Linking Community Visioning and Highway Capacity Planning: Appendices

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Linking Community Visioning and Highway Capacity Planning: Appendices

CAMBRIDGE SYSTEMATICS, INC.

with

CENTER FOR TRANSPORTATION AND THE ENVIRONMENT, NORTH CAROLINA STATE UNIVERSITY

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America's highway system is critical to meeting the mobility and economic needs of local communities, regions, and the nation. Developments in research and technology—such as advanced materials, communications technology, new data collection technologies, and human factors science—offer a new opportunity to improve the safety and reliability of this important national resource. Breakthrough resolution of significant transportation problems, however, requires concentrated resources over a short time frame. Reflecting this need, the second Strategic Highway Research Program (SHRP 2) has an intense, large-scale focus, integrates multiple fields of research and technology, and is fundamentally different from the broad, mission-oriented, discipline-based research programs that have been the mainstay of the highway research industry for half a century.

The need for SHRP 2 was identified in *TRB Special Report 260: Strategic Highway Research: Saving Lives, Reducing Congestion, Improving Quality of Life,* published in 2001 and based on a study sponsored by Congress through the Transportation Equity Act for the 21st Century (TEA-21). SHRP 2, modeled after the first Strategic Highway Research Program, is a focused, time-constrained, management-driven program designed to complement existing highway research programs. SHRP 2 focuses on applied research in four areas: Safety, to prevent or reduce the severity of highway crashes by understanding driver behavior; Renewal, to address the aging infrastructure through rapid design and construction methods that cause minimal disruptions and produce lasting facilities; Reliability, to reduce congestion through incident reduction, management, response, and mitigation; and Capacity, to integrate mobility, economic, environmental, and community needs in the planning and designing of new transportation capacity.

SHRP 2 was authorized in August 2005 as part of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). The program is managed by the Transportation Research Board (TRB) on behalf of the National Research Council (NRC). SHRP 2 is conducted under a memorandum of understanding among the American Association of State Highway and Transportation Officials (AASHTO), the Federal Highway Administration (FHWA), and the National Academy of Sciences, parent organization of TRB and NRC. The program provides for competitive, merit-based selection of research contractors; independent research project oversight; and dissemination of research results.

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Envision Utah and Wasatch Choices 2040

Wasatch Region, Utah

Envision Utah facilitated a visioning process to develop strategies to address issues related to growth. A related effort, the Wasatch Choices 2040 plan, developed a regional transportation plan responsive to desired growth and future development patterns.

Structure of the Visioning Process

Envision Utah, a civic organization, was formed to facilitate a public visioning process to develop a future growth strategy for the Salt Lake City Region. This organization formed the basis for a public–private partnership between businesses, civic leaders, policy makers, and the public.

Visioning Process

The process included the development and modeling of four regional growth scenarios that clearly illustrated the consequences of varying growth patterns and transportation investments. The scenarios ranged from a low-density alternative with predominantly auto-oriented development to a high-density, transit-oriented alternative with more compact growth and higher levels of infill and redevelopment. Extensive public outreach formed the foundation of a Quality Growth Strategy for the region, which was adopted by the Utah state legislature in 1999 and has informed regional and local decisions ever since.

Business Case

The Wasatch Front Regional Council (WFRC) and the Mountainland Association of Governments (MAG), the two MPOs in the Wasatch region, collaborated with Envision Utah to conduct a public visioning process resulting in a land use and transportation vision for their own region. Both agencies saw a need to shift from current practices because of population growth and budget constraints. Visioning was perceived as an early investment to develop effective strategies that could result in infrastructure costs savings in the future.

Community Impacts

The high level of public outreach and community involvement during each visioning process resulted in a blueprint for how areas can grow while maintaining desired quality of life. The visions incorporated assessments of air quality, mobility, transportation choice, land preservation, water resources, infrastructure costs, and housing opportunities.

Public Outreach

The Envision Utah and Wasatch Choices efforts both included public outreach campaigns that incorporated public workshops, open houses, and surveys into the visioning process. Radio, television, and print media helped increase public awareness. Visualization techniques were used to provide interactive opportunities for residents to map where growth should occur and what transportation improvements were preferred. Scenario planning also was used based on the visualization exercises to develop and test alternative futures.

Partnerships

Wasatch Choices 2040 (WC2040) was a joint effort between WFRC and MAG with assistance from the Envision Utah organization. The Utah DOT and Utah Transit Authority were formal partners in the effort. A steering committee of community leaders guided the effort and included representatives from local government, business, environmental groups, advocacy groups, and the like.

Transportation Component of Visioning Process

The WC2040 vision was integrated into regional transportation plans, which used the vision map, regional growth principles, and other inputs to evaluate future transportation needs. Envision Utah helped facilitate the WC2040 vision and obtain support from local jurisdictions. Now called the Wasatch Choices for 2040, this more specific vision was approved by WFRC and will form the land use basis for the regional transportation plan.

Commitment Tracking

The WC2040 vision was intended to serve as a context for the regional transportation plan and for plans that are developed by local, state, and other entities. WFRC identified performance measures based on the regional growth principles, which are formally adopted and in use. In 1999, based in part on Envision Utah's efforts, the Utah state legislature passed the Quality Growth Act to establish a Quality Growth Commission and provide incentives to help communities pursue quality growth.

Envision Missoula

Missoula County, Montana

Envision Missoula was a visioning process utilized as the public participation component of the 2008 update to the Long-Range Transportation Plan (LRTP) for the Missoula, Montana, Metropolitan Planning Organization (MPO). The vision primarily relied on scenario planning as a way to visualize the future of Missoula and the region. This led to exploration of land use and transportation relationships in determining future transportation investments.

Structure of the Visioning Process

The LRTP effort was led by the Missoula Office of Planning and Grants Transportation Division (also the federally designated MPO). The study area includes the city of Missoula and the surrounding urban areas of Missoula County. The 2008 update to the LRTP covers a 20-year planning horizon. The project was initially intended to simply update the LRTP, but the consultant chosen incorporated an extensive public participation component, which led to initiation of a visioning process within the update.

Visioning Process

The Envision Missoula LRTP update process was unprecedented in planning in the region. The process included extensive public outreach and scenario planning, emphasizing the relationship between land use and transportation. Workshops were held to gather public input on future transportation and land use choices available, and this information was used to form two alternatives for the scenario analysis. The public then had the opportunity to vote on the desired future scenario, which in turn was intended to guide the overall goals and objectives.

Business Case

The visioning process was a part of the broader LRTP, which was planned and funded prior to the selection of any consultants, and the cost differential between teams was not prohibitive. Therefore, choosing a team with an emphasis on public participation did not alter the cost of the LRTP, removing any need to provide a business case for additional funding. However, the more intense public participation segment has increased community trust in the MPO, adding intangible value to the LRTP.

Community Impacts

Impacts on the community were measured in each alternative scenario through links to transportation or to land use measures. Measures included congestion, travel times, transit ridership, new employment, urban area development, greenhouse gas emissions, air quality, housing types, and open space provisions.

Public Outreach

The Envision Missoula process relied on several sources of public outreach, including direct stakeholder outreach, interactive workshops, a regional forum, opinion polling, public commenting, and interagency consultation. The interactive workshops used visualization techniques by incorporating scenario planning and alternative future mapping into the discussion of alternatives.

Partnerships

The MPO's Transportation Policy Coordinating Committee was involved throughout the process and maintained final decision authority, but many partners were involved along the way. The primary partners were the Citizens Advisory Committee, the Technical Advisory Committee, and a Steering Committee for the LRTP, each providing varying levels of support to the visioning process within the overall LRTP.

Transportation Component of Visioning Process

The vision within the LRTP explored the potential system performance benefits of demand-side transportation controls and provided valuable growth scenario preference information for the Urban Fringe Development Area growth study. Major goals addressed responses to potential growth

management planning scenarios. Overall, the community favored increased spending for bicycle and pedestrian improvements, including efforts to create context-sensitive designs usable for all modes of travel.

Commitment Tracking

The vision did not include a specific component to measure outcomes of the plan or visioning efforts. However, the LRTP will guide future transportation planning processes, and the MPO's project selection process is directly linked to the vision's outcomes, making the vision a significant source of input for transportation decision making in the Missoula Region.

Bluegrass Tomorrow

Lexington, Kentucky

Bluegrass Tomorrow is a Central Kentucky civic organization that evolved from a grassroots community partnership toward a comprehensive regional planning organization. The regional vision was developed to enhance economic vitality and provide a strong quality of life in the future.

Structure of the Visioning Process

Bluegrass Tomorrow's early regional visioning effort occurred between 1990 and 1993 and included an intensive community outreach effort in the seven-county Bluegrass Region of Kentucky. The regional vision did not have a defined planning horizon, and the process was funded through corporate and individual funds, donations, and grants. The basic motivations for the visioning process were to establish key values in the region and determine how to maintain the region's quality of life.

Visioning Process

In preparation for the visioning process, background analysis, surveys, topical focus groups, and educational outreach were conducted. The actual visioning effort was completed during seven county-based meetings followed by a unifying regional summit, at which the vision was validated using a broad consensus approach. Products of the visioning exercise included regional values, desired growth patterns, and tools to overcome obstacles. These early vision outcomes continue to inform planning in the region.

Business Case

The Bluegrass Tomorrow effort was primarily business funded, led, and supported, with the understanding that successful geographic regions need to follow strategic visions, just as successful businesses do. Benefits of this effort include multi-agency and disciplinary partnerships, consensus building, transportation alignment with community goals, and increased public trust.

Community Impacts

Community impacts and quality-of-life considerations were identified through a regional issues survey and county meetings. In these cases, participants were asked to identify important community assets and issues, and the potential obstacles to sustaining assets long term. The resulting values included maintaining community identity and character.

Public Outreach

Techniques utilized in the process included a community survey, topical focus groups, regional education conferences, steering committees, speakers bureaus, county meetings, and a regional visioning meeting. The effort also employed the use of scenario planning to analyze the natural and man-made systems in the region under differing future conditions. Along with this, visualization was used to display future growth scenarios.

Partnerships

Bluegrass Tomorrow's leadership was made up of key interests and stakeholders in the region, and private- and public-sector partners were involved in the vision. Local community leaders assisted in engaging groups and citizens, reaching out and educating citizens, and in planning county and regional visioning meetings.

Transportation Component of Visioning Process

Transportation activities within the process were limited to the identification of values and strategies. Of importance was the need to tie regional transportation goals to local and regional objectives for land use and community character through greater coordination between entities in transportation planning. The Corridor Management Planning Handbook, a product of Bluegrass Tomorrow, helped outline a process by which to successfully plan corridor enhancement.

Commitment Tracking

Bluegrass Tomorrow did not incorporate a formal tracking method for commitment to the vision. The visioning process did, however, lead to tools that were used in future plans and policies, such as the Corridor Planning Handbook. The handbook outlines the steps necessary to ensure coordination and communication between transportation officials and citizens when involved with roadway planning projects.

Visioning efforts in the region have been continually sustained and updated since 1993.

Transportation Outlook 2040

Kansas City Region, Missouri-Kansas

The Mid-America Regional Council (MARC) developed a vision to guide investment decisions and address transportation needs in two states and nine counties. Transportation Outlook 2040 presents a new vision for how transportation investments will relate to land use in the future.

Structure of the Visioning Process

The regional vision addressed transportation issues amid expected growth in the nine-county Kansas City Region. The visioning process lasted 18 months and informed the 2040 Long-Range Transportation Plan. Overall, the process engaged local communities and developed partnerships in order to create a regionally accepted vision.

Visioning Process

Prior to initiating the vision, local plans were reviewed to identify key policies and strategies common across local plans. These commonalities were combined to form the basis of a draft regional vision. This vision was then validated through an extensive public involvement process, referred to as "Imagine KC," that included public meetings, workshops, and community conversations. The final vision of an adaptive land use scenario for Greater Kansas City Region currently is being presented to the community to guide the development of the region's transportation plan.

Business Case

Funding for the visioning effort came from an FHWA grant and from the annual budget of MARC, yet the budget for the effort was reasonably conservative. Existing efforts from local communities were leveraged to create a regional view supported by local governments and the public. This connection to individual communities fostered communication among agencies and groups involved in the visioning and planning process.

Community Impacts

MARC's work on the regional vision and the updated transportation plan largely centered on quality-of-life considerations, whereas the overall vision addressed growth and infrastructure management to create an environmentally balanced region. Key criteria used to address community impacts included integrating land use and transportation planning, increasing travel choices, improving safety and public health, managing and reducing transportation demand, and incorporating environmental and sustainability factors in all activities.

Public Outreach

Several outreach mechanisms were used in the process, including traditional open houses, workshops, town hall meetings, and newsletters. Some of the more innovative approaches included online blogs, a regional photo competition, youth art exercises, online videos with animation, and online surveys. Possible future scenarios were presented in animation that showed the effects of mixed-use development, improved transit service, and greater walking and biking facilities.

Partnerships

MARC formed partnerships with several organizations, including the University of Kansas, One KC Vision, Bridging the Gap, Kansas City Public Television, Regional Transit Alliance, and various local governments. Partnering groups were very effective in enhancing public involvement because of their leadership and access and connections to local communities.

Transportation Component of Visioning Process

Transportation was one of the three main areas presented in the vision, and, in general, the future vision puts emphasis on increased transit, bicycling, and walking. The regional vision is being used as input to developing the regional long-range transportation plan, improving coordination and continuity between the vision and the transportation plan.

Commitment Tracking

Transportation Outlook 2040 includes a performance measurement chapter that details data and measures that directly relate to the plan's identified policy goals. Additionally, a commitment has been made to revisit and update the adopted vision and underlying population and employment forecast every 2 years, based on how the region is tracking.

Vision Metcalf

Overland Park, Kansas

Metcalf Avenue is a 9.5-mi corridor though Overland Park, Kansas. As a former state highway carrying 60,000 vehicles per day, the corridor required multiple approaches to problem

solving. Vision Metcalf developed land use and transportation objectives for the corridor over a 30-year planning horizon.

Structure of the Visioning Process

Vision Metcalf was a 2-year effort involving more than 4,000 people. The city of Overland Park convened the effort as leaders realized the corridor was in need of revitalization, and when facing new development, an overall vision to guide growth was beneficial. Ultimately, this led to a plan to revitalize Metcalf Avenue through design principles that will be implemented in future phases.

Visioning Process

Prior to the process, analysis was completed on demographic and market trends and current land use policies. The visioning process primarily used preference surveys, resident questionnaires, and workshops, all of which relied on visualization techniques. A series of public meetings was held to present professional designs to the public before approval by the city.

Business Case

Vision Metcalf was a $1.3 million research and analysis process funded by the city of Overland Park. With this investment, the city was able to provide the basis for a comprehensive plan and for transit proposals along the corridor. Overland Park leaders hope the investment leads to a more livable community and that the development of community-driven alternatives will save resources when moving into future implementation phases.

Community Impacts

Throughout the process, the community was able to contribute thoughts on quality-of-life issues and potential transportation improvements. The desire was to make walking easy, safe, and convenient while promoting mixed-use options and improved transit service. The city anticipates that air and water quality will be improved and land will be conserved as a result of the implementation of the vision's principles.

Public Outreach

The visioning process relied on various public outreach tools, including workshops, surveys, public meetings, and charrettes. Direct involvement techniques provided the opportunity for a variety of members of the public to participate in the process. Visualization techniques were well utilized, including photos and drawings illustrating types of development associated with improvements. More than 4,000 residents, business owners

and operators, commercial property management groups, and development teams were involved.

Partnerships

Whereas Vision Metcalf was led entirely by the city, there were informal partnerships formed during the process between the city, the development community, and the neighborhoods around the corridor. Elected officials were key decision makers, but the private sector and neighborhood leaders played a major role in developing community-driven solutions.

Transportation Component of Visioning Process

Transportation was a key element in the visioning process for Metcalf Avenue. Although roadway capacity on this corridor will be maintained in the future, new growth will require a multimodal approach to investment, which is reflected in the vision developed by the community.

Commitment Tracking

No formal tracking measures were developed for Vision Metcalf. However, subsequent studies, such as the current transit alternatives analysis, may develop tracking measures. The Overland Park City Council adopted the vision, and it was incorporated into the city's master plan. A form-based code is being developed as the primary tool to guide redevelopment in the corridor. Thus, while no specific tracking measures were developed, the city has taken ownership of the vision.

2040 Vision for the I-95 Corridor Coalition

I-95 Corridor, East Coast States

The 2040 Vision process marked a departure from the coalition's historic role, which focused primarily on short-term issues within the corridor. In an effort to address long-term environmental, economic, and energy issues, the I-95 Corridor Coalition convened a visioning process.

Structure of the Visioning Process

The coalition outlined a vision for the eastern seaboard that would invest in a multimodal transportation system, reduce the carbon footprint of the region, and enhance the region's economic vitality and global competitiveness. The ultimate objective was to develop a framework and principles to incorporate within members' long-range planning efforts. A strategic planning and policy committee directed the vision on behalf of the coalition.

Visioning Process

Many of the member state DOTs and MPOs in the region had previously completed long-range visioning or planning efforts. The coalition utilized these prior efforts to inform the vision, which was broad and high-level. Three policy-level scenarios were developed and analyzed by the committee, resulting in a final vision-scenario addressing transportation, energy, environmental, and economic challenges and opportunities. The goal was to generate a unified, strategic vision framework for member states to consider in their own future planning efforts.

Business Case

This effort helped bring together many of the related visions for the I-95 corridor and provide a basis for future coordination, but there has been no determination of the advantages or effectiveness of this effort.

Community Impacts

Prior visioning outcomes from members were utilized for drafting scenarios and developing principles. However, this process did not directly consider community quality-of-life aspects, instead focusing on broad considerations and trends in energy use, land use, and economic development.

Public Outreach

The process did not include public outreach activities, but did focus significantly on partner outreach and coordination among members, including vision input sessions with MPOs and other key partners.

Partnerships

The Corridor Coalition is a partnership of 16 state departments of transportation and the District of Columbia. In addition, many regional agencies and partners from public entities and private industry participated.

Transportation Component of Visioning Process

The 2040 Vision is an example of a multistate effort that resulted in a framework and principles that will benefit state DOT coordination of capacity issues and projects. The effort addressed issues within the long-range transportation plans from a number of state DOTs and Metropolitan Planning Organizations.

Commitment Tracking

The 2040 Vision scenario principles illustrate a future multimodal transportation system supportive of regional economic growth while contributing to emerging energy and GHG emission targets. The effort did not develop tools or techniques to measure and track performance, planning, or project delivery over time. However, the vision is utilized as input to the coalition's strategic and annual business plan, which is tracked.

Oregon Transportation Vision Committee

State of Oregon

The Oregon Transportation Vision was initiated by Governor Kulongoski to address future transportation challenges and shape future transportation legislation. The vision for Oregon's future transportation system responds to the needs of a global economy, increases in population, rising energy costs, and the reductions in greenhouse gas emissions.

Structure of the Visioning Process

Committee members were appointed by the governor and included an array of transportation stakeholders. The visioning process planned for a horizon of 2030, while the committee's recommendations included short-term legislative action for 2009–2011. Workgroups were composed of business leaders, legislators, local and state officials, transportation stakeholders and sustainability and land use experts charged with developing recommendations in three key areas: funding, modal, and environment.

Visioning Process

The committee drew information about Oregon's transportation needs and required funding levels from the 2006 state transportation plan. The visioning process consisted primarily of stakeholder meetings with informal discussions among members. The primary product of the process was the Transportation Vision Committee Report to the governor, which was used to inform the Jobs and Transportation Act of 2009.

Business Case

The Transportation Committee was an initiative from the governor's office and fully funded by the state. The visioning process helped make the case for increased transportation funding and led to the adoption of a comprehensive transportation bill. However, earmarks for specific projects were used to gain support from legislators, setting a precedent that did not align with Oregon DOT's existing project selection process.

Community Impacts

The vision statement identified greenhouse gas reduction goals, economic competitiveness values, land use considerations,

and accessibility to transportation choices as the main tenets of the vision. The implementation of the vision over the course of the planning horizon is intended to be sensitive to these issues.

Public Outreach

The visioning process brought a large group of stakeholders together, but there was no extensive public participation effort. One of the goals of the committee was a hope that the effort would engage Oregonians in thinking differently about transportation and what it means to their lives and quality of life.

Partnerships

Members of the Transportation Vision Committee were appointed by the governor and included a broad range of transportation stakeholders and interest groups. This brought together groups that typically may not have discussed transportation issues cooperatively and collaboratively.

Transportation Component of Visioning Process

The visioning process centered on transportation funding policy by providing recommendations on increases to support transportation infrastructure needs. The process also provided recommendations for selection of transportation projects by proposing least-cost planning. The resulting transportation bill approved by the legislature is expected to guide future transportation planning activities at the state level.

Commitment Tracking

Some of the recommendations from the Transportation Vision Committee report were incorporated into the 2009 transportation bill. However, the recommendations of the effort are intended to drive transportation investment and decision making well into the future.

I-90 Snoqualmie Pass East Project

Kittitas County, Washington

Interstate 90 is a critical transportation corridor linking Puget Sound to eastern Washington and beyond. The project began as a capacity and operations improvement project but soon transformed into a ground-breaking safety, mobility, operations, and ecological connectivity project. To accomplish project goals, the Washington State Department of Transportation (WSDOT) used an innovative approach to visioning and stakeholder coordination, eventually leading to the successful planning, designing, and environmental permitting of one of WSDOT's largest public works projects in the last decade.

Structure of the Visioning Process

WSDOT engaged partners and stakeholders throughout planning and development phases. This allowed active and ongoing dialogue on issues of critical importance to the project. WSDOT organized the effort into two main teams: an interdisciplinary team (IDT) with responsibility for high-level policy issues, and a mitigation development team (MDT) that addressed specific details of environmental impact. WSDOT, the IDT, and the MDT went on to create three smaller technical committees in order to focus on specific project issues, including stormwater treatment, wildlife monitoring, and wetland monitoring.

Visioning Process

The process consisted of coordination meetings between teams as well as meetings with different partnering agencies to gather input and define the scope of the project. WSDOT also engaged the public by hosting open houses and hearings to provide information on project needs, address public concerns and questions, and present findings from environmental review processes.

Business Case

The successful implementation of the collaborative, vision-based approach used in planning and developing the I-90 Project helped reduce cost and schedule complications caused by public opposition and potential litigation. WSDOT did not estimate the costs of such events, instead viewing visioning as a means to engage the public and establish trust as early as possible in the process. The collaborative process also enabled WSDOT to stay on time, on budget, and move quickly through permitting processes.

Community Impacts

I-90 is an economic engine for freight movement and also the lifeline for the many small communities along the corridor. WSDOT conducted in-depth studies into the I-90 Project's impacts on freight and local economies to ensure project improvements were meeting the needs of an important user group. WSDOT also educated communities along the corridor about the project's impacts and long-term benefits through a public campaign resulting in a supportive community, freight, and business audience.

Public Outreach

The key public outreach period in the I-90 visioning effort was associated with the NEPA review process, although WSDOT coordinated public outreach efforts since beginning the scoping process in 1999 and continues to do so today.

WSDOT's extensive public involvement campaign involved engaging the public by hosting open houses, visiting schools and municipalities, and participating in community functions and civic meetings. The involvement campaign also enabled WSDOT to form strategic partnerships with environmental groups and other nongovernmental organizations.

Partnerships

An expanded multi-agency partnership was the centerpiece of the I-90 Project visioning effort. WSDOT invited representatives from local, state, and federal agencies and nongovernmental groups to participate in the IDT and MDT. These agency partners helped WSDOT achieve a balance in objectives and perspectives throughout the planning and visioning process.

Transportation Component of Visioning Process

The I-90 Project is an improvement project designed to address multiple transportation needs. In order to manage project commitments, communication was vital. Consistent and transparent communication between WSDOT and its project partners was essential for success. Two-way communication between WSDOT and the general public was also important, including explaining the project's needs, benefits, the NEPA review process, goals, challenges, and project complexities.

Commitment Tracking

WSDOT tracked project commitments and critical project paths using resource-loaded scheduling software. This commitment tracking helped the efficiency of the multidisciplinary approach; in fact, the efficiency of the team resulted in WSDOT starting construction 1 year ahead of schedule.

Vision for Route 50 Scenic Byway

Loudoun and Fauquier Counties, Virginia

The Route 50 Corridor Coalition was formed to organize public interest and advance a preferred alternative to a proposed road-widening project in rural Virginia. The proposed project affected a 20-mi stretch of Route 50, an area of historical, cultural, and environmental resources. The visioning process led to a preferred design favored by residents, adopted by local governments, championed by the state, and implemented by VDOT.

Structure of the Visioning Process

Under the leadership of the citizen-based Route 50 Corridor Coalition, community members, civic organizations, and elected officials were brought together to form a vision statement and advance preferred traffic calming improvements along Route 50. The visioning process had strong leadership, which persisted to advance local interest through state and federal processes. The visioning process began in 1995 with a cohesive vision statement and alternative plan for traffic calming and culminated in the earmark of federal funds for the project in 1998. In 1999, the Route 50 Traffic Calming Task Force was appointed by Virginia's secretary of transportation to oversee the project. The task force was composed of local community members and elected officials and was given unprecedented joint authority with VDOT in the project procurement process to select consultants to refine the community's design solutions for the corridor.

Visioning Process

Development of the vision relied on active community members to build consensus and opposition to VDOT's original proposal of widening the road. The vision statement was formed during public meetings and three smaller workshops. Citizens defined the vision of the Route 50 Corridor as "a scenic, unique, rural community in an historical, agricultural, quiet, and natural setting." This vision statement was developed as a means to guide efforts and assess transportation decisions for the corridor.

Business Case

Funding for the effort came from private donations as well as grants from several foundations. The visioning process determined that congestion was not the primary concern with Route 50, rather speeding and poor driving behavior were major concerns. Therefore, the visioning process stopped a significant investment that would not have actually addressed community concerns and provided a plan to allocate funds for an effective solution.

Community Impacts

The community-led process sought to minimize the impacts of the proposed roadway widening, which was considered to have significantly impacted quality of life. By advocating for a more effective and locally preferred alternative, and by securing dedicated funding for this alternative, the community coalition was able to maintain and enhance the desired community character along the corridor.

Public Outreach

Input to the Route 50 Vision was gathered through town hall meetings, and breakout sessions were used to engage community members during the visioning exercise. Direct

mailings were sent to those within a 10-mi radius of the project, and newsletters and brochures were distributed to promote grassroots outreach. The coalition maintained a website that kept the community informed and current.

Partnerships

The Route 50 Corridor Coalition was formed in response to the proposed project. The coalition acted as an umbrella organization for civic and business organizations, as well as local citizens, business leaders, and elected officials. This diverse representation reinforced community involvement and provided the coalition a significant voice in the process.

Transportation Component of Visioning Process

The visioning process occurred during the initial project scoping for the Route 50 widening project, to which the community was opposed. The visioning process included a problem identification exercise, which determined that the community's issues with Route 50 were excessive speed, aggressive driving, and illegal passing maneuvers, rather than being centered on traffic congestion, which was the original intent of the project and perception of problems by VDOT.

Commitment Tracking

After a federal earmark for implementation of the alternative proposal was secured, a task force was formed to guide procurement and construction processes and ensure the vision was met. Additionally, progress was tracked on a dedicated project website, with updates on the process. This open, transparent process helped keep the community informed and those responsible for implementation accountable to the original vision.

Atlanta VISION 2020

Atlanta, Georgia

VISION 2020 was initiated by the Atlanta Regional Commission (ARC) to establish a vision to address the region's rapid growth. The creation of a comprehensive regional plan to translate initiatives and policies into action items did not occur as planned, and no single plan reflecting VISION 2020 output was ever adopted.

Structure of the Visioning Process

VISION 2020 was based on developing a broad vision for the Atlanta region through a series of initiatives and policies that would also guide implementation. This process was led by a steering committee that managed partnership and public outreach, with the support of ARC staff. In addition to ARC

support, the process received financial assistance primarily from private organizations.

Visioning Process

VISION 2020 involved thousands of participants and was organized as a three-phase process. The first phase focused on community outreach to define principal issues, the second developed issue-based collaborative groups to articulate ideas for specific programs and initiatives, and the third created a comprehensive regional plan to translate programs and policies into action items.

Business Case

In a metropolitan region as large and diverse as Atlanta's, coordination of multiple local governments, state and regional agencies, and the private sector is complex and challenging. VISION 2020 was effective in bringing together business interests in support of a visioning effort. While the goals and initiatives were not transferred into a single public plan with the broad support of state and local agencies, many of these initiatives developed into planning efforts in their own right and helped to change ARC's approach to regional planning. Because of the effort, the private sector became more engaged in regional dialogue, a trend that continues today.

Community Impacts

Specific projects were not considered in the process; instead, the vision focused on broad community dimensions beyond transportation and emphasized the development of initiatives and action plans. As a result, there is no simple link between VISION 2020 and Atlanta's built environment in the years since the effort was undertaken, although the effort has been the genesis for several planning initiatives that have shaped growth throughout the region in smaller planning areas.

Public Outreach

The visioning process included public involvement efforts on a scale unprecedented for Atlanta. ARC sought the input and guidance of the National Civic League and followed an approach based on inclusion, recognition of diversity, and attention to a wide variety of perspectives. Initial issues and discussion points were identified through a survey of local, regional, and national experts, developing a series of potential futures to use as the basis for broader community-based public outreach discussion.

Partnerships

The private sector, especially foundations and major corporations, were involved in the VISION 2020 process early and

remained a central component of its efforts. Atlanta is a city and region whose power structure is rooted in the business community, and its cooperation and support allowed VISION 2020 to develop and evolve to the extent that it did. Public agency partnership, especially among local governments and key state agencies, did not coalesce to the same degree, a major reason that many of VISION 2020's positive ideas and innovations were not adopted as public policy.

Transportation Component of Visioning Process

VISION 2020 was a multidisciplinary visioning process that addressed planning issues beyond transportation, and its transportation component was seen as a way to plan differently than the conventional regulatory planning processes.

Commitment Tracking

ARC actively tracked progress of select VISION 2020 initiative goals through 1998, including some transportation goals. However, largely as a result of limited buy-in from state and regional transportation agencies, tracking the progress of all transportation initiatives has been less clear. In 2008, the Atlanta Regional Commission launched another initiative, known as Fifty Forward: A Metro Atlanta Futures Forum, to explore scenarios for metro Atlanta focusing on the region's future livability, prosperity, and sustainability.

Community Technical Assistance Program

New Hampshire Department of Transportation

The New Hampshire Department of Transportation's (NHDOT's) Community Technical Assistance Program (CTAP) assists communities along the Interstate 93 corridor to proactively plan for reconstruction project impacts. NHDOT facilitated visioning processes to help better understand the land use and transportation implications of highway capacity projects.

Structure of the Visioning Process

CTAP's visioning effort was driven by a coalition of communities along the I-93 corridor. The organizational structure includes stakeholder and steering committees representing municipalities, a management team covering day-to-day operations, working groups focusing on specific themes, and a partner organization (Antioch New England Institute) working to enhance public outreach efforts. NHDOT retains primary authority and provided funding and staff support.

Visioning Process

The visioning process was initiated with a 6-month outreach period to educate and engage stakeholder groups and local governments. Vision creation occurred over another 6 months, centered on interactive visioning and mapping exercises that enabled consensus building around major quality-of-life factors. The process resulted in a unified vision statement for corridor communities with supporting goals and action items.

Business Case

NHDOT leadership favored proactive planning for growth and for better linking land use and transportation decisions. While it had not been quantified at the time of CTAP, it was generally understood that failure to bring these two decision-making tracks together would result in added costs for NHDOT in the long run. The use of visioning also provided NHDOT an opportunity to comprehensively plan for the entire I-93 corridor, lessening anticipated opposition.

Community Impacts

NHDOT's approach to the visioning effort centered on the assumption that regional growth was an expected outcome of expansion of the interstate. This visioning effort was carried out specifically to anticipate and mitigate the undesired impacts of growth and to enhance desired impacts, based on community concerns and considerations.

Public Outreach

Public involvement efforts targeted specific stakeholders, community representatives, and the general public. This allowed corridor community representatives to summarize needs and concerns, rather than organize large and costly public events. Communication was facilitated by the use of web resources and print media, allowing members of the public to understand and participate in the process.

Partnerships

Arrangement of CTAP participants was complex and featured different leadership levels. NHDOT was the primary organizer and leader, with involvement from other state agencies, local and regional governments, and civic organizations representing particular planning issues. NHDOT retained Antioch New England Institute, a university facilitation center, for public outreach efforts. This organization was effective in keeping communities involved throughout while administration of the effort rested with NHDOT.

Transportation Component of Visioning Process

CTAP was initiated because of proposed I-93 reconstruction projects. Visions primarily examined land use implications and did not affect roadway design for I-93. Coordination with local governments was undertaken because of the understanding that growth would have immediate community impacts and subsequent future impacts on I-93 capacity.

Commitment Tracking

NHDOT tracked successes in carrying out the vision and reporting on improved communication between stakeholders and corridor communities. No formal mechanisms for tracking transportation efforts were established during the process, largely because the actual implementation of the I-93 expansion project was developed under a more conventional NHDOT process.

California Regional Blueprint Planning Program

San Joaquin Valley, California

The Blueprint Program is funded and administered by the California Department of Transportation (Caltrans) to fund MPO development of preferred growth scenarios or blueprints, which are intended to provide consensus guidance to long-range transportation plans as well as land use, housing, and environmental planning concerns.

Structure of the Visioning Process

Caltrans is the lead agency, providing support and funding to MPOs, though the planning of each blueprint is based on a collaborative visioning process that relies on input from constituent local governments of each MPO, business interests, nongovernmental organizations, and advocacy groups. In the San Joaquin Valley, the focus of this case study, an Advisory Committee was established to guide the Blueprint process. The committee was supported by a technical assistance group.

Visioning Process

The San Joaquin Blueprint process featured large-scale regional planning based on community-focused public outreach as well as agency collaboration and consensus-building processes. These efforts were targeted to involve local governments and business and civic organizations. The process utilized early involvement of key interests to ensure continuity in later steps of the visioning process.

Business Case

Caltrans adopted an approach that allowing regional consensus-building to determine the direction of state and regional transportation investment. Although regional councils of government (COGs) and MPOs in California do not have land use planning authority (which rests with local governments), the risk factor in choosing to advance the Blueprint process was predicated on the greater cost of direct coordination with many local governments.

Public Outreach

San Joaquin Blueprint began with educational efforts to engage stakeholders in the process and inform the public of involvement opportunities. After large-scale, regional events, individual MPOs and COGs were responsible for creating and adopting their own subregional growth visions with technical assistance from a centralized program center. The subregional visioning efforts were coordinated through a Blueprint Regional Advisory Committee, which helped to translate the subregional visioning efforts into a consistent and compatible Regional Blueprint.

Partnerships

The San Joaquin Blueprint organizational structure was complex but developed to ensure local input and control over the decision-making process while leveraging regional resources. This involved collaboration between the MPOs and constituent local governments, with top-level coordination between the MPO and the Blueprint Regional Advisory Committee. At the community and subregional level, more detailed partnerships were formed between government, civic organizations, and business partners.

Transportation Component of Visioning Process

A stated component of the overall goal of the statewide Regional Blueprint Plan is to develop regional consensus on efficient land use patterns that support improved mobility and reduce dependency on single-occupant vehicle trips. Caltrans considered regional blueprints as tools to assist transportation agencies in addressing a broad reach of community livability concerns. This is recognition of the role the DOT plays in fostering comprehensive planning, both under state law and as a result of the increased integration of transportation and community planning.

Commitment Tracking

The Blueprint program did not adopt formal commitment tracking criteria as part of the grant program. Individual

regional blueprint initiatives have developed progress reports, and in 2007 the California Center for Regional Leadership in cooperation with Caltrans published an in-depth *California Regional Progress Report.* This report provides baseline measures for regions across a range of quality-of-life measures within the framework of the California Regional Blueprint Planning Program. Since the initiation of the Blueprint Program, 18 MPOs and 15 RTPAs have participated in the $20 million grant program.

Vision PDX

Portland, Oregon

Vision PDX was an initiative of the City of Portland to update an earlier vision which would reflect recent population growth and demographic shifts, as well as change attitudes toward growth and sustainability.

Structure of the Visioning Process

Vision PDX was a 3-year process led by a Vision Committee of 60 volunteers representing a wide range of interest groups and citizens. The City of Portland Bureau of Planning and Sustainability provided staff support to the process. Public involvement consultants assisted in facilitating six issue-specific subcommittees of the Vision Committee (Engagement, Grants, Analysis, Communication, Speakers Bureau, and Research). The City of Portland assumed overall organizational responsibility, funding, and ultimate decision-making authority.

Visioning Process

The visioning effort was based primarily on an extensive outreach process with participation from more than 17,000 community members. The introductory engagement effort involved four open-ended questions intended to stimulate discussion over a wide range of community issues. Information was collected through surveys, discussion at a series of community-wide forums, and innovative outreach techniques and events. The final vision was formed based on public input, but was reviewed, synthesized, and drafted by members of the Vision Committee.

Business Case

The City of Portland sponsored Vision PDX to help shape how Portland will look in the future. The process was fully funded by the city, although vision partners provided in-kind donations (e.g., technical assistance, office space, and labor). Making the business case was not crucial to the decision to convene Vision PDX as it was effectively an update to a prior vision. The primary difference was the emphasis on public involvement which held significant value for the city.

Public Outreach

Vision PDX gained recognition for innovative and effective approaches to public involvement. In addition to surveys and large public events, Vision PDX included rigorous scientific analysis of survey responses that helped focus the direction of the visioning exercise. The survey collected over 21,000 pages of responses, a level of citywide public involvement unprecedented for Portland.

Partnerships

Because of the central leadership role of the Visioning Committee, Vision PDX had consistent links to business, artists, educators, neighborhood advocates, and other community members not conventionally associated with transportation or community planning. Developing a broad, volunteer-based committee helped establish public champions, generate word of mouth outreach and publicity, and reach a broad cross section of residents.

Transportation Component of Visioning Process

Vision PDX was a broad effort intended to extensively address all facets of the community, and was not focused on transportation. Transportation issues were one of the main topic areas and resulted in discussion of specific topics such as transit, bicycle and pedestrian use, traffic congestion management, and parking. Transportation was included within several of the final five elements that constituted the vision statement (built, economic, environmental, learning, and social). Transportation outcomes within these elements tended to focus on mobility of people and freight, providing alternative travel choices, and enhancing communities and workplaces.

Commitment Tracking

Vision PDX did not develop formal commitment tracking criteria. The Portland Plan will be the final outcome of the process and was adopted by the Portland City Council with the understanding that principles and goals will be integrated into future policy plans for the City of Portland. Implementation efforts included grant programs for local projects and integration with related processes and plans. Vision into Action is a community-based group formed to carry forward the work of Vision PDX.

Riverfront Parkway Transportation Plan

Chattanooga, Tennessee

Chattanooga developed a comprehensive vision for the future in the 1980s, and Riverfront Parkway was one of several projects completed in the implementation of that vision. The Parkway Project involved the City of Chattanooga in partnership with RiverCity Co. to transform an underutilized expressway into a traditional urban parkway that met the community's vision for connecting downtown with the riverfront.

Structure of the Visioning Process

Chattanooga Venture's Vision 2000 was a visionary process for the late 1980s which began with a citywide approach, though the final vision ultimately focused on a 20-year plan for downtown revitalization and concentrated on the waterfront area. RiverCity partnered with local elected officials, state and federal agencies, and freight companies to involve the public in developing a plan for downtown improvements.

Visioning Process

The Chattanooga Vision 2000 visioning effort was based primarily on community outreach, with over 1,000 members of the community participating in a series of public workshop events in 1984. Implementation continued over the following two decades, primarily as a result of the lasting partnerships formed between civic and business leaders. As the Riverfront Parkway project began, a series of meetings and design workshops was held in early 2000 among key stakeholders, residents, city officials, and Tennessee DOT representatives to develop a conceptual plan for the roadway configuration.

Business Case

The Riverfront Parkway project achieved the intended objective of creating a connection between downtown Chattanooga and a newly developed riverfront park, which was also envisioned as part of the Vision 2000 process. It generated a significant amount of private investment, both in downtown and along the riverfront, realizing tangible benefits for the city.

Public Outreach

Significant effort in soliciting early public participation and input in the Vision 2000 process helped to streamline future efforts. As a successor to the Chattanooga Venture umbrella organization, the RiverCity's working relationship with public agencies, business groups, and civic organizations helped boost stakeholder participation. The visioning and project planning processes also used innovative techniques, such as local media outreach and social church networks, to encourage participation.

Partnerships

As the primary agency behind the Riverfront Parkway development, RiverCity was the product of preexisting civic and business networks and continued strong relationships with the City of Chattanooga and Hamilton County. One challenge the Riverfront Parkway project faced was a lack of support from the Tennessee DOT, which had jurisdiction over Riverfront Parkway and significant concerns over alterations to the road. The final outcome of the process was a negotiated transfer of ownership and maintenance responsibility for the road from Tennessee DOT to the City of Chattanooga.

Transportation Component of Visioning Process

Vision 2000 addressed Riverfront Parkway as a barrier to downtown revitalization, and recommendations for change were largely conceptual. In 2000, a detailed analysis determined that the road was operating below capacity and that local access was the primary transportation concern of residents. A key component of this analysis was the definition of capacity as system-oriented rather than facility-oriented, recognizing that the needs for downtown access could be met, while preserving capacity, if the parkway was configured as a regular street with network access to downtown.

Commitment Tracking

The City of Chattanooga did not employ a formal commitment tracking process; however the participation of established organizations such as RiverCity allowed project partners and the public to maintain access to information and accountability for the project.

Arizona State Route 179

Coconino and Yavapai Counties, Arizona

The SR 179 Needs-Based Implementation Plan (NBIP) was conducted by the Arizona Department of Transportation (ADOT) to plan improvements to a 9-mi scenic road corridor. Increased population and tourist travel led to the need to address mobility and safety within this corridor, while protecting the natural environment and economic vitality of corridor communities.

Structure of the Visioning Process

In studying SR 179, ADOT adopted a context-sensitive design approach to address traffic problems. The visioning process was structured using related Executive, Project, and Public Outreach teams. The Executive Team was the ultimate decision-making body. The Project Team was responsible for day-to-day management of the process. The Public Outreach Team assisted in events and communications. In addition, citizen-based Design Advisory Panels were organized for each segment to develop conceptual plans. Panels met with Project Team members to review designs in relation to safety, engineering and mobility needs, and aesthetic, historic, environmental, and other community values.

Visioning Process

Development of the vision relied on community input solicited through a variety of public involvement techniques. Over the course of the process, gradual elimination of alternatives was used to build consensus among stakeholders. Each step of the process was intended to reflect the unique nature of the corridor, including the development of possible solutions, the corridor-wide design framework, and each segment's conceptual design.

Business Case

Given the corridor's environmentally sensitive areas, active and organized community, and numerous stakeholders with jurisdiction along the corridor, it made sense for ADOT to launch a collaborative visioning process. The process established community trust and input during design and limited resistance during construction phases.

Community Impacts

The process centered on balancing the need to enhance mobility and safety with enhancing community values and quality of life along the corridor. Criteria used to assess these outcomes included retaining natural landscape and scenic beauty, minimizing noise and air quality impacts, and providing safe vehicular and emergency access.

Public Outreach

In the early stages of the vision, several outreach strategies were employed to ensure wide community involvement, including informational booths at community events, educational forums, interviews with community members, focus groups, direct mail campaigns, and public opinion surveys. Additionally, the project website provided background information, news updates, and materials to the community. The website also solicited feedback from visitors and allowed individuals to sign up for the project contact database, which was used to distribute e-newsletters.

Partnerships

ADOT partnered with key stakeholders with jurisdictional responsibility along the corridor, including Big Park Regional Coordinating Council, Yavapai County, Coconino National Forest, FHWA, City of Sedona, and Coconino County. These stakeholders were brought into the process as Executive Team members as a means to enhance cooperation and to equally share responsibility and decision-making authority in the process.

Transportation Component of Visioning Process

Transit, pedestrian, bicycle, and motorist mobility issues were all considered central to the visioning process. Traffic simulations provided visual information during public workshops and helped communicate safety and engineering concerns. Roundabouts were the preferred community choice for intersection control on SR 179, based on engineering principles, community input, access management, safety studies, research on other communities with roundabouts, and traffic studies.

Commitment Tracking

ADOT and Executive Team membership were involved in the SR 179 decision-making process from planning through construction. This allowed stakeholders to ensure that design and construction met the guidelines set forth in the vision. The entire project corridor has been planned and is in the process of construction, reflecting an adherence to project commitments developed through the visioning process.

Transportation 2040 and Vision 2040

Puget Sound Region, Washington

Puget Sound Regional Council (PSRC) coordinates with local governments, businesses, and citizens to build a common vision for the region's future through three major activities: VISION 2040—the region's growth strategy, Transportation 2040—the region's long-range transportation plan, and Prosperity Partnership the region's economic strategy.

Structure of the Visioning Process

The PSRC, as the region's MPO, updated Transportation 2040 to carry out the goals and objectives expressed in Vision

2040. PSRC utilized a consultant team, subject-matter groups, task forces, a Regional Staff Committee, and two sub-committees of the Transportation Policy Board to develop the 2040 vision.

Visioning Process

In 2003, the council's leadership agreed to update the 1990 VISION 2020 plan and to extend the horizon to 2040 in order to consider the implications of emerging issues such as the impacts of climate change and population growth. VISION 2040 was developed over a period of 4 years and included extensive public input opportunities, including large public events, small group presentations, public television videos, and seminars to discuss technical data. The council also customized the scenario planning software, INDEX—Paint the Region, to develop, analyze, and compare scenarios using environmental, land use, demographic, and transportation indicators. The end result was VISION 2040, which is broad in scope and closely integrated with the region's transportation plan.

Business Case

Transportation 2040 serves as the regional long-range transportation plan for federal planning requirements and as the regional transportation plan for state planning purposes. Both of these requirements are directly tied to funding sources, which provides fiscal incentives to complete the planning effort. By advancing transportation issues related to the region's overall growth strategy, Transportation 2040 maximizes the cost-effectiveness of future plans and improvements.

Community Impacts

Evaluation criteria were employed to address quality-of-life considerations related to safety, human health, and security. Each alternative future was analyzed for potential community impacts relative to a baseline scenario.

Public Outreach

Transportation 2040 relies on the foundation of public involvement developed through the Vision 2040 process. Specifically for the LRTP, the PSRC relied on input from elected officials through council presentations, and conducted open houses during the scoping process to collect public opinion regarding transportation issues.

Partnerships

Throughout the process, PSRC member jurisdictions were involved in regional conversations. Interaction with federal, state, and local government agencies was ongoing, and staff consulted with partner agencies when needed.

Transportation Component of Visioning Process

Transportation 2040 provides a long-range regional transportation strategy that is fully integrated with the regional growth strategy. Alternatives proposed in the transportation plan are consistent with the regional growth vision, meet regional goals, compare alternatives using evaluation criteria, and consider environmental and community contexts.

Commitment Tracking

PSRC is committed to reporting environmental, growth management, transportation, and economic issues, based on the region's adopted goals policies. This commitment allows decision makers to see whether the region, cities, counties, and transit and other agencies are taking the specific steps necessary to implement VISION 2040 and Transportation 2040.

Vision Idaho

State of Idaho

In 2000, the Idaho Transportation Department (ITD) brought together stakeholders from across the state to determine long-term transportation needs. Over 4 years, ITD engaged stakeholders in a collaborative effort to develop a vision for the state's future transportation system.

Structure of the Visioning Process

The process was largely stakeholder driven and depended on engagement by two groups: the Vision Management Team and an Executive Round Table. Membership of these teams was diverse and included transportation planners, agency managers, business leaders, policy makers, and special interest groups.

Visioning Process

IDT began the visioning process with an internal symposium to discuss possible approaches and met with planning staff, district managers, and executive leadership to solicit input. A random telephone survey was conducted statewide to provide focus points for stakeholder workshops. Workshops included interactive methods such as electronic polling, mapping, and dynamic, real-time scenario planning of alternative investment patterns to help participants visualize different possibilities. This approach was effective in encouraging dialogue among numerous stakeholders.

Business Case

IDT used the visioning process to provide widespread public involvement in the planning process and to encourage innovative thinking. One of the rewards was that the visioning process included a wide assortment of partners that grew to trust and continue to work with IDT. The cited benefits of the visioning process include better alignment of transportation and land use and improved relationships among IDT departments.

Community Impacts

Participants identified guiding principles for the vision that included a commitment to compatibility of environment and community. For example, in scenario development and evaluation, participants considered wide-ranging issues such as land use, air quality, greenhouse emissions, ecological preservation, water, energy, housing and economic growth. Participants considered each of these issues in future scenarios and expressed preferences on potential outcomes.

Public Outreach

ITD began to develop the Vision by sponsoring a symposium that brought together over 200 participants. Experts on future trends, subject matter experts, and other transportation professionals presented information about the future of transportation and expected impacts on Idaho. ITD held workshops throughout the process in cooperation with MPOs and partner agencies, along with civic and environmental organizations.

Partnerships

ITD management was responsible for bringing together various stakeholders, including resource agencies, metropolitan planning organizations, tribes, and the public. In addition, ITD formed additional committees to share technical and policy expertise and provide approval authority throughout the visioning process. The committees included not only planners—modal experts—but also business leaders, policy makers, and special interest groups, universities, and multinational corporations.

Transportation Component of Visioning Process

The vision defines Idaho's preferred transportation system over the next 30 years, spanning all highway, public transportation, bicycle, pedestrian, water, air, information technology, and rail systems. Since completing the vision, ITD has used the document to complete a wide range of corridor

plans and related projects. Planning decisions use the process developed during the visioning effort to better coordinate planning activities within ITD and among partners.

Commitment Tracking

ITD made a concerted effort to ensure the vision was implemented and adopted by the Idaho Transportation Board. ITD representatives reported the project's most important legacies might be the department's improved relationship with stakeholders. For the purpose of accountability, outcome-based performance measures were developed, such as pavement and bridge conditions, fatalities, and seat belt usage.

How Shall We Grow?

Central Florida

Central Florida's visioning exercise, known as "How Shall We Grow" (HSWG) led to the development of a shared growth vision for the future of the region.

Structure of the Visioning Process

In 2008, *myregion.org,* a business unit of the Central Florida Partnership, organized partners to complete a 50-year regional vision. The visioning process was convened with the assistance of multiple partners and focused activities in three primary areas: leadership development, public involvement, and technical modeling.

Visioning Process

The process engaged residents through media outreach, community events, opinion surveys, and presentation of alternative scenarios. Interactive exercises, or chip games, helped the public develop an understanding of the impacts of future growth by allocating population, employment, environmental lands, and transportation corridors. The process resulted in several key outcomes, including a shared long-term vision for growth and development. The vision includes principles for future decision-making that have been adopted by local governments and integrated into the strategic plans of key regional partners, including the Regional Planning Council.

Business Case

The Florida Department of Transportation (FDOT) and the region's five MPOs viewed the benefits of visioning as increased public participation, integration of regional transportation activities, and greater attention from regional leaders and elected officials to the challenges of transportation service

provision in a high-growth region. In addition, FDOT's statewide transportation plan contains objectives supporting visioning as a means to encourage regional cooperation.

Community Impacts

Community concerns were addressed in the scenario evaluation process by utilizing indicators to communicate impacts of future development alternatives. Population density, urban development, conservation areas, environmental resources, and transportation efficiency performance measures were the focus of quality-of-life measurement in the regional vision.

Public Outreach

Tools and techniques used to facilitate public participation included community meetings, county-level forums, and regional summits. Interactive visualizations and alternative scenario modeling were used to build consensus around the need for change among residents. During the campaign, over 20,000 residents were involved through workshops and presentations, participating in electronic voting, as well as online public comment and opinion surveys. A variety of outreach strategies were pursued to reach a broad cross section of residents, including actively engaging traditional media, including public television, as well as online social networking tools.

Partnerships

Coordinating activities strengthened many existing regional organizations and has spurred further cooperation at the regional and super-regional level. The vision was developed with the cooperation of multiple partners from the public, private, and civic sectors, which were essential to initiating, supporting, financing, guiding, and implementing the vision. Key partners provided advisory, technical, financial, or collaborative support to components of the process. A focused effort also was made to build leadership capacity and create public champions by involving elected officials.

Transportation Component of Visioning Process

Transportation issues were framed as part of larger issues such as economic competitiveness, quality of life, or environmental stewardship. Transportation was continuously mentioned as a high public priority and one of the principles developed, "provides for a variety of transportation choices." Specific transportation projects were not defined because the goal was a long-term vision with general development guidance.

Commitment Tracking

An official commitment tracking process for vision outcomes or transportation planning purposes was not developed. However, *myregion.org* communicates the progress of regional efforts and commitments of local leaders through the publication of regional progress reports. One regularly tracked indicator is the number of local governments and regional agencies that have adopted elements of the vision into plans. The vision process was considered effective by most partners and continues to receive support from the business community, elected officials, and public agency partners.

New Visions 2015–2030
Albany Region, New York

The Capital District Transportation Committee (CDTC) is the designated MPO for the Albany-Schenectady-Troy region. CDTC has articulated a mission extending beyond transportation planning, "to proactively shape a comprehensive vision for the region's future growth." In the early 1990s, the CDTC made a conscious decision to leverage a required planning process to address a broad scope of regional issues.

Structure of the Visioning Process

CDTC's Long-Range Regional Transportation Plan (LRTP) is known as "New Visions," and was adopted in 1997, with subsequent updates in 2000, 2004, and 2007. The CDTC is governed by a Policy Committee whose membership reflects both urban and suburban municipalities and multimodal partners and who have ultimate decision authority in the process. The New Visions 2030 update centered on a Quality Region Task Force formed of a diverse group of stakeholders to help guide the effort. The CDTC provided regional research and supported five working groups to explore issues of interest to the Task Force.

Visioning Process

The New Visions process was designed to be stakeholder driven and to establish an overall vision, as well as the principles, strategies, and actions to achieve that vision. Validation of the vision occurred through ongoing public outreach opportunities, such as presentations during Linkage studies, and public comment solicited on LRTP drafts and working documents. Involvement of partners and elected officials was accomplished primarily through representation of towns, cities, and county officials on Task Forces and the governing board of the CDTC.

Business Case

The impetus for a regional growth vision stemmed from the desire of regional leadership to enhance economic development and growth to the region in a balanced, responsible manner. A subsequent analysis of future alternatives by the Center for Economic Growth focused on the real costs of development, infrastructure, services, and the like. The need for regional planning was thus presented as both a benefit (economic development) and as a cost savings (responsible growth.)

Community Impacts

The CDTC process addresses community quality-of-life considerations through urban revitalization, pedestrian accessibility, transit options, and the sustainability of the existing character of towns and cities. CDTC incorporated performance measures within scenario development and evaluation efforts that elevated nontraditional concerns, such as transportation and community compatibility, community character, economic health, and noise exposure issues.

Public Outreach

Tools and techniques used to facilitate public participation and feedback for the 2030 update included mailings and presentations at community meetings. CDTC conducted visualization and scenario-planning exercises to assist the public in understanding the implications of project and policy alternatives. CDTC also partnered with regional organizations with existing networks among minority or low-income communities, to provide greater opportunities for public input.

Partnerships

CDTC partnered with the Center for Economic Growth, a regional organization that represents the business community, and the Capital District Regional Planning Commission, to examine regional growth patterns, suburban sprawl, economic development, and urban revitalization. This partnership allowed CDTC to gain the support of the business community for the New Visions Plan.

Transportation Component of Visioning Process

New Visions, as part of an LRTP, is focused on transportation considerations. Visioning outcomes included principles, strategies, and actions governing regional planning and transportation in the region. The principles represent broad consensus and are increasingly reflected in development regulations and transportation plans of municipalities. The CDTC also actively works to coordinate New Visions with community development and transit plans through its linkage program.

Commitment Tracking

The majority of short-range recommendations in the New Visions 2015 plan were implemented by the time the updated New Visions 2021 plan was adopted in October 2000. In addition, the vision includes various investment categories in the MPO's Transportation Improvement Plan, which is regularly monitored for consistency with the targets included in the vision.

Metro Vision 2035

Greater Denver, Colorado

Metro Vision is the Denver region's vision for future growth and development, outlining long-term goals in three key areas: growth and development, transportation, and the environment. These priorities reflect the vision principles identified at the inception of Metro Vision in 1992 and remain central to the vision.

Structure of the Visioning Process

The Denver Regional Council of Governments (DRCOG) is the lead organization in the Metro Vision process with responsibilities for convening partners, developing technical analysis, approving final outcomes, and facilitating implementation. DRCOG's board of directors is the primary decision-making body and is composed of representatives from counties and municipalities, all of whom are elected officials.

Visioning Process

Metro Vision's policies, goals, and strategies were derived from internal input from DRCOG's Board, the Metro Vision Issues Committee, and staff. The committee provides recommendations to the Board for action on Metro Vision issues, plans, and implementation strategies. DRCOG Board Members direct the overall process and hold decision-making authority through chairmanship of committees.

Business Case

During the 1980s, the costs of urban sprawl were becoming apparent through infrastructure costs to local governments, air quality costs to human health and tourism, and increasing congestion and travel limitations through the region. In early 1990s, the business, community, and public sectors began to coordinate on major economic development and

environmental initiatives, which aided motivation and support for regional planning efforts. DRCOG was the natural facilitator of dialogue among the public sector and views Metro Vision as central to the mission of the agency.

Community Impacts

Metro Vision's plans and policies focus on six core issues that inform a holistic approach to considering quality of life. The utilization of scenario-planning and integrated policy development within the Metro Vision process helped illuminate the relationship between transportation and development patterns, water quality, and open space conservation. The indicators and measures chosen to evaluate scenarios and to measure progress in the 2005 and 2007 reports all reflect the central goals of Metro Vision, which is to improve quality of life in the region.

Public Outreach

DRCOG's public outreach strategy is intended largely to build consensus among key partners and inform the public of Metro Vision, rather than to utilize public input directly in the formation of the regional vision and plan. Public involvement is limited to presentations and workshops intended to educate and inform, with the exception of large-scale regional workshops, such as the Metro Growth Forum. Outreach efforts are evolving to incorporate direct public input in scenario-planning within future updates.

Partnerships

The organizational decision-making and committee structure of DRCOG provided the framework for establishing partnerships between the agency and member governments, and between member governments themselves. Internal partnerships were primarily arranged through standing Metro Vision committees.

Transportation Component of Visioning Process

Transportation considerations and investment policies are a significant portion of the policies that support Metro Vision's overarching goals. The Transportation Vision generally defines the extent of the region's transportation system, identifies priorities, and establishes policies to preserve and enhance the regional system. Metro Vision and the Metro Vision Long-Range Transportation Plan (LRTP) are related and closely integrated plans produced by DRCOG.

Commitment Tracking

DRCOG's primary tool for tracking commitments and implementation of the regional vision is a semiannual performance report. The report evaluates progress the region has made toward Metro Vision goals in growth and development, transportation, and environment. A committee of local government staff and elected officials, DRCOG board members, and technical advisors developed the indicators utilized.

Considering Communities

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(As of May 10, 2009). The purpose of this report is to function as a guide for the uniform implementation of CSS processes and training throughout NMDOT. This report specifically illustrates performance measures for each stage in the life of a transportation project and provides a compilation of these by stage and chapter of the report.

Brownson, R., Clemente, O., Ewing, R., and Handy, S., Measuring Urban Design Qualities: An Illustrated Field Manual, Robert Wood Johnson Foundation, Princeton, New Jersey (2005). This is a manual providing guidance on how to objectively measure urban design qualities of typical streets for their contribution to walkability. It aims to go beyond typical measures of walkability such as density and street connectivity, as those do not adequately describe the quality of what it feels like to walk down a given street and seeks instead to outline subtler qualities that may influence choices about active travel (biking and walking) and active leisure time.

Buehler, R., Data Needs for Bicycling and Sustainability Research, Transportation Planning Research Advisory Committee (TPRAC), Charlottesville, Virginia (2009) pp 1–9. This presentation was created to help outline the types of indicators and data that are needed to evaluate whether an area is suitable for sustainable transportation in the forms of biking, walking, and transit with an emphasis on bicycling. It begins with a discussion of the concept of sustainability and how it applies to the transportation system, and then looks at green modes of transportation and goes on to list the data needed to evaluate a community's bikeability and measures to evaluate sustainable transportation.

Buehler, R., Kunert, U., and Pucher, J., Making Transportation Sustainable: Insights from Germany, Brookings Institution Metropolitan Policy Program, Washington, D.C. (2009). This report examines how the United States may be able to learn from Germany ways to make transportation more sustainable and offers a number of specific lessons for the United States. It looks at the key differences and determinants of

travel behavior in Germany and the United States, trying to parse out why Americans travel by car twice as much per year as Germans and use transit only a sixth as much. Policy is a vehicle by which Germany has successfully affected travel behavior among its citizens. German government at all levels has used policy toward this end. They have used tools such as pricing, restrictions, technological improvements, integration of public transportation, regional land planning, and the like. The United States has an opportunity to increase sustainability by shaping transportation via the right federal policies.

Burden, D., Street Design Guidelines for Healthy Neighborhoods, Center for Livable Communities, High Springs, Florida (1999). This manual provides street-making guidelines to create streets and neighborhoods that are more interactive, walkable, enjoyable, and livable for new or retrofitted neighborhoods. It lists and describes seven "healthy street categories" meant to replace Conventional Street Hierarchies and offers street design features for each street category.

Cambridge Systematics, Inc., Community and Social Benefits of Transportation Investment, National Cooperative Highway Research Program (NCHRP) Project 8-36, Task 22 Demonstrating Positive Benefits of Transportation Investment, Transportation Research Board, Washington, D.C. (2002) 23 pp. This paper is part of NCHRP Project 8-36, Task 22, whose goal was to produce a document explaining the positive impacts of transportation investments in the United States for use by AASHTO in its TEA-21 reauthorization efforts. This is one of four working papers produced by Cambridge Systematics, each of which covers positive impacts of transportation investments, with this one, addressing the community and social benefits of transportation investments.

Cambridge Systematics, Inc., Demonstrating Positive Benefits of Transportation Investment: Community and Social Benefits of Transportation Investment, National Cooperative Highway Research Program (NCHRP) Project 08-36, Task 22, Transportation Research Board, Washington, D.C. (2002). This report uses case studies to highlight the community and social benefits of transportation projects. The paper does not discuss techniques and approaches for identifying and incorporating community vision into transportation projects and design, but rather qualitative ways by which to understand associated community and social benefits from a particular project.

Cambridge Systematics, Inc., Guidelines for Environmental Performance Measurements–Final Report, National Cooperative Highway Research Program (NCHRP) Project 25-25, Task 23, Transportation Research Board, Washington, D.C. (2008). This report and project specifically addresses performance measurements for environmental systems, citing a literature review, survey of 13 agencies, and roughly the same number of case studies. The report identifies nontraditional performance measurements and clearly delineates terms such as measurement, indicator, and benchmark.

Cambridge Systematics, Inc., Performance Measurement Framework for Highway Capacity Decision Making, Strategic Highway Research Program (SHRP), New York, New York (2009). The report covers a broad range of performance measures related to highway capacity decision making. Categories include some traditional quality-of-life areas; all of these measures may be useful in quantifying visioning outcomes depending on the input received from stakeholders.

Cambridge Systematics, Inc., Transportation and Health, National Cooperative Highway Research Program (NCHRP) Project 08-36, Task 59, Transportation Research Board, Washington, D.C. (2006). This report identifies the current state of the practice of state and metropolitan planning organizations and their consideration of public health issues, in particular physical activity, in the decision-making process. It examines the relationship between transportation projects and the built environment and how, if not well designed, it can contribute to an overall decline in physical activity of a community.

Center for Transportation and the Environment, North Carolina State University, and Cambridge Systematics, Inc., Improved Methods for Assessing Social, Cultural, and Economic Effects of Transportation Projects, National Cooperative Highway Research Program (NCHRP) Project 08-36, Task 66, Transportation Research Board, Washington, D.C. (2008). This report identifies existing and emerging methods and practices used during community and social impact assessment that can be employed for evaluating quality-of-life considerations. The report seeks to answer questions that will assist the practitioner and the transportation agency to understand better the general complexities of working in the human environment.

Centers for Disease Control and Prevention, Department of Health and Human Services, Public Health Workbook to Define, Locate and Reach Special, Vulnerable, and At-Risk Populations in an Emergency, (2006 working draft). This workbook was written to help public health and emergency planners find new, nontraditional methods of communicating information to special populations in emergency situations. Special populations specified in this workbook include: economic disadvantage; limited language competence; physical, cognitive, or sensory disability; cultural/geographic isolation; and age vulnerability. The workbook outlines a systematic process that can support municipal, state, and tribal planners and public health officials as they design and implement new strategies to reach all populations–including traditionally underserved and hard to reach populations—in day-to-day communication and during crisis or emergency situations. The workbook is still in

draft stages, and the Centers for Disease Control and Prevention requests that it not be cited or quoted.

CIA Practitioners Network, Community Impact Assessment (CIA): Questions and Answers. www.ciatrans.net/cia_faq .html. (As of July 2009.) This document is a list of 20 questions and answers about Community Impact Assessments (CIA), a process meant to help bring up and discuss potential community effects early in the planning process.

CIA Web Site, Community Impact Assessment: A Quick Reference for Transportation, www.ciatrans.net/CIA_Quick_ Reference/Purpose.html. (As of July 15, 2009.) This webpage is a reference guide targeted to transportation professionals and analysts to help them assess the impacts of proposed transportation actions on communities, with an emphasis on the early project planning and development part of the planning process. This primer lays out the community impact assessment process, highlights critical areas that must be examined, and identifies basic tools and information sources.

Clemente, O., Ewing, R., Handy, S., and Brownson, R., Measuring Urban Design Qualities—An Illustrated Field Manual, Robert Wood Johnson Foundation, Princeton, New Jersey (2005). www.activelivingresearch.org/node/10637. (As of July 20, 2009.) The manual provides an introduction to several key urban design qualities and guidance on how to objectively measure qualities of a typical street.

Committee on Identifying Data Needs for Place-Based Decision-Making, et al., Community and Quality of Life, Data Needs for Informed Decision-making, National Academy Press, Washington, D.C. (2002) pp 77–100. Chapter 3, Measurement and Analysis of Livability discusses spatial and temporal issues involved in measuring and analyzing livability. This includes how to measure place-based indicators and how to measure accessibility.

Community Partnership Forum, Building Projects that Build Communities: Recommended Best Practices, Washington State Department of Transportation, Olympia, Washington (2003). This handbook was created by a forum of transportation experts from different backgrounds, including those representing cities, counties, consulting firms, Sound Transit, the Association of Washington Cities, the FHWA, and the Washington State Transportation Department. The handbook provides an in-depth discussion about how to strengthen the entire planning process by simultaneously advancing the objectives of safety, mobility, enhancement of the natural environment and preservation of community values, much of which can be achieved through good communication, meaningful public involvement, listening, collaboration, and compromise. The handbook includes case studies, a list of resources and personnel to assist in conflict resolution, ways to evaluate, adjust, and improve a project, and checklists to assess project success.

Council on Environmental Quality, Considering Cumulative Effects Under the National Environmental Policy Act, Washington, D.C. (1997). This national resource provides descriptions of the basic methodology for identifying and evaluating cumulative impacts through an 11-step process. Resources and techniques are explained in moderate detail, accompanied by some case studies and examples. Indictors are listed at a general level of detail, although thresholds and many aspects of human community effects are not presented in detail.

Day, K., Boarnet, M., Alfonzo, M., and Forsyth, A., Irvine Minnesota Inventory, Irvine, Minnesota (2005) https://web files.uci.edu/kday/public/Irvine_MN_Inventory.pdf. (As of July 23, 2009.) Irvine Minnesota Inventory Web Manual, Irvine, Minnesota (2005) https://webfiles.uci.edu/kday/ public/index.html. (As of July 23, 2009.) The audit tool is designed largely for practitioners and public health officials to collect data on features of the physical environment that are potentially linked to physical activity.

Department of Transport, United Kingdom, Manual for Streets–Residents' Perception Survey, www.communities.gov.uk/ documents/planningandbuilding/pdf/32244.pdf. (As of July 20, 2009.) This survey tool can be administered to area residents to better understand how they perceive the environment in which they live. It should be used early in the decision-making process to not only assist the transportation agency with this understanding but used to build trust through the participation of area residents and jump start their thought processes about possible ways to improve their environment.

Eat Smart, Move More NC, Active Community Environments (ACE) Community Assessment, www.eatsmartmovemorenc .com/ACEs/ACEs.html. (As of July 20, 2009.) This resource provides guidelines for public health practitioners, community groups, advocates, and grassroots organizations for getting involved in land use and transportation planning. It is designed to help the user identify ways that can encourage and support pedestrian and bicycle movements.

Esplau, R., Streets as Places—Using Streets to Rebuild Communities, Project for Public Spaces, Inc., New York, New York (2008). www.pps.org/info/streets_as_places/ (As of June 20, 2009.) The book was developed by Project for Public Spaces, Inc. (PPS). This book is the culmination of over 30 years of research on how people use public spaces in 26 countries and in over 2,000 communities in the United States and abroad. The number one issue identified in nearly all the places is traffic and its impact on community life.

Federal Highway Administration (FHWA), "Community Effects Considerations," National Community Impact Assessment Course (Adapted from FDOT SCE Considerations). This resource provides a list of different categories of community effects and a list of key questions to each. The information is

presented in a table with the community effects broken down into seven meta-categories: Sociocultural Considerations; Economic Considerations; Land Use Considerations; Mobility/Access Considerations; Sensory/Aesthetic Considerations; Safety Considerations; and Displacement Considerations. Each of these has multiple subcategories. With each subcategory are questions that should be asked about that particular type of community effect, the data sources needed to investigate that effect, and a list of key things to consider in the analysis of that effect.

Federal Highway Administration (FHWA), Community Impact Assessment, www.ciatrans.net/index.shtml. (As of June 23, 2009.) This website provides background information and resources for the Community Impact Assessment (CIA) process. This resource focuses on CIA principally in the United States but does provide resources for international CIA efforts.

Federal Highway Administration (FHWA), "Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process," Environmental Guidebook, www.environment.fhwa.dot.gov/guidebook/qaimpact .asp. (As of July 24, 2009.) This guidance offers information to developers of ICI documentation, particularly definitions, resources, and specific content requirements for ICI analyses.

Federal Highway Administration (FHWA)/Federal Transit Administration (FTA), Transportation Planning Capacity Building, www.planning.dot.gov/technical.asp. (As of July 18, 2009.) This webpage is the Technical Resources section of the Transportation Planning Capacity Building (TPCB) website, which was created to provide information about the TPCB Program, a collaborative effort of the FHWA and the FTA with various public and private organizations. The program is aimed at helping state and local transportation officials and staff create plans and programs by providing them with information, training, and technical assistance. The Technical Resources section offers a variety of technical papers, reports, and other published materials and is updated regularly.

Federal Highway Administration (FHWA), and Urban Land Institute, Influence of Transportation Infrastructure on Land Use, A ULI Advisory Workshop Report, Urban Land Institute, Washington, D.C. (2004). This short summary of a ULI/FHWA panel convened in December 2004 responds to questions about how private- and public-sector agencies make development decisions, including positive and negative indicators ("flags") that speak to a local government's willingness to proactively manage private development actions.

Feldstein, L. M., Jacobus, R., and Burton, H., Economic Development and Redevelopment: A Toolkit for Building Healthy, Vibrant Communities, California Department of Health

Services, Sacramento, California (2007). The toolkit is designed to inform nutrition and public health advocates on ways to improve food access in low-income neighborhoods. It also is a good reference for transportation and economic development practitioners working to rebuild communities. It provides an overview of techniques and tolls that can be used for effectively engaging communities in land use and redevelopment activities.

Feldstein, L. M., Jacobus, R., and Burton, H., Economic Development and Redevelopment: A Toolkit on Land Use and Health, California Department of Health Services, Sacramento, California (2007). This report discusses in detail the need for and techniques required to achieve more small business development, particularly in the area of locally grown agricultural products and services. Financing and aid strategies sometimes refer to exclusively California-based subject matter.

Florida Department of Transportation, Community Effects Considerations, www.berger-nc.com/cssresources/Community Context/CommunityEffectsConsiderations_FDOT.pdf. (As of November 10, 2009.) This tool is a guide designed to help practitioners understand the key criteria, data sources and analytical methods that should be considered when assessing potential impacts to the human environment. The tool, which contains a wealth of information, can be referenced during all stages of transportation decision making, however it may prove the most useful during project development when assessing for potential impacts to the human environment.

Forkenbrock, D. J., and Sheeley, J., NCHRP Report 532: Effective Methods for Environmental Justice Assessment, Transportation Research Board, Washington, D.C. (2004). This guidebook is designed to help practitioners—such as those working in state departments of transportation (DOTs), metropolitan planning organizations (MPOs), and local transportation planners—understand and assess potential environmental justice impacts of transportation projects. Its goal is to ensure that consideration and assessment of environmental justice is incorporated into all parts of the transportation planning process. The guidebook first defines environmental justice, then discusses identifying protected populations and gives detailed technical guidance and supplemental resources on assessing 11 categories of effects.

Forkenbrock, D. J., and Weisbrod, G., NCHRP Report 456: Guidebook for Assessing the Social and Economic Effects of Transportation Projects, Transportation Research Board National, Washington, D.C. (2001). This guidebook is designed to help practitioners assess the social and economic implications of transportation projects for their surrounding communities, including the often overlooked effects of transportation projects on members of society

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who will not be the end-users of the facility to be improved. Community effects are divided into two clusters: transportation system effects and social and economic effects.

Goldberg, A., Moving Communities Forward: How Well-Designed Transportation Projects Make Great Places, Center for Transportation Studies, University of Minnesota, Minneapolis, Minnesota (2007). www.movingcommunitiesforward.org/Publications/. (As of July 20, 2009.) Case studies of transportation projects that go beyond their original scope to bring a variety of enhancements in the form of economic development, public safety and health, and design features to the communities in which they are located. It identifies successful design principles and practices while stressing the importance of a holistic approach involving parties other than transportation officials. It examines the benefits achieved by engaging the public in the decision-making process and how anticipated benefits can evolve even further into a transportation facility that is welcomed by the community.

Grant, M., et al., Recurring Community Impacts, National Cooperative Highway Research Program (NCHRP) Project 25-25, Task 36, Transportation Research Board, Washington, D.C. (2008). This NCHRP study looks at past guidance and research to formulate a general methodology for identifying and assessing recurring community impacts. Although a few new metrics are discussed for community health, the report focuses more on examples gleaned from surveys and telephone interviews.

Gudmundsson, H., "Sustainable Transport and the Role(s) of Performance Indicators," 89th Annual Meeting of the Transportation Research Board, Washington, D.C., Session 677: Performance Measures for Sustainability (2008) page 34. This presentation is about finding performance indicators to measure sustainability in the transportation system. It starts by defining the term "sustainable transportation" and offers some definitions, but also points out that there is no one correct definition. It provides real-life scenarios in which sustainable transportation performance indicators have been used and draws conclusions based on them.

Guerre, J. A., "White Paper: Performance-Based Needs Assessment," NCHRP Project 08-36, Task 76e, Chicago, Illinois (2008) page 14. This white paper illustrates the connections available between performance-based asset management and long-range transportation planning. Notably cited was the SEMCOG (MPO) example that developed four funding-based scenarios to determine how to allocate its transportation planning funding over the life of the long-range plan.

Hall, R., Understanding and Applying the Concept of Sustainable Development to Transportation Planning and Decision-Making in the U.S., Massachusetts Institute of Technology, Cambridge, Massachusetts (2006). This thesis seeks to provide a framework for tools and approaches that can be used to create policies and programs for achieving sustainability. Specific ideas explored include: A Rawlsian/utilitarian decision-making philosophy; a hybrid tradeoff/positional analysis framework that is presented as an alternative to benefit/cost analysis; ecological versus environmental economics; participatory back casting; and ways to stimulate disrupting and/or radical technological innovation.

Hart, M., Sustainable Measures, www.sustainablemeasures.com. (As of August 9, 2009.) Ms Hart's website is extremely thorough in its breadth and depth of sustainable indicator definition, samples, and resources. Notably, the site includes case study communities and an online training course to assist with learning the volume of material on the website.

Harvard Kennedy School, The Social Capital Benchmark Survey, www.hks.harvard.edu/saguaro/communitysurvey/index.html. (As of July 15, 2009.) This website was created to provide information about a survey called the "Social Capital Community Benchmark Survey," which is a survey on the civic engagement of Americans that looks at how connected people are to family, friends, neighbors, and civic institutions on a local and national level. These connections are considered "social capital" or the "glue that holds us together and enable us to build bridges to others."

Healy, T., and Cote, S., "The Well-Being of Nations: The Role of Human and Social Capital," Education and Skills, Organization for Economic Cooperation and Development, Paris, France (2001). This report focuses on the concepts of human capital and social capital and their relationships with economic and social development, discussing their definitions, uses, measurement frameworks, and policy implications.

ICF International, NCHRP 8-36 Task 86: Corridor Approaches to Integrating Transportation and Land Use, Final Report, Transportation Research Board, Washington, D.C. (2009). This report looks at the role of transportation agencies in addressing land use and transportation integration issues with the objective of identifying successful innovations in integration of transportation and land use planning for transportation corridors that could be used as models for projects in other locations. The research inventoried good examples of integrating land use and transportation planning, and documented the tools and practices that have worked.

International City/County Management Association, Transportation Performance Measures that the Public Can Understand—Archived Webcast, http://icma.org/main/ld.asp?ldid=20293&hsid=1&tpid=18. (As of July 20, 2009.) The website has a notable section on transportation performance measures, including a section intended to be easy to understand by the public. This section includes a 2005 webinar that featured three speakers presenting fairly traditional measures that can be graphed or mapped readily.

International City/County Management Association, "What's Behind Resident Quality of Life Perceptions," http://icma.org/main/ns.asp?nsid=4275&hsid=3. (As of July 23, 2009.) This is an online resource that hosts a wealth of information about quality-of-life considerations, performance measures, and survey instruments. It identifies current initiatives and has a subscription survey service that could be used by a transportation agency or government agencies looking to better understand the environment in which they are working.

Joachim, M. W., Ecotransology: Integrated Design for Urban Mobility, Massachusetts Institute of Technology, Cambridge, Massachusetts (2006). http://dspace.mit.edu/handle/1721.1/37577. (As of June 10, 2009.) This literature piece is a thesis that demonstrates a new urban mobility paradigm that incorporates elements of ecological design. Ecotransology is the new field of study resulting from joining multiple fields of study that support mobility and ecology. This rethinking of urban mobility through an ecological design framework for the purpose of advancing human mobility, is the central thread of this work.

Keystone Healthy Routes, Neighborhood Walking/Biking Assessment, http://drusilla.hsrc.unc.edu/cms/downloads/Pennsylvania_Keystone%20Healthy%20Routes_Urban.pdf (Urban)

http://drusilla.hsrc.unc.edu/cms/downloads/Pennsylvania_Keystone%20Healthy%20Routes_Suburban.pdf (Suburban)

http://drusilla.hsrc.unc.edu/cms/downloads/Pennsylvania_Keystone%20Healthy%20Routes_Rural.pdf (Rural)

The form is designed for residents to assess roadway and land use conditions in their neighborhood to determine if it is safe for students to walk and bicycle to school. There are three slightly different versions of the tool to be used in an urban, suburban, or rural environment.

Lane, L., and Hartell, A., "Understanding Communities: Investigating the Use of Measures of Social Capital in Transportation Planning," North Carolina Association of Metropolitan Planning Organizations Conference (2007) pp 1–15. This presentation arose from NCHRP 8-36 Task 66, which was about identifying new measures and data sources to use as part of the CIA process. It cites nontraditional sources that are readily available, such as home mortgage data and crime data, but focuses on social capital because it is an entirely new data source, with an emphasis on how measuring social capital can be useful in transportation planning.

Litman, T., Community Cohesion As a Transport Planning Objective, Victoria Transport Policy Institute, Victoria, British Columbia (2009). www.vtpi.org/cohesion.pdf. (As of July 23, 2009.) This describes the concept of community cohesion through how much residents of a study area (community) know and care about their fellow residents. Community cohesion value and the effect of transportation decisions are examined.

Litman, T., Transportation Cost and Benefit Analysis II, Victoria Transport Policy Institute, Victoria, British Columbia www.vtpi.org/tca/. (As of July 23, 2009.) This online report includes extensive literature reviews and bibliography, as well as case studies and sample variable values that describe 23 cost categories for motorized transport modes. The report is particularly of use for the researcher or analyst seeking to quantify change measures (in terms of costs) as part of a large community- or region-visioning exercise.

Litman, T., Well Measured—Developing Indicators for Comprehensive and Sustainable Transport Planning, Victoria Transport Policy Institute, Victoria, British Columbia (2009). www.vtpi.org/wellmeas.pdf. (As of May 10, 2009.) This paper provides guidance on the use of indicators for sustainable transportation planning. It discusses sustainable development and sustainable transportation concepts, and the role sustainability indicators play in evaluation and planning. Examples of indicators and indicator sets are provided, and recommendations for selecting indicators for use in a particular situation are explored.

The Louis Berger Group, Inc., Guidance for Estimating the Indirect Effects of Proposed Transportation Projects, National Cooperative Highway Research Program (NCHRP) Report 403, Transportation Research Board, Washington, D.C. (1998) and The Louis Berger Group, Inc., Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects, National Cooperative Highway Research Program Report 466, Transportation Research Board, Washington, D.C. (2002). Both guidance documents illustrate the requirements for conducting indirect effect analyses in NEPA processes, with the latter including a stepped methodology for identifying, evaluating, and mitigating indirect effects.

Marsden, G., Designing a monitoring strategy to support sustainable transport goals, University of Leeds for Distillate Project. (2007). This report identifies costs, inputs, outputs, and intermediate- and long-term outcomes as the key categories of performance indicators, as well as describing the role of indicators on communicating with various audiences and purposes (e.g., elected officials, public, external benchmarking, and internal performance tracking). The report does a nice job of illustrating how outcomes and performance indicators can effectively enhance communication in a transportation project development process.

Maryland Department of Transportation, Thinking Beyond the Pavement Checklist, www.berger-nc.com/cssresources/CommunityContext/ThinkingBeyondthePavementChecklist.pdf. (As of November 10, 2009.) The checklist is a tool to be used by practitioners to assess the physical setting—both natural and manmade—in which proposed improvements

would occur. The checklist can be used as part of the Context Sensitive Solutions (CSS) approach.

Mid-America Regional Council, Metro Outlook, www.marc.org/ metrodataline/pdf/Metro_Outlook.pdf. (As of May 10, 2009.) This report provides a review for a variety of factors that influence quality of life in the Kansas City metropolitan region. The purpose is to provide a better tool to evaluate how well the region is making progress; to educate the community concerning the region's trends and challenges; to measure how they affect and are affected by council decisions; and to initiate regional discussions and catalyze actions that improve the prospects for positive community change.

National Cooperative Highway Research Program (NCHRP), Marketing Sheet: NCHRP Project 15-32 (CSS: Quantification of the Benefits) NCHRP15-32 Matrix, Transportation Research Board, Washington, D.C. (report not yet finalized). This matrix of the principles of context sensitive solutions (CSS) and their measurable benefits is part of NCHRP Project 15-32, whose objective is to quantify the benefits of strategic and appropriate application of the principles of context sensitive solutions in transportation planning, programming, project development, and operations. Benefits of CSS are believed to be the minimizing of delay and controversy in transportation projects.

New York State Department of Transportation and the New York State Governor's Smart Growth Cabinet, Smart Growth Checklist, A Checklist for Municipal Land Use Planning and Management, www.nysdot.gov/programs/smart-planning/ repository/SGCheck_Municipal_PRINT.pdf. (As of July 23, 2009.) This easy-to-use tool is a guide that can be used by communities when making decisions about future land use and development patterns. It is designed to assess how well planning and land use decisions in a community follow the principles of Smart Growth.

New York State Department of Transportation and the New York State Governor's Smart Growth Cabinet, Smart Growth Checklist, A Checklist for Proposed Development in Your Community, www.nysdot.gov/programs/smart-planning/ repository/SGCheck_Development_Print.pdf. (As of July 23, 2009.) This easy-to-use tool is a guide that can be used by communities to determine how a proposed project would contribute to the overall well-being of a community. The checklist provides the framework by which to evaluate how a proposed or potential project would contribute to the community and what types of larger and more durable benefits it would offer.

Olszak, L. M., Goldbach, R. L., and Long, J. R., Ph. D., Using Context Sensitive Solutions (CSS) Performance Measures to Assess the Effectiveness of a CSS Process During the Preliminary Design of a Major Highway Project: The Mon/Fayette Expressway, Olszak Management Consulting, Pittsburgh, Pennsylvania (2007). www.olszak.com/publicinvolvement/files/

measuringCSS_fullreport.pdf. (As of May 15, 2009.) This research project worked to build upon previous work undertaken by TRB. The research initiative evaluated the DAT effort and based results on the relevant and available literature on CSS processes and outcomes. The goal of the research effort was to establish a foundation for future research aimed at improving the reliability of CSS success criteria within community-oriented transportation design practices.

Partners for Livable Communities and the National Association of Area Agencies on Aging, Assessing Your Community's Aging-Readiness: A Checklist of Key Features of an Aging-Friendly Community, www.icma.org/upload/library/2007-05/%7B2B 390E33-5C27-4949-944E-05B2046D7DB8%7D.pdf. (As of July 23, 2009.) The checklist is part of a guidebook to arm local leaders with the knowledge and tools necessary to build collaborative partnerships for creating livable communities for people of all ages.

Partnership for a Walkable America and the Federal Highway Administration, Walkability Checklist and A Resident's Guide for Creating Safe and Walkable Communities, www .walkableamerica.org/checklist-walkability.pdf and http:// safety.fhwa.dot.gov/ped_bike/ped_cmnity/ped_walk guide/residentsguide.pdf. (As of July 20, 2009.) This one-page checklist is designed for community members to determine if their neighborhood is a friendly place to walk. The guidebook can be referenced by participants to learn about roadway conditions, traffic problems that adversely affect pedestrian movements, and ways to address these problems to make the environment more supportive of pedestrian activity. The checklist is referenced as a useful resource in the guidebook.

Pennsylvania Department of Transportation, Community Context Audit, Pittsburgh, Pennsylvania (2005). www .oakgov.com/wireless/assets/docs/community_context_ audit.pdf. (As of July 20, 2009.) The audit form, still in draft stages, is a slightly augmented version of the Pennsylvania Department of Transportation Community Context Audit. It is intended to be a guide for practitioners to identify various community characteristics that make each transportation project location unique to its residents, its businesses, and the public in general. Findings from the audit will help to define the purpose and need of the proposed transportation improvements based upon community goals and local plans for future development.

Peterborough Transportation Management, West Peterborough Road Audit, Peterborough, New Hampshire. www.berger-nc.com/cssresources/CommunityContext/WestPeterbor oughRoadAudit_NHDOT_PPS.pdf. (As of July 20, 2009.) This audit tool can be used to evaluate how well streets and adjacent land uses are performing as places, and to identify opportunities for future enhancements.

PolicyMap, Geographic Information Systems (GIS) Mapping Services and Software, www.policymap.com. (As of July 20, 2009.) This website offers a free trial and a subscription service that utilizes cutting-edge technology, allowing proposed investments to be mapped; relates them to other investments; demonstrates how neighborhoods have changed where the agency has made past investments; and shows where future investments would make the most sense. Subscribers can request customized queries; the site can report and map up to 4,000 indicators.

Prevention Institute, A Community Approach to Address Health Disparities: T*H*R*I*V*E Toolkit for Health and Resilience in Vulnerable Environments, Oakland, California (2004). www.omhrc.gov/assets/pdf/checked/THRIVE_FinalProjectReport_093004.pdf. (As of July 20, 2009.) The toolkit was developed as a community resilience assessment tool to help communities enhance their environment in ways that improve public health and reduce disparities experienced by racial and ethnic minorities.

Prevention Institute, THRIVE: Community Tool for Health and Resilience in Vulnerable Environments, www.preventioninstitute.org/thrive.html. (As of June 15, 2009.) This webpage is for the THRIVE toolkit, a framework meant to help communities with three things: identifying factors associated with poor health outcomes in communities of color; engaging relevant stakeholders; and taking action to remedy the disparities. The goal of THRIVE is to improve health in communities and reduce disparities experienced by minorities, both racial and ethnic. Low-income communities and communities of people of color experience a disproportionately high amount of poor health and safety outcomes, including chronic disease, traffic-related injuries, mental illness, substance abuse, teen pregnancy, and violence. THRIVE focuses on prevention rather than treatment by focusing on underlying risk and resilience factors.

Prevention Research Center, and St. Louis University School of Public Health, Active Neighborhood Checklist, (2006). http://prc.slu.edu/Documents/Active_Neighborhood_Checklist.pdf. (As of July 20, 2009.) The checklist was designed to assess street-level features of a neighborhood that are thought to be related to physical activity behavior. It can be used to produce descriptive statistics about an area, to raise awareness about the environment in supporting or discouraging physical activity, and/or to mobilize the community to advocate for enhancements or improvements.

Prevention Research Center, and St. Louis University School of Public Health, Community Core Indicators of Activity Friendliness–Telephone Questionnaire, (2003). http://prc.slu.edu/Documents/CommCoreDraftSurvey.pdf. (As of July 20, 2009.) The questionnaire was designed to find out how a community views its physical surroundings and if the environment is supportive and encouraging of physical activity.

Project for Public Spaces, Streets as Places, Using Streets to Rebuild Communities, New York, New York (2008). This guidebook was created in 2008 by the Project for Public Spaces in partnership with the American Association of Retired People (AARP) to teach citizens how to shape and enhance their streets to serve all users with lively, walkable, community-friendly environments. The book discusses the role of the automobile in changing the nature of streets from places for people into places for cars, and discusses the characteristics of streets with a "sense of place" and offers tools to achieve them.

Project for Public Spaces and New Hampshire Department of Transportation, Place Game–Placemaking through Transportation, www.pps.org. (As of July 23, 2009.) The Place Game is designed to evaluate how well streets and adjacent land uses are performing as places, and to identify opportunities to enhance them in the future.

The Reinvestment Fund, The PolicyMap, www.policymap.com/index.html. (As of May 17, 2009.) PolicyMap is a tool that provides an uncomplicated way to incorporate current and trend data into the decision-making process. Data can be analyzed and visualized in meaningful ways through customized maps, tables, reports, and a proprietary analysis tool called Analytics.

Saguaro Seminar: Civic Engagement in America Project, John F. Kennedy School of Government at Harvard University, Social Capital Community Benchmark Survey Short Form, (2002). www.hks.harvard.edu/saguaro/pdfs/socialcapitalshortform.pdf. (As of July 23, 2009.) Social Capital Community Benchmark Survey Long Form, (2000) 46 pages. www.cfsv.org/communitysurvey/docs/survey_instrument.pdf. (As of July 23, 2009.) The survey was designed to be used by state or federal government agencies interested in surveying constituents on social capital, smaller communities that may not have the time, budget, or staff to use the long-form survey, and communities and nonprofits that already may be conducting surveys and want the short form to act as supplemental information on social capital. The survey is designed to be used "pre-" and "post-" project to determine if social capital has changed.

St. Louis University School of Public Health, Roadway Audit Tool, Analytic Version, www.activelivingresearch.org/files/audit_tool_analytic.pdf. (As of July 23, 2009.) The audit forms were designed to better understand the relationship between street-scale environments and rates of physical activity.

Stair, P., Wooten, H., and Raimi, M., How to Create and Implement Healthy General Plans: A Toolkit for Building Healthy, Vibrant Communities Through Land Use Policy Change, Raimi + Associates for California Department of Health Services, Sacramento, California (2007). This report is an excellent resource for developing healthy community

metrics and implementation ideas and techniques. The transportation section reports on various connections between the transport system and oft-cited measures of health: street connectivity, bike/pedestrian facility density, and so forth.

Transportation Research Board (TRB), Sustainable Transportation Indicators Subcommittee, "Sustainable Transportation Indicators: A Recommended Program to Define A Standard Set of Indicators For Sustainable Transportation Planning," 89th Meeting of the Transportation Research Board, Washington, D.C. This paper, developed through a cooperative effort by the Transportation Research Board's Sustainable Transportation Indicators Subcommittee (ADD40 [1]), identifies indicators that can be used for sustainable transportation evaluation. The paper discusses sustainable transportation definitions and concepts, describes factors to consider when selecting indictors, recommends specific sustainable transportation indicators, and discusses issues of data quality.

Transportation Research Board (TRB), and Institute of Medicine, Does the Built Environment Influence Physical Activity? Examining the Evidence, TRB Special Report No. 282, Transportation Research Board, Washington, D.C. (2005). The TRB Special Report discusses both the existing research and important research needs necessary to make causal linkages between various physical and other factors that may influence the degree of physical activity in a community. Although these factors do include roadway capacity-related characteristics, the supporting, causal data is so far fairly weak. However, many communities that value public health may want to incorporate street density, land use intensity, and other measures into a community visioning exercise.

Transportation Research Board (TRB) Workshop: Sustainability and Social Measures for Transportation Planning and Project Development: (January 2009). This is a TRB workshop about discussing measures that can be used in analyzing sustainability in transportation. The workshop featured the following presentations: Incorporating Social and Health Indicators into Transportation Policy and Project Evaluation by Todd Litman; Pathways to a Healthy Decatur: Creating and Implementing a Sustainable Transportation Plan by Amanda Thompson; Social Justice in Transportation by Marc Brenman; Building Partnerships to Promote Positive Outcomes and Mitigate Adverse Health Impacts of Transportation Plans and Policies by Andrew Dannenberg; and Impacts of Transportation and Land Use Strategies on Local and Global Sustainability: Can We Get There from Here? by Chris Porter.

U.S. Environmental Protection Agency, Office of Federal Activities, Consideration Of Cumulative Impacts In EPA Review of NEPA Documents, EPA 315-R-99-002, U.S. Environmental Protection Agency, Washington, D.C. (1999). www.epa.gov/compliance/resources/policies/nepa/cumulative.pdf. (As of July 24, 2009.) This brief technical memorandum outlines the definition of cumulative impacts, and then suggests answer to the most common questions asked by practitioners about the scope and content of the analysis.

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University of North Carolina School of Public Health, Health Behavior and Health Education and the North Carolina Department of Health and Human Services, Division of Public Health, Making Your Community Walkable and Bikeable: A Guidebook for Change, Chapel Hill, North Carolina (2002). www.eatsmartmovemorenc.com/ACEs/Texts/070317_wabsa_guidebook.pdf. (As of July 20, 2009.) The guidebook is a step-by-step navigation tool to be used by local groups and citizens to effectively contribute to the planning process and build partnerships with transportation practitioners to enhance the local road network to be more supportive of pedestrian movements.

University of Western Australia, Systematic Pedestrian and Cycling Environmental Scan (SPACES) Audit Instrument, (2000). www.cpah.health.usyd.edu.au/pdfs/2007_SPACES_Audit_Instrument.pdf. (As of July 23, 2009.) This tool is to be used as an observational tool for practitioners to assess the physical environment in a neighborhood and its suitability to support pedestrian movements. It uses street segments or the area between two intersections as the basis for observation. The Observers Manual is designed to assist the practitioner in the proper completion of the audit.

Victoria Transport Policy Institute, Sustainable Transportation and TDM: Planning That Balances Economic, Social and Ecological Objectives, www.vtpi.org/tdm/tdm67.htm. (As of July 15, 2009.) This webpage is a chapter (subpage) of the TDM Encyclopedia titled "Sustainable Transportation and TDM." The TDM Encyclopedia is an online encyclopedia created by the Victoria Transport Policy Institute to help people better understand the concept and best practices of Transportation Demand Management (TDM). This chapter discusses how TDM can help achieve more sustainable transport, and how incorporating sustainability goals in planning can support TDM.

Weisbrod, G., Lynch, T., and Meyer, M., Monetary Valuation per Dollar of Investment In Different Performance Measures,

National Cooperative Highway Research Program (NCHRP) Project 08-36, Task 61, Transportation Research Board, Washington, D.C. (2007). This study reviews the state of the practice of assigning monetary values to performance measures that are not normally measured in financial terms. It provides information on the most promising tools and practices for monetizing benefits.

Quality-of-Life Literature Review

Moving Communities Forward: How Well-Designed Transportation Projects Make Great Places

Principal Author/Authors: Goldberg, Andrew
Date of Publication/Presentation/Access: September 2007
Website Link: www.movingcommunitiesforward.org/
   Publications/

Description

This report showcases approximately 30 transportation projects that go beyond their original scope to bring a variety of enhancements in the form of economic development, public safety and health, and design features to the communities in which they are located. The report clearly states the importance of recognizing that the same approach cannot and should not be used in every community because each has unique qualities that must be understood and considered in the design process. However, the report does identify general principles and practices that can be modified to most appropriately fit the environment in which the project will be located.

The case studies were selected, in part, because they recognize the importance of the interconnected relationship of transportation, economic development and land use options in a setting in which budgetary constraints and environmental concerns play a critical role in the decision-making process. They showcase ways that transportation facilities can be designed to fit more harmoniously in communities by re-organizing adjacent land uses, if necessary, which can support or trigger economic activity, increase land value and tax revenues, and retain and attract jobs, visitors, and residents. The projects appropriately consider the physical environment in which they are located and have been designed to also support non-vehicular movements.

The report identifies successful design principles and practices while stressing the importance of a holistic approach involving parties other than transportation officials, the success of which can be marked by the incorporation of the community's visions into overall project design. The holistic approach is supported by integrated design, which enlists a multidisciplinary team to arrive at a solution that achieves a variety of benefits by integrating seemingly unrelated design elements.

The report examines the different strengths of varying public involvement approaches to appropriately capture the community's vision for an area. It examines the benefits achieved by engaging the public in the decision-making process and how anticipated benefits can evolve even further into a transportation facility that is welcomed by the community. The ability to utilize a process that appropriately considers the community's visions can determine whether the impacts go beyond the project footprint, or misses opportunities greater than the sum of the parts. The case studies—which showcase projects in inner-city, outer-city/inner suburb, and outer suburban environments—highlight context sensitive solutions, transit-oriented development, sustainable design, and different software platforms used during visualization exercises.

NCHRP 8-36, Task 59, Transportation and Health

Principal Author/Authors: Cambridge Systematics, Inc.
Publisher: NCHRP/TRB
Date of Publication/Presentation/Access: November 2006
Website Link: www.statewideplanning.org/_resources/61_
   NCHRP8-36-59.pdf

Description

This report identifies the current state of the practice of state and metropolitan planning organizations and their consideration of public health issues—in particular physical activity—in the decision-making process. The study was commissioned to examine the relationship between transportation projects and the built environment—which if not well designed—can contribute to an overall decline in physical activity of a community. It documents emerging practices and collaborative partnerships that have been established to build transportation facilities that fit harmoniously into communities.

This report was designed to be a resource for state and transportation officials because there are few other reports that address the concept of transportation and the built environment on the state and metropolitan levels. However, it also is useful for local planning and public health agencies, organizations, and other interested parties concerned about the relationship of transportation and physical activity and overall health.

Much of the information gathered for this report was collected through the use of an Internet-based survey that sought input from state departments of transportation (DOTs), metropolitan planning organizations (MPOs), and

public health agencies to identify activities undertaken to address physical activity and health through transportation planning. Input from the public was not sought. The survey found that a number of MPOs and DOTs are beginning to address, or are considering ways by which to address, health and physical activity in tandem with transportation projects. Case studies from the two state DOTs and two MPOs at the leading edge of incorporating health and activity issues into the planning process are discussed in the appendix.

Similar to the relationship of transportation and land use, economic development, and design of the built environment, there is not one approach that works best for integrating transportation and physical activity—the approach must be customized for each type of project based on the environment in which it will occur. Whereas plans will differ based on each project's need to be customized to appropriately fit the environment in which the transportation facility will be sited, the report indicates that most will likely support each of the "5P" strategies: preparation; policies; promotions; programs; and physical projects.

The report identified evidence of improvement in the relationship between transportation agency practices and public health and physical activity, yet indicates that there is still a significant amount of work to be done. Not surprisingly, the most significant barrier for addressing the relationship of physical activity and transportation is limited funding resources.

Although the report does not speak at length about the specific activities that can be undertaken to engage the community during the transportation decision-making process, it clearly demonstrates how transportation agencies view the relationship to and importance of physical activity and public health. Much of this can be found in the survey results shown in the appendix. The report also provides a bibliography of resources and the list of agencies and organizations that were contacted for participation in the survey.

NCHRP 8-36, Task 66: Improved Methods for Assessing Social, Cultural, and Economic Effects of Transportation Projects

Principal Author/Authors: Center for Transportation and the Environment, North Carolina State University
Publisher: NCHRP/TRB
Date of Publication/Presentation/Access: April 2008
Website Link: www.statewideplanning.org/_resources/234_NCHRP-8-36-66.pdf

Description

This report identifies existing and emerging methods and practices used during community and social impact assessment that can be employed for evaluating quality-of-life considerations. It stipulates that, although there has been significant progress in the assessment of environmental and cultural resources, advancements in the assessment of the human environment and quality-of-life considerations have not kept pace. The report seeks to answer questions that will assist the practitioner and the transportation agency to better understand the general complexities of working in the human environment. It sets forth the following: what constitutes social well-being; how can it be measured; and how can it be more fully integrated into the decision-making process?

Because many transportation agencies employ outreach activities that are not customized for the community(s) in which a project would be sited, some populations (i.e., elderly or disabled, illiterate or persons with limited-English proficiency) and the vision that they hold for their community may not be heard during outreach efforts. Many quality of life considerations are indirectly affected by a transportation project, making associated and cumulative impacts more difficult to understand. Research conducted as a part of this report confirms that quantifiable indicators can serve as a valuable supplement to public involvement and Community Impact Assessment (CIA). The report showcases effective practices in CIA, an in-depth literature review, and interviews with professionals both within and outside the transportation field. It includes a discussion of quality-of-life indicators, such as public health and safety, housing, neighborhood quality, and social capital, to help establish a framework for understanding social wellbeing. In addition, it identifies measures that can be used to understand the functionality of a community. The report stresses that quality-of-life considerations are not mutually exclusive and should not be considered as such. They have many overlapping and interacting components which generally fall under three primary domains: physical health; economic; and social capital.

Primarily targeted toward transportation practitioners responsible for assessing the human environment and community effects, the report discusses measures used for understanding community well-being through the framework of the three primary domains. It can arm the practitioner with an understanding of the level of effort required to collect and synthesize these measures as part of an analysis. This report also is designed to inform managers of data and other information that should be collected during the scoping process as well as useful screening tools. It can help define the role of the community analyst and be used as a guide for properly considering the human environment in all stages of decision making. Lastly, the report can help managers understand the current state of the practice and the direction that it needs to move in order to appropriately

consider quality of life and community effects in all stages of decision making.

NCHRP Project 8-36, Task 22 Demonstrating Positive Benefits of Transportation Investment: Community and Social Benefits of Transportation Investment

Principal Author/Authors: Cambridge Systematics, Inc.
Publisher: NCHRP/TRB
Date of Publication/Presentation/Access: January 2002
Website Link: http://onlinepubs.trb.org/onlinepubs/archive/
     notesdocs/NCHRP08-36(22)_FR.pdf

Description

This report—which is part of a series of working papers prepared for AASHTO to be used in its TEA-21 reauthorization efforts—uses case studies to highlight the community and social benefits of transportation projects. The case studies divide these benefits into five categories: mobility and access; multimodal networks; safety; beautification; and community cohesion. This paper does not discuss techniques and approaches for identifying and incorporating community vision into transportation projects and design, but presents qualitative ways by which to understand associated community and social benefits from a particular project.

The report touches upon a number of quality-of-life considerations that separately and together strengthen and contribute to the overall experience enjoyed by area residents. Furthermore, it demonstrates how a project, through the enhancement of one or two quality-of-life considerations, can have reverberations throughout a community.

The practitioner can draw from these examples that the understanding of quality-of-life considerations can be used to design plans and projects with the community in mind. This can lead to a greater understanding of the community and social benefits of transportation projects that can be used to inform and enhance the design of public involvement and outreach activities. The benefits identified in each of the case studies should be understood by the practitioner to ensure that future projects appropriately consider how a community(s) can be impacted by transportation projects and how they can be designed to fit more harmoniously into communities.

Building Projects that Build Communities: Recommended Best Practices

Principal Author/Authors: Community Partnership Forum
Publisher: Washington State Department of Transportation
Date of Publication/Presentation/Access: 2003
Website Link: www.wsdot.wa.gov/biz/csd/BPBC_Final/

Description

The Washington State Department of Transportation (WSDOT) is guided by a 50-year vision—prepared by the Washington State Transportation Commission and its transportation partners across the state—that calls for changing how transportation is approached to ensure that Washington remains a desirable place to live. Because building livable communities is a goal of transportation planning and investment decisions, the vision identifies livability at the core of achieving this mission. By creating a balance between vibrant communities, a vital economy, and a sustainable environment, a livable future can be achieved. The commission envisioned a livable future through effective community-based design and collaborative decision-making.

The handbook stresses that, whereas transportation planning is challenging for a variety of reasons, any project with potential impacts on the local community requires a balanced and sensitive approach to planning, design, and construction. Transportation agencies, local groups and organizations, and other partners must understand and implement collaborative approaches that allow for the community to express what quality-of-life considerations are important to them through their equal participation in the vision, design, and construction of a project. The incorporation of a community's vision into the design of a project cannot only help avert long delays and additional costs but it also can achieve other objectives, such as improved lighting and streetscapes and/or changes in land use that support economic development. The handbook, which establishes a framework to carry out joint projects more effectively, is a collection of new and innovative practices that will help WSDOT and other transportation agencies achieve this objective.

The handbook provides an in-depth discussion about how to strengthen the entire planning process by simultaneously advancing the objectives of safety, mobility, enhancement of the natural environment, and preservation of community values—much of which can be achieved through good communication, meaningful public involvement, listening, collaboration, and compromise. It highlights approaches for building stronger partnerships and identifying and securing additional funding, as well as a series of questions that should be answered during each stage of decision making and the size and diversity of the project management team by project type that should be formed to ensure the projects overall success. It encourages involved parties, including the local community, to identify how the success of the project—both in the short and long term—can be measured. The handbook includes case studies, resources that can be referenced and persons who can be contacted to assist in conflict resolution, ways to evaluate, adjust, and improve a project, and review

checklists that can be used during identified milestones to assess project success.

Taking the High Road, the Environmental and Social Contributions of America's Highway Programs

Principal Author/Authors: American Association of State Highway and Transportation Officials
Publisher: AASHTO
Date of Publication/Presentation/Access: 2003
Website Link: http://environment.transportation.org/center/products_programs/high_road.aspx

Description

Through the balancing of mobility needs with the responsibility to protect and enhance natural and cultural resources, the construction and rehabilitation of roads and highways across the country is helping to revitalize communities, enhance the environment, and improve quality of life. This report identifies a variety of ways that transportation projects can help maintain and enhance the quality of life enjoyed by communities. It provides an overview of the ISTEA's Transportation Enhancements Program and how the distribution of funds across the country for bicycle and pedestrian movements has helped preserve historic and cultural resources, provide scenic beautification, protect the environment, and protect land. These projects have helped build community identity, promote community revitalization, attract tourists, and provide recreational amenities.

The report identifies the National Transportation Enhancements Clearinghouse—a database of over 10,000 projects across the country—as a useful reference tool for understanding how projects in receipt of transportation funds have positively contributed to the overall quality of life enjoyed by a community. It showcases a wide variety of projects and lists activities eligible for target funds. Such activities include: pedestrian and bicycle facilities; pedestrian and bicycle safety and education activities; acquisition of scenic or historic easements and sites; scenic or historic highway programs; landscaping and scenic beautification; historic preservation; rehabilitation and operation of historic transportation buildings, structures, or facilities; preservation of abandoned railway corridors; control and removal of outdoor advertising; archaeological planning and research; environmental mitigation of highway runoff and provision of wildlife connectivity; and establishment of transportation museums.

In addition to highlighting both the social and economic quality-of-life considerations that can be enhanced in a community by responsible transportation projects, the report demonstrates the environmental benefits of sensible and sustainable design. It includes a discussion of context sensitive design, brownfields development, recycling of pavement, preservation and restoration of wetlands, storm water management, and emissions and noise reduction. This report, as well as the National Transportation Enhancements Clearinghouse, can be referenced by both transportation agencies and interested parties to identify approaches that can be extracted and possibly incorporated into plans for the construction or rehabilitation of a transportation facility that will help improve the quality of life enjoyed by the community.

Community Context Tools

The following publications help to describe and define the scope of community context tools (see also Table B.1).

Measuring Urban Design Qualities: An Illustrated Field Manual

Principal Author/Authors: Otto Clemente, Reid Ewing, Susan Handy, and Ross Brownson
Publisher: Active Living Research
Date of Publication/Presentation/Access: July 2009
Website Link: www.activelivingresearch.org/node/10637

Description

Often, the built environment and walkability are discussed in quantitative terms such as neighborhood density and street connectivity. However, the manual stipulates that these measures do not fully capture what a person experiences when he or she walks down the street, and that to fully conceptualize how the built environment affects the quality of life, a qualitative discussion also must be included. The manual includes an introduction to several key urban design qualities and provides guidance on how to objectively measure qualities of a typical street. These qualities—which include imageability, enclosure, human scale, transparency, and complexity—are separate from the physical features of the landscape but depend on them and generally reflect the way people perceive and interact with their environment. The manual, which is organized by these qualities, includes a scoring sheet for measuring urban design qualities and photographs to help define urban design qualities. Website links for the Identifying and Measuring Urban Design Qualities Final Report, and an MS-PowerPoint presentation that reviews the applied techniques found on the scoring sheet and can help the practitioner successfully complete the exercise and report findings, are listed below. An additional discussion of this tool can be found in the Community Effects section.

This is a useful tool for local groups and organizations, stakeholders, and other interested parties to identify and

Table B.1. Community Context Tools

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
Measuring Urban Design Qualities: An Illustrated Field Manual	Provides an introduction to several key urban design qualities and guidance on how to objectively measure qualities of a typical street. Includes a scoring sheet for measuring urban design qualities.	Manual and Scoring Sheet for Residents	Imageability, Enclosure, Human Scale, Transparency, and Complexity	Land Use	The manual and scoring sheet can be used during a visioning exercise to get residents to think about the urban design qualities present in their community. Findings can help facilitate conversation between and among parties of desired improvements.	Project, Neighborhood, Corridor, or Community	Urban, Suburban, or Rural	Land Use, Sensory Factors, Aesthetic Quality, and Urban Design	The level of effort necessary to review the manual and complete the scoring sheet is small. A field visit would be required. Findings can be used to facilitate discussion and visioning exercises.	www.activeliving research.org/ node/10637, www.niehs.nih .gov/news/ events/pastmtg/ 2005/esoay/docs/ ewing-ppt.pdf (PowerPoint)
PolicyMap, Geographic Information Systems (GIS) Mapping Services and Software	An on-line tool with the capacity to map and report information on up to 4,000 indicators related to demographics, real estate, crime rates, health, schools, housing affordability, employment, energy, and public investments.	On-line Resource and Subscription Services for Transportation Agencies, Government Agencies, and Local Groups and Organizations	As a web-based tool, the user can scroll through information in the order they choose.	Economic, Public Health, Natural Environment, Sociocultural, and Land Use	Extensive data available through the use of this tool can present a detailed community profile. It can be used to map proposed investments, relate them to other investments, demonstrate how neighborhoods have changed where the agency has made past investments, and show where future investments would make the most sense.	Project, Neighborhood, Corridor, Community, Regional, State, or Multistate	Urban, Suburban, or Rural	Data requests available through the subscription service can provide information on a wide variety of quality of life considerations.	The level of effort to use this resource is moderate to high. The subscriber needs to prepare an Excel file containing certain information. Depending on the data request, dbf files used for GIS would be suitable for decreasing the level of effort.	www.policymap .com
Active Community Environments (ACE) Community Assessment	This is an assessment tool designed to help the user identify ways that can help encourage and support bicycle movements. There are five short questionnaires and a rating system that can be used as a benchmark for community progress.	Assessment tool for Public Health Practitioners, Community Groups, Advocates, and Grassroots Organizations	Policies and Planning for Non-motorized Transportation, Pedestrian and Bicycle Safety and Procedures, Community Resources for Physical Activity, Schools, and Public Transportation	Public Health, Land Use, Financial, and Mobility	The assessment can help identify areas in need of improvement to support pedestrian movements, safety education, and physical activity levels. Findings can be used to design pedestrian and bicycle linkages that are accessible to area residents.	Project, Neighborhood, Corridor, and Community	Urban, Suburban, or Rural	Physical Fitness, Safety, Mobility, Recreational Resources, Land Use, Budget Realities, Access, and Educational Opportunities.	The level of effort necessary to complete the assessment is small. Some information would need to be collected from municipal departments and a site visit would be necessary.	www.eatsmart movemorenc .com/ACEs/ ACEs.html

Table B.1. **Community Context Tools (continued)**

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
Active Neighborhood Checklist	The checklist is designed to assess street-level features of a neighborhood thought to be related to physical activity. It can be used to produce descriptive statistics about an area, to raise awareness about the environment in supporting or discouraging pedestrian activity, and/or mobilize the community to advocate for enhancements or improvements.	Checklist to be completed by community residents.	Land Use, Public Transit, Street Characteristics, Quality of the Environment for a Pedestrian, and Paths or Greenways for Walking and Bicycling.	Land Use and Mobility	The use of this tool can build trust between the community and the transportation agency and can be used to assess the diversity of land uses and roadway features in need of improvement or enhancement. Findings can be used to identify land uses that could be introduced to the area to make it more diverse and encouraging of non-vehicular movements. The checklist also would help identify those areas in need of roadway improvements and/or safety and security precautions such as lighting and crossing signals.	Project, Neighborhood, or Community	Urban, Suburban, or Rural	Land Use and Mobility	The level of effort to use the checklist is small. Participants should be given a brief tutorial prior to the site visit, write down additional thoughts and take photographs while on the site visit.	http://prc.slu.edu/ Documents/Active_ Neighborhood_ Checklist.pdf
Manual for Streets—Residents' Perception Survey	The survey can be administered to area residents to better understand how people perceive the environment in which they live.	Survey to be administered to community residents.	Household Characteristics, Street Characteristics, and Roadway Safety and Personal Safety/ Crime Issues.	Land Use and Public Health	Participant suggestions can be used during project development and design to ensure that improvements are both functional and practical.	Project, Neighborhood, Corridor, and Community	Urban, Suburban, or Rural	Public Safety, Crime, and Land Use	The level of effort necessary to use this tool is small. Participants will complete the survey and the facilitator will compile results in a master document. It is anticipated that it would take participants less than one hour to complete the survey.	www.dft.gov.uk/ pgr/sustainable/ manforstreets/ pdfmanforstreets .pdf
Walkability Checklist and A Resident's Guide for Creating Safe and Walkable Communities	This one-page checklist is designed for community members to determine if their neighborhood is a friendly place to walk. The guidebook can be referenced by participants to learn about roadway conditions, traffic problems that adversely affect pedestrian movements, and ways to help address these problems to make the environment more supportive of pedestrian activity.	Checklist to be completed by community residents.	Did you have room to walk?, Was it easy to cross streets?, Did drivers behave well?, Could you follow safety rules?, and Was your walk pleasant?	Land use, Safety, and Mobility	The checklist can be used by area residents to assess the walkability of their community and identify improvements to be made in the short and long term. Findings can be shared with a transportation agency or with municipal officials to advocate for improvements.	Neighborhood or Community. It also could be used on the project or corridor level if the project area is not sufficiently large.	The checklist would be most appropriately used in a suburban or rural environment, but also could be used in an urban setting.	Safe Travel, Accessibility, and Land Use	The completion of the checklist is estimated to take approximately one hour. Participants are asked to review the checklist prior to the site visit. Additional time would be needed should the participant decide to advocate for improvements.	www.walkable america.org/ checklist-walk ability.pdf, http:// safety.fhwa.dot .gov/ped_bike/ ped_cmnity/ ped_walkguide/ residentsguide.pdf (A Resident's Guide for Creating Safe and Walkable Communities)

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
West Peterborough Road Audit	This audit tool can be used to evaluate how well streets and adjacent land uses are performing as places, and identify opportunities for future enhancements.	Audit Tool to be completed by transportation practitioners or area residents.	Access, Linkages and Information, Uses and Activities, Comfort, Image and Sociability, Safety, Additional Comments, Project Prioritization, and Next Steps	Land Use and Mobility	The audit tool can be used to assess an area and prioritize improvements. Findings can be used to prepare Problem and Vision Statements and draft recommendations and can be used by a transportation agency to better understand the environment in which they are working.	Project, Neighborhood, Corridor, or Community	Urban, Suburban, or Rural	Land Use and Activities, Safety, and Budget Realities	A short site visit is necessary to complete the audit form. The assessment can be conducted either in a group or individually. Findings should be summarized and incorporated into a vision statement. No preliminary research or data collection is necessary to complete this effort.	www.berger-nc .com/cssresources/ CommunityContext/ WestPeterborough RoadAudit_ NHDOT_PPS.pdf
Community Context Audit	The audit form is intended to be a guide for practitioners to identify various community characteristics that make each transportation project location unique to its residents, its businesses and the public in general. Findings from the audit will help to define the purpose and need of the proposed transportation improvements based upon community goals and local plans for future development.	Audit Tool to be completed by practitioners	Community Characteristics/Land Use, Infrastructure Assessment, Neighborhood Culture, Aesthetics and Street Amenities, Economic Development, Community Planning, and Social and Economic Characteristics	Economic, Natural Environment, Public Health, Sociocultural, Land Use, Mobility, and Financial Considerations	Findings from the audit will help to define the purpose and need of the proposed transportation improvements based upon community goals and local plans for future development. It also may reveal features of critical importance to a community that may have been previously unidentified.	Project, Neighborhood, Corridor, or Community	Urban, Suburban, or Rural	Business Growth and Investment, Safety, Historic, Cultural, and Scenic Preservation, Open Space, Faith Based Institutions, Cultural Amenities, Land Use and Activities, Sustainable-mixed Growth, Access and Proximity to Amenities, Aesthetic Quality, ADA Compliance, Modal Choices, and Policy Initiatives	The level of effort necessary to complete the audit is moderate to high. A field assessment is required as well as the review of municipal documents.	http://65.207.30.22/ css/www/community.php (Official link—not working right now), www .oakgov.com/ wireless/assets/ docs/community_ context_audit.pdf (Another link but not the official one)

Table B.1. Community Context Tools (continued)

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
Community Core Indicators of Activity Friendliness—Telephone Questionnaire	The questionnaire was designed to find out how a community views its physical surroundings and if the environment is supportive and encouraging of physical activity.	Telephone Questionnaire to be taken by area residents	Health, Community Environment, Behavior, and Individual and Interpersonal Supports and Constraints	Public Health, Natural Environment, Sociocultural and Land Use	This tool can be used by public health advocates or local agencies and organizations to better understand how residents perceive their environment, and the value of physical activity as part of their everyday lives. Findings can be shared and incorporated in project development so proposed roadway improvements include linkages to locations frequented by community residents to support and encourage physical activity.	Neighborhood or Community. It also could be used on the project or corridor level if the project area is not sufficiently large.	The tool would be best suited to be used in an urban or suburban environment however it also could be used in a rural environment.	Recreational Opportunities, Physical Fitness, Community Cohesion, Land Use and Activities, Safety, Aesthetics, Food Access, and Mobility	The level of effort to complete this survey is moderate. It is recommended that a flier be sent to people's homes or run in a local publication to inform residents of the upcoming study and that their participation may be requested. Contact lists must be obtained prior to the start of the exercise. The interviewer may get a few people that do not want to take the survey before finding a participant. The questionnaire will take about 20 minutes and findings should be entered into the database at the end of each surveying session. Alternatively, the questionnaire could be sent out in the mail or completed at a public meeting. The existing questionnaire can but does not need modification to be administered in different geography areas.	http://prc.slu.edu/ Documents/ CommCore DraftSurvey.pdf
Making Your Community Walkable and Bikeable: A Guidebook for Change	The guidebook is a step-by-step navigation tool to be used by local groups and citizens to effectively contribute to the planning process and build partnerships with transportation practitioners to enhance the local road network to be more supportive of pedestrian movements.	Guidebook and Audit Forms to be completed by residents	Getting Ready, Walking Assessment, Bicycling Assessment, Using the Assessment Results to Make Change Happen, and Definitions, Resources and Appendices	Public Health, Financial Considerations, and Mobility	The "soup to nuts" approach clearly outlined in the guidebook informs residents about land use features that generally prohibit pedestrian movements and how the tool can inform new policy initiatives that lead to roadway enhancements that support pedestrian activity.	Primarily Neighborhood or Community level. It also could be used on the project and corridor level depending on the size of the study area since they should be used in project areas of less than 2 miles in length.	Urban, Suburban, or Rural	Safe Travel, Mobility, and Policy Initiatives	The level of effort necessary to complete all of the steps set forth in the guidance manual is high. The success of this effort would be largely dictated by strong and continuous local leadership over an extended period of time. The audit forms and other materials found in the appendices could be used as a single exercise and could be completed in a few hours.	www.eatsmart movemorenc .com/ACEs/Texts/ 070317_wabsa_ guidebook.pdf

Table B.1. Community Context Tools (continued)

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
Context Screening Tool	This tool, which is based on the Project for Public Spaces, Inc. Place Audit, is designed to evaluate how well streets and adjacent land uses are performing as places, and to identify opportunities to enhance them in the future.	Screening Tool	Basic Information to Understand the Study Area, Evaluate the Place to Identify Problems, Add Any Other Problems You See, and Prioritize the Problems You Have Identified	Sociocultural, Mobility, Land Use, Economic, and Financial Considerations	This is a relatively easy exercise that can be initiated by local stakeholders or a transportation agency. It is a participatory tool designed to reveal a community's vision for a place. Findings can be used to refine design alternatives to avoid or minimize adverse project-induced impacts, identify appropriate mitigation measures if necessary, or incorporate desired enhancements into project design. The use of this tool early in the decision-making process will engage residents and the sponsor agency gain the trust of area residents.	Community or Neighborhood. It also could be used in for a project or corridor project if the project area is not sufficiently large.	Rural, Suburban, or Urban	Access and Proximity to Resources, Mobility, Aesthetic Quality, Historic, Cultural, Scenic Preservation, Land Use and Activities, Economic Health, and Budget Realities	The level of effort necessary to complete this exercise is small. Participants would need a brief tutorial on how to use the screening form. The completion of this tool can be used to facilitate group dialogue and other visioning activities.	
Community Effects Considerations	This tool is a guide designed to help practitioners understand the key criteria, data sources and analytical methods that should be considered when assessing potential impacts to the human environment.	Reference Tool	Sociocultural Considerations, Economic Considerations, Land Use Considerations, Mobility/Access Considerations, Sensory/Aesthetic Considerations, Safety Considerations, and Displacement Considerations	Economic, Public Health, Sociocultural, Land Use, and Mobility	This tool can be referenced by the practitioner to better understand the data sources and analysis necessary to evaluate potential impacts. The use of the various components of this tool early in the decision-making process can help streamline a project and save time and money. A full understanding of potential impacts and the environment in which a project is proposed to be sited also can help refine design alternatives and/or customize outreach efforts and measures to avoid, minimize, or mitigate adverse effects that are appropriately suited to the affected community.	Neighborhood or Community. It also could be used on the project or corridor level if not sufficiently large.	Rural, Suburban, or Urban	Tax Base, Property Values, Emergency Services, Safety and Security, Community Cohesion, Cultural Amenities, Faith-Based Institutions, Land Uses and Activities, Sensory Factors, Aesthetic Quality, Mobility and Access to Amenities, Recreation, and Mobility of Disadvantaged Populations	Since this is a reference tool, the level of effort to use it in part or in full can vary widely. As a reference tool, it is short and easy to understand which tools and techniques should be used to assess various impact areas.	

Table B.1. Community Context Tools (continued)

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
Economic Development and Redevelopment: A toolkit for building healthy, vibrant communities	The toolkit is designed to inform nutrition and public health advocates on ways to improve food access in low-income neighborhoods. It also is a good reference for transportation and economic development practitioners working to rebuild communities. It provides an overview of techniques and tools that can be used for effectively engaging communities in land use and redevelopment activities.	Toolkit	Connection Between Economic Development and Health, Reasons Communities Lack Access to Healthy Food, Strategy Development, Economic Development, Financing Sources, Redevelopment Strategies, Building Community Support, Data Collection, Communicating with Public Officials, and Resources	Economic, Public Health, Sociocultural, Land Use, and Financial Considerations	This toolkit provides an overview of techniques and tools that can be used for effectively engaging communities in land use decisions during (re)development activities.	Project, Neighborhood, Corridor, or Community	Urban, Suburban, or Rural	Equity, Access to Healthy Foods, Land Use and Activities, Access and Proximity to Amenities, Diversity and Equity, and Funding Requirements	The level of effort to use this resource in full is high. It would require multi-agency coordination, (re)development alternatives, development of a plan, and investment sponsors. The healthy food options in a location that would be both feasible from an economic and physical standpoint and accessible to community residents would require a significant amount of public outreach and economic analysis.	www.healthy planning.org/ ecdev_toolkit/ EcDevToolkit.pdf
A Community Approach to Address Health Disparities: T*H*R*I*V*E Toolkit for Health and Resilience in Vulnerable Environments	The toolkit was developed as a community resilience assessment tool to help communities enhance their environment in ways that improve public health and reduce disparities experienced by racial and ethnic minorities.	Toolkit	Background Research and Framing Issue, The Community Resilience Landscape, Community Resilience Factors, Review of Existing Tools, Community Toolkit for Health and Resilience in Vulnerable Environments (THRIVE), Preliminary Guidelines, and Next Steps	Economic, Public Health, Sociocultural, Land Use, and Mobility	The toolkit is a learning, strategic, or needs assessment tool that can be used by transportation practitioners conducting a community impact assessment to help in the identification of racial and ethnic communities, existing disparities, and opportunities to reduce or eliminate these disparities. It identifies techniques for engaging stakeholders and preparing and implementing policies and/or plans that can reduce or eliminate disparities.	All geographic areas. Initiatives would need to be geographically specific.	Urban, Suburban, or Rural	Educational Opportunities, Diversity and Equity, Safety and Security, Housing, Low Crime, Public Health and Human Services, Physical Fitness, Community Cohesion, Civic Engagement, Cultural Amenities, Social Capital, Sensory Factors, Food Access, Access and Proximity to Amenities, and Modal Choices	The level of effort necessary to achieve the objectives in the toolkit is high and would require multi-agency coordination and extensive research. Certain elements of the toolkit could be extracted and used as independent initiatives. The level of effort to successfully complete these initiatives would depend on their extent.	www.omhrc.gov/ assets/pdf/ checked/THRIVE_ FinalProject Report_093004.pdf

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
Assessing Your Community's Aging-Readiness: A checklist of key features of an aging-friendly community	The checklist is part of a guidebook to arm local leaders with the knowledge and tools necessary to build collaborative partnerships for creating livable communities for people of all ages.	Checklist and Guidance Manual	Housing, Planning and Zoning, Transportation, Health and Supportive Services, Cultural and Lifelong Learning, Public Safety, and Civic Engagement and Volunteer Opportunities	Sociocultural, Mobility, Institutional, and Land Use	Findings from the checklist could be used to implement new policy initiatives or changes in the delivery of services to the elderly if deficiencies are found. Municipal officials could work with transportation agencies to adjust the services they are providing to ensure safe and reliable transport, if necessary. Transportation agencies can work with municipal officials and other parties to create mixed-use communities that are welcoming and attractive to elderly populations.	Neighborhood or Community	Urban or Suburban	Housing, Safety and Security, Access to Health Care, Civic Engagement, Diversity, Land Use, Mobility, Reliable Transportation Options, and Municipal Policy Objectives.	The level of effort necessary to complete this checklist is small to moderate. Supporting documents from municipal departments would need to be reviewed. Findings can be submitted to municipal officials and/or presented at a town meeting.	www.icma.org/upload/library/2007-05/%7B2 B390E33-5C27-4949-944E-05 B2046D7DB8% 7D.pdf
Place Game—Planning through Transportation	The Place Game is designed to evaluate how well streets and adjacent land uses are performing as places, and to identify opportunities to enhance them in the future.	Audit to be completed by residents	Evaluate the Place, Identify the Opportunities of this Place, Interview, and Problem Statement	Land Use, Sociocultural, Economic, Public Health, Mobility, and Natural Environment	This is a relatively easy, participatory tool designed to reveal a community's vision for a place. Findings can be incorporated into project design to ensure that proposed roadway improvements are sensitive to areas of importance to the community and include desired enhancements where feasible.	Neighborhood or Community	Urban, Suburban, or Rural	Property Values, Recreation, Safety and Security, Social Networks, Historic, Cultural and Scenic Preservation, Modal Splits, Access and Proximity, Land Use and Activities, Accessibility, Aesthetic Qualities, and Sensory Factors	The level of effort necessary to complete this exercise is small to moderate depending on the amount of quantitative data collected to support qualitative findings. The site visit and defining of the Problem Statement without quantitative data collection would take a few hours. Much of the quantitative data collection would be provided by those facilitating the exercise.	
Public Health Workbook to Define, Locate and Reach Special, Vulnerable and At-Risk Populations in an Emergency	The workbook outlines a systematic process that can support municipal, state, and tribal planners and public health officials as they design and implement new strategies to reach all populations—including traditionally underserved and hard to reach populations—in day-to-day communication and during crisis or emergency situations.	Workbook	Defining Special Populations, Locating Special Populations, and Reaching Special Populations	Public Health and Sociocultural	The workbook can be used by practitioners and public health agencies to ensure that all populations are reached and informed in the event of an emergency. The sponsor agency can work with transportation agencies to ensure that evacuation routes are well-defined and translated into the languages of limited and non-English speaking populations in their community. They also can identify transportation services to evacuate physically and mentally handicapped and elderly populations.	All geographic areas. Initiatives would need to geographically specific.	Urban, Suburban, or Rural	Emergency Services and Diversity and Equity	The level of effort necessary to complete each of the steps outlined in the workbook is substantial. The process would likely culminate in an emergency preparedness plan. To complete this effort in full it could take a few months to a year.	www.bt.cdc.gov/workbook/pdf/ph_workbook_draft.pdf

Table B.1. Community Context Tools (continued)

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
Roadway Audit Tool, Analytic and Checklist Versions	The audit forms were designed to better understand the relationship between street-scale environments and rates of physical activity.	Analytic Audit Tool to be completed by practitioners or municipal officials. The Checklist Audit Version to be completed by residents.	Land Use Environment, Transportation Environment, Facilities, Aesthetics, Signage, and Social Environment	Natural Environment, Public Health, Sociocultural, Land Use, and Mobility	The Land Use component can act as a retail analysis identifying leakage and surplus in the area, which can be prohibitive when trying to create a mixed-use environment welcoming of pedestrian movements. Findings coupled with the assessment of roadway conditions can be used to build partnerships to design projects that are sensitive to areas of local importance, support mixed-use development and encourage pedestrian movements. The audit also can be used to help in project prioritization.	Neighborhood or Community. They also could be used on the project or corridor level if the study area is not sufficiently large. For larger areas, segments could be created allowing for the audit to be completed in each segment and later combined into a full profile.	Urban or Suburban	Land Uses and Activities, Recreation, Aesthetic Quality, Housing, Sustainable-balanced Growth, Access and Proximity, Physical Health, Natural Features, Transit Options, Roadway and Sidewalk Conditions, Safety, Sensory Factors, and Diversity	The level of effort necessary to complete the audit tools is small to moderate. The analytic version would take longer to complete than the checklist version. No additional data is necessary to complete the exercise.	www.activeliving research.org/files/ audit_tool_analytic .pdf (Analytic Tool), www.activeliving research.org/files/ audit_tool_check list.pdf (Checklist Tool)
Thinking Beyond the Pavement Checklist	The checklist is a tool to be used by practitioners to assess the physical setting—both natural and manmade—in which proposed improvements would occur. The checklist can be used as part of the Context Sensitive Solutions (CSS) approach.	Checklist to be completed by practitioners	Aesthetic or Historic Character, Roadsides, Medians, Existing Vegetation, Landscaping Opportunities, Sidewalks, Pedestrian Crossings and Trails, Stormwater Ponds, Drainage Swales and Structures, Slopes and Retaining Walls, Noise Abatement Walls, Traffic Barriers, Fencing and Guard Rail, and Signing and Lighting	Natural Environment, Public Health, Sociocultural, Land Use, and Mobility	The use of the CSS checklist and overall approach during the early stages of project development through operation and maintenance is essential to the decision-making process. Ensuring the early and often consideration of communities in the decision-making process not only lends a hand in helping the practitioner and agency overall design projects that fit more harmoniously into communities but also can help streamline a project as it moves through the pipeline saving the agency time and money in refining the various project components.	Project, Neighborhood, Corridor, and Community	Urban, Suburban, or Rural	Cultural Amenities, Natural Resources, Aesthetic Quality, Sensory Factors, Historic, Cultural, and Scenic Preservation, Safe Travel, Infrastructure, and Reliable Service	The level of effort necessary to complete the checklist is moderate. A multidisciplinary team comprised of experts from each subject area should take part in its completion. The checklist should be reviewed and updated as a project moves through the decision-making process to identify new impacts or eliminate those impacts that no longer exist with the selected project design.	www.berger-nc .com/cssresources/ CommunityContext/ ThinkingBeyondthe PavementChecklist .pdf

Table B.1. Community Context Tools (continued)

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
Neighborhood Walking/ Biking Assessment (Urban, Suburban, and Rural)	Three slightly different forms were designed for residents to assess roadway and land use conditions in their neighborhood to determine if it is safe for students to walk and bicycle to school. A small number of questions vary based on the environmental setting in which the assessment is being conducted.	Assessment tool to be completed by residents	Physical Environment, Bike Routes, Trails, Intersections, Streets, Environment, and Land Use/Location	Land Use, Public Health, and Mobility	This tool could be used by residents to identify positive and negative features along proposed routes or the neighborhood overall. Findings could be used to select a route(s) that would be most appropriate for the setting and implementation of enhancements that ensure the safety of its users. This tool could be used for Safe Routes to Schools (SRTS) or other roadway improvements.	Neighborhood or Community. It also could be used on the project or corridor level if the project area is not sufficiently large.	Urban, Suburban, or Rural	Safe Travel, Physical Fitness, Land Use, Recreation, and Mobility	The level of effort necessary to complete this assessment is moderate. Prior to going in the field, the facilitator and participants should decide if they are going to focus along potential routes or throughout the entire neighborhood. Participants should anticipate being in the field for a few hours. If more than one person or group conducts the assessment, a master document and map should be prepared which highlights positive and negative attributes identified in the neighborhood.	http://drusilla.hsrc .unc.edu/cms/ downloads/ Pennsylvania_ Keystone%20 Healthy%20 Routes_Urban.pdf (Urban), http:// drusilla.hsrc.unc .edu/cms/ downloads/ Pennsylvania_ Keystone%20 Healthy%20 Routes_Suburban .pdf (Suburban), http://drusilla.hsrc .unc.edu/cms/ downloads/ Pennsylvania_ Keystone%20 Healthy%20 Routes_Rural.pdf (Rural)
Systematic Pedestrian and Cycling Environmental Scan (SPACES) Audit Instrument	This tool is to be used as an observational tool for practitioners to assess the physical environment in a neighborhood and its suitability to support pedestrian movements.	Audit form to be completed by practitioners.	Walking and Cycling Paths, Street Assessment, and Overall Assessment	Land Use, Public Health, and Mobility	The audit form can be used to identify streetscape and roadway improvements necessary to create an environment that supports and encourages pedestrian movements. The presence and/or absence of certain features can help identify and prioritize improvements. The land use element helps identify if there is an appropriate mix of uses to attract pedestrian movements.	Project, Neighborhood, Corridor, and Community	Urban or Suburban	Safe Travel, Land Use, and Access	The level of effort necessary to complete this exercise is moderate to high, the extent of which would depend on the size of the area being surveyed. A segment of approximately 1.25 miles can be observed in slightly less than an hour. Desktop exercises associated with the audit also would be timely.	www.cpah.health .usyd.edu.au/pdfs/ 2007_SPACES_ Audit_Instrument .pdf, www.cpah .health.usyd.edu .au/pdfs/2007_ SPACES_ Observers_Manual .pdf (Observers Manual)

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
Smart Growth Checklist, A Checklist for Municipal Land Use Planning and Management	This easy-to-use tool is a guide that can be used by communities when making decisions about future land use and development patterns. It is designed to assess how well planning and land use decisions in a community follow the principles of Smart Growth.	Checklist to be completed by practitioners	Municipal Planning Profile, Infrastructure, Open Space, Farmland, and Critical Environments, Mixed-Use Development, Transportation and Access, Municipal Character, and Sustainability	Land Use and Transportation	Findings from this exercise can be used to guide public investment and private development in accordance with Smart Growth principles and/or revise the land use and transportation elements of a comprehensive plan. Municipal officials can work with the community to ensure that new development is welcome and introduces land uses to the area that are necessary to support Smart Growth. Additionally, municipal officials and residents can work with transportation agencies to ensure that roadway improvements and/or public transportation options help achieve this objective.	Neighborhood or Community. It also could be used on the project or corridor level if the project area is not sufficiently large.	Urban or Suburban	Housing, Preservation of Open Space, Infrastructure, Historic Preservation, Sustainable-balanced Growth, and Access and Proximity to Amenities	The level of effort necessary to accurately complete the checklist is moderate. The person's familiarity with municipal objectives and policies will dictate the time necessary to complete the exercise. A review of municipal documents will be required.	www.nysdot.gov/programs/smart-planning/repository/SGCheck_Municipal_PRINT.pdf
Smart Growth Checklist, A Checklist for Proposed Development in Your Community	This easy-to-use tool is a guide that can be used by communities to determine how a proposed project would contribute to the overall well-being of a community.	Checklist to be completed by municipal planners, local groups or organizations, stakeholders, and residents.	Infrastructure, Housing, Open Space, Farmland, and Critical Environmental Areas, Mixed Land Use, Transportation and Access, Walkability, Community Character, and Sustainability	Land Use and Sociocultural	Findings can be used to advocate for changes in a development proposal to fit more harmoniously into a community, the adoption of Smart Growth principles by the municipality (if not already implemented), and/or recommend changes to municipal plans to support and/or prohibit certain types of development in Smart Growth areas. Developers and municipal officials can work with transportation agencies to ensure that roadway improvements and/or public transportation options help achieve Smart Growth principles.	Neighborhood or Community. It also could be used on the project or corridor level if the project area is not sufficiently large.	Urban or Suburban	Infrastructure, Sustainable-balanced Growth, Access and Proximity to Amenities, Historic Resources, Recreation, and Community Cohesion	The level of effort necessary to accurately complete the checklist is small to moderate. It requires familiarity with municipal objectives, the proposed development, and community characteristics. It is both a desktop and in-field exercise. It is anticipated that it would take a few hours to complete the checklist.	www.nysdot.gov/programs/smart-planning/repository/SGCheck_Development_Print.pdf

Table B.1. Community Context Tools (continued)

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
Irvine Minnesota Inventory	The audit tool is designed largely for practitioners and public health officials to collect data on features of the physical environment that are potential linked to physical activity.	Audit form to be completed by practitioners and public health advocates.	Street Crossing, Views, Land Use, Barriers, Sidewalks, Bicycle Lanes, Mid Block Crossing, Sidewalk Amenities, Buildings, Garages, Parking, Driveways, Maintenance, Lighting, Freeways, Traffic Features, Architecture/Design, and People and Animals	Natural Environment, Public Health, Sociocultural, Land Use, and Mobility	This tool can be used by a transportation agency to develop a detailed profile of a neighborhood or community which can be used in the early stages of decision-making to identify potential impacts and can assist in the design of public involvement activities and mitigation measures if necessary.	Neighborhood or Community	Urban, Suburban, or Rural	Natural Features, Safety, Community Cohesion, Land Uses and Activities, Aesthetic Quality, Access and Proximity, Mobility, Historic, Cultural, and Scenic Preservation, and Roadway Features	The level of effort necessary to complete this audit is high. It is designed to be used by trained observers who must take an approximately eight-hour training program prior to field visits under the supervision of a team leader, preferably with advanced research training. The team leader would train the team, test the reliability of observations, and oversee data collection and analysis. The field visit would take a team of two observers approximately three-four days to complete. A detailed map of each setting that includes footpaths and trails, etc. is necessary.	https://webfiles.uci.edu/kday/public/Irvine_MN_Inventory.pdf, https://webfiles.uci.edu/kday/public/index.html (Web Manual)
Community Tool Box	The Community Tool Box provides practical, step-by-step guidance in community building skills that can be used in a variety of settings to understand community characteristics and create exercises that increase community cohesion. Chapter 17 is of particular interest to facilitate in the visioning process.	Tool Box	Chapter 17—An Introduction to the Problem Solving Process; Thinking Critically; Defining and Analyzing the Problem; Analyzing Root Causes of Problems: The "But Why?" Technique; Analyzing Social Determinants of Heath and Development; Generating and Choosing Solutions; and Putting Your Solution into Practice.	The questions and approaches outlined in Chapter 17 are not specific to any one or group of quality of life categories. The questions and approach taken would require that the facilitator alter the questions to fit the needs of the task at hand. At that time, the quality of life categories would be identified.	This tool could be used by transportation practitioners or other parties facilitating a community visioning process. The easy-to-use tools and checklists can be altered as needed to be context-specific and can be used to ensure that the visioning process identifies the true issues at hand and captures the voice of affected parties.	Neighborhood or Community. It also could be used on the project or corridor level, depending on the size of the project area. If used in a larger environment, visioning sessions may be needed in different parts of the project area.	Urban, Suburban, or Rural	N/A	The level of effort to use part or all of these tools is small. The tools would primarily be used during group visioning sessions and would not require homework on the part of the participant. Facilitators may need to alter the questions to be suitable for the discussion.	http://ctb.ku.edu/en/tablecontents/index.htm (Community Tool Box), http://ctb.ku.edu/en/tablecontents/chapter_1017.htm (Chapter 17 of Community Tool Box)

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
What's Behind Resident Quality of Life Perceptions	This is an on-line resource that hosts a wealth of information about quality of life considerations, performance measures, and survey instruments. It identifies current initiatives and has a subscription survey service that could be used by a transportation agency or government agencies looking to better understand the environment in which they are working.	On-line Resource and Subscription Services for Transportation Agencies, Government Agencies, and Local Groups and Organizations	Since this is an on-line resource, the user can scroll through the various components relevant to their interest area	Economic, Sociocultural, Land Use, Mobility, Public Health, Natural Environment, and Financial Considerations	Materials available on the web site can be referenced to understand the challenges when dealing with specific quality of life considerations and how they contribute to the overall experience enjoyed by residents, ways to effectively reach populations to assess the importance of a consideration(s), and checklists that can be augmented to suit the environment in which visioning activities are taking place. The best practices component of each quality of life consideration can assist in the development of outreach activities and visioning exercises appropriate for the context. The paid survey feature can be used early in project development to assess how a community values certain quality of life consideration(s), which can be used in the design of visioning activities and later incorporated into project design. Sample surveys can be downloaded for free and altered to appropriately fit the environment in which the visioning process will occur.	Resources available on the web site are applicable for use on the community and up through the multistate level depending on the information being sought. The user would need to make sure that the resource they are referencing would be applicable on that particular geographic level.	Urban, Suburban, or Rural	The topical scope of this resource covers the spectrum of quality of life considerations ranging from healthy lifestyles and physical activity to brownfields reclamation to environmental justice.	The level of effort necessary to use this resource can vary significantly. Since it serves as a repository of information, the user could simply use the resources as a reference, conduct an effective practices review, or extract relevant materials such as checklists to be used during a visioning exercise. If purchased, the NCS prepares reports using customized survey findings.	http://icma.org/main/ns.asp?nsid=4275&hsid=3

Table B.1. Community Context Tools (continued)

Name of Resource	Description	Type	Tool Organizational Components	Quality of Life Category	Tool Applicability	Geographic Scale	Land Use Characteristics	Topical Scope	Level of Effort	Website Link
Social Capital Community Benchmark Survey Short Form	The survey was designed to be used by state or Federal government agencies interested in surveying constituents on social capital, smaller communities that may not have the time, budget, or staff to use the long-form survey, and communities and nonprofits that already may be conducting surveys and want the short form to act as supplemental information on social capital. The survey is designed to be used "pre" and "post" project to determine if social capital has changed.	Survey to be administered to community residents.	Community Cohesion, Public Affairs, Political Interest and Involvement, Recreational Activities, Faith-Based Involvement, Charitable Giving, Social and Economic Characteristics	Sociocultural	A transportation agency or local group or organization—either together or separately—could use this tool as part of a visioning exercise to better understand how people feel about the environment in which they live and how a proposed project may affect the community. This tool could be used during the early stages of decision-making to design a project that does not adversely affect the existing social capital in a community. It also can be used to determine where trust-building among parties may need to be undertaken for the success of the project. A transportation agency can work with other parties and the public to design a project that also is not functional but supports activity that may lend to increased community cohesion and social capital.	This tool could be used in any geographic setting.	Urban, Suburban, or Rural	Personal Sense of Safety, Civic Engagement, Community Cohesion and Social Networks, Social Capital, and Faith-Based Institutions	The level of effort necessary to complete this varies and is in part dependent on sample size. The short-form survey could be used as is but it also should be augmented as necessary to ensure that questions are appropriate for participants. It phone survey or in a group environment where people fill out their own survey. Time requirements decrease significantly when administered to a group rather than individual. The survey could be administered by the sponsor agency or contracted out to a data and market research company, significantly changing the level of effort required to complete this task. A variety of queries can be run once the information is in the database. The level of effort needed to run queries and prepare accompanying documentation will depend on agency interests. If used as part of a visioning exercise at a public meeting or other outreach activity, the level of effort would be small.	www.hks.harvard.edu/saguaro/pdfs/socialcapitalshortform.pdf (short form), www.cfsv.org/communitysurvey/docs/survey_instrument.pdf (long form)

(continued from page 32)
score quality of life considerations within their community and/or project corridor. Findings from this exercise can be used to help create an open dialogue between and among parties about how the community currently perceives the environment in which they live and design transportation facilities that are context sensitive.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life category of this resource is land use.

TOOL APPLICABILITY
A score sheet for measuring urban design qualities is found at the end of the manual. The manual is organized in the same order as the scoring sheet to inform the participant on qualities and attributes that should be observed during the site visit and assist during completion of the scoring sheet. The manual and scoring sheet can be used as a visioning tool by individuals and communities to think about the urban design qualities present in their environment and can help initiate thought and conversation of desired improvements.

TOOL ORGANIZATIONAL COMPONENTS
Imageability, enclosure, human scale, transparency, and complexity.

TYPOLOGY
Typology—such as geographic scale, land use characteristics, topical scope, and level of effort—as a tool can be used on the project, neighborhood, corridor, or community scale. This tool can be used in an urban, suburban, or rural environment. The topical scope is land use, sensory factors, aesthetic quality, and urban design. The level of effort to complete the scoring sheet is small to moderate. This is a tool to be used by local agencies, stakeholders, and concerned citizens as a way to score the local landscape. Findings from this can be presented to a transportation agency to help design transportation facilities that are context sensitive and support quality of life considerations that are valued in a community. Participants should review the manual prior to the site visit to understand what is being asked of them and the proper way to complete the scoring sheet. A photo journal also should be kept. Visual attractors and detractors can be presented to the transportation agency as a way to convey attributes that the community believes contribute (positively or negatively) to their overall quality of life. A pen, the scoring sheet, and calculator are needed to complete this exercise.

- Website Link—www.activelivingresearch.org/node/10637 (Manual and Scoring Sheet);

- www.activelivingresearch.org/files/FinalReport_071605 .pdf (Final Report); and
- www.niehs.nih.gov/news/events/pastmtg/2005/esoay/ docs/ewing-ppt.pdf (MS-PowerPoint).

PolicyMap, Geographic Information Systems Mapping Services and Software

Principal Author/Authors: The Reinvestment Fund
Publisher: The Reinvestment Fund
Date of Publication/Presentation/Access: 2009
Website Link: www.policymap.com

Description

PolicyMap was designed as a tool to better inform decisions through the use of current and trend data. It utilizes cutting-edge technology that allows proposed investments to be mapped, relates them to other investments, demonstrates how neighborhoods have changed where the agency has made past investments, and shows where future investments would make the most sense. Drawing data from a number of state and federal organizations, it has the capacity to map and report information on approximately 4,000 indicators related to demographics, real estate, crime rates, health, schools, housing affordability, employment, energy, and public investments. Some indicators are available all the way down to the Census Block Group level while others are only available for larger geographic areas.

This application can be used by transportation agencies, local groups and organizations, and communities to obtain a wide range of data (in map, table, or report format) to gain a better understanding of the environment in which a transportation facility is proposed to be constructed or rehabilitated. Because each series of reports is customized based on the user request, the data can quantify a number of quality-of-life considerations. However, in order to fully encapsulate the environment in which a transportation facility would be constructed or rehabilitated, this data should be supplemented with qualitative information on those quality-of-life considerations valued by the community.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
Depending on the request of the user group, given the vast capabilities of this resource, there are many quality-of-life categories that could be satisfied through its use. This could include economic, public health, natural environment, socio-cultural, and land use.

Given the vast diversity of information that can be extracted from this tool, it can assist in the visioning process of most quality-of-life considerations.

TOOL ORGANIZATIONAL COMPONENTS
Because this is a web-based tool, the user can scroll through the information in the order that he or she chooses.

TYPOLOGY
Depending on the data being requested, this tool can be used on the project, neighborhood, corridor, community, regional, state, or multistate level. This tool can be used in an urban, suburban, or rural environment. This is a subscription service, but it allows for a 30-day free membership trial. The free membership trial only includes public information and standard mapping. The paid subscription service would allow the user to obtain quantified information for the large majority of quality-of-life considerations. Because this tool is considered as an alternative to creating in-house GIS maps, the level of effort to use this tool can be extensive, depending on the resources available to the user group. An Excel file with the land use type, address, and name of establishment type must be included for each feature that will be mapped. Agencies and groups seeking information already may have a GIS dbf file, which could easily be converted to an Excel file and relevant information extracted. Transportation agencies can work with local groups and organizations, stakeholders, and communities to have desired indicators mapped. Additional data may be required to map desired features.

Active Community Environments (ACE) Community Assessment

Principal Author/Authors: Eat Smart, Move More NC, adapted from Michigan's "Promoting Active Communities Award"
Publisher: Eat Smart, Move More NC
Date of Publication/Presentation/Access: 2003
Website Link: www.eatsmartmovemorenc.com/ACEs/ ACEs.html

Description

This resource provides guidelines for public health practitioners, community groups, advocates, and grassroots organizations for getting involved in land use and transportation planning. The ACE's Community Assessment tool assists the user to identify ways to encourage and support pedestrian and bicycle movements. The tool is divided into five sections: policies and planning for nonmotorized transportation; pedestrian and bicycle safety and procedures; community resources and physical activity; schools; and public transportation. Each section has a customized questionnaire to be completed by the user. Answers, based on a yes or no response or Likert scale point system, are scored, and the level of excellence is determined. The ACE's Community Assessment tool and the levels of excellence can be used to benchmark for community progress. It can be used at a later date to determine if the levels of excellence have increased from those benchmarked before improvements or enhancements were made. The tool can be used as a platform for health care practitioners and other user groups to collaborate with transportation agencies to identify feasible locations for new paths and linkages that support bicycle and pedestrian movements.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are financial, public health, land use, and mobility.

TOOL APPLICABILITY
This tool can be used as the foundation for which public health practitioners or other users and transportation agencies work to encourage and support bicycle and pedestrian movements. This approach can be used as a way to construct new linkages in preferred locations or incorporate desired enhancements into roadway design.

TOOL ORGANIZATIONAL COMPONENTS
These components include policies and planning for non-motorized transportation; pedestrian and bicycle safety and procedures; community resources for physical activity; schools; and public transportation.

TYPOLOGY
This tool can be used on the project, neighborhood, corridor, or community scale. The community context of this tool is urban, suburban, or rural. The topical scope addressed through the use of this tool includes budget realities, educational opportunities, physical fitness, safety, access and mobility, recreational resources, and land use. The level of effort necessary to accurately complete the ACEs Community Assessment is relatively small. The user would need to make a few phone calls to municipal officials and school representatives to obtain information about planning and policies with respect to nonmotorized transportation, zoning, educational programs promoting physical activity, and injury prevention. The remaining sections of the assessment would be completed through a site visit.

Active Neighborhood Checklist

Principal Author/Authors: Prevention Research Center, St. Louis University School of Public Health
Publisher: St. Louis University
Date of Publication/Presentation/Access: 2006
Website Link: http://prc.slu.edu/Documents/Active_Neighborhood_Checklist.pdf

Description

This tool was designed to assess street-level features of a neighborhood that are thought to be related to physical activity behavior. It can be used to produce descriptive statistics about an area, to raise awareness about the environment in supporting or discouraging physical activity, and/or to mobilize the community to advocate for enhancements or improvements. The form was designed to be short, ensuring that it would be user-friendly for a variety of community stakeholders. It includes five general areas: land use; public transit; street characteristics; quality of the environment for a pedestrian; and paths or greenways for walking and bicycling.

Users are referred to other data sources or more extensive audit tools on land use, quality and maintenance of recreational facilities, street connectivity, traffic speed and volume, intersection characteristics, architecture, and crime statistics. The checklist encourages users to comment on how they perceive the environment and to take photographs of important features and visual attractors and detractors. The area being assessed should be broken into small segments, generally a block or two. Each segment should take approximately 5–10 min to complete. The checklist is relatively straightforward and requires that the participant check the appropriate box identifying the presence of different land uses, types of commercial establishments, and roadway conditions. Transportation agencies or local groups and organizations can distribute the form to community members for completion. Results can be compiled in a master document and shared with the sponsor transportation agency. Findings from this exercise can help the transportation agency conceptualize those amenities and features that are valued by the community and those that are not.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The main quality-of-life categories of this resource is land use and mobility.

TOOL APPLICABILITY
This tool can build trust between the community and the transportation agency and can be used to assess the diversity of land uses and roadway features in need of improvement or enhancement. Findings can be used to identify land uses that could be introduced to the area to make it more diverse and encouraging of nonvehicular movements. The checklist also would help identify those areas in need of roadway improvements and/or safety and security precautions such as lighting and crossing signals.

TOOL ORGANIZATIONAL COMPONENTS
Land use, public transportation, street characteristics, quality of the environment, and pedestrian and bicycle movements.

TYPOLOGY
This tool can be used on the project, neighborhood, or community scale. The community context of this tool is urban, suburban, or rural. The topical scope addressed through the use of this tool includes land use and mobility. The level of effort necessary to use this tool is small. The participant should be given a brief tutorial on how to complete the form and encouraged to write down additional thoughts and take photographs of visual attractors and detractors. No other data are necessary to complete this exercise.

Manual for Streets—Residents' Perception Survey

Principal Author/Authors: Department of Transport, United Kingdom
Publisher: Department of Transport, United Kingdom
Date of Publication/Presentation/Access: 2006
Website Link: www.communities.gov.uk/documents/planningandbuilding/pdf/322449.pdf

Description

This tool can be used by a transportation agency to better understand how residents perceive the environment in which they live. It should be used early in the decision-making process because it will help build trust between residents and the transportation agency; it will also jump-start the residents' thought processes about possible ways to improve their environment.

The survey is organized in three sections: household characteristics; street characteristics; and roadway safety and personal safety/crime issues. The survey begins by asking general households questions such as gender, age, household type, number of cars in the household, and duration at current address. In the second section, "About Your Street," the survey requires that the participants think about the positive and negative features of their street, ease of traveling on the street by various modes of transportation, and concerns about road and personal safety. Concerns about road and

personal safety include lack of nonmotorized linkages, traffic volumes and speed, and poor street lighting. In the last section, "Road Safety and Personal Safety/Crime Issues," participants are asked to consider the main threat to safety on their street, how safe they think their street is to support pedestrian and bicycle movements of children (both supervised and unsupervised) and adults, and incidents or near incidents. Lastly, participants are asked to consider what changes (safety, access, and aesthetic) they would like to see on their street.

The survey is relatively short and straightforward. There are a number of matrices that allow the participant simply to check the appropriate box. Space also is provided for additional feedback. Depending on the geographic area that the transportation agency is trying to capture, the survey could be distributed to children in schools to be delivered to parents or left in residents' mailboxes. The survey could be mailed or completed online. By offering a desirable raffle prize and a relatively short time commitment, the survey encourages community participation.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are land use and public health.

TOOL APPLICABILITY
The tool can be used by transportation agencies to understand how a community perceives the environment in which they live. Possible improvements to the street, as suggested by participants, should be considered in the planning and design phase of planned improvements. The incorporation of such can help design a transportation facility that is both functional and practical to the community and the sponsor agency.

TOOL ORGANIZATIONAL COMPONENTS
Household characteristics, street characteristics, and roadway safety and personal safety/crime issues.

TYPOLOGY
This tool can be used on the project, neighborhood, corridor, or community geographic scale. The tool can be used in an urban, suburban, or rural setting. The topical scope addressed through the use of this tool includes public safety, crime, and land use. The level of effort necessary to use this tool is small. The transportation agency would distribute the survey to area residents and prepare a master document summarizing participant results. No data would need to be collected by the participant prior to completing the survey. It is anticipated that it would take participants less than 1 h to complete the survey.

Walkability Checklist and A Resident's Guide for Creating Safe and Walkable Communities

Principal Author/Authors: Partnership for a Walkable America and the Federal Highway Administration
Publisher: Partnership for a Walkable America and FHWA
Date of Publication/Presentation/Access: July 2009
Website Link: www.walkableamerica.org/checklist-walkability.pdf (Checklist); http://safety.fhwa.dot.gov/ped_bike/ped_cmnity/ped_walkguide/residentsguide.pdf (A Resident's Guide for Creating Safe and Walkable Communities)

Description

This tool is designed for community members to determine if their neighborhood is a friendly place to walk. It is recommended that participants, with their child if they have one, take a walk through the neighborhood to complete this one-page checklist. To start, a place to walk such a route to school, a friend's house, a recreation or open space area, or somewhere else that one might walk should be selected. The participant should read over the checklist prior to the walk and, while on the walk, check observed conditions for each question and note the location of things they would like to see changed. At the end of the walk, each question should be given a rating using a Likert scale of 1 (awful) to 6 (excellent). A range of scores is presented on the checklist for participants to see how suitable their neighborhood is for walking. The participant is then asked to consider ways to improve the community's score both in the short and long term. The checklist can be completed in the future to determine how improvements and/or enhancements have contributed to the overall quality of walking conditions in the area.

The checklist is presented in five short sections that ask: "Did you have room to walk?"; "Was it easy to cross streets?"; "Did drivers behave well?"; "Could you follow safety rules?"; and "Was your walk pleasant?" The next part of the checklist, which is presented in the same order as the previous questions, informs participants of what they should be looking for while on their walk and ways to make immediate improvements to the area, such as trimming of bushes impeding pedestrian movements, sharing of findings with local public works departments, or leaving a letter on someone's car asking them not to park there. Other improvements that can be made if the participant is willing to invest more time in the effort also are identified. Recommendations include speaking at community board meetings, petitioning for streetscape improvements or enforcement of traffic violations, and requesting increased police protection, among other suggestions. It includes a list of agencies that can be contacted that can provide additional information and recommendations on ways to improve community walkability.

A more detailed description to be referenced by participants before and after the initial assessment to assist in the identification of roadway conditions and features detracting from pedestrian activity is the FHWA guidebook "A Resident's Guide for Creating Safe and Walkable Communities." It includes facts, ideas, and resources to help residents learn about roadway conditions and traffic problems that adversely affect pedestrian movements, and presents ways to help address these problems to make the environment more supportive of pedestrian activity. Similar to the Walkability Checklist except in greater detail, the guidebook includes information on identifying problems, taking action to address pedestrian concerns, finding solutions to improve pedestrian safety, and resources to obtain additional information.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are land use, safety, and mobility.

TOOL APPLICABILITY
This tool can be used by participants to assess the walkability of their community. It provides recommendations for making improvements and generally considers the amount of time that would be required for such improvements. Participant findings, either separately or combined, can be shared with municipal officials to advocate for improvements.

TOOL ORGANIZATIONAL COMPONENTS
Did you have room to walk? Was it easy to cross streets? Did drivers behave well? Could you follow safety rules? and Was your walk pleasant?

TYPOLOGY
This tool would most likely be used on the neighborhood or community geographic scale. It also could be used on the project level if the project area is not significantly large. The tool would be appropriate for an urban, suburban, or rural setting. The topical scope addressed through the use of this tool includes safe travel, accessibility, and land use. The level of effort necessary to use this tool is small. The participant is asked to review the checklist prior to going for a walk along a self-selected route. It is anticipated that the walk and checklist could be completed in about an hour. More time would be necessary should the participant elect to advocate for improvements or complete the checklist in more than one location. No additional data are required.

West Peterborough Road Audit

Principal Author/Authors: Peterborough Transportation Management

Date of Publication/Presentation/Access: July 2009
Website Link: www.berger-nc.com/cssresources/Community Context/WestPeterboroughRoadAudit_NHDOT_PPS.pdf

Description

This tool can be used by either transportation practitioners or area residents to evaluate how well streets and adjacent land uses are performing as Places, and to identify opportunities for future enhancements. It can be part of a group visioning exercise in which participants complete the audit individually and then reassemble as a group to discuss, or it can be completed as a group. The participant should consider existing rather than future conditions yet identify aspects that could be problematic in the future. Findings from this audit could be incorporated into a Vision Statement to help ensure that both the short- and long-term objectives of a proposed improvement are met. The audit is based on the Place Audit developed by the Project for Public Spaces, Inc., and on training provided by the New Hampshire Department of Transportation.

The first part of the audit asks the participant to evaluate how well the site performs as a Place from the perspective of someone who lives or works in the area. This part of the audit is broken into four subsections: access, linkages, and information; uses and activities; comfort, image, and sociability; and safety. There are a series of questions in each subsection that ask the participant to agree or disagree on a scale of 1 to 4 about the question being asked. At the end of each subsection, the scores are tallied and later combined for an overall score.

The first subsection includes questions related to access, linkages, and information, including pedestrian and bicycle movements, street crossings, and signage. The second subsection asks about current land uses and accessibility. The third focuses on streetscapes, signage, natural and scenic features, and whether the place is welcoming as a gathering location. The last subsection addresses roadway safety, including lighting, sight lines, and roadside distractions. The audit encourages participants to list other problems that may have been identified. Participants are then asked to prioritize the problems and take into consideration budgetary constraints. Such constraints should not be the primary reason why a project is ranked on either the bottom or top of the list but it should be considered because smaller budget problems often have the likelihood of being addressed within a shorter period of time. Lastly, participants are asked to develop a problem statement, a draft vision statement, and draft recommendations for the place they have just observed.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are land use and mobility.

The tool can be used by transportation agencies and area residents to assess an area in need of improvement. The use of the audit tool while on a site visit can help in the identification and prioritization of needed improvements. Not only can these findings be used to prepare Problem and Vision Statements and draft recommendations, but they also can be used by the transportation agency to better understand the environment in which they are working. If completed by a practitioner, he or she is asked to complete the audit from the perspective of someone who lives or works in the area, and therefore is encouraged to take off the practitioner hat and think outside the box. The use of this tool can help inform the decision-making process and should be used early in project development.

TOOL ORGANIZATIONAL COMPONENTS
Access, linkages and information; uses and activities; comfort, image and sociability; safety, additional comments, project prioritization, and next steps.

TYPOLOGY
This tool can be used on the project, neighborhood, corridor, or community geographic scale. The tool can be used in an urban, suburban, or rural setting. The topical scope addressed through the use of this tool includes land uses and activities, access and mobility, safety, and budget realities. The level of effort necessary to use this tool is small. A short site visit is necessary to complete the audit form. The assessment can be conducted either in a group or individually. Findings should be summarized and incorporated into a vision statement. No preliminary research or data collection is necessary to complete this effort. Photographs should be taken to document positive and negative features and attributes in the area of observation.

Community Context Audit

Principal Author/Authors: Pennsylvania Department of Transportation
Publisher: Pennsylvania Department of Transportation
Date of Publication/Presentation/Access: 2005
Website Link: http://65.207.30.22/css/www/community.php; www.oakgov.com/wireless/assets/docs/community_context_audit.pdf (Another link but not the official one)

Description

The audit form is intended to be a guide for practitioners to identify various community characteristics that make each transportation project location unique to its residents, its businesses, and the public in general. Findings from the audit will help to define the purpose and need of the proposed transportation improvements based upon community goals and local plans for future development. It is designed to take into account the community's history or heritage, present conditions and anticipated conditions.

The practitioner is asked to consider the interaction of persons and groups within the community when considering factors such as mobility and access (vehicular, nonvehicular and transit modes), safety, local and regional economics, aesthetics, and overall quality of life. Each question asks the practitioner to check *yes* or *no* based on the presence of natural resources, land use types, community characteristics, among other features and their relative importance both in the present and the future. Since practitioners are often approached by area residents when conducting a field visit, these interactions, including questions about the proposed project, should be documented and submitted with the form. The practitioner also is asked to take photographs and document potential issues revealed during the audit that are not included on the form.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are economic, natural environment, public health, sociocultural, land use, mobility, and financial considerations.

TOOL APPLICABILITY
Findings from the audit will help to define the purpose and need of the proposed transportation improvements based upon community goals and local plans for future development. It also may reveal features of critical importance to a community that may have been previously unidentified. Results from the audit can be used to refine project design or lead to the inclusion of other enhancements that can make the transportation facility fit more harmoniously into the community. Findings also can help inform public involvement activities where mitigation may be necessary.

TOOL ORGANIZATIONAL COMPONENTS
Community characteristics/land use, infrastructure assessment, neighborhood culture, aesthetics and street amenities, economic development, and community planning.

TYPOLOGY
This audit form can be used at the neighborhood, community, project, or corridor level. It can be used in a rural, suburban, or urban environment. The topical scope of this audit includes business growth and investment, safety, historic, cultural, and scenic preservation, open space, faith-based institutions, cultural amenities, land use and activities, sustainable mixed

growth, access and proximity to amenities, aesthetic quality, ADA compliance, modal choices, and policy initiatives. The level of effort necessary to complete the audit is moderate to high. A field assessment is required as well as the review of municipal documents.

Community Core Indicators of Activity Friendliness—Telephone Questionnaire

Principal Author/Authors: Prevention Research Center, St. Louis University School of Public Health
Publisher: St. Louis University
Date of Publication/Presentation/Access: 2003
Website Link: http://prc.slu.edu/Documents/CommCore DraftSurvey.pdf

Description

This tool was designed to find out how residents perceive their community. The questionnaire is estimated to take approximately 20 min to complete and must be done so by someone 18 years of age or older. The four sections of the questionnaire—health, community environment, behavior, and individual and interpersonal supports and constraints— were designed to present a detailed look at how a community views its physical surroundings and if this environment is supportive and encouraging of physical activity.

The first section, health, simply asks the participants how they perceive their general health. The second section, community environment, is broken into a number of sections, which asks participants about their street and areas within a 5- or 10-minute walk of their home, depending on the question. It includes questions related to physical activity, recreational resources, land use, street safety and accessibility, neighborhood organizations, social environment, aesthetics, and food access. The next section, behavior, primarily focuses on physical activity, encouraging the participants to think about eating habits as well as the amount of physical activity they get on a daily basis at the workplace and at home, and the amount of planned exercise. The last section asks about interest in physical activity and the physical layout of the participants' workplace, whether it supports physical activity (i.e., accessible stairwells), and promotion of physical activity by the employer. It also includes a short section on demographic and economic characteristics.

In order to easily record participant responses, a numerical value is associated with possible responses to each question. The numerical values are not a rating system but rather a tool by which to easily and efficiently enter information that has been collected into a database. Having the information in a database allows for specified queries, including cross-tabular reports.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are public health, natural environment, sociocultural and land use.

TOOL APPLICABILITY
This tool can be used by public health advocates or local agencies and organizations to better understand how residents perceive their environment as well as how residents value physical activity and the ability to move freely in their community as part of their everyday lives. Findings can be shared with transportation practitioners during project development, so that proposed roadway improvements include pedestrian and bicycle linkages to locations frequented by area residents to support and encourage physical activity.

TOOL ORGANIZATIONAL COMPONENTS
Health, community environment, behavior, and individual and interpersonal supports and constraints.

TYPOLOGY
The geographic scale of this tool would be neighborhood or community. It also could be used at the project or corridor level, if the project area is not significantly large. This tool would best be used in the urban or suburban setting but also could be used in a rural environment. The topical scope of this tool includes recreational opportunities, physical fitness, community cohesion, land use and activities, safety, aesthetics, food access, and mobility. The level of effort to complete this effort is moderate. It is recommended that a flier be sent to people's homes or appear in a local publication to inform residents of the upcoming study and request their participation. Contact lists must be obtained prior to the start of the exercise. The interviewer should anticipate that a certain percentage of people will not want to participate. The higher the success rate of people agreeing to participate, the less time it should take to obtain the desired sample size. The questionnaire will take about 20 min, and findings should be entered into the database at the end of each surveying session. The interviewer also should explore the possibility of using a tablet or computer to enter the answers while administering the survey to save time and money. Alternatively, the questionnaire could be sent in the mail or completed at a public meeting. The existing questionnaire can but does not need modification to be administered in different geography areas.

Making Your Community Walkable and Bikeable: A Guidebook for Change

Principal Author/Authors: University of North Carolina School of Public Health, Health Behavior and Health Education

and the North Carolina Department of Health and Human Services, Division of Public Health.

Publisher: University of North Carolina

Date of Publication/Presentation/Access: 2001

Website Link: www.eatsmartmovemorenc.com/ACEs/Texts/070317_wabsa_guidebook.pdf

Description

This resource is designed to help community groups, organizations, and concerned individuals learn how to work with transportation planners and other agency officials to enhance the local road network to be more supportive of pedestrian and bicycle movements. The guidebook provides a detailed set of instructions for forging cross-party relationships, assessing the suitability of local roads for nonvehicular movements, and developing an improvement plan. It stresses the importance of community vision in the local planning process to build better, stronger communities by improving the physical environment—a challenge that can only be achieved by creating an environment that not only promotes but supports physical activity. The ease by which people can safely access linkages that support nonvehicular movements increases the potential for people to use alternate modes for short trips.

The guidebook is a step-by-step navigation tool to be used by local groups and concerned citizens to effectively contribute to the planning process. The "soup to nuts" approach outlined in the guidebook allows for local parties to have their community vision incorporated into municipal objectives. It identifies government agencies and officials who should be contacted, important data needs, such as traffic counts and GIS maps, general design principles, ways to conduct a walking or bicycle assessment, including draft templates, how to rate the use of each resource, and other attributes that contribute—positively or negatively—to the physical environment.

Found in the appendices are one-page walkability and bikability audit forms that can be used individually or as part of a larger exercise for residents to assess existing conditions and identify areas in need of improvement. The guidebook includes a discussion of how to use these forms and other data needed (i.e., annual traffic counts) for their completion. The audit forms, which are similar in their presentation style, are designed for road segments less than 2 mi in length. Data collected and field observations are included as part of a larger formula that presents an overall walking or bicycling suitability score for the area of observation. Findings and recommendations should be presented to municipal officials and/or transportation agencies to adopt new policy initiatives and to either implement desired improvements or incorporate them into a larger project design.

Additionally, the guidebook introduces policy- and design-related issues that must be considered when preparing an implementation plan (i.e., ADA compliance), ways to leverage local officials to advocate on the behalf of the community, and a wealth of resources from other agencies to better inform the planning process. In addition to helping active participants establish a framework by which to achieve their objectives, the guidebook identifies techniques for engaging nonactive participants. It provides a template to be used when making phone calls to local organizations, text that can be used for a press release inviting people to attend a workshop session, and checklists for workshop organizers. The impetus of local participants to undertake such a detailed assessment of the physical environment that surrounds them clearly states the importance of these resources to positively contributing to the quality of life enjoyed by area residents. Certain elements of the guidebook can be extracted and used independently if a full, detailed assessment is not desired.

Applicability to the C08 Project

QUALITY OF LIFE CATEGORY
The primary quality-of-life categories of this resource are public health, financial considerations, and mobility.

TOOL APPLICABILITY
The guidebook is a step-by-step navigation tool to be used by local groups and concerned citizens to effectively contribute to the planning process. The "soup to nuts" approach clearly outlined in the guidebook informs residents about land use features that generally prohibit pedestrian movements and how the tool can help in the formation of new policy initiatives that lead to the enhancement of roadway conditions to support increased pedestrian activity.

TOOL ORGANIZATIONAL COMPONENTS
Getting Ready, Walking Assessment, Bicycling Assessment, Using the Assessment Results to Make Change Happen, and Definitions, Resources, and Appendices.

TYPOLOGY
The geographic scale of this guidebook would be most suitable on the neighborhood or community level but also could be used on the project and corridor level depending on the size of the study area. The audit forms referenced above should be used in project areas of less than 2 mi in length. The guidebook and accompanying materials such as the audit forms can be referenced by residents in rural, suburban, and urban environments. The topical scope of this resource includes safe travel, mobility, and policy initiatives. The level of effort necessary to complete all of the steps set forth in the guidance manual is high. In addition to needing to mobilize

residents over an extended period of time, a considerable amount of additional information would be necessary. The success of this effort would be largely dictated by strong and continuous local leadership. The audit forms and other materials found in the appendices could be used as a single exercise and would not require much time. The collection of annual traffic data would be the most time-consuming component of completing the audit forms. Otherwise, the walkability and bikeability audit forms found in the appendices could be completed in a few hours. Findings and recommendations can be shared with municipal officials and transportation practitioners.

Context Screening Tool

Principal Author/Authors: Tennessee Department of Transportation
Publisher: Tennessee Department of Transportation
Date of Publication/Presentation/Access: 2008

Description

This tool, which is based on the Project for Public Spaces, Inc., Place Audit, is designed to evaluate how well streets and adjacent land uses are performing as Places, and to identify opportunities to enhance them in the future. The successful completion of the exercise requires both the participation of the transportation agency and area residents.

Because the first portion of the screening tool provides background information or baseline conditions for the place being observed, it is anticipated that it would be completed by a local planner or employee of a local group or organization. Background information includes demographic characteristics, community facilities, natural, cultural, visual/aesthetic, and historic features, and the identification of regional needs and uses of transportation facilities. It would be helpful to review this information before the site visit, but this part of the exercise could be completed after as well. If completed after participants have performed the place audit, comments such as those related to valuable cultural or historic resources, for example, could be recorded in this section.

The citizen participation portion of the screening tool begins with a site visit. Similar to the exercise in *Place Game—Placemaking through Transportation,* participants evaluate neighborhood characteristics using a Likert scale. Assessment areas include human and social characteristics, natural/cultural/visual characteristics, transportation/mobility characteristics, and economic and land use characteristics. The inclusion of these quality-of-life considerations in the exercise helps participants better understand the overall context of these elements and how they collectively contribute to an environment. Participants are then encouraged to identify additional problems and ultimately prioritize the order in which they would like to see improvements made.

After the site visit, participants can discuss findings and prioritize those areas in the greatest need of improvement to enhance the overall environment. Consensus can be used to formulate a Problem or Vision Statement. This can be shared with the transportation agency proposing improvements or enhancements. This information coupled with the Basic Information to Understand the Study Area can inform the practitioner of the challenges and opportunities in a particular community. Findings can be used to refine design alternatives to avoid or minimize adverse project-induced impacts, identify appropriate mitigation measures if necessary, or incorporate desired enhancements into project design.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
Sociocultural, mobility, land use, economic, and financial considerations.

TOOL APPLICABILITY
This is a relatively easy exercise that can be initiated by local stakeholders or a transportation agency. It is a participatory tool designed to reveal a community's vision for a place. Findings can be used to refine design alternatives to avoid or minimize adverse project-induced impacts, identify appropriate mitigation measures if necessary, or incorporate desired enhancements into project design. The use of this tool early in the decision-making process will engage residents and build their trust of the sponsor agency.

TOOL ORGANIZATIONAL COMPONENTS
Review the basic information to understand the study area, evaluate the place to identify problems, add any other problems you see, and prioritize the problems you have identified.

TYPOLOGY
This tool would be most appropriately used in a community or neighborhood. It also could be used for a project or corridor if the area is not large. For larger projects, the study area can be broken into segments, and the tool could be completed by residents in each respective segment. It could be used in a rural, suburban, or urban environment. The topical scope of this tool includes access and proximity to resources, mobility, aesthetic quality, historic, cultural, and scenic preservation, land use and activities, economic health, and budget realities. The level of effort necessary to complete this exercise is small. Participants would need a brief tutorial on how to use the screening form. The completion of this tool

can be used to facilitate group dialogue and other visioning activities.

Community Effects Considerations

Principal Author/Authors: Florida Department of Transportation
Publisher: Florida Department of Transportation
Date of Publication/Presentation/Access: 2005
Website Link: www.berger-nc.com/cssresources/Community Context/CommunityEffectsConsiderations_FDOT.pdf

Description

This tool is a guide designed to help practitioners understand the key criteria, data sources, and analytical methods that should be considered when assessing potential impacts to the human environment. The tool, which contains a wealth of information, can be referenced during all stages of transportation decision making, however, it may prove the most useful during project development when assessing for potential impacts to the human environment. It provides a detailed overview of how to conduct field research, and a systematic inventory of community conditions, resources, and assets provides the basis for determining the appropriate scope of work (i.e., level of analysis) as well as a means for defensibly supporting findings characterizing the significance of impacts. A table demonstrates the different impact areas included in the tool. Data sources and key analysis techniques used to identify potential impacts are included for each subcategory. An additional discussion of this tool can be found in the Community Effects section of the literature review.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The quality-of-life categories for this tool include economic, public health, sociocultural, land use, and mobility.

TOOL APPLICABILITY
This tool can be referenced by the practitioner to better understand the data sources and analysis necessary to evaluate potential impacts. The use of the various components of this tool early in the decision-making process can help streamline a project and save time and money. A full understanding of potential impacts and the environment in which a project is proposed to be sited also can help refine design alternatives and/or customize outreach efforts and measures to avoid, minimize, or mitigate adverse effects that are appropriately suited to the affected community.

TOOL ORGANIZATIONAL COMPONENTS
The tool organizational considerations are: sociocultural, economic, land use, mobility and access, sensory and aesthetic, safety, and displacement.

TYPOLOGY
The geographic scale of this tool is primarily neighborhood or community. It also could be used on the project or corridor level if not too large. This tool can be used in an urban, suburban, or rural environment. The topical scope of this tool includes tax base, property values, emergency services, safety and security, community cohesion, cultural amenities, faith-based institutions, land uses and activities, sensory factors, aesthetic quality, mobility and access to amenities, recreation, and mobility of disadvantaged populations. Since this is a reference tool, the level of effort to use it in part or in full can vary widely. As a reference tool, it is short and easy to understand which tools and techniques should be used to assess various impact areas.

Economic Development and Redevelopment: A Toolkit for Building Healthy, Vibrant Communities

Principal Author/Authors: Feldstein, Lisa M., Rick Jacobus, and Hannah Burton Laurison
Publisher: Public Health Law and Policy
Date of Publication/Presentation/Access: 2007
Website Link: www.healthyplanning.org/ecdev_toolkit/EcDevToolkit.pdf

Description

This toolkit is designed to inform nutrition and public health advocates on ways to improve food access in low-income neighborhoods. It also is a good reference for transportation and economic development practitioners working together to rebuild communities. It provides an overview of techniques and tools that can be used for effectively engaging communities in land use decisions during economic (re)development activities. These tools identify ways to attract full-service grocery stores, increase the selection of healthy foods in existing retail establishments, attract locally owned businesses that offer healthy foods, and site farmers' markets and community gardens in practical locations.

The lack of access to healthy food is one of the primary contributors to obesity and other health-related issues. The flight of middle- and upper-income families to the suburbs has attracted large supermarkets, often times at the expense of poorer communities where residents have less spending power. The departure of these services from low-income

communities has contributed to the overall decline in the physical health of area residents. The absence of such services not only touches upon concerns related to public health but also relates to the equitable distribution of resources among the population. Because the lack of healthy food is often in depressed areas, the toolkit identifies the challenges and risks associated with, and benefits of attracting healthier food options, and how the introduction of such services can help induce other types of development.

In addition to the basic needs these stores fulfill, they help create a positive community image and decrease crime levels by bringing activity to the streets. The appropriate use of healthy food options can contribute to more compact and livable urban neighborhoods and decrease auto dependency. When transportation agencies work with communities and redevelopment authorities to design roadway projects that are supportive of a community's visions for redevelopment, the results can lead to safer streets that are supportive of both vehicular and nonvehicular movements that draw residents to shopping areas offering healthier food options.

Local community groups and organizations are working hard to site healthy food options in locations that are easily accessible to residents where few options currently exist. The toolkit identifies a wide variety of available funding sources and ways to leverage existing funds. While these resources are specific to California, the toolkit can point practitioners in other states toward similar organizations and agencies in their home state.

Additionally, the toolkit presents a variety of different approaches that can help the practitioner develop strategies for improving access to healthy foods in underserved communities. The approaches differ in the level of effort, start-up capital, and other required resources necessary to make healthy food options in low-income communities successful. It identifies data collection methods, the feasibility of conducting a retail market analysis and request for proposal template to retain a firm to prepare the study, effective ways to communicate and collaborate with public officials, benefits of conducting a food access audit, and case studies showcasing how healthier food options has been a great success in low-income neighborhoods.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are economic, public health, sociocultural, land use, and financial considerations.

TOOL APPLICABILITY
This toolkit is designed to inform nutrition and public health advocates on ways to improve food access in low-income

neighborhoods. It also is a good reference for transportation and economic development practitioners working together to rebuild communities. It provides an overview of techniques and tools that can be used for effectively engaging communities in land use decisions during economic (re)development activities.

TOOL ORGANIZATIONAL COMPONENTS
Connect economic development and health; find reasons communities lack access to healthy food; develop a strategy for economic development, financing sources, and redevelopment; build community support; collect data; and communicate with public officials.

TYPOLOGY
This toolkit can be used on the neighborhood, community, project, or corridor level. It can be used in a rural, suburban, or urban environment.

The topical scope of this toolkit includes equity, access to healthy foods, land use and activities, access and proximity to amenities, diversity and equity, and funding requirements. The level of effort to use this resource in full is high. It would require multiagency coordination, redevelopment options and the development of a plan, and investment sponsors. Placing healthy food options in a location that would be both feasible from an economic and physical standpoint and accessible to community residents would require a significant amount of public outreach and economic analysis.

A Community Approach to Address Health Disparities: T*H*R*I*V*E Toolkit for Health and Resilience in Vulnerable Environments

Principal Author/Authors: The Prevention Institute
Publisher: The Prevention Institute
Date of Publication/Presentation/Access: September 2004
Website Link: www.omhrc.gov/assets/pdf/checked/THRIVE_
  FinalProjectReport_093004.pdf

Description

This resource was developed as a community resilience assessment toolkit to help communities enhance their environment in ways that will improve public health and reduce disparities experienced by racial and ethnic minorities. It provides a framework for local organizations, agencies, public health practitioners, local decision makers, and concerned citizens to identify factors that negatively affect public health in minority communities. Furthermore, it identifies techniques for engaging stakeholders and for preparing and implementing policies and/or plans that can reduce or eliminate

disparities. The toolkit features community characteristics that influence the Healthy People 2010 Leading Health Indicators (i.e., tobacco use, physical inactivity, overweight/obesity, substance abuse, responsible sexual behavior, mental health, violence and injury prevention, environmental quality, and access to care), which have been linked to eliminating health disparities.

Unlike other prevention strategies that largely focus on reducing risk factors, T*H*R*I*V*E seeks to build community resilience by enhancing positive features that already exist in a community. These features or quality-of-life considerations have been clustered into four categories for assessment purposes: the built environment; social capital; services and institutions; and structural factors. The toolkit—which has been designed for people who recognize the value of a community resilience approach and want to strengthen considerations identified in the four clusters—describes sample actions, resources, tools, and community examples for each cluster and associated consideration.

The toolkit provides an overview of how communities perceive health-related issues, confirms the value of innovative approaches, challenges traditional thinking about promoting healthy lifestyles, and discusses difficult concepts. It has been designed to have utility for practitioners and concerned citizens in rural and urban environments and is a good tool for strategic planning at the community and organizational levels. The framework fosters solutions that address a variety of health concerns simultaneously.

As the population demographic becomes more diverse, the risk of increasing disparities experienced by racial and ethnic communities becomes more prevalent. The risks, both social and financial, associated with not implementing policies and programs to decrease disparities experienced by racial and ethnic communities are significant, ultimately weakening the social fabric of many communities.

The process was guided by an expert panel, which has deemed the toolkit to be complete in its utility and has emphasized its wide distribution to ensure that it is used effectively. The panel also has recommended tracking the use of the toolkit and related information to build a stronger science and practice base for minority communities. The toolkit identifies a variety of ways that well-designed streets can promote and improve safety and environmental quality and attract commercial establishments, among other features, that can contribute to increased pedestrian movements leading to improved public health. The toolkit includes a diverse mix of case studies, and the approaches and resources utilized for each. It includes both blank templates and completed matrices for identifying key health issues and community effects considerations, and a priority rating systems for clusters and considerations. These resources can be used by transportation practitioners while they conduct a community impact assessment to help in the identification of racial and ethnic communities, existing disparities, and opportunities to reduce or eliminate some of these disparities.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are economic, public health, sociocultural, land use, and mobility.

TOOL APPLICABILITY
This toolkit offers communities an alternative way of interpreting environmental factors that influence overall health and well-being. It is a learning, strategic, or needs assessment tool that can be used by transportation practitioners conducting a community impact assessment to help in the identification of racial and ethnic communities, existing disparities, and opportunities to reduce or eliminate some of these disparities. It identifies techniques for engaging stakeholders and preparing and implementing policies and/or plans that can reduce or eliminate disparities. The risks, both social and financial, associated with not implementing policies and programs to decrease disparities experienced by racial and ethnic communities are significant, ultimately weakening the social fabric of many communities. Government officials, public advocates, and transportation agencies must work together and with communities to ensure that transportation enhancements to do help exacerbate trends.

TOOL ORGANIZATIONAL COMPONENTS
The organizational tool components are: background research and framing issue, community resilience landscape, community resilience factors, review of existing tools, community toolkit for health and resilience in vulnerable environments (THRIVE), preliminary guidelines, and next steps.

TYPOLOGY
The toolkit could be used in a neighborhood or community as well as on a multistate level. Appropriate initiatives would need to be implemented depending on the geographic area and distribution of the sponsor agency(s). It could be used in a rural, suburban, or urban environment. The topical scope included in the toolkit includes educational opportunities, diversity and equity, safety and security, housing, low crime, public health and human services, physical fitness, community cohesion, civic engagement, cultural amenities, social capital, sensory factors, food access, access and proximity to amenities, and modal choices. The level of effort necessary to achieve the objectives in the toolkit is high and would require multiagency coordination and extensive research.

Assessing Your Community's Aging-Readiness: A Checklist of Key Features of an Aging-Friendly Community

Principal Author/Authors: Partners for Livable Communities and the National Association of Area Agencies on Aging.
Date of Publication/Presentation/Access: May 2007
Website Link: www.icma.org/upload/library/2007-05/%7B2B390E33-5C27-4949-944E-05B2046D7DB8%7D.pdf

Description

This checklist is part of a guidebook designed to arm local leaders with the knowledge and tools necessary to build collaborative partnerships for creating livable communities for people of all ages. It is based on more detailed assessment tools such as the Advantage Survey, Michigan's Community for a Lifetime Recognition program and AARP's Livable Communities Evaluation guide.

Information from various municipal departments must be collected in order to complete the checklist or may be available from one department in smaller municipalities. The checklist itself is relatively straightforward (a check is placed in the box if the answer is *yes* to a specific question and left blank otherwise) and does not require extensive knowledge of planning or technical skills. It is presented in seven sections—housing, planning and zoning, transportation, health and support services, cultural and lifelong learning, public safety, and civic engagement and volunteer opportunities—each having between four and six questions. Designed to assess how well municipal services and policies support elderly residents in the community, findings from the checklist can be used to help identify key issues and priorities for ensuring that the community is welcoming of growing elderly populations.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are sociocultural and land use, mobility, and institutional.

TOOL APPLICABILITY
The checklist would be completed by a municipal planner, a local agency or organization likely associated with elder services, or a concerned citizen. Findings could be used to implement new policy initiatives or changes in the delivery of services to the elderly if deficiencies are found. Municipal officials could work with transportation agencies to adjust the services they are providing to ensure safe and reliable transport, if necessary. Additionally, transportation agencies can work with municipal officials and other parties to create mixed-use communities that are welcoming and attractive to elderly populations.

TOOL ORGANIZATIONAL COMPONENTS
The organizational components are: housing, planning and zoning, transportation, health and supportive services, cultural and lifelong learning, public safety, and civic engagement and volunteer opportunities.

TYPOLOGY
It would be most applicable in an urban or suburban environment. The topical scope of this exercise includes housing, safety and security, access to health care, civic engagement, diversity, land use, mobility, reliable transportation options, and municipal policy objectives. The level of effort necessary to complete this checklist is small to moderate. Although little background research would need to be conducted prior to this effort, information from other departments within the municipality must be compiled. Findings should be submitted to municipal officials and/or presented at a town meeting.

Place Game—Placemaking through Transportation

Principal Author/Authors: Project for Public Spaces and New Hampshire Department of Transportation
Publisher: Project for Public Spaces
Date of Publication/Presentation/Access: 2006
Website Link: www.pps.org

Description

This tool is designed to evaluate how well streets and adjacent land uses are performing as Places, and to identify opportunities to enhance them in the future. A Place Diagram is included to help area residents understand the various components that contribute to a space. The center of the diagram is a specific place to be evaluated, encircled by four main criteria and a number of key attributes and intangibles to help judge how well the space is functioning. The outer ring identifies quantitative aspects that can be measured by statistics or research.

The tool can be used as part of a visioning exercise in a community or neighborhood. A site visit will be conducted during which time participants will individually evaluate, using a Likert scale, access and linkages to the place, its comfort and image, uses and activities it supports, and social attributes. Next, the participant is asked to consider suitable options to improve the place both in the short and long term, and partnerships that should be sought to help achieve these goals. Participants are asked to interview one or two users of the place to find out what they like about the place and the types of improvements they think would enhance it. After the site visit, participants will discuss findings and reach a consensus on a Problem Statement that includes problems and

needs related to transportation, community, and environmental concerns, does not prefigure solutions, and is not mode-specific. This information should be shared, if not conducted by a transportation agency or municipal agency, so that part or all of the elements identified in the Problem Statement can be incorporated into project design to help retain or achieve a community's vision for the area.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are land use, sociocultural, economic, public health, mobility, and natural environment.

TOOL APPLICABILITY
This is a relatively easy exercise that can be initiated by local stakeholders or a transportation agency. It is a participatory tool designed to reveal a community's vision for a place. Findings can be incorporated into project design to ensure that proposed roadway improvements are sensitive to areas of importance to the community and include desired enhancements where feasible.

TOOL ORGANIZATIONAL COMPONENTS
Evaluate the place, identify the opportunities of this place, conduct interviews, and write a problem statement.

TYPOLOGY
This tool is most applicable in a neighborhood or community. It can be used in a rural, suburban, or urban environment. The topical scope of this tool includes property values, recreation, safety and security, social networks, historic, cultural and scenic preservation, modal splits, access and proximity, land use and activities, aesthetic qualities, and sensory factors. The level of effort necessary to complete this exercise is small to moderate depending on the amount of quantitative data collected to support qualitative findings. The site visit and defining of the Problem Statement without quantitative data collection would take a few hours. Much of the quantitative data collection would be provided by those facilitating the exercise.

Public Health Workbook to Define, Locate and Reach Special, Vulnerable and At-Risk Populations in an Emergency

Principal Author/Authors: Centers for Disease Control and Prevention and Department of Health and Human Services
Publisher: Centers for Disease Control and Prevention
Date of Publication/Presentation/Access: 2007
Website Link: www.bt.cdc.gov/workbook/

Description

This workbook outlines a systematic process that can support municipal, state, and tribal planners and public health officials as they design and implement new strategies to reach all populations—including special populations, such as physically and mentally disabled, limited or non-English speaking, geographically or culturally isolated, medically or chemically dependent, homeless, frail/elderly, and children—in day-to-day communication and during crisis or emergency situations. The workbook is the result of conversations with municipal and state public information officers and emergency public information and risk communication planners and their desire to be prepared to reach and appropriately inform a diverse constituent base during a public health emergency. The workbook is still in draft stages and the Centers for Disease Control requests that it not be cited or quoted. Nevertheless, the workbook is a helpful tool that can be referenced by practitioners seeking to design emergency preparedness plans for their community, county, or state.

The workbook is a research-based approach to inclusive planning that will offer time-saving assistance to planners and public health officials to define, locate, and reach special populations in their community. The framework of the workbook and approaches it sets forth were developed from a review of published materials and interviews with public health professionals, nonprofit organization leaders, government and quasi-government officials, emergency and public safety personnel, educators, faith-based and neighborhood leaders, elected and appointed officials, among others, to reveal the current state of the practice and effective practices.

The workbook is divided into three sections, each representing a major stage in the process of communicating with special populations. The first section identifies ways in which special populations are defined in a designated geographic area and adequate ways to gather demographic information about these populations. The workbook provides baseline research and additional resources that could significantly decrease the amount of work and associated costs for conducting such an assessment. The second section identifies steps for locating and documenting the presence of these populations through the use of GIS software and other methods. The last section identifies ways that special populations can be reached once they have been defined and located. This includes public outreach efforts, however, it emphasizes partnership building with local leaders and the use of various media outlets that are trusted sources of information to special populations in the designated area. Each of the three sections is organized in a similar fashion and includes research and fact finding, community engagement and collaboration,

and application of the information gathered. Each includes a detailed list of resources that can assist in the understanding of the process, tools and templates that will help in doing the work, and a checklist of critical tasks to be completed.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are public health and sociocultural.

TOOL APPLICABILITY
This workbook can be used by practitioners and public health agencies to ensure that all populations are reached and informed in the event of an emergency. Additionally, the sponsor agency can work with transportation agencies to ensure that evacuation routes are well defined and translated into the languages of limited and non-English speaking populations in their community. They also can identify transportation services to evacuate physically and mentally handicapped and elderly populations.

TOOL ORGANIZATIONAL COMPONENTS
The organizational components are: defining special populations, locating special populations, and reaching special populations.

TYPOLOGY
This workbook is helpful for any environment. It could be used by municipal planners and public health officials to design customized approaches specific to their community or by county, regional, or state agencies to adopt strategies for the larger area. This workbook could be used in a rural, suburban, or urban environment. The topical scope of the workbook includes emergency services and diversity and equity. The level of effort necessary to complete each of the steps outlined in the workbook is substantial. The process should culminate in an emergency preparedness plan for the authority conducting the exercise. To complete this effort in full it could take a few months to a year.

Roadway Audit Tool, Analytic and Checklist Versions

Principal Author/Authors: St. Louis University School of Public Health
Publisher: Active Living Research
Date of Publication/Presentation/Access: 2003
Website Link: www.activelivingresearch.org/files/audit_tool_analytic.pdf (Analytic Tool); www.activelivingresearch.org/files/audit_tool_checklist.pdf (Checklist Tool)

Description

The Roadway Audit Tool was developed using information from 36 audit instruments collected from peer literature review, the Internet, interviews with experts from a variety of backgrounds, and advocacy groups. The effort culminated in the creation of two audit forms designed to better understand the relationship between street-scale environments and rates of physical activity. The first is an analytic version that relies on a Likert scale and ordinal response choices, and the second is a checklist version using dichotomous response choices. Both include the same questions in which six major domains are assessed: land use environment, transportation environment, recreational facilities, physical disorder, signage, and social environment.

The analytic version could be used by a transportation agency or other government officials looking to prepare a detailed assessment of the physical environment of a designated area. It should be used during the early stages of project development to better understand the relationship of land use, roadway conditions, and pedestrian movements. The checklist version, which does not require the same level of detail as the analytic version, could be used by area residents during a visioning exercise to get them thinking about their physical environment and possible improvements that could be made to enhance the space to be more supportive of pedestrian activity.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are natural environment, public health, sociocultural, land use, and mobility.

TOOL APPLICABILITY
The land use component can act as a retail analysis identifying leakage and surplus in the area, which can be prohibitive when trying to create a mixed-use environment welcoming of pedestrian movements. It also can help identify vacant and underutilized properties for redevelopment. Findings coupled with the assessment of roadway conditions can be used to build partnerships between a transportation agency, municipal officials, and area residents to design projects that are sensitive to areas of local importance, support mixed-use development, and encourage pedestrian movements. The audit also can be used to identify short- and long-term goals for area-wide improvements.

TOOL ORGANIZATIONAL COMPONENTS
Land use environment, transportation environment, facilities, aesthetics, signage, and social environment.

TYPOLOGY

These tools would be most appropriately used in a neighborhood or community. They also could be used on the project or corridor level, if the study area is not large. For larger areas, segments could be created allowing for the audit to be completed in each segment and later combined into a full profile. They would be most applicable in a suburban or urban environment but also could be used in a rural environment. The topical scope includes land uses and activities, recreation, aesthetic quality, housing, sustainable-balanced growth, access and proximity to amenities, physical health, natural features, transit options, roadway and sidewalk conditions, safety, sensory factors, and diversity. The level of effort necessary to complete either of the audit tools is small to moderate. The analytic version would take longer to complete than the checklist version. No additional data are necessary to complete the exercise. A map and a camera should be encouraged during the site assessment.

Thinking Beyond the Pavement Checklist

Principal Author/Authors: Maryland Department of Transportation
Publisher: The Louis Berger Group, Inc.
Date of Publication/Presentation/Access: 1998
Website Link: www.berger-nc.com/cssresources/Community Context/ThinkingBeyondthePavementChecklist.pdf

Description

This checklist is the result of the May 1998 "Thinking Beyond the Pavement" conference that introduced the principles of Context Sensitive Solutions (CSS), a process for creating a collaborative and interdisciplinary approach for involving all stakeholders to develop a transportation facility that fits its physical setting and preserves and enhances scenic, aesthetic, historic, community and environmental resources, while maintaining or improving safety, mobility, and infrastructure conditions.

CSS deals with context both as a constraint and an opportunity. Better understanding of a context can help a project be in harmony with the community and preserve resources that otherwise might be lost or harmed. A stronger understanding of the issues facing any context—whether the setting is a major corridor, a small main town street, or a rural road—also will help frame the role that a transportation project can play in enhancing that place. The checklist, which is a combination of yes/no and subjective questions, is a tool to be used by practitioners to assess the physical setting—both natural and man-made—in which proposed improvements would occur. The project manager should call upon the expertise of a multidisciplinary team for its accurate completion. The checklist should be reviewed and revised during each key milestone of the project planning phase and shared with the design team project manager as part of project documentation. Due to the familiarity that a practitioner obtains about a project, the same team of staff should review and revise the checklist during each key milestone, if possible.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY

The primary quality-of-life categories of this resource are natural environment, public health, sociocultural, land use, and mobility.

TOOL APPLICABILITY

Transportation investments, if properly conceived, can be catalysts to create lasting value in a community or countryside. The use of the CSS checklist and overall approach during the early stages of project development through operation and maintenance is essential to the decision-making process. Ensuring the early and frequent consideration of communities in the decision-making process not only lends a hand in helping the practitioner and agency overall design projects that fit more harmoniously into communities, but also can help streamline a project as it moves through the pipeline, saving the agency time and money in refining the various project components.

TOOL ORGANIZATIONAL COMPONENTS

The organizational components are: aesthetic or historic character, roadsides, medians, existing vegetation, landscaping opportunities, sidewalks, pedestrian crossings and trails, stormwater ponds, drainage swales and structures, slopes and retaining walls, noise abatement walls, traffic barriers, fencing and guard rails, and signs and lights.

TYPOLOGY

This checklist can be used on the project, neighborhood, community, or corridor scale. It can be used in a rural, suburban, or urban environment. The topical scope identified in this checklist includes cultural amenities, natural resources, aesthetic quality, sensory factors, historic, cultural, and scenic preservation, safe travel, infrastructure, and reliable service. The level of effort necessary to complete the checklist is small to moderate. A multidisciplinary team composed of experts from each subject area should take part in its completion. The checklist should be reviewed and updated as a project moves through the decision-making process to identify new impacts or eliminate those impacts that no longer exist

with the selected project design. The use of this checklist early in the decision-making process and the identification of community interests can help in the design of transportation facilities that fit more harmoniously into the community. Its utilization also can help design customized public involvement activities that are more meaningful.

Neighborhood Walking/Biking Assessment (Urban, Suburban, and Rural)

Principal Author/Authors: Keystone Healthy Routes
Date of Publication/Presentation/Access: July 2009
Website Links: http://drusilla.hsrc.unc.edu/cms/downloads/
Pennsylvania_Keystone%20Healthy%20Routes_Urban
.pdf (Urban)
  http://drusilla.hsrc.unc.edu/cms/downloads/Pennsyl
vania_Keystone%20Healthy%20Routes_Suburban.pdf
(Suburban)
  http://drusilla.hsrc.unc.edu/cms/downloads/Pennsylva
nia_Keystone%20Healthy%20Routes_Rural.pdf (Rural)

Description

This tool is designed for residents to assess roadway and land use conditions in their neighborhood to determine if it is safe for students to walk and bicycle to school. In order to capture important features in different environmental settings, three different assessment tools have been prepared—rural, suburban, and urban. The assessment method for each is identical and for the most part, the assessment forms are the same, with a few alterations to customize them to be more appropriately suited for the environment in which they will be used.

The assessment tools allow for those most familiar with the neighborhood to evaluate what is needed to provide a safe environment that encourages students to walk and bicycle to school, as well as recommend improvements that would be welcomed by the community. The tools are simple in nature, asking the participant to rate neighborhood features, such as sidewalks, bike routes, trails, intersections, streets, the environment, and land use on a map with a plus (+) or minus (−) sign and to take photographs of positive and negative attributes that may influence the use of walking and bicycling routes.

The facilitator—likely someone from a safe routes to school program, school board, municipal planner, or other local official—will provide neighborhood maps that include the location of the subject school and a 1- or 2-mi radius buffer around it, and potential routes for students to walk and bicycle to school. Findings from the visual assessment can be compiled into a master document and shared with transportation agencies to ensure that the selected route(s) and

corresponding roadway and streetscape improvements achieve the highest level of safety possible for user groups.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are land use, public health, and mobility.

TOOL APPLICABILITY
This tool could be used by transportation practitioners or local agencies and organizations such as the parent teacher association (PTA) to identify positive and negative features along proposed routes or the neighborhood overall. Findings could be used to select the route that would ensure the greatest safety for children and be most suitable for the neighborhood. These tools can be used for safe routes to schools (SRTS) or other roadway improvements.

TOOL ORGANIZATIONAL COMPONENTS
The organizational components are: physical environments, bike routes, trails, intersections, streets, environment, and land use and location.

TYPOLOGY
These assessment tools would be used at the project, neighborhood, or community scale and are applicable in a rural, suburban, or urban environment. The topical scope of this tool includes safe travel, physical fitness, land use, recreation, and mobility. The level of effort necessary to complete this assessment is moderate. Participants would need a neighborhood map, a camera, and the assessment itself. Prior to going in the field, the facilitator and participants should decide if they are going to focus on potential routes or the entire neighborhood. The tool should be reviewed prior to the walk to answer any questions and make sure that participants know what is being asked of them. Participants should anticipate being in the field for a few hours. If more than one person or group conducts the assessment, a master document and map should be prepared which highlights positive and negative attributes identified in the neighborhood.

Systematic Pedestrian and Cycling Environmental Scan (SPACES) Audit Instrument

Principal Author/Authors: The University of Western Australia
Date of Publication/Presentation/Access: 2000
Website Links: www.cpah.health.usyd.edu.au/pdfs/2007_
SPACES_Audit_Instrument.pdf
  www.cpah.health.usyd.edu.au/pdfs/2007_SPACES_
Observers_Manual.pdf (Observers Manual)

Description

This audit instrument is an observational tool developed to assess the physical environment in a neighborhood and its suitability to support pedestrian movements. It uses street segments or the area between two intersections as the basis for observation, each of which gets a unique segment number and requires a separate audit form. The University of Western Australia has prepared an observers manual to assist the practitioner in the proper completion of the audit.

The audit instrument itself is not difficult to use, however, it is only the first step in the SPACES audit process. The surveyor(s) walk each segment in a specified area checking for the presence of different land uses, streetscape and roadway conditions, and safety. A check is placed in the appropriate box if certain features are identified. It is estimated that an observer can collect information for a 1.25-mi segment in just less than an hour. The results can be incorporated onto a detailed map and/or can be used to create specific GIS layers. Findings can help not only identify roadway conditions and areas in need of improvement but also land use conditions indicating a saturation or shortage of certain land uses necessary to create a sustainable, mixed-use environment.

Using the observers manual as a reference, community members, local groups or organizations, or other stakeholders could successfully complete the audit. The audit instrument could be used as part of a community visioning exercise in which participants are assigned to survey certain segments to ensure full participation and a rapid execution of this step. Group leaders or organizers can create a map with the findings and present them at a follow-up meeting and begin brainstorming sessions. The audit tool also can be used by land use and transportation planners during the early stages of decision making to prepare a detailed land use profile to help identify roadway features in need of improvement and presence of diverse land uses to encourage pedestrian movements.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are land use, public health, and mobility.

TOOL APPLICABILITY
This tool can be used to identify streetscape and roadway improvements necessary to create an environment that supports and encourages pedestrian movements. The presence and/or absence of certain features can help identify and prioritize improvements. Areas in need of improvement as identified through the use of the audit would be considered short-term, such as the installation of new streetlights or crosswalks. The land use element helps identify if there is an appropriate mix of uses to attract pedestrian movements.

TOOL ORGANIZATIONAL COMPONENTS
The organizational components are: walking and cycling paths, street assessments, and overall assessments.

TYPOLOGY
The audit instrument could be used on the project, neighborhood, community, or corridor level. It can be used in a rural, suburban, or urban environment. The topical scope includes safe travel, land use, and access. The level of effort necessary to complete this exercise is moderate to high, the extent of which would depend on the size of the area being surveyed. A segment of approximately 1.25 mi can be observed in slightly less than an hour. Desktop exercises associated with the audit also would be timely.

Smart Growth Checklist, A Checklist for Municipal Land Use Planning and Management

Principal Author/Authors: New York State Department of Transportation and the New York State Governor's Smart Growth Cabinet.
Publisher: New York State Department of Transportation
Date of Publication/Presentation/Access: June 2008
Website Link: www.nysdot.gov/programs/smart-planning/ repository/SGCheck_Municipal_PRINT.pdf

Description

This easy-to-use tool is a guide that can be used by communities when making decisions about future land use and development patterns. It is designed to help assess how well planning and land use decisions in a community follow the principles of smart growth. The checklist does not critique current conditions, past land use planning, or management decisions but rather provides a way in which to evaluate current land use planning and management decisions for their consistency with smart growth principles. Additionally, the checklist can be used to determine if land use planning and management decisions are likely to guide public investment and private development to achieve larger and more durable benefits to the community as a whole.

The checklist is designed for residents and community stakeholders as a way to identify suitable initiatives for their community to attract and to achieve growth in accordance with smart growth principles. The questions on the checklist are presented in seven categories—municipal planning profile, infrastructure, open space, farmland, and critical environments, mixed-use development, transportation and access, municipal character, and sustainability—which reflect the planning elements necessary to promote development consistent with

these principles. For each question, a checkmark should be placed in the box for each question that the municipality can positively identify. At the conclusion of the exercise, the areas not checked should be reviewed for their relevance within the community. Answers to these questions may indicate areas in which changes in land use planning and management decisions may be warranted to achieve smart growth principles. Community visioning exercises can build upon findings to create a vision plan for the area that can be shared with municipal and transportation agencies. This tool can be considered a building block in the overall framework necessary to forge stronger relationships between and among interested parties.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are land use and transportation.

TOOL APPLICABILITY
Findings from this exercise can be used to guide public investment and private development in accordance with smart growth principles. They also can be used to revise the land use and transportation element of comprehensive plans. Municipal officials can work with the community to ensure that new development is welcomed by residents and introduces land uses to the area that are necessary to support smart growth. Additionally, municipal officials and residents can work with transportation agencies to ensure that roadway improvements and/or public transportation options help achieve this objective.

TOOL ORGANIZATIONAL COMPONENTS
The organizational components are: municipal planning profile, infrastructure, open space, farmland, and critical environments, mixed-use development, transportation and access, municipal character, and sustainability.

TYPOLOGY
This tool can be used at the project, neighborhood, or community level and should be used in an urban or suburban environment. The topical scope of this tool includes housing, preservation of open space, infrastructure, historic preservation, land use and activities, sustainable-balanced growth, and access and proximity to amenities. The level of effort necessary to accurately complete the checklist is moderate. The person's familiarity with municipal objectives and policies will dictate the time necessary to complete the exercise. A review of municipal documents will be required.

Smart Growth Checklist, A Checklist for Proposed Development in Your Community

Principal Author/Authors: New York State Department of Transportation and the New York State Governor's Smart Growth Cabinet.
Publisher: New York State Department of Transportation
Date of Publication/Presentation/Access: June 2008
Website Link: www.nysdot.gov/programs/smart-planning/ repository/SGCheck_Development_Print.pdf

Description

This easy-to-use tool is a guide that can be used by communities to determine how a proposed project would contribute to the overall well-being of a community. The checklist does not critique current conditions or past management decisions but rather provides a way by which to evaluate how a proposed or potential project would contribute to the community and what types of larger and more durable benefits it would offer. It is not a regulatory tool but should be used as a way to assess project induced impacts and benefits. The success of the checklist lies not only in its completion but in the stimulation of conversation between and among community leaders, private developers, agencies such as the local MPO or state DOT, and other members of state agencies involved in smart growth principles.

The questions on the checklist are presented in eight categories, one for each smart growth principle. Participants may need the assistance of a local planner to answer some of the questions or get information to assist in the accurate completion of the checklist. Questions may include whether the proposed development is located in an Empire Zone or an urban redevelopment zone.

At the conclusion of the exercise, the checklist should be reviewed to assess how well the proposed or potential project fits within the community. Checklist results can be used to initiate thought about the true benefits of a project and changes that could be made to maximize its success within the community. The checklist and subsequent findings can be used as part of a community visioning exercise to advocate for changes to a proposed development to more appropriately meet the needs of the community or to design a vision plan for the area that can be shared with municipal and transportation agencies.

The checklist is most applicable for larger projects because they typically have the greatest impacts, but is useful for most project proposals. It should be noted that local zoning and subdivision requirements may not permit or direct a project to be built according to the criteria set forth in the checklist. In these cases, the checklist can be used to stimulate

conversation in the community to determine if there is interest in adopting land use plans that will encourage smart growth principles.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are land use and sociocultural.

TOOL APPLICABILITY
This exercise can be completed by municipal planners, local officials, stakeholders, or concerned citizens. Findings can be used to advocate for changes in a development proposal to fit more harmoniously into a community, the adoption of smart growth principles by the municipality (if not already implemented), and/or recommend changes to municipal plans to support and/or prohibit certain types of development in smart growth areas. Developers and municipal officials can work with transportation agencies to ensure that roadway improvements and/or public transportation options help achieve smart growth principles.

TOOL ORGANIZATIONAL COMPONENTS
The organizational components are: infrastructure, housing, open space, farmland, and critical environmental areas, mixed land use, transportation and access, walkability, community character, and sustainability.

TYPOLOGY
This tool should be used on the neighborhood or community level. It also could be used on the project level if the study area is not too large. This tool would most appropriately be used in suburban and urban environments. The topical scope of this tool includes infrastructure, sustainable-balanced growth, access and proximity to amenities, land use and activities, historic resources, recreation, and community cohesion. The level of effort necessary to accurately complete the checklist is small to moderate. It requires familiarity with municipal objectives, the proposed development, and community characteristics. It is both a desktop and in-field exercise. It is anticipated that it would take a few hours to complete the checklist.

Irvine Minnesota Inventory

Principal Author/Authors: Kristen Day, Ph.D., Marlon Boarnet, Ph.D., Mariela Alfonzo, MURP, and Ann Forsyth, Ph.D.
Publisher: University of California, Irvine
Date of Publication/Presentation/Access: 2005

Website Links: https://webfiles.uci.edu/kday/public/Irvine_MN_Inventory.pdf (Audit Tool)
https://webfiles.uci.edu/kday/public/index.html (Web Manual)

Description

This audit tool, developed by researchers at the University of California, Irvine, and tested and refined by researchers at the University of Minnesota, is designed largely for practitioners and public health officials to collect data about features of the physical environment that are potentially linked to physical activity. The tool allows for observation of macro- and micro-scale features of the physical environment. Macro-scale features, which are called setting-level observations in the audit tool itself, allow observation of the entire setting, such as overall street patterns and roadway conditions. Micro-scale features are specific to a designated block (called a setting in the audit tool) or small section of the overall area being observed. These observations are called segment-level observations and would include features, such as number of stores, billboards, or trees in the segment. The tool is designed to observe features of the physical environment as they relate to accessibility, pleasurability, human needs and comfort, and safety.

The area of observation is defined by the team leader or sponsor agency and can vary significantly in size. The user manual for this tool indicates that a neighborhood with 60 to 80 blocks would require a sample size of 15 to 20 segments to accurately capture the dynamic of the physical environment. The tool can be completed using a paper version or a tablet PC, which eliminates the additional data entry step necessary with the paper version. Questions require either a yes/no response or are based on a Likert scale. The setting can be defined as a Census block group, political boundaries, an area bound by geographic barriers, or a homogeneous population, such as a senior community. Each segment included in the observation will be predetermined by the team leader and selected to ensure that any unique or distinctive features are captured during the exercise. The audit requires observation of land uses, roadway and sidewalk conditions, traffic features, and neighborhood amenities. An online manual (link below) provides detailed instructions about how to successfully use the audit tool, train observers, and define land uses and areas of observation.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life categories of this resource are natural environment, public health, sociocultural, land use, and mobility.

TOOL APPLICABILITY

This tool can be used by a transportation agency to develop a detailed profile of a neighborhood or community, which can be used in the early stages of decision making to identify potential impacts and also can assist in the design of public involvement activities and mitigation measures if necessary. This tool also could be used by local groups or organizations, however, given the amount of time and money necessary to successfully complete the exercise, it is anticipated that it would only be used for larger projects that have generated a fair amount of controversy within a community.

TOOL ORGANIZATIONAL COMPONENTS

The organizational components are: street crossing, views, land use, barriers, sidewalks, bicycle lanes, mid block crossing, sidewalk amenities, buildings, garages, parking, driveways, maintenance, lighting, freeways, traffic features, architecture/design, and people and animals.

TYPOLOGY

This tool should be used on the neighborhood or community level. It can be used in a rural, suburban, or urban environment. The topical scope of this tool includes natural features, safety, community cohesion, land uses and activities, aesthetic quality, access and proximity, mobility, historic, cultural, and scenic preservation, and roadway features. The level of effort necessary to complete this audit is high. It is designed to be used by trained observers who must take an approximately 8-h training program prior to field visits. Observations can be conducted by college students, community members, or other stakeholders without previous expertise in design or physical activity under the supervision of a team leader, preferably with advanced research training. The team leader would train the team, test the reliability of observations, and oversee data collection and analysis. The field visit would take a team of two observers approximately 3–4 days to complete. A detailed map of each setting including footpaths, trails, and the like is necessary. There are supplemental GIS questions on the audit which would require the use of the tablet PC and knowledge of GIS. Stat Transfer and SPSS software or equivalent are needed to analyze data.

Community Tool Box

Principal Author/Authors: Work Group for Community Health and Development, University of Kansas
Publisher: University of Kansas
Date of Publication/Presentation/Access: 2009
Website Links: http://ctb.ku.edu/en/tablecontents/index.htm (Community Tool Box)

http://ctb.ku.edu/en/tablecontents/chapter_1017.htm (Chapter 17 of Community Tool Box)

Description

Community Tool Box provides practical, step-by-step guidance in community-building skills. Its 46 chapters identify nearly 300 different qualitative techniques that can be used in a variety of settings to understand community characteristics and exercises to increase community cohesion. The *Community Tool Box* is broken down into 13 sections that cover topics such as promoting community health and development, community assessment, increasing participation in initiatives, developing a strategic plan, group facilitation, supporting cultural diversity, and program evaluation.

Of particular interest to help facilitate the visioning process is Chapter 17, Analyzing Community Problems and Solutions, which includes information on how to think critically about community issues, to identify those who can benefit from and assist in the vision of a proposed project, and ways to customize approaches to reach and engage culturally and economically diverse communities. The chapter is presented in seven sections, each of which includes an introduction, what, why, when, who, and how component, real world examples, links to related chapters and sections, tools that encourage critical thought and checklists, and a MS-PowerPoint summarizing the section. The following discusses how the tools and/or checklists in each section can be used during the visioning process. Tools and checklists may need to be slightly augmented to make them more applicable to the setting in which they will be used.

AN INTRODUCTION TO THE PROBLEM SOLVING PROCESS

The tools found in this section focus on how to select approaches that would be best suited to identify potential project-induced effects, how facilitated group discussions can contribute to the decision-making process, and on the types of processes that would be most beneficial to use during the visioning process. The tools could be used by a transportation agency during Community Impact Assessment or by municipal officials or local groups and organizations.

THINKING CRITICALLY

The checklist in this section provides a brief overview of the various steps to critically evaluate the environment of a proposed project. It should be used as a tool to ensure that practitioners or other individuals facilitating the visioning process conduct meaningful activities that accurately capture community sentiments.

DEFINING AND ANALYZING THE PROBLEM

The tools in this section are designed for use during group sessions to help develop a vision statement. It includes questions

(to be augmented as necessary) that ask participants to identify problems within a designated area and the effect(s) that they have on the community. This could be used, for example, to assess how a roadway in need of improvement affects the community. Participants may reveal that the effects are far greater than those related to transportation and mobility.

ANALYZING ROOT CAUSES OF PROBLEMS:
THE "BUT WHY?" TECHNIQUE
The information presented in this section is designed to identify underlying factors or root causes behind a community problem. This is an exercise that should be used during a group visioning exercise to help identify root causes and possible approaches that can be taken to eliminate or lessen adverse impacts. This technique would be useful to assess how a transportation facility has affected a community and how and what types of improvements would enhance the area.

GENERATING AND CHOOSING SOLUTIONS
The checklist in this section identifies approaches to ensure that all participants are heard and meaningfully contribute in group visioning sessions. Furthermore, it lists ways to encourage individual thought of participants and presents various ways decisions can be made and different directions that can be taken if group consensus is not reached.

PUTTING YOUR SOLUTION INTO PRACTICE
The tools in the section can be used to identify and assign ownership of next steps. It also provides a number of feedback questions that can be asked of the group at the conclusion of the visioning session.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The questions and approaches outlined in Chapter 17 of the Community Tool Box are not specific to any one or group of quality-of-life categories. The questions and approach taken would require that the facilitator alter the questions to fit the needs of the task at hand. At that time, the quality-of-life categories would be identified.

TOOL APPLICABILITY
This tool could be used by transportation practitioners or other parties facilitating a community visioning process. The easy-to-use tools and checklists can be altered as needed to be issue-specific and can be used to ensure that the visioning process identifies the true issues at hand and encapsulates the voice of affected parties.

TOOL ORGANIZATIONAL COMPONENTS
Chapter 17 is organized in seven sections: An Introduction to the Problem-Solving Process; Thinking Critically; Defining and Analyzing the Problem; Analyzing Root Causes of Problems: The "But Why?" Technique; Analyzing Social Determinates of Heath and Development; Generating and Choosing Solutions; and Putting Your Solution into Practice.

TYPOLOGY
This tool should be used at the neighborhood or community level. It also could be used on the project or corridor level, depending on the size of the project area. If used in a larger environment, visioning sessions may be needed in different parts of the project area. It could be used in a rural, suburban, or urban environment. The level of effort to use part or all of these tools is small. The tools would primarily be used during group visioning sessions and would not require homework on the part of the participant. Facilitators may need to alter the questions to be suitable for the discussion.

What's Behind Resident Quality of Life Perceptions

Principal Author/Authors: International City/County Management Association
Publisher: International City/County Management Association
Date of Publication/Presentation/Access: 2009
Website Link: http://icma.org/main/ns.asp?nsid=4275&hsid=3

Description

This online resource is the product of the International City/County Management Association (ICMA), a professional and educational organization for chief appointed managers, administrators, and assistants in municipalities, counties, and regional entities designed to create excellence in local governance by advocating and developing the management of local governments. The website hosts a wealth of information about quality-of-life considerations, performance measures, and survey instruments. The website identifies current ICMA initiatives and serves as a repository for reports and other documents they have prepared. These resources are available for download or purchase.

All of the information available on the *What's Behind Resident Quality of Life Perceptions* portion of the website is arranged by quality-of-life consideration. General considerations are available are listed below.

- Active and healthy living;
- Brownfields;
- Career resources—general support, internships, manager's employment agreements, next generation of managers, professional and personal development, retirement, and transition/job loss;

- Citizen and resident participation—advisory boards and commissions, citizen and resident education, citizen and resident feedback, school curricula on local government, and volunteers;
- Community and economic development—economic development, foreclosure, housing, land use controls, military base reuse, public-private partnerships, and vacant properties;
- Council–manager form of government;
- Culture, libraries, and art;
- Elected officials—chief elected officials, council–manager relations, and council operations;
- Environment—air, climate and water, energy efficiency, environmental justice, environmental liability, and environmental management systems;
- Ethics—codes of ethics, elected official relationships, gifts, general ethics issues and advice, investments, outside employment, personal relationships, personnel matters, political activity, and public trust;
- Finance and budgeting—economic crisis, budgeting, financial management, infrastructure financing, purchasing and procurement, revenue, and risk management;
- Health and human services—aging, community diversity, health, human services, service individuals with disabilities, job readiness, public health threats, and youth services;
- Immigration;
- Management—customer service and satisfaction, international perspectives, management practices, regionalism, service delivery, and strategic planning;
- Parks and recreation—facilities, forestry, management and finance, and programs;
- Performance measurement;
- Personnel and benefits—benefits and pay scales, employee development, employee health benefits, labor-management relations, organization charts and position descriptions, performance evaluation, personnel administration, and personnel policies;
- Planning and zoning—codes and code enforcement, historic preservation, nuisance abatement/graffiti, planning, and zoning;
- Public safety—animal control, emergency management, fire and emergency medical services, homeland security, natural disasters, police, and public safety;
- Public works—building and grounds, fleet, solid waste and recycling, street and road maintenance, and utilities;
- School/university relations—public schools and town-gown;
- Smart growth;
- Sustainability;
- Technology and telecommunications; and
- Transportation—parking, public transit, traffic management, planning and finance, and walking and biking.

Additionally, the National Citizen Survey (the NCS), a citizen survey service for local governments developed by ICMA and National Research Center, Inc., can poll citizen opinion for program planning, budgeting, goal setting, and performance measurement. Results can be used to improve service delivery, prioritize spending, and measure progress and identify next steps. Costs associated with using this service depend on the extent of information being requested.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The resources available on the website encapsulate one or a variety of quality-of-life categories. The quality-of-life categories for the topics available on the website include economic, sociocultural, land use, mobility, public health, natural environment, and financial considerations.

TOOL APPLICABILITY
Materials available on the website can be referenced by transportation agencies, local groups or organizations, stakeholders, or the general public to understand the challenges when dealing with specific quality-of-life considerations and how they contribute to the overall experience enjoyed by residents, ways to effectively reach populations to assess the importance of a consideration(s), and checklists that can be augmented to suit the environment in which visioning activities are taking place. The best practices component of each quality-of-life consideration can assist in the development of outreach activities and visioning exercises appropriate for the context. The paid survey feature can be used early in project development to assess how a community values certain quality-of-life consideration(s), which can be used in the design of visioning activities and later incorporated into project design. If an agency does not want to have a survey customized and administered, sample surveys can be downloaded for free and altered to appropriately fit the environment in which visioning activities will occur.

TOOL ORGANIZATIONAL COMPONENTS
Because this is an online resource, users can scroll through the various components relevant to their interest area.

TYPOLOGY
Resources available on the website are applicable for use on the community level and up through the multistate level, depending on the information being sought. The user would need to make sure that the resource he or she is referencing would be applicable on that particular geographic level. Resources can be used in a rural, suburban, or urban environment. However, similar to the geographic scale, the user would need to review the materials being referenced to see if

the materials are suitable for that particular setting. The topical scope of this resource covers the spectrum of quality-of-life considerations, ranging from healthy life-styles and physical activity to brownfields reclamation to environmental justice. The level of effort necessary to use this resource can vary significantly. Because it serves as a repository of information, the user could simply use the resources as a reference, conduct an effective practices review, or extract relevant materials such as checklists to be used during a visioning exercise. If the user makes a purchase, the NCS prepares reports using customized survey findings.

Social Capital Community Benchmark Survey Short Form

Principal Author/Authors: Saguaro Seminar: Civic Engagement in America Project, John F. Kennedy School of Government at Harvard University
Publisher: Harvard University
Date of Publication/Presentation/Access: 2002
Website Links: www.hks.harvard.edu/saguaro/pdfs/social capitalshortform.pdf
www.cfsv.org/communitysurvey/docs/survey_instrument.pdf (long form)

Description

In 2000, approximately three dozen community organizations and foundations assembled at the John F. Kennedy School of Government at Harvard University to partner with the Saguaro Seminar: Civic Engagement in American to design the Social Capital Community Benchmark Survey (SCCBS). The effort—which included the design of a 25-min telephone survey and survey administration to approximately 30,000 Americans—is considered the largest and most scientific investigation of social capital at the time it was undertaken. Questions cover approximately 100 different measures related to social capital. Findings reveal 11 different subdimensions of social capital, including two dimensions of social trust, two measures of political participation, two measures of civic leadership and associational involvement, and one measure each of giving and volunteering, faith-based engagement, informal social ties, diversity of friendships, and equality of civic engagement at the community level. Based on findings from the 2000 survey and other surveys conducted in 2001–2002, a short-form survey was distilled down to a 5- to 10-min exercise. The short-form survey uses a series of yes/no responses or a Likert scale to document survey responses.

The short form was designed for use by state or federal government agencies interested in surveying constituents on social capital, by smaller communities that may not have the budget, time, or staff to conduct the long-form survey, and by communities and nonprofits that already may be conducting surveys and want the short form to act as a supplement to information on social capital. The survey design team recommends that the instrument has the most utility when used as a pre and post measurement to determine if more or less social capital is being built in an area. If used as such, the same survey should be administered during both surveying periods. Although either survey could be used by a transportation agency or other parties, the community characteristics and social capital revealed using the short form would likely be sufficient to inform practitioners about the environment in which they are working and the opportunities and challenges that may arise during the larger visioning process.

Applicability to the C08 Project

QUALITY-OF-LIFE CATEGORY
The primary quality-of-life category of this resource is sociocultural.

TOOL APPLICABILITY
This tool could be used by a transportation agency, local, state, and federal government agencies, and local groups and organizations. A transportation agency or local group or organization—either together or separately—could use this tool as part of a visioning exercise to better understand how people feel about the environment in which they live and how a proposed project may affect the community. This tool could be used during the early stages of decision making to design a project that does not adversely affect the existing social capital in a community. It also can be used to determine where trust-building among parties may need to be undertaken for the success of the project. A transportation agency can work with other parties and the public to design a project that also is not functional but supports activity that may help increase community cohesion and social capital.

TOOL ORGANIZATIONAL COMPONENTS
Community cohesion, public affairs, political interest and involvement, recreational activities, faith-based involvement, charitable giving, social and economic characteristics.

TYPOLOGY
This tool could be used in any geographic setting. It can be used in a rural, suburban, or urban environment. The topical scope of this survey includes personal sense of safety, civic engagement, community cohesion and social networks, social capital, and faith-based institutions. The level of effort necessary to complete this varies. The short-form survey could be used as is, but also should be reviewed and augmented as necessary to ensure that questions are appropriate for participants. The

length of time necessary to complete surveying would depend on the desired sample size. This tool can be used as a phone survey or in a group environment in which people fill out their own survey. Time requirements decrease significantly when administered in a group setting rather than on an individual basis. A telephone survey also takes longer because it may take the surveyor a number of calls before finding a person willing to participate. The survey could be administered by the sponsor agency or contracted out to a data and market research company, significantly changing the level of effort required to complete this task. If a paper format is used, survey responses will need to be entered into a database. A variety of queries can be run once the information is in the database. The level of effort needed to run queries and prepare accompanying documentation will depend on agency interests. If used as part of a visioning exercise at a public meeting or other outreach activity, the level of effort would be small. Respondents could complete the survey individually and reconvene as a group for discussion.

Community Effects Literature Review

The Transportation Planning Capacity Building (TPCB) Web Site: Technical Resources

Principal Author/Authors: U.S. Department of Transportation, Federal Highway Administration/Federal Transit Administration
Publisher: U.S. Department of Transportation
Date of Publication/Presentation/Access: Page last modified on July 29, 2009
Website Link: www.planning.dot.gov/technical.asp

Description

The Transportation Planning Capacity Building (TPCB) website was created to provide information about the Transportation Planning Capacity Building (TPCB) Program, a collaborative effort of the FHWA and the FTA with various public and private organizations. The program is aimed at helping state and local transportation officials and staff create plans and programs by providing information, training, and technical assistance. The website's "Technical Resources" section, which is updated regularly, offers a variety of technical papers, reports, and other published materials.

Documents on the Technical Resources page are divided into the following categories and subcategories:

- Funding issues
  - Disadvantaged business enterprises
  - Financial management
  - Funding
  - Procurement
- Communities
  - Americans with Disabilities Act
  - Community design
  - Community impact assessment
  - Health and human services
  - Human environment
  - Job access
  - Public involvement
  - Title VI/environmental justice
- Natural and cultural resources
  - Air quality
  - Linking planning and NEPA
  - Natural environment
  - NEPA and
  - Noise
- Operations
  - Design
  - Freight in planning
  - ITS
  - Performance measures
  - Planning and operations
  - Transit ridership
- Planning process
  - Land use and transportation
  - Metropolitan planning
  - Planning fundamentals
  - Planning and programming
  - Rural and small community planning
  - Smart growth
  - Statewide planning
  - Tribal planning
- Related areas
  - Public affairs
  - Real estate
- Security and safety
  - Safety conscious planning
  - Security issues in planning
- Tools
  - Data resources
  - GIS
  - Modeling

Applicability to the C08 Project

The resources highlighted in this section from the website may offer some guidance in the C08 project. The booklet *Building Livable Communities with Transit* presents some of the successes (in terms of planning, development, and implementation) of the community-sensitive transportation planning development process, including Building Livable Communities

with Transit, Center for Livable Communities, Livable Communities, Smart Growth Network, Sustainable Communities Network, Transit-Focused Development, Transportation for Livable Communities Network, and Transportation Toolbox for Rural Areas and Small Communities.

The handbook *Building Projects that Build Communities: Recommended Best Practices* helps local agencies, citizens, and WSDOT work together on transportation projects to meet communities' needs. The principles and practices are transferable to any transportation agencies working together. Topics include effective communication, project advocacy and management, conflict resolution, how to identify and involve appropriate community partners, and keeping projects and teams on track. In addition to very practical project management applications, it contains numerous resources to assist transportation professionals working with communities and others, including team agreement forms and team evaluations.

Context Sensitive Design (CSD) is a collaborative, interdisciplinary approach that involves all stakeholders in developing a transportation facility that fits its physical setting and preserves scenic, aesthetic, historic, and environmental resources, while maintaining safety and mobility. CSD is an approach that considers the total context within which a transportation improvement project will exist.

The *Flexibility in Highway Design* guide covers designing highways that incorporate community values and are safe, efficient, effective mechanisms for the movement of people and goods. The guide is written for highway engineers and project managers who want to learn more about the flexibility available to them when designing roads, and illustrates successful approaches used in other highway projects. It also can be used by citizens who want to gain a better understanding of the highway design process.

CIA: Useful Resources is a compilation of resources of particular interest to those working in community planning and design.

Community Impact Assessment is a process to evaluate the effects of a transportation action on a community and its quality of life. The assessment process is an integral part of project planning and development that shapes the outcome of a project.

The *Community Impact Assessment and Environmental Justice for Transit Agencies: A Reference* (January 2002) was developed through a grant from the National Center for Transit Research and the guide provides tools, techniques, and references that may be used to assess transit actions.

Access to Jobs: Planning Case Studies (September 2001) illustrate effective practices of job access planning. The case studies profile how various agencies have addressed issues regarding the provision of transportation services as a component of welfare reform.

Understanding the Communications and Information Needs of Elected Officials for Transportation Planning and Operations was written to enhance FHWA's communications capabilities and approaches with local elected officials (as well as senior appointed officials), with an emphasis on the linkages between transportation planning and transportation systems management and operations.

AIRNow Air Quality Index tells you how clean the air is and whether it will affect your health. EPA, state, and local agencies work together to report current and forecast conditions for ozone and particle pollution. AIRNow forecasts next-day air quality.

The Congestion Mitigation and Air Quality (CMAQ) Improvement Program provides background and resource materials about transportation planning and air quality improvement as well as application procedures, eligible projects, and contacts.

Transportation Conformity: A Basic Guide for State and Local Officials offers basic provisions of the conformity process, includes a description of actions subject to conformity, frequency of conformity determinations, key components of a conformity determination, consequences of a failure to make a conformity determination, and roles and responsibilities of public agency staff, management, policy officials, and decision-makers in the conformity process.

Defenders of Wildlife released *Conservation-Minded Citizen's Guide to Transportation Planning* to help Florida citizens understand the role they play in minimizing the impacts of roads on wildlife.

NCHRP Project 25-22, Technologies to Improve Consideration of Environmental Concerns in Transportation Decision-making, project is intended to advance the use of current and emerging technologies to achieve improved, implementable transportation decisions.

Building Projects that Build Communities: Recommended Best Practices is a handbook to help local agencies, citizens, and WSDOT work together on transportation projects to meet communities' needs. The principles and practices are transferable to any transportation agencies working together. The handbook contains chapters on effective communication, project advocacy and management, conflict resolution, how to identify and involve appropriate community partners, keep projects and teams on track, and much more. In addition to very practical project management applications, it contains numerous resources to assist transportation professionals working with communities and others, including team agreement forms and team evaluations.

TRB Performance Measurement Exchange site allows people with common interests, goals or expertise to share their experiences and knowledge, collaborate on work, identify and exchange best practices, and advance the state of the art

in their field. This site allows visitors to contribute their thoughts and ideas in an open forum.

In support of the technical assistance element of the TPCB Program, the Association of Metropolitan Planning Organizations (AMPO) conducted a survey of recent MPO projects to identify those that have been highly effective in their support of transportation-land use integration. AMPO screened these initiatives for innovation, effectiveness and transferability and selected a sample of five as notable practices, featured in *AMPO Noteworthy MPO Practices in Transportation-Land Use Planning Integration Report.* Each of the selected projects was recently completed or is in the final stage.

Domestic Scan Tour I: Land Use and Transportation Coordination (March 2003) discusses the major challenge designing transportation systems that enhance mobility, economic opportunity, and community livability is for many communities across the country. In the United States, political leaders, planning professionals, and private citizens are increasingly aware of the connections between land use policies and transportation planning. In the autumn of 2002, the Federal Highway Administration sponsored a domestic scan tour to learn about projects in Colorado, Utah, and Wyoming aimed at successfully integrating land use and transportation planning. A delegation of federal and local government representatives visited these projects to collect, synthesize, and distribute information on innovative approaches to this issue. Their findings are contained in this report.

Domestic Scan Tour II: Land Use and Transportation Planning Coordination (November 2003) focuses on communities in three southeastern states: Florida, North Carolina, and Tennessee. The scan tour emphasizes the redesign, redevelopment, and retrofitting of roadway corridors that included new design and planning elements to enhance the livability of each community. The team reviewed visioning processes that considered the interrelationships among transportation, land use decision-making, quality-of-life, and economic vitality issues.

Scenario Planning provides a framework for developing a shared vision for the future by analyzing various forces (e.g., health, transportation, economic, environmental, and land use) that affect growth. When undertaken at the statewide level and metropolitan regions, it tests various future alternatives that meet state and community needs. As a defining characteristic of successful public sector scenario planning, it actively involves the public, the business community, and elected officials on a broad scale, educating them about growth trends and tradeoffs, and incorporating their values and feedback into future plans.

The site can also be searched for resources on the dynamics of on-street parking.

Community Impact Assessment (CIA) Web Site—CIA Quick Reference Guide

Principal Author/Authors: Sponsored by the FHWA and Administered by the University of South Florida
Publisher: FHWA
Date of Publication/Presentation/Access: Copyright 2000–2009
Website Link: www.ciatrans.net/CIA_Quick_Reference/Purpose.html

Description

This quick reference guide is targeted at transportation professionals and analysts to help them assess the impacts of proposed transportation actions on communities with an emphasis on early project planning and development. "Community impact assessment is a process to evaluate the effects of a transportation action on a community and its quality of life . . . and should include all items of importance to people, such as mobility, safety, employment effects, relocation, isolation, and other community issues," according to the guide. Community Impact Assessment also is "legally required and supported by major Federal regulations, statutes, policies, technical advisories and Executive Orders." This primer lays out the community impact assessment process, highlights critical areas that must be examined, and identifies basic tools and information sources. According to the website, community impact analysts should play an important role in defining the project starting in the early phases of project development. The CIA process will inform the analyst who can help understand a project's purpose and need and help develop project alternatives.

Applicability to the C08 Project

This CIA reference guide points out that understanding community effects is a process that will vary as the practitioner engages with each individual community, given the difference in values that makes up a community's attitudes towards quality of life. Understanding the effects of a transportation project needs to be an iterative process that is started as early as possible. Beginning early is the key to fleshing out potential outcomes and their related effects and is the key to steering the project accordingly.

Basic frameworks for identifying and investigating project impacts:

- Comprehensive approach—gain as much relevant data as possible, examine, and then research a conclusion.
- Incremental approach—build on information a bit at a time until a conclusion is reached.

- Comparative approach—identify similarities and differences from past experience.

Some techniques available to examine the effects of a project on a community:

- Statistical analysis—forecasting, trendline projections, and correlation.
- Comparisons—case studies of similar transportation actions in other locations, using analogies, and examining similarities and differences over time or across areas.
- Visual imaging—computer simulations and development of physical models.
- Mapping overlays—plotting various maps (physical characteristics, demographics, and project alternatives) and superimposing them to create a composite image.
- Expert consultation—roundtables, discussions, and reports.
- Peer review—consultation with professionals within the transportation field.
- Brainstorming—generating ideas through quick-response reactions.
- Delphi techniques—structured form of reaching consensus among experts for problem-solving.
- Market research—focus groups, targeted surveys, interviews, and questionnaires.
- Public meetings—workshops and citizen advisory groups.

Types of data that should be gathered to understand a community:

- Census Bureau publications and statistical abstracts (population trends and demographics, economic indicators, and housing);
- Aerial maps and road maps (community boundaries and physical characteristics, location of activity centers, infrastructure, houses, and businesses);
- Field or windshield surveys and reviews (locations and numbers of structures, and activity patterns);
- Yellow Pages or city directories (businesses and community facility locations and type);
- Dun and Bradstreet databases (business location, type, and number of employees);
- Donnelley Directory (business location, type, and number of employees);
- Tax records (property values);
- Building permit records (approved or built development);
- Real estate market surveys, regional real estate journals, and interviews with realtors (housing prices, trends in sales, age or characteristics of structures, and neighborhood compositions);

- Interviews and public involvement with businesses, community leaders, and residents (community values and issues).

When analyzing impacts, it is important to keep in mind the following guidelines:

- Be cognizant of both positive and negative impacts.
- Consider both temporary and permanent impacts, as well as secondary and cumulative effects.
- Keep community goals in mind when identifying impacts.
- Recognize the public's perception of impacts. If the public identifies issues, then review and research these issues.
- Focus on the magnitude of an issue of controversy; it determines the level of specificity the analyst must adopt.

NCHRP Report 456: Guidebook for Assessing the Social and Economic Effects of Transportation Projects

Principal Author/Authors: David J. Forkenbrock, Public Policy Center, University of Iowa; Glen Weisbrod, Economic Development Research Group
Publisher: NCHRP/Transportation Research Board
Date of Publication/Presentation/Access: 2001
Website Links: http://ttap.colostate.edu/Library/TRB/nchrp_rpt_456-a.pdf
    www.ciatrans.net/CIA_Quick_Reference/Purpose.html

Description

This guidebook is designed to help practitioners assess the social and economic implications of transportation projects for their surrounding communities, including the often overlooked effects of transportation projects on members of society other than users of the facility to be improved. Written in 2001, the guidebook "identifies current best methods, tools, and techniques, based on an extensive literature review and comprehensive survey of state departments of transportation and metropolitan planning organizations."

The guidebook divides community effects into two clusters: transportation system effects and social and economic effects. "In brief, transportation system effects pertain to changes in how well the transportation system serves its users. Social and economic effects generally relate to how a transportation project affects people in the community other than those actually using the transportation system." The sections on transportation system effects are divided into: changes in travel time, safety, and changes in vehicle operating costs. The sections on social and economic effects are: community cohesion, economic development,

traffic noise, visual quality, transportation choice, accessibility, property values, and distributive effects. Surrounding transportation system effects and social and economic effects are "distributive effects." These effects deal with "how the various effects, positive and negative, are experienced by different subgroups within the community. In other words, who would benefit and who would bear the costs of a transportation project?" Finally, surrounding distributive effects and all other effects are "external forces."

Applicability to the C08 Project

The way this guidebook breaks down effects is a useful framework. The framework centers on Quality of Life, which is affected by two main types of community effects, transportation system effects and social and economic effects. Affecting all of these are distributive effects and external forces.

ASSESSMENT OF NEED FOR THE PROJECT

One or several problems or opportunities usually serve as the impetus for proposing a specific transportation project. It is at this initial stage that one should consider the issue of whether the project would advance community development and land use goals as stated in the community's adopted comprehensive plan. A preliminary study will help determine possible alternatives to the project, such as encouraging use of an alternative transportation mode, applying traffic management techniques, or influencing travel behavior by adopting different land use policies. At this stage, one should consider both short-run and longer-term effects on the community's development patterns.

FEASIBILITY ANALYSIS OF ALTERNATIVES

If the project is deemed necessary, one must then determine whether it is feasible from an engineering perspective—can it be constructed or implemented without undue cost or complexity? Would other approaches to addressing the problem or opportunity be more cost-effective? If this analysis results in a negative assessment, further assessments of likely effects are not necessary.

ANALYSIS OF SOCIAL AND ECONOMIC EFFECTS

This analysis is completed to serve two intertwined purposes: 1) provide residents, stakeholders, and decision makers with as much information as possible as to the effects, positive and negative, the project would have on the community; and 2) enable the federal requirements to be met regarding impact assessments called for in such provisions as the National Environmental Policy Act of 1969 (NEPA), the 1970 Federal-aid Highway Act, the Civil Rights Act of 1964 (as amended), and President Clinton's Environmental Justice Order 12898 of 1994 (EO 12898).

ANALYSIS OF EFFECTS ON NATURAL SYSTEMS

A parallel analysis is carried out to consider how the proposed project would affect natural systems. Included in this analysis would be effects on: 1) air and water quality; 2) endangered species and other wildlife; 3) greenhouse gas emissions; and 4) archeological and other cultural sites. NEPA prescribes the types of potential impacts one must address regarding effects on natural systems. These effects are not addressed in this guidebook.

RESULTS THAT ARE EASILY UNDERSTOOD BY RESIDENTS, STAKEHOLDERS, AND DECISIONMAKERS

The results and findings of the foregoing analyses must be effectively communicated to: 1) Persons who might be affected by the proposed project; and 2) applicable state and federal agencies. Applicable agencies are those charged with assessing whether the project would create unacceptable impacts and what mitigation measures would be necessary to protect the public's health, safety, and welfare.

The following are specific methods for assessing different types of community effects—the guidebook gives detailed information on all of these; the following is a brief synopsis.

- Assessing Changes in Travel Time:
  - Steps in the analysis are
    - Select a method to evaluate travel time savings;
    - Collect the necessary data;
    - Estimate the savings in travel time; and
    - Evaluate the time savings of the project.
  - Methods are
    - Highway Economic Requirements System (HERS);
    - Shortcut method based on HERS;
    - Stated-preference surveys; and
    - Travel time variability model.
- Assessing Safety:
  - Steps in the analysis are
    - Select a method to evaluate safety benefits and costs;
    - Collect the necessary data;
    - Estimate the safety benefits; and
    - Evaluate the chosen alternative in terms of satisfying user benefits.
  - Methods are
    - Analysis of national data;
    - Comparison approach;
    - Regression analysis; and
    - Bicycle safety index.
- Assessing Changes in Vehicle Operating Costs:
  - Steps in the analysis are
    - Select a method to valuate vehicle operating cost savings;
    - Collect the necessary data; and
    - Estimate the savings in vehicle operating costs.

- Methods are
  - Estimating vehicle operating costs as a function of speed;
  - Estimating vehicle operating costs as a function of grade; and
  - Highway Economic Requirements System (HERS).
- Assessing Transportation Choice:
  - Steps in the analysis are
    - Define the study area;
    - Perform a preliminary inventory of modes and facilities;
    - Examine the demand for alternative modes; and
    - Evaluate how mobility and safety would be affected by a project.
  - Methods are
    - Case studies;
    - Qualitative analysis;
    - User demand and evaluation surveys;
    - Improved transportation surveys and models;
    - Bicycle compatibility index;
    - Pedestrian street crossings; and
    - Barrier effect analysis.
- Assessing Accessibility:
  - Steps in the analysis are
    - Identify key origins and destinations;
    - Measure current accessibility between key origin-destination pairs;
    - Estimate accessibility between key origin-destination pairs for each alternative; and
    - Estimate accessibility effects in terms of cost.
  - Methods are
    - Interviews, focus groups, and surveys;
    - Site analysis;
    - Maps and aerial photographs;
    - Spreadsheet analysis;
    - Gravity models; and
    - Traffic demand models.
- Assessing Community Cohesion:
  - Steps in the analysis are
    - Define the study area;
    - Collect information from community leaders and groups active in the community;
    - Spend time in the study area;
    - Estimate the existing level of community cohesion; and
    - Extrapolate the project's effects on areas of relative cohesiveness.
  - Methods are
    - Interviews, focus groups, and surveys;
    - Site analysis;
    - Maps and aerial photographs; and
    - Databases on structures.

- Assessing Economic Development:
  - Steps in the analysis are
    - Measure the transportation factors affecting economic development;
    - Estimate the direct effect on business competitiveness;
    - Estimate the direct effect on business growth or decline; and
    - Estimate indirect, induced, and dynamic effects on economic development.
  - Methods are
    - Expert interviews;
    - Market studies;
    - Case studies;
    - Computer models; and
    - Input-output models.
- Assessing Traffic Noise:
  - Steps in the analysis are
    - Define the impact area and affected land uses and activities;
    - Do an initial screening analysis;
    - Determine existing noise levels;
    - Predict traffic noise levels resulting from the transportation project;
    - Identify and evaluate noise effects; and
    - Identify construction noise effects.
  - Methods are
    - Look-up tables: TNMLOOK; and
    - Traffic noise prediction models.

NCHRP REPORT 532: Effective Methods for Environmental Justice Assessment

Description

Environmental justice is a vital consideration in transportation planning owing to the large effects transportation projects have on people's quality of life. Evaluation of environmental justice has increased significantly since the passage of Executive Order 12898 in 1994. This is a guidebook that can help practitioners (including those working in state departments of transportation, metropolitan planning organizations, local transportation planners, working on transportation projects, and the like) understand and assess potential environmental justice impacts of those projects. Its goal is to ensure

that consideration and assessment of environmental justice is incorporated into all parts of the transportation planning process, "from long-range transportation systems planning through priority programming, project development, and policy decisions." The guidebook first defines environmental justice, then discusses identifying protected populations and then gives detailed technical guidance and supplemental resources on assessing the following categories of effects: air quality, hazardous materials, water quality and drainage, safety, transportation user effects, community cohesion, economic development, noise, visual quality, land prices and property values, and cultural resources.

"The guidance builds on existing impact assessment methods and presents new techniques that improve on current practice. These methods are organized and presented to guide practitioners in assessing environmental justice issues within specific application categories (e.g., air quality, safety, transportation user effects, and economic development). It is intended to advance current knowledge, provide practical guidance and qualitative and quantitative assessment tools, and share state-of-the-art methods for addressing environmental justice in transportation."

Applicability to the C08 Project

TYPES OF EFFECTS

Transportation project effects are considered as falling into two categories: 1) related to human health and safety; or 2) affecting social, economic, or cultural elements of the human environment (certain effects might have impacts in both areas).

The guidebook chose the methods to evaluate community effects because they meet the following criteria:

- They can be used to evaluate distributive effects to protected populations.
- They are predictive.
- They can be integrated into a participation-focused planning process.
- They meet regulatory and legal requirements and will stand up to scientific review.
- They are flexible and can be modified to address many types of issues.
- As a whole, the methods provide a range of assessment options that streamline and simplify method selection and implementation for the practitioner.

Key considerations used to select the methods:

- Integrating community participation and predictive assessment;
- Meeting legal, policy, and scientific requirements;

- Making the tool fit the problem; and
- Simplifying the assessment process.

Transportation effects addressed in the guidebook fall into two categories: human health and safety; and social, economic, and cultural effects.

- Human health and safety:
  - *Air quality* (Chapter 3) is important to human health, the vitality of the natural environment, and the quality of life in general.
  - *Hazardous materials* (Chapter 4) are used in the construction, maintenance, and operation activities of transportation facilities. There also is concern over spills when hazardous cargo is transported through populated areas or sensitive environmental areas.
  - *Water quality and drainage* (Chapter 5) may have environmental justice implications if it affects public or private water supplies or resources more highly valued by protected populations. Drainage issues are commonly social or economic, but are discussed here because they are related to water quality.
  - *Transportation safety* (Chapter 6) covers the changes in public safety resulting from a transportation project or program that can be classified into three groups: 1) traveler safety, particularly for road users; 2) safety of pedestrians and users of non-motorized transportation; and 3) safety of the general public, especially children, the elderly, and the disabled.
- Social, economic, and cultural effects:
  - *Transportation user effects* (Chapter 7) can be classified into five groups: 1) changes in travel time; 2) changes in safety; 3) changes in vehicle operating costs; 4) changes in transportation choice; and 5) changes in accessibility.
  - *Community cohesion* (Chapter 8) is often raised as an environmental justice concern, commonly related to displacement of persons or severing of transportation linkages that connect community members.
  - *Economic development* (Chapter 9) illustrates that one of the most positive effects of transportation projects is that reduced transportation costs can make businesses more competitive. Transportation changes can have beneficial and adverse economic development effects.
  - *Noise* (Chapter 10) from traffic and from rail and air transportation can have harmful health effects, but nuisance effects are much more common.
  - *Visual quality* (Chapter 11) of transportation system changes can have a significant when they require new structures to be built, older structures to be torn down, or the view of pleasant settings or landscapes to be obscured.

- *Land prices and property values* (Chapter 12) are discussed together because changes in the demand for land are a key driving force behind changes in property values.
- *Cultural resources* (Chapter 13) that may be of cultural value to protected populations can be adversely affected by transportation system changes.
- Criteria the guide suggests for identifying appropriate methods of community affects assessment.
- Assessment level. Screening assessment/initial review or detailed analysis.
- Appropriate uses. Regional plans, investment plans, system assessment, corridor studies, project-level studies.
- Use when. Brief description of types of issues that can be evaluated.
- There are three levels of data needs:
  - Low—Data are readily available and processing demands are minor;
  - Medium—Data are generally available, must budget for acquisition/processing costs; and
  - High—Data may be costly to acquire, processing requirements may be extensive.
- Expertise required. Listing of types of expertise needed to perform the assessment.

Below are the methods discussed for identifying protected populations and for analyzing each type of effect.

- Methods to identify the locations and activity space of protected populations:
  - Local knowledge and public input;
  - Threshold analysis using large-area census data;
  - Spatial interpolation using small-area census data;
  - Field survey;
  - Customer survey;
  - Population surfaces;
  - Analysis of historical data;
  - Population projections;
  - Environmental justice index;
  - Activity space analysis using personal interviews;
  - Activity space analysis using an abbreviated diary; and
  - Space-time activity analysis using GIS.
- Methods used to analyze air quality impacts from transportation projects:
  - General air quality review;
  - Detailed microscale analysis;
  - Detailed regional analysis; and
  - Analysis using pollution surfaces.
- Methods to analyze how hazardous material data can effectively be used to perform environmental justice assessment:
  - Phase 1 desktop assessment;
  - Phase 1 computer-based assessment;

- Hazardous materials transport screening study; and
- Hazardous materials transport—probability modeling.
- Methods for assessing likely water quality impacts of a proposed transportation project:
  - Land acquisition checklist;
  - Visual quality checklist;
  - Accessibility checklist;
  - Groundwater quality checklist; and
  - Surface water quality checklist.
- Method for estimating the safety impacts of transportation system changes:
  - Analysis of national data;
  - Comparison approach;
  - Regression analysis;
  - Bicycle safety index;
  - Bicycle compatibility index;
  - Pedestrian street crossings;
  - Pedestrian danger index;
  - Barrier effect analysis; and
  - User demand and evaluation surveys.
- Methods for studying accessibility:
  - Unmodified transportation demand models;
  - Adaptation of transportation demand models;
  - More advanced adaptation of transportation demand models;
  - HERS-ST model;
  - Activity-based travel simulation; and
  - The Transportation Analysis and Simulation System.
- Methods for studying transportation choice:
  - Modal quality assessment;
  - User demand and evaluation surveys; and
  - Improved transportation surveys and models.
- Methods for analyzing community cohesion:
  - Focus groups to identify interaction patterns;
  - Personal interviews;
  - Deliberative polling;
  - Travel demand models with geographic information systems (GIS); and
  - Stop watch and distance wheel.
- Methods for analyzing economic development:
  - Map and GIS assessment;
  - Surveys or focus groups; and
  - Gravity models.
- Methods for analyzing noise effects:
  - Initial evaluation;
  - Highway project noise analysis; and
  - Transit project noise analysis.
- Methods for analyzing visual effects:
  - Visual preference survey (VPS);
  - Stated-preference/contingent choice (SP/CC); and
  - Distributive effects analysis.

- Methods for analyzing land prices and property values:
  ○ Market studies and expert opinion;
  ○ Property comparisons/appraiser opinion; and
  ○ Hedonic regression.
- Methods for analyzing cultural resources:
  ○ Multilevel impact valuations;
  ○ Site visit and survey with a community leader; and
  ○ Stakeholder and expert charrette.

NCHRP 8-36 Task 86: Corridor Approaches to Integrating Transportation and Land Use, Final Report

Principal Author/Authors: Submitted by: ICF International for National Cooperative Highway Research Program
Publisher: NCHRP/Transportation Research Board
Date of Publication/Presentation/Access: April 2009
Website Link: www.trb.org/notesdocs/NCHRP08-36(86)_FR.pdf

Description

More than in the past, transportation agencies are being called upon to address land use and transportation integration issues. The objective of NCHRP 8-36 Task 86 was to "identify successful innovations in integration of transportation and land use planning for transportation corridors that could be transferred to other locations, and to disseminate this information rapidly to practitioners to address their own transportation corridor problems." The research inventoried good examples of integrating land use and transportation planning, and documented the tools and practices that have worked. The report includes a literature review summary, six case studies, and a synthesis of notable practices gleaned from both parts.

Applicability to the C08 Project

The target audience of this report was same as the target audience for the SHRP 2 project—state DOTs and other agencies involved in transportation and land use planning, decision making, and investments. Many community effects are the result of transportation planning and construction that is not mindful of land use issues. This report is useful for best practices and tools for integrating transportation and land use. It is not as useful for understanding different types of potential impacts and how to assess them, but is useful for trying to avoid community effects at the get-go. In that sense, it may not be very relevant to the C08 Project. One thing many of the case studies pointed to was that community effects and efforts to mitigate or avoid them should be looked at from a regional perspective—in the case of Utah, this can even be as broad as at the level of the entire state.

Some community effects related to land use and transportation:

- Effects on urban centers;
- Environmental quality;
- Lack of a balanced, multimodal transportation system;
- Encroachment on rural and resource lands;
- Unpleasant rather than great streets;
- Lack of street connectivity;
- Lack of street access by alternate modes;
- Lack of adequate housing choices;
- Safety;
- Lack of transportation choice;
- Increasing traffic congestion;
- Truck traffic;
- View shed destruction;
- Habitat impacts;
- Destruction of sense of place for the community;
- High regional energy use;
- Negative effects on water supply;
- Loss of open space; and
- Frayed urban fabric.

Some best practices for the avoidance of community effects:

- Rightsizing the road;
- Integrating land use and facility design to address capacity, aesthetics, safety, and multimodal issues;
- Aesthetic improvements to better integrate transportation facilities;
- Provision for multimodal options;
- Covering/depressing of roads to reconnect neighborhoods;
- Creating redundancy/parallel roads in the network;
- Rezoning to get Transit-Oriented Development, higher densities, and mixed use clustering;
- Development regulation to match corridor form;
- Growth management;
- Protecting adjacent land use from undesirable aspects of transportation facilities;
- Landscaping, street furniture, and better bike/pedestrian infrastructure;
- Living (complete) streets approach;
- New/better street classification systems;
- Appropriate "upzoning";
- Balancing pedestrians and other travel modes with adjacent land use; and
- Buildings that frame and enclose the street corridor.

Public Health Workbook to Define, Locate and Reach Special, Vulnerable, and At-Risk Populations in an Emergency Draft

Principal Author/Authors: Centers for Disease Control and Prevention and Department of Health and Human Services
Publisher: Centers for Disease Control and Prevention
Date of Publication/Presentation/Access: Note: "Working draft document for review. Do not cite or quote."
Website Link: www.bt.cdc.gov/workbook/pdf/ph_workbook_draft.pdf

Description

This workbook was written in response to a number of crises that have befallen the United States over the last decade (9/11 and the anthrax attacks that followed, Hurricanes Katrina and Rita, power outages in the Northeastern United States, mudslides, and diseases such as SARS and West Nile Virus). Public health and emergency planners have learned from these disasters that they need to find new, nontraditional methods of communicating health and emergency information to some members of the community, as those with the greatest needs and greatest risk are often are outside the channels of mainstream communication. This workbook provides a process that can "support state, local, and tribal planners as they advance in their efforts to reach all populations—and specifically, special populations—in day-to-day communication and during crisis or emergency situations."

The categories of special populations specified in this workbook include: economic disadvantage; limited language competence; physical, cognitive, or sensory disability; cultural/geographic isolation; and age vulnerability. The workbook has three sections, each representing a major stage in the process of communicating with special populations. Section 1.0 assists a local, regional, or state planner in defining the special populations in a locale and gathering critical demographic data about these groups; Section 2.0 details the steps for locating special populations in a designated geographic area; and Section 3.0 addresses reaching people once research has defined who they are and where they are located.

Applicability to the C08 Project

The SHRP 2 project can learn from emergency preparedness and response because these activities require that a community knows what subgroups make up their population, where the people in the groups live and work, and how they best receive information. Some of the tips and techniques outlined in this workbook for communicating effectively with under-served populations could help transportation planners communicate with these same groups during the visualization process for a capacity expansion project. Outreach techniques outlined in the three sections of the workbook—defining, locating, and reaching out to special populations—could help get underserved populations involved in visioning. The workbook gives very clear instructions on how to carry out all three (defining, locating, and reaching).

The workbook's lengthy discussion of what comprises a special population (such as economic disadvantage; limited language competence; physical, cognitive, or sensory disability; cultural/geographic isolation; and age vulnerability) also can be useful to practitioners trying to determine community effects. They can look at how the project might bring more or harsher community effects to certain disadvantaged populations using the definitions of these populations that the workbook so carefully outlines.

The workbook outlines the following "Principles of Community Engagement," which also could be used by planners in visioning for transportation projects:

1. Be clear about the purposes or goals of the engagement effort and the populations and/or communities you want to engage.
2. Become knowledgeable about the community's economic conditions, political structures, norms and values, demographic trends, history, and experience with engagement efforts. Learn about the community's perceptions of those initiating the engagement activities.
3. Go into the community, establish relationships, build trust, work with the formal and informal leadership, and seek commitment from community organizations and leaders to create processes for mobilizing the community.
4. Remember and accept that community self-determination is the responsibility and right of all people who comprise a community. No external entity should assume it can bestow on a community the power to act in its own self-interest.
5. Partnering with the community is necessary to create change and improve health.
6. All aspects of community engagement must recognize and respect community diversity. Awareness of the various cultures of a community and other factors of diversity must be paramount in designing and implementing community engagement approaches. (Engaging these diverse populations will require the use of multiple engagement strategies.)
7. Community engagement can only be sustained by identifying and mobilizing community assets, and by developing capacities and resources for community decisions and action.

8. An engaging organization or individual change agent must be prepared to release control of actions or interventions to the community and be flexible enough to meet the changing needs of the community.

9. Community collaboration requires long-term commitment by the engaging organization and its partners.

THRIVE: Community Tool for Health and Resilience in Vulnerable Environments

Principal Author/Authors: Prevention Institute prepared this information with funding from the Office of Minority Health, U.S. Department of Health and Human Services
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Website Link: www.preventioninstitute.org/thrive.html

Description

THRIVE provides a framework to help communities with three things: identifying factors associated with poor health outcomes in communities of color; engaging relevant stakeholders; and taking action to remedy the disparities. The goal of THRIVE is to improve health in communities and reduce disparities experienced by minorities, both racial and ethnic. Low-income communities and communities of people of color experience a disproportionately high amount of poor health and safety outcomes, including chronic disease, traffic-related injuries, mental illness, substance abuse, teen pregnancy, and violence. THRIVE focuses on prevention rather than treatment by focusing on underlying risk and resilience factors. The THRIVE community tool can be used in urban, rural, and suburban settings, and THRIVE was tested in three pilot communities—one urban (New York City), one suburban (De Paso Heights, California), and one rural (Hidalgo County, New Mexico).

According to the executive summary, "The toolkit contributes to a broad vision about community health, confirms the value of upstream approaches, challenges traditional thinking about health promotion, organizes difficult concepts and enables systematic planning, has rural and urban applicability, has utility for practitioners and community members, and is a good tool for strategic planning at community and organizational levels."

THRIVE has 20 "factors" sorted into four "clusters" to describe community health. The THRIVE guidelines describe samples actions, resources, tools, and community examples for each cluster and factor. The factors and clusters follow:

1. Built environment:
   a. Activity-promoting environment;
   b. Nutrition-promoting environment;
   c. Housing;
   d. Transportation;
   e. Environmental quality;
   f. Product availability; and
   g. Appearance/ambiance.
2. Social capital:
   a. Social cohesion and trust;
   b. Collective efficacy;
   c. Civic participation/engagement;
   d. Positive behavioral/social norms; and
   e. Positive gender norms.
3. Services and institutions:
   a. Public health, health and human services;
   b. Public safety;
   c. Education and literacy;
   d. Community-based organizations; and
   e. Cultural/artistic opportunities.
4. Structural factors:
   a. Ethnic/racial relations;
   b. Economic capital; and
   c. Media/marketing.

Applicability to the C08 Project

The THRIVE tool is relevant to the project in that it has a goal of addressing health-related community effects. Its focus on vulnerable populations makes sense for capacity expansion projects, which have historically negatively impacted these communities most. THRIVE focuses on underlying risk and resilience factors, and so its framework of looking at community effects at more than just a surface level is instructive to assessing the effects of capacity expansion projects.

Community Effects Considerations

Principal Author/Authors: FHWA National Community Impact Assessment Course (Adapted from FDOT SCE Considerations)
Publisher: The Louis Berger Group, Inc.
Website Link: www.berger-nc.com/cssresources/Community Context/CommunityEffectsConsiderations_FDOT.pdf

Description

This resource lists categories of community effects and key questions to each. The information is presented in a table with the community effects broken down into seven meta-categories: sociocultural considerations; economic considerations; land use considerations; mobility/access considerations; sensory/aesthetic considerations; safety consid-

erations; and displacement considerations. Each has multiple subcategories, and with each subcategory are questions about that type of community effect, data sources needed to investigate that effect; and key considerations in analyzing that effect.

Applicability to the C08 Project

This table is highly relevant to the project, as it is a detailed list of community effects considerations accompanied by data needs and key analyses requirements. The table has a very useful long list of key questions and a column called "Key Analyses" that lists methods of analysis for each key question.

The following are the seven main categories accompanied by their subcategories. Refer to the table itself for the questions, data sources, and key analysis items for each subcategory:

- Sociocultural considerations:
  - Changes in demographics;
  - Community cohesion;
  - Compatibility with community goals and issues;
  - Cultural/historic resources; and
  - Spiritual/religious practices.
- Economic considerations:
  - Effect on business;
  - Traffic levels;
  - Traffic patterns;
  - Special needs patrons;
  - Business visibility;
  - Regional employment; and
  - Tax base/property values.
- Land use considerations:
  - Land use patterns/urban form;
  - Compatible with local land use plans; and
  - Indirect and cumulative effects.
- Mobility/access considerations:
  - Bike/pedestrian; transit; transportation-disadvantaged populations; parks; public services;
  - Connectivity:
    - Intermodal; and
    - Land uses.
  - Vehicular mobility.
- Sensory/aesthetic considerations:
  - Noise/vibration;
  - Physical intrusions;
  - Viewshed; and
  - Compatible with aesthetics/community focal points.
- Safety considerations:
  - Vehicular safety;
  - Bike/pedestrian safety;

  - Emergency response;
  - Crime; and
  - Health.
- Displacement considerations:
  - Residential/nonresidential;
  - Business and farms;
  - Relocation sites; and
  - Community focal points.

Community Impact Assessment (CIA): Questions and Answers

Principal Author/Authors: A Product of the CIA Practitioners Network
Publisher: FHWA
Date of Publication/Presentation/Access: July 2009
Website Link: www.ciatrans.net/cia_faq.html

Description

The Community Impact Assessment (CIA) process is a method utilized to analyze potential community effects. This document is a list of 20 questions and answers about CIA. According to this document, CIA is "an iterative process that raises awareness and understanding of both positive and negative effects of proposed actions on the human (social and economic) environment. CIA uses data analysis as well as broad community interaction to enable informed transportation decision-making in compliance with 23 U.S.C. 109(h)." 23 U.S.C. 109(h) is a section of Chapter 1 of Title 23 of the United States Code (USC) whose wording can be traced back to the Federal-aid Highway Act of 1970. Another reference listed in the Q and A document is a manual created by the Illinois DOT in 2007 titled "Community Impact Assessment," which is available as formal guidance for state districts and consultants.

This document describes CIA as "a framework for assessing the potential positive and negative effects of proposed transportation actions on the human environment. It also helps incorporate community viewpoints into the transportation decision-making process. CIA supports the development of better transportation projects that meet community needs, goals, and values as well as mobility and safety." CIA is meant to help get potential community effects brought up and discussed early in the planning process. The document says, "The advantages of CIA can include: early identification and mitigation of issues; increased communication; public acceptance and support that comes through an open, inclusive process; improved agency reputation; streamlining through increased communication and trust; and avoidance of litigation."

The Q and A document gives a short "How to" on how to assess community effects. Begin immediately to build a network of community contacts and stay in touch, using the following steps:

1. Gather existing community information from secondary sources, particularly official jurisdictional maps:
   a. Within your organization, find out who lives in the area.
   b. What major projects have occurred or are planned in addition to yours?
   c. What is the accident history and level of service (LOS) on roadways?
   d. What are the environmentally sensitive areas?
   e. Where are the mapped and unmapped recreational areas?
2. Map available community data (such as schools, churches, fire, police, and shopping) with community identifiers (labels) on each, for presentation to the public.
3. Compile a list of elected officials, staff of all participating agencies, interest groups, community leaders, "interested parties," resident groups interested in transportation, and individuals who may be adversely affected by the project. Visit or call them and use simple surveys to start building working relationships and your knowledge of the area.
4. Analyze your data and present it to the public, asking them to confirm and add to your information. Follow federal and state environmental justice guidelines, and make sure you are inclusive of the traditionally underserved as well as reluctant public groups and individuals.

The document also gives instructions on creating a community profile or community fact sheet. A fact sheet should contain:

- A community boundary;
- Overview of the history of the area;
- Discussion of social and economic characteristics;
- Discussion of trend data;
- Inventory of study-area features;
- Discussion of current community issues and needs;
- Identification of formal and informal community leaders;
- Listing any planned building and demolition projects; and
- Concluding with any findings.

Regarding indirect and cumulative effects, the document advises, "When you develop a CIA, using community input and expert panels, or similar methods may be a better way to capture these effects than trying to use data analysis. Indirect and cumulative effects also need to be reevaluated periodically since change continually occurs in a community."

Applicability to the C08 Project

This reading describes what a CIA is and how the process works. The CIA is supposed to look at certain community effects; they are listed those below. Other than repeating those effects and the methods used in the CIA process to address them, this document will not be much use to the project. Impacts on the human (social and economic) environment include:

- Adverse economic effects:
  - Adverse employment effects;
  - Tax losses; and
  - Property values losses.
- Adverse social effects:
  - Destruction or disruption of aesthetic values;
  - Destruction or disruption of community cohesion;
  - Destruction or disruption of the availability of public facilities and services;
  - Injurious displacement of people;
  - Injurious displacement of businesses;
  - Injurious displacement of farms; and
  - Disruption of desirable community and regional growth.
- Adverse environmental effects:
  - Air, noise, and water pollution; and
  - Destruction or disruption of man-made and natural resources.

Data Needs for Bicycling and Sustainability Research

Principal Author/Authors: Ralph Buehler, Virginia Tech, Alexandria, VA (prepared with input from The Louis Berger Group, Inc.)
Publisher: Virginia Tech
Date of Publication/Presentation/Access: April 2009

Description

This presentation was created to help outline the types of indicators and data needed to evaluate whether an area is suitable for sustainable transportation in the form of biking, walking and transit, with an emphasis on bicycling. It begins with a discussion of the concept of sustainability and how it applies to the transportation system. It looks at "green modes" of transportation (walk, bike, transit) in Alexandria and Arlington County, Virginia, and compares them to the mode split for the South Atlantic Census Division, Virginia, and the United States. It discusses the potential benefits of cycling and gives indicators of a bikeable and walkable community. It lists the data needed to evaluate a community's bikeability and measures to evaluate sustainable transportation.

Applicability to the C08 Project

This presentation is about sustainability with a focus on bikeability in a community. It was created to help people understand data needs for research on bikeability and sustainability. The main community effect that is relevant to this document is sustainability brought about by a "green" transportation system with a focus on bikeability. The document lists the following potential benefits of cycling to a community:

- More daily physical activity and better personal health;
- Reduced direct and indirect medical costs;
- Improved traffic safety and more livable neighborhoods;
- Better environment: reduced air, water, and ground pollution; less noise; less disruption of natural ecosystems;
- Reduced greenhouse gases and global warming;
- Improved accessibility and increased social and economic integration of all groups;
- Reduced traffic congestion, parking needs, energy use; and
- Economic development (e.g., bike stores and housing values).

Capacity expansion projects can have a negative effect on sustainability by detracting from bikeability. Some questions about how a project that might detract from bikeability include:

- Will the project displace people into a place where cars would be the only mode available to get around?
- Does the project create barriers to neighborhood cohesion by creating barriers to community connectivity?
- Would the project degrade safe access to community facilities by walking or biking?
- Does the project have a negative impact on community goals for sustainability/quality of life associated with sustainability?
- Does the project create an added emphasis on car ownership (financial burden for some)?
- Does the project have a negative impact on the community's vision?
- Does the project have a negative impact on community equity—serving population who can afford cars versus those who cannot?
- Does the project have an impact on cultural/historic sections or area?

Measuring Urban Design Qualities: An Illustrated Field Manual

Principal Author/Authors: Prepared for the Active Living Research Program of the Robert Wood Johnson Foundation by: Otto Clemente and Reid Ewing, University of Maryland, National Center for Smart Growth; Susan Handy, University of California, Davis; Ross Brownson, Saint Louis University

Description

This is a manual providing guidance on how to objectively measure urban design qualities of typical streets for their contribution to walkability. This manual aims to go beyond typical measures of walkability, such as density and street connectivity, as those do not adequately describe the quality of what it feels like to walk down a given street. It seeks to outline subtler qualities that may influence choices about active travel (e.g., biking, walking) and active leisure time. The urban design qualities discussed in this manual are: imageability, enclosure, human scale, transparency, and complexity. These qualities reflect the way people perceive and interact with the environment. The manual gives detailed guidance on how to measure each of these qualities for a specific street.

This manual defines the five urban design qualities as:

1. *Imageability* is the quality of a place that makes it distinct, recognizable, and memorable. A place has high imageability when specific physical elements and their arrangement capture attention, evoke feelings, and create a lasting impression.
2. *Enclosure* refers to the degree to which streets and other public spaces are visually defined by buildings, walls, trees, and other elements. Spaces where the height of vertical elements is proportionally related to the width of the space between them have a room-like quality.
3. *Human scale* refers to the size, texture, and articulation of physical elements that match the size and proportions of humans and, equally important, correspond to the speed at which humans walk. Building details, pavement texture, street trees, and street furniture are all physical elements contributing to human scale.
4. *Transparency* refers to the degree to which people can see or perceive what lies beyond the edge of a street or other public space and, more specifically, the degree to which people can see or perceive human activity beyond the edge of a street or other public space. Physical elements that influence transparency include walls, windows, doors, fences, landscaping, and openings into midblock spaces.
5. *Complexity* refers to the visual richness of a place. The complexity of a place depends on the variety of the physical environment, specifically, the numbers and kinds of buildings, architectural diversity and ornamentation, landscape elements, street furniture, signage, and human activity.

Applicability to the C08 Project

The potential community effects are as follows:

- Increase or decrease in built environment's imageability (and thus walkability) with the following data:
  - Number of courtyards, plazas, and parks: both sides, within study area.
  - Number of major landscape features: both sides, beyond study area. (Prominent landscape views such as bodies of water, or man-made features that incorporate the surrounding natural environment. Note: A major landscape feature serves as a natural landmark. Therefore, when counting, consider whether the view is prominent and/or well known, such that it could be used as a reference point for orientation.)
  - Proportion historic building frontage: both sides, within study area. (For the portion of the street with buildings fronting the sidewalk, estimate the proportion that is fronted by historic buildings—on both sides of the street.)
  - Number of buildings with identifiers: both sides, within study area.
  - Number of buildings with nonrectangular shapes: both sides, within study area. (Buildings on either side of the street whose shape is not a simple rectangular box. Count buildings that are within the study area or that make up more than 20% of your field of vision. Note: Consider a nonrectangular building to be any building that, from any angle, is not a simple rectangle. A building with a basically rectangular shape but with a pitched roof or ornamental trim will be considered nonrectangular.)
  - Presence of outdoor dining: your side, within study area. (Consider a place as having outdoor dining even if there are no people currently utilizing it. However, if a place has outdoor dining but appears to be closed (folded chairs and umbrellas), do not consider it an instance of outdoor dining. The outdoor dining must appear to be open to be counted.)
  - Number of people: your side, within study area. (Note: walking, standing, or sitting pedestrians; do not include people sitting at outdoor eating areas.)
  - Noise level: both sides, within study area. (Amount of noise made by traffic, pedestrians, and any other ambient sources.)
- Increase or decrease in built environment's enclosure (and thus walkability) with the following data:
  - Number of long sight lines: both sides, beyond study area. (Consider far ahead being approximately 1000 ft, or three short city blocks.)
  - Proportion street wall: both sides, beyond study area. (Consider the "street wall" as portions of the block that are occupied by continuous facades or walls adjacent to the sidewalk. If a facade or wall is set back from the sidewalk (e.g., by a lawn, parking lot) by less than 10 ft, then that facade or wall contributes to the street wall; if it is set back more than 10 ft, then it does not contribute to the street wall.)
  - Proportion sky: both sides, beyond study area. (Proportion of your field of vision straight ahead that is sky.)
- Increase or decrease in built environment's human scale (and thus walkability) with the following data:
  - Number of long sight lines both sides: beyond study area. (While walking, can you see far in front of you? Record a 1 if at any time during the walk you were able to see far in front. Note: Consider far ahead being approximately 1,000 ft, or three short city blocks.)
  - Proportion windows at street level: your side, within study area. (The proportion of the surface area of the first floor (street level) of buildings that front along the sidewalk made up of windows.)
  - Average building height: your side, within study area.
  - Number of small planters: your side, within study area.
  - Number of pieces of street furniture and other street items: your side, within study area.
- Increase or decrease in built environment's transparency (and thus walkability) with the following data:
  - Proportion windows at street level: your side, within study area.
  - Proportion street wall: your side, beyond study area.
  - Proportion active uses: your side, within study area.
- Increase or decrease in built environment's complexity (and thus walkability) with the following data:
  - Number of buildings: both sides, beyond study area. (Count buildings that are either on the street within your study area or buildings that are outside the study area but occupy at least 20% of the height of your field of vision as you walk with the buildings on your right.)
  - Number of colors: both sides, beyond study area.
  - Presence of outdoor dining: your side, within study area.
  - Number of pieces of public art: both sides, within study area.
  - Number of people: your side, within study area.

Some questions about how capacity projects might affect urban design qualities (and thus walkability):

- How will the capacity project change the way the streets in the project area are perceived by users?
- How will the capacity project add/detract from the built environments' imageability?
- How will the capacity project add/detract from the built environments' enclosure?
- How will the capacity project add/detract from the built environments' human scale?

- How will the capacity project add/detract from the built environments' transparency?
- How will the capacity project add/detract from the built environments' complexity?

This manual addresses walkability as it pertains to urban design qualities. The following questions all touch on how the capacity project might affect other things if it affects walkability.

- Will the capacity project's effect on walkability adversely alter demographic patterns, community cohesion, or the community's ability to reach its goals?
- Will the capacity project's effect on walkability adversely alter businesses, traffic levels, traffic patterns, special needs patrons, business visibility, regional employment, or property values?
- Will the capacity project's effect on walkability adversely alter land use patterns or enactment of land use plans?
- Will the capacity project's effect on walkability adversely alter access to transit, parks, or public services for transportation-disadvantaged populations?
- Will the capacity project's effect on walkability adversely alter connectivity between transportation modes and/or land uses or vehicular mobility?
- Will the capacity project's effect on walkability increase noise/vibration or physical intrusions?
- Will the capacity project's effect on walkability adversely alter viewsheds, or community aesthetics?
- Will the capacity project's effect on walkability adversely alter vehicular safety, bike/pedestrian safety, emergency responses, crime rates, or health?

The methods given in this presentation would be the use of the measures it outlines for the urban design qualities of imageability, enclosure, human scale, transparency, and complexity using "no-build" and "build" scenarios and comparing the results.

Community Cohesion as a Transport Planning Objective

Principal Author/Authors: Todd Litman, Victoria Transport Policy Institute
Publisher: Victoria Transport Policy Institute
Date of Publication/Presentation/Access: January 2009
Website Link: www.vtpi.org/cohesion.pdf

Description

This describes the concept of community cohesion through how much residents of a study area (community) know and care about their fellow residents. Community cohesion value and the effect of transportation decisions are examined. The piece also illustrates planning strategies that can help improve community cohesion, generally through concepts such as walkability, accessibility, and affordability.

The paper defines community cohesion as the quantity and quality of interactions among people in a community as indicated by the degree residents know and care about their neighbors and participate in community activities. The author examines the way transportation and land use decisions can impact this cohesion. Human happiness can be directly affected by the location and accessibility of activities and the quality of the public realm (places where people naturally interact, including parks, public transportation, sidewalks, and the like). In the planning realm, community cohesion is categorized as a land use impact, a social impact, and a community livability impact.

Planning strategies for improving community cohesion are organized into five categories: pedestrian improvements; improving transport system diversity and affordability; universal design; public transportation; and smart growth.

Applicability to the C08 Project

This resource indicates that transportation and land use planning decisions affect community cohesion in the following ways:

- Quality of the public realm, particularly sidewalks, paths, streets and parking lots, and traffic volumes on local roads;
- Amount of walking that occurs in a neighborhood, and therefore opportunities for neighborly interactions;
- Land use mix, such as locating stores, cafes, parks, and schools within neighborhoods, and therefore the frequency of social interactions when running errands or participating in local activities; and
- Diversity of housing (type and price) and therefore demographic mix and opportunities for interaction among different income groups.

The following are the recommended data needs given for these effects:

- Land use;
- VMT/VHT data;
- Location of bicycle and pedestrian facilities;
- Bike/pedestrian usage (counts);
- Speed limits and actual average speed;
- Census data;
- Housing data (including HDMA data);
- Street dimensions;
- Property data;

- NHTS data (all trip purposes);
- CRA data;
- Local survey data;
- Obesity/health statistics;
- Crash statistics, as well as crash rate statistics, involving bike/pedestrian modes; and
- Density measurements and diversity measurements.

This project looks at the value of community cohesion and the effects transportation planning decisions have on that cohesion. Some community-effects–related questions that focus on community cohesion include:

- Is community cohesion defined enough to engage all stakeholders in the visioning process of capacity projects?
- Does community cohesion accurately reflect all of the relevant needs of a community related to a highway capacity project?
- How do land use, social interaction, and social quality decisions and changes affect community cohesion?

The methods given in this work include identifying and evaluating improvements in the following areas:

- Pedestrian improvements: Evaluation of the quality, accessibility, security, and attractiveness of pedestrian facilities and programs.
- Improving transport system diversity and affordability: Evaluation of improvements to walking/cycling conditions, parking varieties, car-sharing/commute-sharing, and distance-based pricing models.
- Universal design: Evaluation of Universal Design Standards implementation.
- Public transportation: Evaluation of transit-oriented development and transit system quality.
- Smart growth: Evaluating the success of smart growth encouragement projects and programs.
- Location efficient development: Evaluating how well communities locate affordable housing in compact, mixed-use, multimodal neighborhoods where nondrivers experience a high level of accessibility and transportation costs are relatively low.

Community Impact Assessment (Planning, Project Development, Data Sources, Analysis Tools and Techniques, Case Studies, Grants, etc.) References and Resources

Principal Author/Authors: Alexander Bond
Publisher: FHWA
Date of Publication/Presentation/Access: May 2009
Website Link: www.ciatrans.net/index.shtml

Description

This website provides background information and resources for the Community Impact Assessment (CIA) process. This resource focuses on CIA principally in the United States but does provide resources for international CIA efforts. This includes federal legislation, publications, other web resources, and training course information. This website was developed to serve as a clearinghouse to assist in the evaluation of transportation planning and project implementation effects on a community's quality of life.

The website is organized into five core areas; About CIA; Latest News, Current Activities; Resources; and Get Involved. At the time of this review the Latest News section was disabled. Each of the remaining sections provides easy-to-use and understandable information on the history and current state of the practice for CIA. The Resources section was last updated on 22 August 2008 and provides an extensive list of links that are organized by agency and subject.

Applicability to the C08 Project

This website does not directly list community effects but could be extremely useful for informing throughout the visioning process and beyond. This website could not only serve as a primer for project stakeholders that are new to CIA but as an ongoing resource for more experienced stakeholders as well.

Monetary Valuation per Dollar of Investment In Different Performance Measures

Principal Author/Authors: Glen Weisbrod, Teresa Lynch, and Michael Meyer
Publisher: National Cooperative Highway Research Program, Transportation Research Board
Date of Publication/Presentation/Access: February 2007
Website Link: www.statewideplanning.org/_resources/63_NCHRP8-36-61.pdf

Description

This study reviews the state of the practice of assigning monetary values to performance measures that are not normally measured in financial terms. It provides information on the most promising tools and practices for monetizing benefits. The work examines the experience in monetizing performance measures for those organizations that have done so and the organizational requirements associated with successful efforts. The report provides a basis for organizations to better ascertain the extent to which monetization is possible for projects.

The report identifies the current state of the practice in terms of the range of benefits and performance measurement topics of interest to state and regional transportation agencies.

The report discusses the ways in which these various performance measures are measured, in qualitative and/or quantitative terms, and provides an assessment of the degree to which the quantitative performance indicators are or can be represented in monetary terms. There also is a discussion of the issues confronting transportation agencies wanting to use monetary measures in performance measurement.

The general methodology for benefits monetization approaches also is summarized. The study analyzes the present valuation of specific impacts as they relate to nontraditional transportation-related performance measures. Cases studies are used to illustrate how different methods are used by transportation and nontransportation agencies. The study also provides useful guidance for transportation agencies on developing performance measurement improvements. The study looks at several ways that community effects across a broad range of contexts have been monetized. Specifically, the measures related to quality of life are identified by the study as difficult to monetize, and are discussed below.

Applicability to the C08 Project

This study identified several direct and indirect indicators that can be used to evaluate quality of life–related community effects. The study indicates that it is not clear how to measure quality of life monetarily, except via a survey of stated preferences.

Direct quality-of-life community effects can be evaluated through the use of social, cultural, and satisfaction survey/opinion ratings. Indirect quality-of-life community effects evaluation tools include a sprawl index and composite index. In addition to the tools explicitly identified in the study for quality-of-life–related effects, other tools may include civic involvement activities such as volunteer opportunities, public arts, and the like.

The following are the recommended data needs given for these effects:

- Local, regional, and national surveys related to social, cultural, and overall community satisfaction;
- Discretionary spending data;
- Census data;
- Housing data (including HDMA data);
- CRA data;
- Obesity/health statistics;
- Crash statistics, as well as crash rate statistics, involving bike/pedestrian modes;
- Density measurements and diversity measurements; and
- Aesthetic and design elements.

Quality-of-life–focused community effects must be understood enough to monetize, and the tool created must be useful when compared to other monetized evaluation tools, such as the cost of traffic congestion. This is key to creating a meaningful device that can be used to include impacts to quality of life throughout all levels of the project development process. Finally, if quality-of-life–related effects accurately reflect all the relevant needs of a community related to highway capacity, then other tools, measures, and analysis procedures should be identified.

Methods that can be utilized to analyze potential community effects in this work revolve around the monetization of performance measures. Quality-of-life impacts have been categorized as difficult to monetize. The primary methods identified are surveys and indexes (i.e., sprawl, congestion, community). It should be noted this type of method can be some of the most labor intensive and costly to develop and implement.

PolicyMap—GIS Mapping Services and Software

Principal Author/Authors: The Reinvestment Fund
Publisher: The Reinvestment Fund
Date of Publication/Presentation/Access: May 2009
Website Link: www.policymap.com/

Description

PolicyMap is a tool that provides an uncomplicated way to incorporate into the decision-making process. Data can be analyzed and visualized in many ways through customized maps, tables, reports, and a proprietary analysis tool called Analytics.

The website was developed by The Reinvestment Fund (TRF) a nonprofit community development financial institution that works across the Mid-Atlantic. TRF has collected and analyzed real estate, bank loan, socioeconomic, health, housing, education, and crime data. A recent addition includes access to available ARRA (stimulus funding) data. The website allows users to analyze this information at various geographic scales with the goal of assisting communities in making better informed public policy and investment decisions. The website also allows users to upload and share their own data for use and analysis.

The website has free but limited access for the general public. Subscription memberships are available and allow for full access to all of the site's features and additional proprietary data. The website's architecture allows users to link maps and analysis tools to other websites as well.

Applicability to the C08 Project

The use of historical data, along with the ability to upload new data, makes this a potentially powerful tool for community effects analysis and visualization for decision makers and the public. This could be an effective tool in bridging the

divide between highly quantitative analysis and documentation of community effects and the sharing of this information with the public and nontechnically-oriented stakeholders. During the rest of performance measures/indicators database development, the group should consider how to link to or develop a similar tool. The visualization tools available through this website could enable effective analysis and communication of community effects to the full spectrum of stakeholders in the visioning process.

Streets as Places—Using Streets to Rebuild Communities

Principal Author/Authors: Renee Esplau
Publisher: Project for Public Spaces, Inc.
Date of Publication/Presentation/Access: 2009
Website Link: www.pps.org/pdf/bookstore/Using_Streets_to_Rebuild_Communities.pdf

Description

This resource focuses on a broader view of transportation. It continually cites traffic calming as an example of how to look at transportation infrastructure from a wider lens and calls for people rather than cars to be the driving force in shaping our cities and towns. The book was developed by Project for Public Spaces, Inc. (PPS), a nonprofit dedicated to improving the comfort, safety, attractiveness, and vitality of streets and other public spaces for society's use. This book is the culmination of over 30 years of research on how people use public spaces in 26 countries and in over 2,000 communities in the United States and abroad. The number one issue identified in nearly all the places is traffic and its impact on community life.

The research discusses how features that make getting to and from places a pleasant, and even an enriching, experience can be adapted and applied today to create people-friendly towns and neighborhoods that offer a strong sense of community. Many of the basic elements that can help create good places and enhance community life, including traffic calming, an innovative approach to the design and management of streets that redistributes street space more equitably for all users (referred to as a "Placemaking catalyst"), are discussed and analyzed.

The work focuses on traffic calming, which could be both useful and detrimental to the visioning process, as the core principles of traffic calming lend themselves well to the placemaking described in the book. However, practitioners should be mindful that traffic calming implementation has varied throughout communities, resulting in some negative connotations that may need to be overcome.

Applicability to the C08 Project

This resource concentrates on how streets can be improved as a way to better communities. The main community effect relevant to this document is the street realm improvements focused on traffic calming. The document lists the following potential benefits of traffic calming to a community:

- More daily physical activity and better personal health;
- Reduce accidents, pollution and noise without reducing traffic volumes;
- Improved traffic safety and more livable neighborhoods;
- Increase in bicycle use;
- Decrease in injuries;
- Rise in street life activity; and
- Increased economic activities and fewer store vacancies.

The following are the recommended data needs given for traffic calming:

- VMT/VHT data;
- Speed limits and actual average speed;
- Emergency/evacuation routes;
- Street dimensions;
- Property data;
- Local bike/pedestrian counts;
- Journey-to-Work and other Census data (e.g., ACS);
- NHTS data (all trip purposes);
- Air quality/emissions data (CO_2, NO_x, PM);
- Obesity/health statistics;
- Crash statistics, as well as crash rate statistics, involving bike/pedestrian modes; and
- Land use density measurements and diversity measurements.

This presentation is about bettering communities through street space improvements with a focus on traffic calming. Some questions of community effects of a project that focus on traffic calming include:

- Do emergency and service vehicles use the area? Do school buses?
- Is there a problem with through traffic?
- What are the surrounding uses? Residential? Commercial? Retail? Cultural? Entertainment? Civic? Educational? Other?
- Who are the users? Are there many elderly people, disabled people, or children?
- What kinds of activities are going on in the vicinity or are planned to go on?
- Are there any plans for improving the area? If so, in what way?

- What kinds of streets are being looked at?
- What is the ideal speed desired?
- Is transit service available? What kind, and where is it located?
- Where is water drainage needed?

Does the Built Environment Influence Physical Activity? Examining the Evidence (TRB 282)

Principal Author/Authors: TRB Committee on Physical Activity, Health, Transportation, and Land Use
Publisher: Transportation Research Board
Date of Publication/Presentation/Access: 2005
Website Link: http://onlinepubs.trb.org/onlinepubs/sr/sr282.pdf

Description

This research represents the most thorough treatment of its title question, and was sponsored in part by the Institute of Medicine with the Transportation Research Board. The 14-member panel convened a workshop midway through the process in recognition of the fact that additional expertise was required to fully identify issues in this still-evolving field of research. The geographic scale of the research was at the neighborhood and regional levels, because there is very little known about this topic at the site and building scales. From this research, several key findings emerged:

- Physical activity levels have declined sharply over the past half-century because of reduced physical demands of work, household management, and travel, together with increased sedentary uses of free time;
- The built environment can facilitate or constrain physical activity;
- The relationship between the built environment and physical activity is complex and operates through many mediating factors;
- The available empirical evidence shows an association between the built environment and physical activity; however, few studies capable of demonstrating a causal relationship have been conducted; and
- The built environment in place today has been shaped by longstanding policies and the practices of many decision makers (e.g., elected officials, planners, developers, traffic engineers).

The study notes that some policies that are directly relevant to community values, such as the desire to live in low-density, suburban developments, will be prohibitively expensive to change in the short term in many communities. An important data source that has appeared in the last few years is the Bureau of Labor Statistic's American Time Use Survey (www.bls.gov/tus/), which identifies by fraction of an hour how the respondents use both weekend and weekday time. Although not organized systematically, the report does contain a variety of statistics about weight gain, exercise impacts, and so forth that would be useful as benchmarks for community visioning purposes.

The benefits of a more active life-style also are enumerated in detail, with the authors noting that reduced probably of contracting breast cancer, high blood pressure, and cardiovascular disease are all benefits cited in one or more previous studies. Again, as "health and well-being" is a measure of community quality of life, then these benefits can be described by one or more metrics cited in this report, for example, walking 20 min at least 3 days per week. Physical features of the environment, including more people living in suburbs, changing work habits, and changes in how people use their leisure time are responsible for a decrease in physical activity in the general U.S. population over time.

Chapter 4 actually addresses the "contextual" factors affecting the degree of physical activity. A study by Boarnet (2004), for example, noted that children walked to school with greater frequency if crossing and traffic control improvements made their typical route to school safer. Educational programs, such as the CDC's "Ready, Set, It's Everywhere You Go" effort to encourage moderate physical activity, that de-emphasized the time-consumptive aspect of traditional exercise also have a positive effect on the willingness to devote more time to physical activities. Design features, including those that are affected directly and indirectly by transportation projects, also may influence physical activity but also are harder to change owing to the large capital investments in public and private infrastructure already in place and the prevailing attitudes about living and working spatial patterns. Street connectivity, traffic calming, and street scale (the three-dimensional space around a street) were cited as examples of possible community visioning metrics, as were street-side aesthetic treatments. The increase of roadway capacity and increased physical exercise can occur in the same space, but additional attention to roadside and crossing measures, as well as the appropriate hierarchy of streets, are critical additions to the planning and design processes. However, the results are more nuanced in terms of the connectivity between these design factors, for example, and potential for increasing walking due to the phenomenon of self-selection. A person may choose to live in an area with better transit, walking/biking connections, and a higher density/diversity of land uses that already are in place, thereby negating the influence of these contextual factors on that person's (preexisting) behavior. The small number of studies that consider self-selection seem to indicate that the connection is still there but is more difficult to measure.

Applicability to the C08 Project

Street connectivity, adherence to street hierarchy, and aesthetic standards as well as land use density and diversity are aspects applicable to the project. The overwhelming focal point of this study was public health, although land use, community values, and laws, regulations, and policies play important supporting roles.

The ATUS database is underreported as a resource. Other research needs are noted in the report, most notably a need for more robust study frameworks that attempt to define causal connections.

The neighborhood was the primary emphasis of most of the discussion, although site-level and regional trends also were addressed to a lesser extent. Urban design considerations and the effects of suburban development were major considerations. The level of effort required to engage these considerations into a community planning process would require both an understanding of national correlations between various contexts that influence physical activity and a commensurate understanding of the local characteristics and data on the built environment.

AASHTO Practitioner's Handbook Indirect Effects and Cumulative Impacts Assessments

Principal Author/Authors: AASHTO
Publisher: AASHTO Center for Environmental Excellence
Date of Publication: 2009

Description

This handbook (proposed to be one in a series published by the AASHTO Center for Environmental Excellence) covers definitions of various types of effects; determining the scale of an Indirect Effects and Cumulative Impacts (IECI) study; how to document the effects or impacts; addressing them in regional planning; and identifying mitigation measures (treated very minimally). A few areas are particularly relevant to community visioning, including the need to develop a multidisciplinary "team" approach to evaluating indirect effects and cumulative impacts. The guidance recommends also that local stakeholders become involved in the identification of notable features during the regional plan visioning process.

Methods for evaluating or assessing potential IECIs include the Delphi process, comparative case analysis, scenario analysis, trend extrapolation, build-out analysis, regression, gravity model formulations, and economic impact modeling. In all, the handbook is a brief overview and distillation of a number of state guidance documents, as well as NCHRP Reports 403 and 466.

Applicability to the C08 Project

The report does not offer specific indicators of when an IECI becomes important, but does offer some analysis techniques to aid in the identification of significant IECIs with stakeholders. IECI analysis and this handbook touch on many context elements, including economic/financial, natural environment, land use considerations, access and mobility, community values, and laws/regulations/policies.

The handbook does not list specific data resources. The analysis tools may require large amounts of information for some technical approaches (e.g., gravity modeling) or very little in cases in which the analysis approach focuses on stakeholder evaluations (e.g., scenario analysis).

The scale of detailed IECI analyses is almost always large corridor or regional, although detailed studies can be conducted around interchange locations or even multistate areas (in rare instances). The community and development characteristics are paramount to IECI studies, and need to involve key stakeholders and knowledgeable local experts to be truly complete. The range of issues is potentially enormous, and the level of effort is typically tied to the geographic scale, presence of sensitive resources, and level of project controversy.

Influence of Transportation Infrastructure on Land Use

Principal Author/Authors: FHWA and Urban Land Institute
Publisher: FHWA
Date of Publication/Presentation/Access: December 2004
Website Link: www.fhwa.dot.gov/planning/tranlanduse.pdf

Description

This report is a summary of an Urban Land Institute (ULI) Advisory Services Program panel workshop that was convened at the request of FHWA to discuss this particular topic over the course of 2 days in December 2004. The subtopics discussed were the roles that transportation plays in local government land use decisions; private development decisions; and how transportation decision-making can interface better with a community's vision for its future.

The report puts forth three steps as to how a community (read: local government agency) sets a vision: through comprehensive planning, development regulations, and implementation. The public sector plays a key role in determining where private development will go by its decisions on water, sewer, stormwater, roads, transit, parks/open space, and social service provisions. The private development decision-making process includes an evaluation of market demand, site suitability, economic feasibility (i.e., the balance of costs of land acquisition and development versus the revenue of,

say, selling 100 homes), regulatory environment restrictions/hurdles, and access to capital (credit).

Transportation decisions, because they are made very early in the planning process, are key elements in future visioning and planning processes for other infrastructure and policy decisions. However, transportation improvements are not the "driving" influence behind community land use planning and visioning. The long time scale of federal transportation capacity improvements renders them useless to the short-term decision-making of private developers.

Recent polls have shown that more people (50%) are willing to live in a smaller home if they get a shorter commute, compounded by the increasing number of empty nest households. An important factor in the evaluation of transportation impacts is that growth is occurring in the U.S. and that these new people will need to live someplace; hence, the issue is not if growth will happen, but where it will happen. Although new roads often lead to new development, they don't have to lead to sprawl, which is determined by local land use decision-making: unmanaged development is the true enemy of sprawl critics. The ULI report also discusses green flags and red flags that determine if a community is willing to manage growth or not, respectively.

An emphasis on partnerships (between state DOTs and MPOs, growth management interests, private sector actors, and local governments) is noted to ensure that varied interests are contained in transportation decision-making, enabling tradeoffs and compromises. The FHWA and other transportation agencies should use their own resources to help ensure good land use planning inside other, partnering agencies in spite of the position of the panel that nontransportation factors such as marketability, capital availability, other public infrastructure and policy decisions have significant roles in land use and development decisions.

Applicability to the C08 Project

This ULI panel summary emphasizes indicators such as collaboration, planning processes, and programs/policy tools that influence or manage development processes (e.g., corridor/subarea studies, development rights transfer or purchase programs, and so forth).

Land use considerations and laws, regulations, and policies are the two primary contextual targets in this report.

The report implies that working with local governments to assess their planning processes, tools, and (long-term) validity are important factors in determining successful land use–transportation integration. Tools that can be used are policy reviews, plan reviews, ordinance reviews, and reviews of past planning board and council/commission meetings (especially with regard to rezoning or variance actions) to understand the strength of their policy positions.

The scale of this study is directed at community (town/city) levels of geography. Backward and forward linkages between community values and the resulting policy environment are implied, although not necessarily in an urban context (counties are sometimes more aggressive about managing open space, for example, than municipalities). The topical scope is inclusive of many values because the focus of this report was on broad policy making. No real visioning process was described to determine a level of effort, but clearly many stakeholders need to be involved to create a sound public policy.

A variety of potential indicators are mentioned, as well as a number of secondary sources for such information, particularly for biological integrity/degradation effects. The natural environment is the overwhelming focus of this document, although community values are mentioned as an area of impact.

The resources required to implement the community impacts assessments vary greatly; many of these are available through third-party data sources on a state-by-state (or county) basis. The geographic scale is assumed to be a corridor, typically expanded to include the sphere of indirect effects. There is no distinction between urban, rural, and suburban contexts. The topical scope is necessarily broad and integrative of many land use-transportation interactions, whereas the level of effort is dependent on the use of third-party data as opposed to conducting local interviews or field work beyond what is normally required for an EA/EIS document.

Consideration of Cumulative Impacts in EPA Review of NEPA Documents

Principal Author/Authors: USEPA, Office of Federal Activities
Publisher: USEPA
Date of Publication/Presentation/Access: 1999
Website Link: www.epa.gov/compliance/resources/policies/nepa/cumulative.pdf

Description

The USEPA guidance illustrates one of several examples of federal agencies periodically releasing supplemental guidance to practitioners dealing with the scale and scope of cumulative or indirect effect analysis. This particular memorandum highlights a preference for conducting cumulative impact assessment only in those cases in which the effects are deemed significant. As is the case with several other guidance documents, mitigation measures also are recommended, citing previous EPA guidance on the subject of mitigation (USEPA, 1984).

In a relevant fashion, the report does discuss the need for a "baseline" approach to impact assessment, as well as for identifying certain thresholds for natural habitat impacts (e.g., stream degradation, habitat patch size, and interconnectedness).

Applicability to the C08 Project

Some indicators suggesting impacts to environmental conditions are mentioned, although not as much discussion or detail are provided for human community impacts. Most of the impacts are related to the natural environment. Resource needs vary depending on the needs and complexity of the analysis. Past development patterns can be very important, for example, but difficult to acquire in rural areas.

The geographic scale is not typically referenced, but is somewhat assumed to be associated with a roadway corridor (albeit a larger one that the typical Area of Potential Effect designated for most direct impacts). The topical scope of this report focused heavily on the natural environment conditions and impacts. The community context was not evident. The level of effort can be considerable, requiring participation from local agencies, for example, to provide historical development information from rezoning or other quasi-legal public actions.

Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process

Principal Author/Authors: FHWA
Publisher: FHWA
Date of Publication/Presentation/Access: July 2009
Website Link: www.environment.fhwa.dot.gov/guidebook/qaimpact.asp

Description

This fairly basic guidance initially defines direct, indirect, and cumulative impacts using the familiar Council on Environmental Quality (CEQ) and federal regulatory (40 CFR § 1508.7 and .8) definitions. The guidance further assists the practitioner with CEQ and case law that describe the foreseeable nature of impact assessment; definition of a range of assessments; and acquisition or creation of "not exorbitant" data to support the analysis. The guidance also highlights the contents of an Indirect and Cumulative Impacts (ICI) analysis, specifically focusing on federal acts and the relevant language contained therein. The guidance concludes with additional resources from federal and state government agencies, websites, and workshops, although the information shown is not up to date. Methods cited to evaluate community effects include Delphi and other group techniques; GIS/mapping; and so forth.

Applicability to the C08 Project

There are no measures or indicators contained in this guidance, which focuses on the legal requirements of ICI analyses.

Most of ICI deals in general with the more regulated topics related to water quality, as does this guidance; however, the main context orientation is toward laws, regulations, and policies.

This item is not applicable, although the guidance does state that if data are available, then they should be used, or procured if the costs for doing so are not exorbitant. The guidance does highlight some differences in the level of effort for various categories of NEPA documentation (e.g., CE; EA/FONSI; EIS).

The geographic scale is not mentioned as a topic, nor is the community context. The topical scope focuses fairly narrowly on the NEPA-based requirements for ICIs. The level of effort is not applicable in most instances, because the guidance is focused on policy definition.

NCHRP Report 403: Guidance for Estimating the Indirect Effects of Proposed Transportation Projects and NCHRP 466: Desk Reference for Estimating the Indirect Effects of Proposed Transportation Projects

Principal Author/Authors: TRB
Publisher: TRB
Date of Publication/Presentation/Access: 1998 and 2002
Website Links: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_w43.pdf (NCHRP 403); http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_466.pdf (NCHRP 466)

Description

A literature and case law review is followed by a step-by-step methodology for identifying, evaluating and documenting indirect effects. Case law is used extensively to address important questions that help define the content of indirect effect analyses: level of detail, legal basis, impact categories, and so forth. The main methodology document (NCHRP 466) identifies a discrete methodology for assessing indirect effects, and includes a variety of relevant impact categories affecting the natural and human environments (particularly the unnamed work by Schaenmen and Miller, 1974). A moderate listing of qualitative and quantitative analysis techniques also are described. The guidance recommends sensitivity analysis as a central part of the evaluation process to reflect the range of uncertainty surrounding private development actions as well as the degree of error in various analysis methods.

Applicability to the C08 Project

A potentially very long listing of indicators is implied in much of the study, including impact to habitat and habitat degradation through encroachment, and measures of com-

munity cohesiveness. Indirect effects, by their nature, have a broad range of potential effects. These include natural environment, economic, land use considerations, and access and mobility. Mitigation measures also may add laws, regulations, and policies.

The data requirements for conducting an indirect effects analysis can be extensive, including travel demand modeling, stakeholder surveys, extended local expert panels, and many other techniques. However, significant progress in the development of geographic information systems tools and data sets has made fairly sophisticated analyses possible.

The geographic scale of indirect effects analysis is highly variable, ranging from site-level (e.g., bridge rehabilitation) to multistate levels—the level of analysis effort may not go up with the size of the study area; in fact, the acceptable level of detail degrades rapidly proportionate to the increase in size of the study area. As mentioned, the topical scope(s) are not only wide-ranging, but are particularly challenging with indirect effects analysis because of their chained interactions.

Recurring Community Impacts

Principal Author/Authors: Michael Grant, ICF Consulting
Publisher: TRB
Date of Publication/Presentation/Access: September 2008
Website Link: http://onlinepubs.trb.org/onlinepubs/archive/
    NotesDocs/25-25(36)_FR.pdf

Description

The purpose of this study was to define recurring community impacts and discuss techniques for their identification and analysis by transportation practitioners. The definition of recurring community impacts is stated as having relevance only between a proposed action (the action presumably under study by the research agent) and some past action or actions taken in the same community. An important distinction is thus presented between recurring and cumulative impacts: cumulative impacts are the result of past, present, and foreseeable future actions, whereas recurring community impacts only affect: 1) The human community; and 2) the relationship of the proposed action to past actions— not foreseeable future actions or ongoing actions.

The study begins with a description of the resources used in its development: online survey of transportation agencies; telephone interviews; and a literature review. The report does not attempt to identify specific community indicators that could be used in a recurring impact analysis, instead referencing the resource NCHRP 8-36 Improved Methods for Evaluating Social, Cultural, and Economic Effects of Transportation Projects. Other past resources such as the 1997

CEQ Considering Cumulative Effects and the impact rating system from the Florida Efficient Transportation Decision-making Process (ETDM) also are used to develop assessment strategies. Case studies are used extensively to illustrate key points. The report concludes with appendices describing the survey responses and a list of resources for additional training in community impacts.

Applicability to the C08 Project

The report tangentially or directly mentions some indicators of community health, such as asthma patients; or community interaction (e.g., special days set aside to decorate cemeteries). Public health and transportation are the two predominant quality-of-life categories that the report deals with throughout. The report repeatedly emphasizes data that are seldom accessible through third-party sources such as community networks and interactions (social capital measures).

The scale is inevitably neighborhood and small community-based, but the community context is not evident. The topical scope focuses on transportation impacts, but only in the context of community well-being. As already noted, fine-grained community information normally accessible only through face-to-face contacts or direct survey methods imply a significant amount of effort on the part of the researcher.

Considering Cumulative Effects under NEPA

Principal Author/Authors: Council on Environmental Quality
Publisher: Council on Environmental Quality
Date of Publication/Presentation/Access: 1997
Website Link: www.nepa.gov/nepa/ccenepa/ccenepa.htm

Description

This popular and often-cited resource guide from the Council on Environmental Quality defines cumulative impacts as: "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR ~ 1508.7)" (page v). The guidance further recognizes four types of impacts, in combination of additive and/ or interactive effects. The 11-step process outlined in this document (broken into three phases: scoping, describing the affected environment, and determining the environmental consequences) are the foundation for later national and state guidance documents. Although cultural resources and socio-economic effects are mentioned as a potential impact area of

concern, the preponderance of the guidance is focused on environmental consequences, not community effects.

The study provides a moderate level of detail on how to identify, assess, and evaluate impacts, as well as review potential sources of mitigation at a general level of detail. Individual analysis techniques, such as carrying capacity and economic benefits analyses, are described briefly.

Applicability to the C08 Project

A variety of potential indicators are mentioned, as well as a number of secondary sources for such information, particularly for biological integrity/degradation effects. The natural environment is the overwhelming focus of this document, although community values are mentioned as an area of impact.

The resources required to implement the community impacts assessments vary greatly; many of these are available through third-party data sources on a state-by-state (or county) basis. The geographic scale is assumed to be a corridor, typically expanded to include the sphere of indirect effects. There is no distinction among urban, rural, and suburban contexts. The topical scope is necessarily broad and integrative of many land use–transportation interactions, whereas the level of effort is dependent on the use of third-party data as opposed to conducting local interviews or field work beyond what is normally required for an EA/EIS document.

Transportation Cost and Benefit Analysis II

Principal Author/Authors: Todd Litman
Publisher: Victoria Transport Policy Institute
Date of Publication/Presentation/Access: July 2009
Website Link: www.vtpi.org/tca/

Description

The report describes the costs associated with 23 categories of vehicle ownership variables, with a detailed chapter that describes the variable as well as its cost implications. Each cost category is further categorized as being market-driven, fixed/variable, or internal/external (depending if users bear the costs directly or indirectly). One important conclusion is that over one-third of the costs of vehicle ownership are variable AND borne by the owner/user of the auto, indicating an important area of underpricing (of the total costs of car ownership). Urban driving costs (internal and external) are much higher for urban ($1.64 per mi for peak-period driving) than for rural driving ($0.94 per mi). The inefficiencies result in providing drivers with little incentive to reduce their miles driven, exacerbating the economic impacts to the environment and to society. Case studies, an

extensive literature/bibliography section, and a cost analysis spreadsheet complete the study and increase its usefulness, as does the fact that Victoria Transport Policy Institute updates the report on an irregular basis. The implications of the research and a critique of transportation cost analysis (e.g., uncertainty and anticonsumer bias) also are included in the study. In one particularly noteworthy analogy, Litman suggests that financing alternative modes not used by the majority is similar to ship passengers financing lifeboats—there is still value to knowing that they are there if and when you need them.

Applicability to the C08 Project

The document has indicators for each of the 23 cost variables listed above. Using some of these indicators, particularly the external costs, would be an enlightening exercise to many people in a visioning exercise.

Transportation is the premier context that this report examines, but that is tied to a broad range of environmental and social cost variables. For example, the report includes many indicators and discussion of evaluating true (internal and external) transportation costs, by mode, which may be considered financial or economic.

The (online) report includes a cost analysis spreadsheet broken out by different travel modes, which allows the reader/user to quantify some of these cost statistics.

The geographic scale is community or regionwide, although the principles of many of the costs can be applied to a single person/traveler. The report does a very good job of delineating urban, urban peak, and rural cost differentials, primarily through the topical lens of transport costs. The level of effort to apply these indicators may be quite small, or, if applied to a small subarea, more onerous, given the potential need to finely delineate vehicle fleet mixes, travel characteristics, and so forth.

International City/County Management Association (Website)

Principal Author/Authors: International City/County Management Association
Publisher: International City/County Management Association
Date of Publication/Presentation/Access: July 2009
Website Link: www.ntoctalks.com/web_casts_archive.php

Description

This website hosts a section dedicated to performance measurement, including a webinar series on transportation performance, including one entitled "Transportation Perfor-

mance Measures that the Public Can Understand." Three authors presented in this webinar on April 27, 2005:

- Vehicle Infrastructure Integration, by Jeffrey F. Paniati, P.E., Associate Administrator for Operations, FHWA (PPT 1.4 MB);
- Identifying High-Priority Applications that Could Leverage VII, by James Schultz, P.E., ITS Program Director, Michigan Department of Transportation (PPT 694 KB); and
- VII System Architecture, by Ron Heft, Senior Principal Engineer, Nissan Technical Center North America (PPT 917 KB).

Several of the performance measures cited in these presentations also are in the Cambridge Systematics SHRP 2 report. Measures focused primarily on strong visual cues, including graphs and space-time diagrams (see Figure 6 in Heft, 2005).

Applicability to the C08 Project

The measures discussed tended towards measure of delay, reliability, and throughput (both vehicular and person). The discussion and most of the measures were presented at a very accessible level. The quality-of-life categories most discussed were directly related to access and mobility (transportation). The data requirements would consist of significant field data collection on traffic queues and travel speeds conducted over several time periods. The geographic scale was almost universally discussed at the corridor level, typically in an urban context. A one-dimensional focus on transportation behavior was evident throughout. While the outcomes of these performance metrics were designed to be accessible, considerable time would be required to acquire and manage the necessary data.

Economic Development and Redevelopment: A Toolkit on Land Use and Health

Principal Author/Authors: Lisa M. Feldstein, Rick Jacobus, and Hannah Burton Laurison
Publisher: Planning for Healthy Places
Date of Publication/Presentation/Access: 2007
Website Link: www.healthyplanning.org/ecdev_toolkit/ EcDevToolkit.pdf

Description

This report describes methods of staging economic recovery using small business models, particularly those oriented around local agriculture. Topics cover financing mechanisms such as tax increment financing; eminent domain subjects; and assistance programs for job training and economic development agencies. The premier geography discussed is California, where the report was prepared; hence, not all of the

aid programs and legal discussions are broadly applicable. A number of brief case studies illuminate certain points contained in the textual descriptions of techniques and advice.

Applicability to the C08 Project

There are no discussions of community indicators, much less any dealing specifically with transportation, but some aspects of positive community development could be translated into metric form. Economy is the premier quality-of-life category, although public health and land use are integral discussion topics. Because there are no real metrics here, data needs are limited to creating inventories of land use characteristics, community perceptions, and resources.

The geographic scale ranges from the site to the community level, and the context frequently jumps between rural and urban economies. The scope of the dialogue is fairly limited to economic opportunities and related financing and aid issues, all California-focused. The effort required to emulate these projects requires a strong public–private-sector partnership devoted to long-term economic change.

Streets as Places, Using Streets to Rebuild Communities

Principal Author/Authors: Project for Public Spaces, Inc.
Publisher: Project for Public Spaces, Inc.
Date of Publication/Presentation/Access: 2008
Website Link: www.pps.org/pdf/bookstore/Using_Streets_ to_Rebuild_Communities.pdf

Description

This guidebook was created in 2008 by the Project for Public Spaces in partnership with the American Association of Retired People (AARP). The guidebook is part of a joint effort of the Project for Public Spaces's "Building Community Through" campaign, which seeks to transform transportation policies and practice that currently prioritize moving people and goods over creating walkable, healthy and sustainable places, and AARP's "Livable Communities" initiative, which aims to ensure affordable and appropriate housing, supportive community features and services, and adequate mobility options for aging Americans. The book's goal is to teach citizens how to shape and enhance their streets to serve all users with lively, walkable, community-friendly environments.

The book discusses the role of the automobile in changing the nature of streets from places for people into places for cars. Walking has become risky and unpleasant, and streets, which once were the building blocks of places, have now become alienating landscapes. Those who control the design of streets have put too much emphasis on automobile capacity,

creating "wider streets, often going only one-way, timing on traffic lights that favored motorists over pedestrians, higher speed limits, broader corners for quicker turns and smaller or no sidewalks." These wider, more auto-friendly streets have not decreased congestion, but have only served to attract more cars. This handbook focuses on "a broader view of transportation exemplified by traffic calming, in which people, not cars, become the driving force in shaping our cities and towns."

Streets with a "sense of place" tend to feature: activity and interest at the street level; a comfortably scaled street; slow-moving traffic and on-street parking; ample sidewalks; and overall image. The guidebook puts a special emphasis on traffic calming in order to achieve these ends. Traffic calming tools listed include: diagonal parking; converting one-way to two-way streets; widening sidewalks, narrowing streets and traffic lanes; bulbs, bulbouts, bumpouts, chokers, curb extensions and neckdowns; chicanes; roundabouts; traffic circles; raised medians; tight corner radii; diverters; road humps, speed tables and cushions; and rumble strips and other surface treatments.

The guidebook offers 12 steps community members can take to create community-friendly environments: identify problems and opportunities; form an improvement group; talk to the people in charge; invite a resource person; develop a vision; look at what's going on; ask questions; get the community together to talk; identify partners/form partnerships; invite the media; create the plan; and implement improvements and evaluate.

Applicability to the C08 Project

This guidebook deals with an important community effect of capacity expansion projects—destruction of or negative impacts upon a community's sense of place. Moving traffic as speedily as possible as the main priority of a project can lead to the harmful community effect of the street becoming a hostile environment for those on foot, a place no longer for people, welcoming only to cars. Capacity expansion project can create "streets that are too wide to cross without feeling endangered by traffic, sidewalks that are too empty to feel safe, a lack of places to sit or stroll and a dearth of interesting and attractive things to look at."

The Well-Being of Nations, The Role of Human and Social Capital

Principal Author/Authors: Healy, Tom and Cote, Sylvain
Publisher: Centre for Educational Research and Innovation, Organization for Economic Cooperation and Development
Date of Publication/Presentation/Access: 2001

Description

This report focuses on the concepts of human capital and social capital and their relationships with economic and social development, building on the 1998 report from the Organization for Economic Cooperation and Development titled Human Capital Investment—An International Comparison. The report discusses how investment in human capital affects growth and well-being, evaluating the evidence for its impacts on both the economy and society. Because social capital is a newer concept than human capital, the report seeks to describe and clarify what it is as and discuss how it can be measured and what its impacts might be.

The definition of human capital used in this report is "the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being." Although the report points out that the definition of social capital is not universally agreed upon, it offers its own definition as, "networks together with shared norms, values and understandings that facilitate cooperation within or among groups."

The report starts with a discussion of societal goals, pointing out that although economic well-being is a factor in general well-being, it does not make up the entirety. Well-being "includes economic well-being but also extends to the enjoyment of civil liberties, relative freedom from crime, enjoyment of a clean environment and individual states of mental and physical health." It goes on to point out that defining and measuring well-being is difficult because the concept is deeply pervaded by "values that will vary between individuals and social groups." Some of the roles that human and social capital can play in improving well-being include higher incomes, social cohesion, and life satisfaction. The report goes on to discuss definitions, uses, and measurement frameworks of the terms human capital and social capital. In the end, the discussion turns to policy implications and further research needs.

Quality-of-Life Indicators Literature Review

Understanding and Applying the Concept of Sustainable Development to Transportation Planning and Decision-Making in the U.S.

Principal Author/Authors: Ralph P. Hall
Publisher: Massachusetts Institute of Technology
Date of Publication/Presentation/Access: June 2006
Website Link: http://esd.mit.edu/students/esdphd/dissertations/hall_ralph.pdf

Description

This is a thesis of nearly 900 pages written by Ralph Hall in order to complete his doctorate in Technology, Management, and Policy at the Massachusetts Institute of Technology. The thesis points out that due to its complexity and its synthesis of knowledge from diverse fields, sustainable development should be approached in a transdisciplinary manner. The goal of the thesis is to create a framework for the tools and approaches that can be used to create policies and programs for achieving sustainability. Specific ideas explored include: a Rawlsian/utilitarian decision-making philosophy; a hybrid tradeoff/positional analysis framework that is presented as an alternative to benefit/cost analysis; ecological versus environmental economics; participatory backcasting; and ways to stimulate disrupting and/or radical technological innovation.

In chapter five, Hall discusses how to measure sustainable development and how to choose metrics. It is worth reading all of chapter five for a better understanding of indicators, indexes of indices, and frameworks for indices, especially indicators, indices, and frameworks pertaining to sustainability. He says, "at a basic level, the problem of sustainable development can be described using rate/flows, stocks/conditions, and feedback." He describes how a "cybernetic" society depends on system feedback to achieve its objectives in changing circumstances. On page 399 he begins a lengthy discussion of what indicators are and how they should be developed. He starts by defining the terms indicator, index, and parameter. He states, "The general criteria used to select an indicator are simplicity, policy relevance, analytical soundness, and measurability" and "to be useful in the policy realm, indicators need to capture the state of a system, track changes over time, and monitor the forces/pressures that can affect the state of a system." He goes on to discuss "holistic indicator frameworks," saying, "One way to address concerns with indexes and holistic indicators is to disaggregate the issue(s) being measured into a framework of indicators." Pages 420 to 422 give a list of sustainable development indicators. The principles of sustainable transportation are shown in chapter five.

In a section of chapter six (6.2.4.3) he discusses issues around increasing or preserving quality of life for persons within the current generation. He defines quality of life as follows:

> In general, quality of life is a complex, multidimensional construct that can be viewed using three major philosophical approaches. In the first approach, quality of life depends upon achieving the characteristics of the "good life" as defined by normative principles or values embedded in philosophical, religious, or other systems . . . The second approach determines quality of life based upon the satisfaction of preferences. This utilitarian formulation considers quality of life to be directly linked to an individual's ability to obtain the things that he/she will most enhance his/her well-being and happiness. In the final approach, quality of life is based on the experience of individuals and is obtained through measuring subjective well-being (SWB). SWB has three core interrelated components—i.e., life satisfaction and pleasant and unpleasant events. The philosophical roots of this approach can be traced back to Jeremy Bentham's utilitarian principle, which states that society should aim to achieve the greatest happiness for the greatest number.

Beyond those two approaches is measuring quality of life by measuring the ability of people to meet their basic human needs, and to measure not just the present generation's ability to meet those needs, but also the ability of future generations to do so.

Measuring quality of life can be done using social indicators, subjective well-being (SWB) measures or using measures regarding basic human needs. Social indicators tend to use objective, quantifiable statistics such as income, consumption, health, life expectancy, literacy, and environmental conditions. A well-known index using social indicators is the UN Human Development Index (HDI), which "estimates quality of life using life expectancy, knowledge, and income." Subjective well-being measures "rely upon an individual's subjective perceptions of his/her quality of life that are influenced by social and environmental factors." The majority of sustainable transportation indicators fall into the first category, social indicators, rather than SWB measures.

The report's Appendix E demonstrates Gudmundsson and Hojer's 1996 approach to measuring the impacts of transportation on quality of life focusing mainly upon social indicators.

As for assessing the ability of present and future generations to meet their basic needs, Hall lists four sets of needs that are essential to the functioning and well-being of humans: Safety, security and sustenance; Competence, efficacy, and self-esteem; Autonomy and authenticity; and Connectedness. He states that "while the needs listed above are common to all humans, the satisfiers of these needs are socially and culturally defined." Beginning on page 499, Hall looks at each of the four sets of human needs to determine whether it is possible to identify the role of transportation in their satisfaction.

In sections 6.3 and 6.4, Hall goes on to discuss a "sustainable transportation decision-support framework" and "connecting the Hall–Revised UNCSD Indicator Framework with Indicators of sustainable transportation." Pages 533 to 540 provide a "comparison of themes addressed by existing sets of sustainable transportation indicators." The report's Appendix B provides a review of published indicators of sustainable

transportation, which identified 13 different indicator sets developed by government agencies, organizations, research programs, and individuals.

Sustainable Transportation and TDM: Planning That Balances Economic, Social and Ecological Objectives, TDM Encyclopedia

Principal Author/Authors: Victoria Transport Policy Institute
Publisher: Victoria Transport Policy Institute
Date of Publication/Presentation/Access: Updated 4 January 2009
Website Link: www.vtpi.org/tdm/tdm67.htm

Description

This web page is a chapter (subpage) of the TDM Encyclopedia titled "Sustainable Transportation and TDM." The TDM Encyclopedia is an online encyclopedia created by the Victoria Transport Policy Institute to help people better understand the concept and best practices of transportation demand management (TDM). This chapter discusses how TDM can help achieve more sustainable transport, and how incorporating sustainability goals in planning can support TDM. Sustainability is explained here as "a planning perspective that accounts for economic, social and environmental goals, including impacts that are indirect, difficult to measure, and distant in time and space." The web page lists some of the various other definitions of sustainability that have emerged over the years since the first definition was coined by the Brundtland Commission 1987.

TDM refers to "various strategies that change travel behavior (how, when and where people travel) in order to increase transport system efficiency and achieve specific planning objectives." TDM strategies influence various factors to encourage more efficient travel patterns, such as shifts from peak to off-peak periods, from automobile to alternative modes, and from dispersed to closer destinations. The online TDM Encyclopedia is a resource for those seeking information on innovative TDM strategies. As an online tool, it is able to hyperlink to information of all sorts worldwide pertaining to TDM strategies.

The web page discusses the difficulty of trying to develop ways to assess and measure factors pertaining to sustainability, as goals and impacts are often indirect and/or difficult to measure. An interesting discussion follows:

> Concern about sustainability can be considered a reaction to increased specialization in the way institutions are organized, and the tendency of decision-makers to focus on easily measured goals and impacts, while ignoring those that are indirect or more difficult to measure (Measuring Transportation).

Conventional planning often reflects a "reductionist" approach, in which a particular organization or individual is responsible for dealing with a particular problem. This may be appropriate in some situations, but it often results in solutions to one problem that exacerbate other problems, or failure to implement solutions that provide modest but multiple benefits. Sustainable decision-making can therefore be described as Comprehensive Planning that considers a variety of goals and impacts regardless of how difficult they are to measure. Sustainable planning and economics often refer to the triple bottom line, meaning consideration of economic, social and environmental impacts.

Later, it says "because transportation activities have so many impacts related to sustainability, it is important to identify strategies that help achieve multiple objectives, and avoid those that solve one transportation problem but exacerbate others."

Appendix E of that report also presents a list of sustainability indicators (not specifically transportation-related) from the web page labeled "Genuine Progress Indicators" developed for Alberta, Canada.

Building Projects that Build Communities: Recommended Best Practices

Principal Author/Authors: Community Partnership Forum for the Washington State Department of Transportation
Publisher: Washington State Department of Transportation
Date of Publication/Presentation/Access: January 2003
Website Link: www.wsdot.wa.gov/biz/csd/BPBC_Final/

Description

This handbook was created by a forum of transportation experts from different backgrounds, including those representing cities, counties, consulting firms, Sound Transit, the Association of Washington Cities, FHWA, and the Washington DOT. The handbook tries to offer the best ways to "plan and develop projects where different levels of government must solve intricate and interrelated problems in order for a project to succeed." The end goal for Washington DOT's project is to support its statewide vision for transportation, which is to create a livable future for Washington via three prongs: vibrant communities, vital economy, and sustainable environment. The commission envisioned a livable future through effective community-based design and collaborative decision making. The guidebook is intended to assist project teams working to achieve a balance between sound engineering practices and incorporation of the needs of the jurisdictions involved. This manual touches less on types of community effects and ways to assess them and more on how bodies at different levels of government can work together collaboratively.

As this handbook's focus is on collaboration, it does offer some ideas on who to contact for public participation in plan making. It suggests reaching out to underserved segments of the population such as transit riders, minorities, pupil transportation coordinators, and low-income community members. It also suggests early, frequent, and effective public involvement.

Sustainability and Social Measures for Transportation Planning and Project Development

Principal Author/Authors: TRB Workshop with presentations by Todd Litman; Amanda Thompson; Marc Brenman; Andrew Dannenberg; and Chris Porter
Publisher: TRB
Date of Publication/Presentation/Access: January 2009

Description

This workshop was about discussing measures that can be used in analyzing sustainability in transportation. It focused on measures for social, health, and equity considerations as finding good metrics, for these aspects of sustainability have lagged behind those for economic and environmental considerations. The workshop also looked at innovative concepts of community mitigation. The workshop featured the following presentations: "Incorporating Social and Health Indicators into Transportation Policy and Project Evaluation" by Todd Litman; "Pathways to a Healthy Decatur: Creating and Implementing a Sustainable Transportation Plan" by Amanda Thompson; "Social Justice in Transportation" by Marc Brenman; "Building partnerships to promote positive outcomes and mitigate adverse health impacts of transportation plans and policies" by Andrew Dannenberg; and "Impacts of transportation and land use strategies on local and global sustainability: Can we get there from here?" by Chris Porter.

Todd Litman's presentation defined "Community Livability" as "the environmental and social quality of an area as perceived by residents, employees, customers and visitors." It defined "Community Cohesion" as "the quantity and quality of positive interactions among people in a community." This presentation presented reductionist planning—"each problem is assigned to a single agency with narrowly defined responsibilities"—is problematic because it can "result in public agencies implementing solutions to one problem that exacerbate other problems facing society, and tends to undervalue strategies that provide multiple but modest benefits." An interesting note on metrics is that the presentation claims that walking is often undercounted and so we should measure the portion of trips that involve some active transport rather than the portion of trips that are only by active transport. The

presentation also offers a handy guide for multimodal level of service (LOS).

Amanda Thompson's presentation talks about creating a transportation plan that seeks to create and maintain an Active Living Community (i.e., a community designed with a pedestrian focus that provides opportunities for people of all ages and abilities to engage in routine daily physical activity). The presentation states that mobility is "not only concerned with a system of transport . . . it's the whole understanding of a city. Therefore, the important questions are not about engineering, but about how we live—health, education, housing, and social needs." The presentation defines Health Impact Assessment as "a combination of procedures or methods by which a policy, program or project may be judged as to the effects it may have on the health of a population."

Marc Brenman's presentation gave the following guidance on how to analyze cumulative impacts taken from the Council on Environmental Quality

SCOPING
- **Step 1.** Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.
- **Step 2.** Establish the geographic scope for the analysis.
- **Step 3.** Establish the time frame for the analysis.
- **Step 4.** Identify other actions affecting the resource.

DESCRIBE THE AFFECTED ENVIRONMENT
- **Step 5.** Characterize the resources, ecosystems, and human communities identified during scoping in terms of their response to change and capacity to withstand stress.
- **Step 6.** Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.
- **Step 7.** Develop a baseline condition for the resources, ecosystems, and human communities.

DETERMINE THE ENVIRONMENTAL CONSEQUENCES
- **Step 8.** Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.
- **Step 9.** Determine the magnitude and significance of cumulative effects.
- **Step 10.** Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.
- **Step 11.** Monitor and evaluate the cumulative effects of the selected alternative and adapt management.

Andrew Dannenberg's presentation discussed the links between transportation and health, discussing health as not just physical health but also mental health, well-being, and "livability." Like Brenman, Dannenberg discussed Health

Impact Assessments, stating: "Transportation planners and other community decision-makers will request information on potential health consequences of projects and policies as part of their decision-making process; and local health officers will have a tool to facilitate their involvement in transportation and land use decisions that impact health."

Community Tool for Health and Resilience in Vulnerable Environments

Principal Author/Authors: Prevention Institute prepared this information with funding from the Office of Minority Health, U.S. Department of Health and Human Services
Publisher: U.S. Department of Health and Human Services
Date of Publication/Presentation/Access: September 2004
Website Link: www.preventioninstitute.org/thrive.html

Description

THRIVE provides a framework for to help communities with three things: identifying factors associated with poor health outcomes in communities of color; engaging relevant stakeholders; and taking action to remedy the disparities. The goal of THRIVE is to improve health in communities and reduce disparities experienced by minorities, both racial and ethnic. Low-income communities and communities of people of color experience a disproportionately high amount of poor health and safety outcomes, including chronic disease, traffic-related injuries, mental illness, substance abuse, teen pregnancy, and violence. THRIVE focuses on prevention rather than treatment by focusing on underlying risk and resilience factors. The THRIVE community tool can be used in urban, rural, and suburban settings, and THRIVE was tested in three pilot communities—one urban (New York City), one suburban (De Paso Heights, California), and one rural (Hidalgo County, New Mexico).

According to the executive summary, "The toolkit contributes to a broad vision about community health, confirms the value of upstream approaches, challenges traditional thinking about health promotion, organizes difficult concepts and enables systematic planning, has rural and urban applicability, has utility for practitioners and community members, and is a good tool for strategic planning at community and organizational levels."

THRIVE has 20 "factors" sorted into four "clusters" to describe community health. The THRIVE guidelines describe sample actions, resources, tools, and community examples for each cluster and factor. The factors and clusters follow:

1. Built Environment:
   a. Activity-Promoting Environment;
   b. Nutrition-Promoting Environment;
   c. Housing;
   d. Transportation;
   e. Environmental Quality;
   f. Product Availability; and
   g. Appearance/Ambiance.
2. Social Capital:
   a. Social Cohesion and Trust;
   b. Collective Efficacy;
   c. Civic Participation/Engagement;
   d. Positive Behavioral/Social Norms; and
   e. Positive Gender Norms.
3. Services and Institutions:
   a. Public Health, Health and Human Services;
   b. Public Safety;
   c. Education and Literacy;
   d. Community-Based Organizations; and
   e. Cultural/Artistic Opportunities.
4. Structural Factors:
   a. Ethnic/Racial Relations;
   b. Economic Capital; and
   c. Media/Marketing.

The executive summary mentions the "Healthy People 2010 Leading Health Indicators," which are tobacco use, physical inactivity, overweight and obesity, substance abuse, responsible sexual behavior, mental health, immunizations, violence and injury prevention, environmental quality, and access to care. These indicators are not included in the indicator table.

Making Transportation Sustainable: Insights from Germany

Principal Author/Authors: Ralph Buehler, John Pucher, and Uwe Kunert
Publisher: Brookings Institution Metropolitan Policy Program
Date of Publication/Presentation/Access: April 2009
Website Link: www.brookings.edu/~/media/Files/rc/reports/2009/0416_germany_transportation_buehler/0416_germany_transportation_report.pdf

Description

The United States may be able to learn ways to make transportation more sustainable from Germany. Transportation in America is becoming a problem due to things such as cost, environment, and reliance on foreign energy providers. Changing people's travel behavior may be the key to increasing sustainability. "Sustainability, for the purposes of this report, means encouraging shorter trips by modes of transportation that require less energy and generate less harmful environmental impacts. Moreover, a more sustainable transportation system should foster commerce, reduce energy

consumption and carbon emissions, increase safety, provide equal access to destinations for all groups of society, and enhance the quality of life."

Policy is a vehicle by which Germany has successfully affected travel behavior among its citizens. German government at all levels has used policy toward this end. They have used tools such as pricing, restrictions, technological improvements, integration of public transportation, and regional land planning.

LESSONS FOR THE UNITED STATES

Public policy can play a major role in reshaping America's transportation system. The German experience offers five lessons to the United States for improving transportation sustainability through changes in travel behavior:

1. Get the price right in order to encourage the use of less polluting cars, driving at nonpeak hours, and more use of public transportation.
2. Integrate transit, cycling, and walking as viable alternatives to the car, as a necessary measure to make any sort of car-restrictive measures publicly and politically feasible.
3. Fully coordinate and integrate planning for land use and transportation to discourage car-dependent sprawl and promote transit-oriented development.
4. Public information and education to make changes feasible are essential in conveying the benefits of more sustainable policies and enforcing their results over the long term.
5. Implement policies in stages with a long-term perspective because it takes considerable time to gather the necessary public and political support and to develop appropriate measures.

Street Design Guidelines for Healthy Neighborhoods

Principal Author/Authors: Dan Burden, Director, Walkable Communities, Inc.
Publisher: Context Sensitive Solutions
Date of Publication/Presentation/Access: This paper was excerpted from the Street Design Guidelines for Healthy Neighborhoods published in January 1999 by the Local Government Commission's Center for Livable Communities.
Website Link: www.contextsensitivesolutions.org/content/ reading/street-design/resources/3918-270-street-design-guidelines-for-healthy-neighborhoods/

Description

In the United States, we are shifting the way we design streets as part of a bigger shift in the way we design neighborhoods. This shift is due to a new emphasis on creating neighborhoods, and thus streets that are more interactive, walkable, enjoyable, and livable. This paper provides street-making guidelines to create streets with those qualities for new or retrofitted neighborhoods. The author says that the guidelines are "based on the principles of traditional neighborhoods built in cities throughout the nation before 1940." Keeping motorists to speeds between 10 and 25 mph is a goal.

Design elements such as on-street parking, sidewalks, shade, benches, street lamps, and other community amenities are desirable as are the following, which should help encourage walking, bicycling, and a sense of community:

- Streets should be well connected to offer a variety of walking routes and to distribute motorized traffic;
- Streets should have regular terminating vistas—prominent features where they end or at the apex of curves—and offer plenty of variety along the way;
- Intersections should have turning radii that require low speeds, yet allow access by infrequent street users such as fire trucks, sanitation trucks, and delivery vehicles;
- Blocks are not longer than 300–450 feet;
- Houses are located close to the street; and
- Parks, schools, churches, and small shops are found at walkable distances from each home.

The guide lists and describes seven "healthy street categories" meant to replace conventional street hierarchies. The healthy street categories are: lanes, streets, main streets, boulevards, and parkways. Street design features are described for each street category, such as street width, planting strip width, sidewalk width, utility location (underground or in alley), block length, residence types, set-back of buildings from the curb, presence of front porches, travel lane width, drainage type, and presence of bike lanes.

Sustainable Transport and the Role(s) of Performance Indicators, TRB, Annual Meeting, January 2008, Washington, D.C., Session 677—Performance Measures for Sustainability

Principal Author/Authors: Henrik Gudmundsson
Publisher: Technical University of Denmark—DTU Transport
Date of Publication/Presentation/Access: January 2008
Website Link: http://orbit.dtu.dk/getResource?recordId=232 406&objectId=1&versionId=1

Description

This presentation starts by defining the term "sustainable transportation" and offers up some definitions, but also points out that there is no one correct definition. The Brundt-

land definition of sustainability is given ("Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.") and discussed, including a matrix looking at the environmental, economic, social, and institutional dimensions. The presentation then discusses performance indicators, first discussing key elements of indicator definitions, then defining them as "The relation of a measured variable to a norm, standard, objective or target."

Examples of real-life scenarios in which sustainable transportation performance indicators have been used are given. The first is the Stockholm Congestion pricing trial that occurred from January to July 2006. The trial resulted in a referendum on September 17, 2006 and a permanent program that began in August 2007.

Stockholm's Evaluation Program
- Purpose: To verify if objectives were fulfilled;
- Developed in cooperation with different actors;
- Prior and during trial;
- More than 30 different evaluation tasks;
- Scientifically designed and carried out by experts; and
- Monthly indicator reports—continuous follow-up:
  - Car travel flows and travel times;
  - Public transit passengers;
  - Cyclists;
  - Parking space utilization; and
  - Retail trade effects.

Influence Factors Present
- Conceptualization: Clearly defined measurement program for specified policy issues.
- Operationalization: Intensive data collection before, during, after.
- Communication: Almost instant reporting of key result indicators, extensive communication strategy, involvement of press, reference groups.
- Institutionalization: Clear responsibilities, relative independence of monitoring unit, requirement to use results for specified decision.
- Interpretation of this case study:
- Extensive use of indicators;
- Clear performance relevance (even if no targets);
- All influence factors identified;
- Instrumental role detected (also via referendum); and
- Sustainable transport promoted? (yes, partially and incrementally).

The next case study was "EU environmental integration monitoring," a program that monitored strategies to integrate environmental concerns in transport policies in the European Union (30+ countries). There were annual reports since 2001, which included 35 indicators. The indicators were designed to answer seven questions:

1. Is the environmental performance of transport improving?
2. Are we getting better at managing transport demand and modal split?
3. Are spatial and transport planning becoming better coordinated so as to match transport demand to the need for access?
4. Are we optimizing the use of existing transport infrastructure capacity and moving towards a better-balanced intermodal transport system?
5. Are we moving towards a fairer and more efficient pricing system, which ensures that external costs are internalized?
6. How rapidly are cleaner technologies being implemented and how efficiently are vehicles being used?
7. How effectively are environmental management and monitoring tools being used to support policy- and decision-making?

Influence Factors Present
- Conceptualization: Clearly defined measurement program for specified issues, related to policy issues.
- Operationalization: Intensive data collection, but delays and variation in definitions and availability of data.
- Communication: Annual report, speeches, and some attempts to activate politicians, but limited effort compared to scope.
- Institutionalization: Independence, but low degree of policy adoption and linkage, no formal requirements to use the indicator report, no "natural" policy venue.

  Interpretation of this case study:

- Freestanding indicator reporting;
- Substantial coverage of environmental sustainability;
- Performance relevance (no/few targets);
- Few influence factors identified;
- Only "symbolic" role in policy-making detected;
- Enlightenment role for national monitoring systems; and
- Sustainable transport promoted? (yes, symbolically but less so instrumentally).

Conclusions of Presentation
- Impossible to define sustainable transportation in the absolute;
- Nevertheless, transport is a problem and should be assessed against sustainability dimensions and criteria;
- Priority to impacts on natural life support systems (including the climate system), and absolute poor;

- To be appropriate, indicators should reflect sustainability concerns;
- To become influential, they also should reflect policy context;
- Sustainability relevance and policy relevance pose conflicting demands on indicators;
- Intended roles are not always fulfilled;
- Instrumental role is a tough act to play;
- Symbolic role is not irrelevant; and
- Enlightenment role may be the most important.

THE AREA REMAINS FULL OF TENSIONS
- Ideal aims versus incremental change;
- Comprehensiveness versus manageability; and
- Independence versus influence.

Community and Social Benefits of Transportation Investment, NCHRP Project 8-36, Task 22 Demonstrating Positive Benefits of Transportation Investment

Principal Author/Authors: Prepared by Cambridge Systematics, Inc.
Publisher: NCHRP/TRB
Date of Publication/Presentation/Access: January 2002
Website Link: www.somervillestep.org/files/Community BenefitsTransInvest_0202.pdf

Description

This paper is directed solely at positive community effects that result from transportation projects. This is one of four working papers produced by Cambridge Systematics, each of which covers positive impacts of transportation investments. This one, as the title implies, covers community and social benefits of transportation investments. This paper is part of NCHRP Project 8-36, Task 22, whose goal was to produce a document explaining the positive impacts of transportation investments in the United States for use by AASHTO in its TEA-21 reauthorization efforts.

The paper discusses five categories of benefits that transportation investments can bring to the quality of life: Mobility and Access Benefits; Benefits of Alternative Travel Modes; Safety Benefits; Aesthetic Benefits; and Community Cohesion Benefits. It uses examples from the 1990s to demonstrate how transportation investments can improve quality of life. It discusses funding for transportation enhancements saying that "ISTEA stipulated that 10% of federal funds distributed to the states through the surface transportation program were to be dedicated to 'enhancements.' TEA-21 continued this commitment and increased funding by 40%, so that annual spending now averages $630 million dollars."

The paper defines a "livable place" as follows: "one that is safe, clean, and healthy; offers a variety of stable job opportunities; has adequate housing, retail, and community services; has a sense of neighborliness; and offers cultural and recreational opportunities close at hand." An elaboration of the five categories of benefits given in the paper is as follows:

1. Transportation investment increases mobility and access: It is important to note that mobility and access, while often used interchangeably, are not the same. A strong, multimodal transport network helps overcome distances (greater mobility). It also helps us reach desired social and economic activities (better access).
2. Transportation investment in a wide variety of modes provides a more balanced transportation network: A more balanced network provides travelers with less stressful alternatives to driving and flying while helping to reduce pollution and congestion.
3. Transportation investment improves safety: Redesigning roads and intersections, constructing pedestrian and bicycle facilities, improving education, and deploying a variety of intelligent transportation systems can help reduce crashes, which in 1999 claimed the lives of 44,000 people in the United States and injured 3.3 million more.
4. Transportation investment can improve the appearance of an intersection, a street, or an entire neighborhood: Across the nation, new and rehabilitated infrastructure is being designed with aesthetics as well as function in mind.
5. Transportation investment can increase community cohesion and inspire a sense of togetherness. It can stimulate social interaction, increase civic participation, foster closeness among neighbors, and increase people's sense of safety.

Taking the High Road: The Environmental and Social Contributions of America's Highway Programs

Principal Author/Authors: AASHTO Center for Environmental Excellence
Publisher: AASHTO
Date of Publication/Presentation/Access: 2003
Website Link: http://environment.transportation.org/pdf/ HighRoad/HighRoad-Full.pdf

Description

This report was created by the AASHTO Center for Environmental Excellence to delineate some of the societal benefits that result from transportation projects. The report give case

studies and discusses multiple types of investments made by state departments of transportation, including: transportation enhancements; historic preservation; recycling; clean air; community design; Brownfields reclamation; walking and biking facilities; wetlands and water quality; wildlife preservation; sound barriers; scenic byways; and landscaping and scenic beautification (wildflowers and native vegetation); pedestrian and bicycle safety and education activities; archaeological planning and research; environmental mitigation of highway runoff; and provision of wildlife connectivity. These investments are described as enhancements to quality of life brought by transportation projects. The introduction states: "This report illustrates the many benefits of transportation to communities and to the environment— major contributions that few Americans realize come from the transportation sector."

This report is mainly a promotional piece created by AASHTO to champion the positive side effects of road building. However, some of the positive things highlighted in the reading that could be used as indicators are presented in the indicator table. An example is: "Dollar investment in wetlands and water quality accompanying the project." I have taken the good things allegedly created by highway projects and made indicators from them.

The following are easy ways to help wildlife along roads cited in the report and could potentially be made into indicators/measures:

- Auguring guardrail posts to protect listed birds from percussive noise;
- Adding ledges to box culverts for Eastern Phoebe nesting;
- Adding shelves in front of and inside frequently flooded box culverts for easier amphibian entry and crossing;
- Avoiding in-stream construction during the breeding seasons of protected fish;
- Bark mulch berm along narrow causeway to protect lake fish from highway runoff;
- Bat "dome" in culvert;
- Birdboxes and platforms (bluebirds, falcons, kestrels, wood ducks, raptors, ospreys);
- Burying the inside bottom of oversized culverts below the stream bottom to create a more natural stream bed within the culvert;
- Constructing an elevated boardwalk over the habitat of the Perdido Beach Mouse;
- Constructing concrete fish barriers to keep out unwanted fish;
- Constructing innovative sediment basins to protect listed fish species;
- Creating small animal habitats out of brush piles;
- Creating bat roosts by retrofitting box culverts with rough-textured concrete forms;

- Cutting trees at the roots at a bridge site to help keep sediment out of the water and away from endangered fish;
- Designing longer-span bridges for wildlife passage along a stream or riparian corridor;
- Designing a channel in the bottom of a stream box culvert to provide low-water fish passage;
- Donating steel posts to FWS for "let's help save sea turtles" signs;
- Fencing to prevent turtle and tortoise road kill;
- Fish ladder "lip" to protect trout from the parasitic sea lamprey;
- Including contract provision "protect existing vegetation" when that vegetation is wildlife habitat and is not protected by laws or regulations;
- Installing metal poles on a high bridge to keep marine birds from flying into traffic;
- Installing removable filter devices in bridge deck drains;
- Installing translucent "shrouds" over the entrances to wildlife underpasses in high snowfall areas;
- Limiting blasting to protect caves used by endangered bats;
- Limiting canopy removal near streams to preserve foraging habitat for endangered bats;
- Limiting tree removal along trout streams;
- "Living snow fence";
- Leaving old trees in the right-of-way for woodpecker habitat;
- Leaving dead palm fronds untrimmed to protect the habitat of baby yellow bats;
- Leaving standing dead trees on wetlands for egrets, hawks, and other birds to use as perches;
- Leaving in place part of a bridge-project work platform to create rocky habitat for a variety of mussel species;
- Ledges for Eastern phoebes;
- Limiting planting along a topsoil-covered stream bank to encourage growth of natural plant communities and to reduce disturbance to fish and wildlife;
- "Lip" on one barrel of two-barrel culvert for low-flow fish passage;
- Locating wetland mitigation sites next to Department of Natural Resources–managed lands;
- Low-sodium lights along road to protect endangered birds that fly into bright light;
- Low-sodium lights on bridge to protect migrating sea turtles;
- Modifying mowing cycles to protect the roadside habitats of ground-nesting birds, the Karner Blue butterfly, and other animals;
- "Mound and pool" topography in wetlands for more natural habitats;
- Mound-planting bottomland oak seedlings to jump-start their growth and production of acorns;

- Netting or Bird-X gel to prevent swallows from nesting on bridges during construction;
- Not planting wildlife-friendly vegetation along rights-of-way or in the medians of high-speed roadways;
- Not power-spraying bridges to protect birds and fish;
- Placing large woody debris and boulders in lakes and streams to enhance fish habitat;
- Planting mass-producing hardwood trees to benefit hogs, squirrels, and other animals;
- Planting native grasses to bring Bob White quail back to open rural areas beyond the ROW;
- Plugging bridge deck drains with removable spray foam;
- Preserving a sandy-soil section of wetland for turtle habitat;
- Protective platform barriers to catch falling debris from bridge construction;
- Purchasing and retaining noneconomic remnants for wetland or upland wildlife habitat;
- Reconnecting hydrology on large wetlands by putting in more culverts;
- Relocating freshwater mussels;
- Relocating osprey nests to artificial nesting platforms;
- Replacing lost forest cover along highways;
- Replanting coastal mangroves to stabilize the shoreline and preserve the food chain in estuaries;
- Rock spurs to help stabilize stream banks;
- Rock vortex fish weirs;
- Saving topsoil and forest duff during construction to use later in habitat restoration;
- Scarifying causeway ROWs for shorebird nesting;
- Shading lights on walkway under bridge to protect migrating salmon fry from predators;
- Start-holes for red-cockaded woodpeckers;
- "Startling" fish away from blasting using sonar fish-startle devices;
- Stockpiling construction-site boulders and placing them in strategic spots on streams to create pools and riffle areas for fish;
- Streambank cattle fencing;
- Streambank fish-cover devices that allow fish to rest and hide;
- Taller lights at intersections near the home of endangered bats;
- Topping low bridge rails with fences barriers to keep purple martins from flying into traffic;
- Training highway maintenance and work crews on how to protect desert tortoises and kit foxes;
- Using catch basins when cleaning road equipment so diesel-based emulsions and solvents do not drip onto the ground and endanger wildlife;
- Using explosives in stream projects only in dewatered coffer dams;
- Using fabric-wrapped foam for ditch checks instead of hay bales (an attraction to grazing animals);
- Using visual barriers to protect bald eagles from the sight of construction work;
- Willow staking on stream banks for shading and soil stabilization; and
- Wood-top rail—not barbed wire—on fences in migration area.

Data Needs for Bicycling and Sustainability Research

Principal Author/Authors: Ralph Buehler, Virginia Tech, Alexandria, VA (prepared with input from The Louis Berger Group, Inc.)
Publisher: Virginia Tech
Date of Publication/Presentation/Access: April 2009

Description

This presentation was created to help outline the types of indicators and data needed to evaluate whether an area is suitable for sustainable transportation in the form of biking, walking, and transit with an emphasis on bicycling. It begins with a discussion of the concept of sustainability and how it applies to the transportation system. It looks at "green modes" of transportation (walk, bike, transit) in Alexandria and Arlington County, Virginia, and compares them to the mode split for the South Atlantic Census Division, Virginia and the USA. It discusses the potential benefits of cycling and then gives indicators of a bikeable and walkable community.

This presentation gave a number of indicators and measures for bikeable and walkable communities and sustainable transportation. These all relate to quality-of-life considerations, as many communities place a high importance on sustainability. It lists the data needed to evaluate a community's bikeability and measures to evaluate sustainable transportation. Data projections for some of the indicators listed in this presentation could be presented in a visioning exercise in a series of scenarios (i.e., a "no-build" scenario with existing data, and then scenarios for several "build" options with data projections). Showing the community this type of data for a capacity expansion project helps them to visualize whether the project is likely to make their community more or less bikeable, walkable, and/or transit-friendly.

The Social Capital Community Benchmark Survey

Principal Author/Authors: Saguaro Seminar: Civic Engagement in America, Kennedy School of Government, Harvard University

Description

This website was created to provide information about a survey called the "Social Capital Community Benchmark Survey," which is a survey on the civic engagement of Americans. The Social Capital Community Benchmark Survey was developed by the Saguaro Seminar at the John F. Kennedy School of Government at Harvard University, guided in survey development by a nine-person Scientific Advisory Committee composed of leading scholars on measuring social capital and on cross-racial social trends. The survey drew upon the lessons learned from a Social Capital Measurement Workshop held at Harvard University in October 1999. (The Saguaro Seminar is an ongoing initiative of Professor Robert D. Putnam at the John F. Kennedy School of Government at Harvard University. The project focuses on expanding what we know about our levels of trust and community engagement and on developing strategies and efforts to increase this engagement.)

The survey looks at how connected people are to family, friends, neighbors, and civic institutions on local and national levels. These connections are considered "social capital" or the "glue that holds us together and enables us to build bridges to others." In 2001 the survey was conducted on nearly 30,000 individuals in 40 communities across the United States. The survey, averaging 26 min, was conducted by telephone using random-digit-dialing during July to November. The survey found that levels of civic engagement—how much residents trusted others, socialized with others, and joined with others, among other measures—predicted the quality of community life and residents' happiness far better than levels of community education or income.

The website defines social capital ("community connectedness") as "social networks and the norms of reciprocity that arise from them." It goes on to say, "A growing body of hard-nosed literature over the last several years shows that social capital, and the trust, reciprocity, information, and cooperation associated with it, enables many important individual and social goods. Communities with higher levels of social capital are likely to have higher educational achievement, better performing governmental institutions, faster economic growth, and less crime and violence. And the people living in these communities are likely to be happier, healthier, and to have a longer life expectancy."

Social capital as defined for use in this survey is a positive thing for communities, and any decrease in social capital resulting from a capacity expansion would be considered a negative. Social capital is a relevant measure at the confluence of transportation, land use, economic well-being with cultural and social well-being. If social capital were to be used in community visioning, it should show how a given project may increase or decrease the community's social capital. This survey uses over 150 questions (indicators) that together determine how much social capital exists within the community. No one of these questions (indicators) looked at on its own would be particularly relevant to social well-being vis-à-vis a capacity expansion project. Combined, they create one important indicator, "Social Capital." In a visioning process it would be useful to give people a sense of how the project may impact some of these indicators and to what degree this may in turn impact social capital.

Data needs for "Social Capital" as measured in the survey are:

- Sense of Community
  - Old or new friends give you a sense of community (yes or no);
  - People in your neighborhood give you a sense of community (yes or no);
  - Living in your city gives you a sense of community (yes or no);
  - Your place of worship gives you a sense of community (yes or no);
  - The people you work with or go to school with give you a sense of community (yes or no);
  - People who share your ethnic background give you a sense of community (yes or no); and
  - People you have met online give you a sense of community (yes or no).
- Whether most people can be trusted or you can't be too careful
  - How much you can trust people in your neighborhood;
  - How much you can trust people you work with;
  - How much you can trust people at your church or place of worship;
  - How much you can trust people who work in the stores where you shop;
  - How much you can trust the local news media;
  - How much you can trust the police in your local community;
  - How much you can trust white people;
  - How much you can trust African Americans or blacks;
  - How much you can trust Asian people;
  - How much can you trust Hispanics or Latinos;
  - How much you can trust Native Americans;
- Frequency of experience of discrimination;
- How happy you are;
- Reported overall health;
- Likelihood of people cooperating to save water or electricity;
- Number of years lived in your local community;

- Expect to be living in your community in 5 years;
- Rating of your community as a place to live;
- Own or rent residence;
- Perceived impact in making community a better place to live;
- Days in the past week respondent read a daily newspaper;
- Hours of TV watched on an average weekday M–F (Mean);
- Hours spent using the Internet in a typical week;
- Access to the Internet at home;
- Interest in politics and national affairs
  - Currently registered to vote (yes or no); and
  - Voted in 1996 presidential election (yes or no).
- How often do you trust national government to do what is right;
- How often do you trust local government to do what is right;
- Political activism
  - Signed a petition in past 12 months (yes or no);
  - Attended a political meeting or rally in past 12 months (yes or no);
  - Worked on a community project in past 12 months (yes or no); and
  - Participated in demonstrations, boycotts, or marches in past 12 months (yes or no).
- Donated blood in past 12 months (yes or no);
- Self-reported political ideology;
- Political knowledge scale;
- Religious preference
  - Protestant denomination;
  - Other specified Christian; and
  - Other specified religion.
- Church/synagogue member;
- How often you attend religious services;
- Participation:
  - Participate in church activities other than attending services (yes or no);
  - Participate in organization affiliated with religion (yes or no);
  - Participate in sports club, league, or outdoor activity club (yes or no);
  - Participate in youth organization (yes or no);
  - Participate in parent association or other school support group (yes or no);
  - Participate in veterans group (yes or no);
  - Participate in neighborhood association (yes or no);
  - Participate in seniors groups (yes or no);
  - Participate in charity or social welfare organization (yes or no);
  - Participate in labor union (yes or no);
  - Participate in professional, trade, farm, or business association (yes or no);
  - Participate in service or fraternal organization (yes or no);
  - Participate in ethnic, nationality, or civil rights organization (yes or no);
  - Participate in political group (yes or no);
  - Participate in literary, art, or musical group (yes or no);
  - Participate in hobby, investment, or garden club (yes or no);
  - Participate in self-help program (yes or no);
  - Involved in group that meets over the Internet (yes or no); and
  - Belong to other kinds of clubs or organizations (yes or no).
- Belonged to any group that took local action for reform (yes or no);
- Served as an officer or on a committee (yes or no);
- Demographics
  - Number of group members who are the same race as respondent;
  - Number of group members who are respondent's gender; and
  - Number of group members who are college educated.
- Money contributed to church or religious causes;
- Money contributed to nonreligious charities;
- Cultural values
  - The people running my community do not really care what happens to me (yes or no);
  - Television is my primary form of entertainment (yes or no);
  - Immigrants are getting too demanding in their push for equal rights (yes or no);
  - A book that most people disapprove of should be kept out of the public library (yes or no); and
  - Religion is very important in my life (yes or no).
- Obstacles
  - Obstacles that make it difficult to be involved with your community;
  - Importance of obstacle: your work schedule or inadequate childcare;
  - Importance of obstacle: inadequate transportation;
  - Importance of obstacle: feeling unwelcome;
  - Importance of obstacle: concerns for your safety;
  - Importance of obstacle: lack of information or not knowing how to begin; and
  - Importance of obstacle: feeling that you cannot make a difference.
- Current employment status;
- Work for pay at present time (yes or no);
- Hours worked in the average week;
- Days/week normally work at home (for ALL current workers);
- Hours it takes to get to work (Mean response);
- Satisfaction with current financial situation;
- Current marital status;

- Living with a partner;
- Kids 17 or younger in household;
- Kids 6 or older in household;
- Number of adults living in household;
- Number of unrelated adults treated as members of the family;
- Race and marriage
  - Favor/oppose marrying an Asian person;
  - Favor/oppose marrying a black person;
  - Favor/oppose marrying a white person;
  - Favor/oppose marrying a Latino or Hispanic person; and
  - Favor/oppose marrying a Native American.
- How often talk with or visit immediate neighbors;
- Worked with others to get people to fix or improve something in neighborhood (yes or no);
- Number of close friends;
- Number of people you can confide in;
- Friendships:
  - Has personal friend who owns a business (yes or no);
  - Has personal friend who is a manual worker (yes or no);
  - Has personal friend who has been on welfare (yes or no);
  - Has personal friend who owns a vacation home (yes or no);
  - Has personal friend with different religious orientation (yes or no);
  - Has personal friend who is white (yes or no);
  - Has personal friend who is Latino or Hispanic (yes or no);
  - Has personal friend who is Asian (yes or no);
  - Has personal friend who is black or African-American (yes or no);
  - Has personal friend who is gay or lesbian (yes or no); and
  - Has personal friend who is a community leader (yes or no).
- Number of: parades, local sports or art events;
- Number of: artistic activities with a group;
- Number of: played cards or board games with others;
- Number of: visited with relatives;
- Number of: attended a club meeting;
- Number of: had friends over to your home;
- Number of: had a friend of a different race at your home or visited theirs;
- Frequency of socializing with coworkers;
- Number of: hung out with friends in a public place;
- Number of: played a team sport;
- Number of: online Internet discussions;
- Number of: attended public meeting discussing school or town affairs;
- Number of: visits to local library;
- Number of: times volunteered;

- Volunteered for place of worship (yes or no);
- Volunteered for health care or fight disease (yes or no);
- Volunteered for school or youth programs (yes or no);
- Volunteered to help poor or elderly (yes or no);
- Volunteered for cultural or arts organizations (yes or no);
- Volunteered for neighborhood or civic group (yes or no);
- Highest education completed
  - GED or equivalency; and
  - Education, including GED follow-up.
- Nationality background of Hispanics (percentages are out of Hispanics);
- Race of Hispanics (percentages are out of Hispanics);
- Race of non-Hispanics (percentages are of non-Hispanics);
- Specific Asian nationality (data not provided because Asian base in national sample too small);
- Citizenship status;
- Number of phone lines in residence; and
- 1999 total household income.

Understanding Communities: Investigating the Use of Measures of Social Capital in Transportation Planning

Principal Author/Authors: Leigh Lane and Ann Hartell, Center for Transportation and the Environment, NCSU
Publisher: NCSU
Date of Publication/Presentation/Access: 2009
Website Link: www.berger-nc.com/cssresources/Community Context/UnderstandingCommunities_Lane10-07.pdf

Description

This presentation arose from NCHRP 8-36 Task 66, which was about identifying new measures and data sources to use as part of the CIA process. It cites nontraditional sources that are readily available, such as home mortgage data and crime data, but the presentation focuses on social capital because it is an entirely new data source. The presentation focuses on how measuring social capital can be useful in transportation planning. It asks "how can we find ways to objectively understand and measure the factors that communities care about such as a sense of belonging, caring neighbors, connected community, close-knit community and so on?" The presentation seeks first to define social capital and to explain how it relates to community quality of life. Then it looks at why transportation professionals should be interested in the concept of social capital. It then asks, what role can MPOs play in understanding how social capital is being affected by transportation plans/projects?

There is a brief discussion on Robert Putnam's book "Bowling Alone" followed by a definition of social capital: "Social capital refers to the collective value of all "social networks" and

the inclinations that arise from these networks to do things for each other; Describes the trust, norms and networks needed to facilitate cooperation; The glue which holds society and communities together." Social capital affects the following things in a community:

- Health: People with more dense friendship networks are healthier;
- Safety and security: There is less crime in places where people know their neighbors;
- Educational achievement: School students perform better when parents are more involved in community affairs;
- Efficiency: Government works better when more people get involved in civic life; and
- Economic benefits: Enhanced economic achievement through increased trust.

Some measures of social capital delineated include: number of times attended public or community meeting; number of charitable contributions made; county-to-county migration flows; number of times worked on community project; VMT or average commute times; race; monetary giving; civic engagement and volunteerism; trust (social, government institutions); levels of health and happiness (perceived); social interactions.

The presentation looks at a transportation case study on the Greensboro, N.C., Outer Loop Project, which added a circumferential loop around the city that connected with two Interstate routes. For this project, a survey instrument was used to measure social capital. The presentation discusses the survey on social capital that was developed by the Saguaro Seminar of the John F. Kennedy School of Government at Harvard University and the short form version of the survey that is available. Some of what the survey measured included trust, socializing with friends and public meeting attendance.

Then it outlines connections between transportation and social capital:

- Commute time: Long commutes are associated with lower levels of social capital.
- Barriers: Trust measure: Possible barriers to community interactions and demographic change brought by rapid and extensive development lowers trust.
- Demographic changes: Desire to stay in community: Transportation system can lead to demographic change by changes in economy, VMT, access, and so forth. Good measure of value of neighborhood.
- Economic investment: Transportation provides a signal to encourage/discourage investment in a community and can affect an individual's propensity for involvement in the community.

- Access to friends: Facilities can limit or improve access for social purposes.
- Outreach: Public meetings attendance: Can flag communities that need innovative outreach methods for input into transportation decision making.
- Scale: Social capital seems to flourish at smaller scales: How is transportation affecting the design of the built environment.

Lastly, the presentation touches on why MPOs should consider collecting Social Capital Data:

- Highlight vulnerable communities;
- Help define community context;
- Context sensitive solutions;
- Balance transportation needs with other community needs;
- Pre- and post-project analysis; and
- Assist with the NEPA process (Community Impact Assessment).

As stated in the presentation, it takes many variables combined to get a great quality of life. Social capital is made up of a long list of indicators. Social capital is a good thing for communities and any decrease in social capital resulting from a capacity expansion project should be considered a negative. Visioning should show how the project may increase or decrease the community's social capital by showing how many of the indicators making up social capital are impacted. In a visioning process it could be useful to give people a sense of how a transportation project may impact some of the items associated with social capital outlined above such as: commute time; barriers to trust; demographic changes (ability to stay in community); economic investment; access to friends; outreach; scale.

The following measures of social capital are usually obtained using a survey instrument:

- Measuring trust (Provides a basic measure of an important aspect of social capital):
  - **How it relates to community wellbeing:** The degree to which someone trusts others indicates his or her perceptions about to what degree he or she can rely on others in times of difficulty or willingness to provide help to others in need.
  - **How it relates to possible effects of transportation infrastructure (including hypothesized direction of effects):** Research has shown a negative relationship between social capital and commute times, neighborhood turnover/migration, and low income. Projects that trigger substantial land use change and/or development that involves substantial in- or out-migration will

likely be associated with a decline in TRUST. Opening up areas that are distant from employment or isolating a neighborhood from employment opportunities (i.e., requiring long commutes) are likely to be associated with decline in TRUST. Improvements in commuting time must be balanced with the potential for triggering demographic change.

○ **How and for what uses a transportation agency might incorporate this measure into practice; how it differs from current practice:** Provides a quantitative measure for a basic element of community well-being. Current practice generally uses public outreach/comment to assess the level of general community cohesion, but does not look at social trust explicitly. If a sample were collected with small-scale analysis in mind, it would provide a valid sample for spatial and statistical analysis that can identify areas that may need particular attention, and targeted outreach to understand how project effects could be mitigated or avoided.

• Socializing with friends and public meeting attendance (Provides a basic measure of an important aspect of social capital. Measures activity, rather than perception or feelings).

○ **How it relates to community well-being:** Higher amounts of informal socializing are a component of social capital. High levels of social capital are associated with improved physical health, longevity, and general life satisfaction, which are desirable outcomes not only for individuals but also at the public policy level. FRIENDS measures social interaction beyond simple greetings between passersby; it measures the amount of an activity that is important to generating and maintaining social capital and captures an aspect of the strength of ties between people. Note, however, that FRIENDS measures all socializing in the home, not only socializing with neighbors, so cannot be interpreted as directly measuring interaction among neighbors.

○ **How it relates to possible effects of transportation infrastructure (including hypothesized direction of effects):** Improvements in commuting time must be balanced with the potential for triggering demographic change. Additionally, if residents in the project area primarily socialize with one another, a transportation project that constitutes a barrier would be expected to decrease FRIENDS. Conversely, a transportation project that improves localized access to residential areas would be expected to increase FRIENDS.

○ **How and for what uses a transportation agency might incorporate this measure into practice; how it differs from current practice:** Provides a quantitative measure for a basic element of community well-being and of community cohesion. Current practice generally uses

public outreach/comment to assess the level of general community cohesion anecdotally.

The Social Capital Survey asks questions such as:

• Generally speaking, would you say that most people can be trusted or that you can't be too careful?
• How much of the time do you think you can trust the NATIONAL government to do what is right? (same question for local government)
• How many times in the past 12 months have you worked on a community project? (same question for public meeting, political meeting or rally, club or organizational meeting)
• How many times in the past 12 months have you had friends over to your home?
• How many times in the past 12 months have you volunteered?
• All things considered, would you say you are very happy, happy, not very happy, or not happy at all?
• How would you describe your overall state of health these days? Would you say it is excellent, very good, good, fair, or poor?

Sustainable Transportation Indicators: A Recommended Program to Define a Standard Set of Indicators for Sustainable Transportation Planning

Principal Author/Authors: TRB Sustainable Transportation Indicators (STI) Subcommittee (TRB Subcommittee ADD40 [1])
Publisher: TRB
Date of Publication/Presentation/Access: January 2008
Website Link: www.vtpi.org/sustain/sti.pdf

Description

This paper, developed through a cooperative effort by TRB's Sustainable Transportation Indicators Subcommittee (ADD40 [1]), identifies indicators that can be used for sustainable transportation evaluation. The paper discusses sustainable transportation definitions and concepts, describes factors to consider when selecting indictors, recommends specific sustainable transportation indicators, and discusses issues of data quality. The authors hope these recommendations will be endorsed by TRB and other professional organizations, and lead to the establishment of a standardized set of sustainable transportation indictors for worldwide use.

The paper points out that sustainability is becoming an important concept for many types of decision-making situations. As a result, there is growing demand for sustainable

development indicators accounting for indirect and long-term impacts, which help determine how individual, short-term decisions relate to long-term, strategic goals. Transportation has significant economic, social and environmental impacts, and so is an important factor in sustainability. For transportation to become more sustainable, a paradigm shift is needed away from physical movement/mobility to accessibility—people's ability to obtain desired goods and services.

The paper notes that multiple definitions of sustainable transportation have been proposed, and the authors recommend the following definition selected by the European Council of Ministers of Transport: a sustainable transport system:

- Allows the basic access and development needs of individuals, companies and society to be met safely and in a manner consistent with human and ecosystem health, and promotes equity within and between successive generations.
- Is affordable, operates fairly and efficiently, offers a choice of transport mode and supports a competitive economy, as well as balanced regional development.
- Limits emissions and waste within the planet's ability to absorb them, uses renewable resources at or below their rates of generation, and uses nonrenewable resources at or below the rates of development of renewable substitutes, while minimizing the impact on the use of land and the generation of noise.

For the purposes of visioning, if we take one of the main goals of sustainability to mean emphasizing accessibility, we need to think about factors such as improving land use accessibility, transit systems or telecommunications, as well as issues of vehicle mobility. Indicators that relate to those factors should be considered under "build" and "no-build" scenarios for a project to help vision whether or not the project is going in the direction of improving accessibility.

Sustainability is high on most people's list for quality of life these days. Sustainability planning takes into account diverse, indirect, and long-term impacts. Below are some of the indicator categories suggested in this paper—each of which has specific metrics:

- Travel activity;
- Air pollution emissions;
- Noise pollution;
- Traffic risk;
- Economic productivity;
- Overall accessibility;
- Land use impacts;
- Equity; and
- Transport policy and planning.

Recommended Transportation Data Sets:

- Mobility In Cities Database: www.uitp.com/publications/MCD2-order/;
- OECD International Road Traffic and Accident Database, data collected in the World Bank Transport web site: www.worldbank.org/transport; and
- Rutgers University's Cross National Time Series: www2.scc.rutgers.edu/cnts/.

Marketing Sheet: NCHRP Project 15-32 (CSS: Quantification of the Benefits) NCHRP15-32 Matrix

Principal Author/Authors: NCHRP
Publisher: NCHRP/TRB
Date of Publication/Presentation/Access: Report not yet finalized

Description

This is a matrix of the principles of context sensitive solutions (CSS) and their measurable benefits. Benefits of CSS are believed to be the minimizing of delay and controversy in transportation projects. According to the TRB website, the objective of the NCHRP project is to "quantify the benefits of strategic and appropriate application of the principles of context sensitive solutions in transportation planning, programming, project development, and operations." The following are principles and benefits of CSS as described in this document, followed by a list of indicators for each benefit.

PRINCIPLES OF CSS
- Use interdisciplinary teams;
- Involve stakeholders;
- Seek broad-based public involvement;
- Use full range of communication strategies;
- Achieve consensus on purpose and need;
- Address alternatives and all modes;
- Consider a safe facility for users and community;
- Maintain environmental harmony;
- Address community and social issues;
- Address aesthetic treatments and enhancements;
- Utilize full range of design choices;
- Document project decisions;
- Track and meet all commitments;
- Use agency resources effectively; and
- Create a lasting value for the community.

BENEFITS OF CSS
- Improved predictability of project delivery;
- Improved project scoping and budgeting;

- Improved long-term decisions and investments;
- Improved environmental stewardship;
- Optimized maintenance and operations;
- Increased risk management and liability protection;
- Improved stakeholder/public feedback;
- Increased stakeholder/public participation, ownership, and trust;
- Decreased costs for overall project delivery;
- Decreased time for overall project delivery;
- Increased partnering opportunities;
- Minimized overall impact to human and natural environment;
- Improved mobility for users;
- Improved walkability and bikeability;
- Improved safety (vehicles, pedestrians, and bikes);
- Improved multimodal options (including transit);
- Improved community satisfaction;
- Improved quality of life for community;
- Improved speed management;
- Design features appropriate to context;
- Minimized construction-related disruption; and
- Improved opportunities for economic development.

BENEFIT METRICS (INDICATORS FOR EACH BENEFIT)

- Improved predictability of project delivery: Difference in project duration in months to complete/Semiquantitative assessment of opinion;
- Improved project scoping and budgeting: Number and cost of change orders/scope changes/Semiquantitative assessment of opinion;
- Improved long-term decisions and investments: Semiquantitative assessment of opinion;
- Improved environmental stewardship: Increased or enhanced mitigation beyond regulatory mandates/Semiquantitative assessment of opinion;
- Optimized maintenance and operations: Annual cost, hours or closures in dollars/Semiquantitative assessment of opinion;
- Increased risk management protection: Number and cost of legal action taken against project/Semiquantitative assessment of opinion;
- Improved stakeholder/public feedback: Number of stakeholder/public responses/Semiquantitative assessment of opinion;
- Increased stakeholder/public participation, ownership and trust: Stakeholder involvement measures/Semiquantitative assessment of opinion and satisfaction level;
- Decreased costs for overall project delivery: Decreased dollar cost amount for project delivery/Number and cost of change orders/scope changes/Semiquantitative assessment of opinion;

- Decreased time for overall project delivery: Number of months by project phases and total duration/Number and cost of change orders/scope changes/Semiquantitative assessment of opinion;
- Increased partnering opportunities: Number of Memorandum of Agreements or grants established/Semiquantitative assessment of opinion;
- Minimized overall impact to human and natural environment: percentage of human and environmental impacts of project/Semiquantitative assessment of opinion;
- Improved mobility for users: Each modal facility element inclusion and extent/Semiquantitative assessment of opinion;
- Improved walkability and bikeability: New and expanded options for pedestrians and bicyclists/Semiquantitative assessment of opinion;
- Improved safety (vehicles, pedestrians and bikes): Change in crashes, crash rate and severity/Semiquantitative assessment of opinion;
- Improved multimodal options (including transit): New and/or expanded modal choices/Modal connectivity (count/volume)/Modal safety (crash/severity)/Semiquantitative assessment of opinion;
- Improved community satisfaction: Semiquantitative assessment of opinion;
- Improved quality of life for community: Semiquantitative assessment of opinion/Alignment with community plans (semiquantitative);
- Improved speed management: Operating speed (expected/actual)/Semiquantitative assessment of opinion;
- Design features appropriate to context: Semiquantitative assessment of opinion;
- Minimized construction-related disruption: Work zone, lane closings and detour duration in days/Semiquantitative assessment of opinion; and
- Improved opportunities for economic development: Number of Memorandum of Agreements/grants established/Semiquantitative assessment of opinion.

You Told Us—What the New President and Congress Should Know About Transportation

Description

This document is a collection of comments, ideas, and concerns from across America on how and what needs to be done to improve the U.S. transportation system. This collection was

developed by AASHTO to act as a conduit for these ideas and concerns to the incoming president (Barack Obama) and the Congress. Selected comments are organized into categories that read like a set of national transportation goals. The literature does not specifically mention performance measures or indicators but alludes to several. One example from a comment in the "Rebuilding our System" category calls for reducing traffic jams and indicates that 1 h of traffic delay translates into 30 to 45 min of nonproductive man hours (NPMH). A performance measure for this would be the level of NPMH on an annual basis. Two others call for fixing bridges and increasing telecommuting options. A performance measure for each of these could be the number of bridges returned to acceptable maintenance levels annually and the annual (or other time frame) increase in telecommuting workers. One comment in the "Create a New Vision" category calls for a feasibility study to investigate stakeholder engagement but does not discuss any indicators or measures for this.

This may be a possible resource for a visioning process insofar as it provides a timely snapshot of the public's thoughts and concerns on the current state of the U.S. transportation system and where efforts should be focused for the future. Any use of this as a resource should note that this collection of comments, ideas, and concerns were chosen by AASHTO from a small sample of the public and may not fully represent the voice of the American public.

Well Measured—Developing Indicators for Comprehensive and Sustainable Transport Planning

Principal Author/Authors: Todd Litman
Publisher: Victoria Transport Policy Institute
Date of Publication/Presentation/Access: July 2008
Website Link: www.vtpi.org/wellmeas.pdf

Description

This paper provides guidance on the use of indicators for sustainable transportation planning. It discusses sustainable development and sustainable transportation concepts, and the role sustainability indicators play in evaluation and planning. It describes factors to consider when selecting sustainable transportation indicators, identifies examples of indicators and indicator sets, and provides recommendations for selecting sustainable transportation indicators for use in a particular situation. The paper discusses the growing interest in the concepts of sustainability, sustainable development, and sustainable transportation. Sustainability is generally evaluated using various indicators, which are specific variables suitable for quantification (measurement). Such indicators are useful for establishing baselines, identifying

trends, predicting problems, assessing options, setting performance targets, and evaluating a particular jurisdiction or organization. Which indicators are selected can significantly influence analysis results. The paper discusses how a particular policy may seem beneficial and desirable when evaluated using one set of indicators, but harmful and undesirable when evaluated using others. The importance of understanding assumptions and perspectives used in the selection and definition of sustainable transportation indicators is identified as key to successful use of those indicators. Examples of indicators and indicator sets are provided, and recommendations for selecting indicators for use in a particular situation are explored. Much of the necessary data to utilize the measures and indicators discussed in this paper are available from U.S.DOT, state departments of transportation, and trade groups/associations. These measures are useful and generally available across the full spectrum of geographic scale. Much of these data are widely available and generally can be disaggregated to the lower geographic scale without a high level of effort. Disaggregation should be carefully monitored, as data collected at a higher geographic scale may not accurately reflect the livability at smaller geographies.

Metro Outlook

Principal Author/Authors: Mid-America Regional Council
Publisher: Mid-America Regional Council
Date of Publication/Presentation/Access: July 2008
Website Link: www.marc.org/metrodataline/pdf/Metro_Outlook.pdf

Description

This report provides a review and report card for a variety of factors that influence quality of life in the metropolitan Kansas City region. The purpose of Metro Outlook is to provide a better tool to evaluate how well the Kansas City region is making progress; to educate the community concerning the region's trends and challenges, as well as how they affect and are affected by our decisions; and to initiate regional discussions and catalyze actions that improve the prospects for positive community change. This report does not focus on transportation planning or transportation-related issues. Rather, it looks at transportation from the regional context and includes transportation issues that impact the overall quality of life throughout the region.

The report covers the three sets of information Metro Outlook is based on—the Metro Outlook Public Survey; data from traditional sources such as local, state, and federal government agencies; and, finally, interviews with community leaders that focus on identifying perceived challenges and opportunities that may be important to address. The Metro

Outlook Public Survey asks residents to identify the factors most important to them, to evaluate how they are doing with respect to those factors, and what they think needs greatest attention from local leaders. This survey can be categorized as a social capital survey. Metro Outlook examines where metropolitan Kansas City is strong and where it appears to be weak or unbalanced, particularly as viewed through a quality-of-life lens. The report also suggests where the region needs to focus its efforts to better achieve its full potential. Metro Outlook is considered a best practices example for understanding the creation of a region's quality of life, rating the state of that quality of life, and identifying ways to improve the quality of life of a region.

This report identifies several transportation-related tie-ins to a visioning process, including resource efficiency, transportation as a conduit for regional change, and social capital (defined in the report as the ability to work together to solve common problems). Metro Outlook can be used to develop elements for a visioning process that can transcend traditional ideas of what should and should not be a part of the transportation planning process, such as the traditional chicken and egg paradigm of transportation and land use. The report's Appendix A provides a description of data used in the development of Metro Outlook. Additional information may be available through The Mid-American Council website, where an update to the transportation component (also the region's LRTP) report is available from 2008. The measures and indicators covered in this report are data intensive. Study areas in which less sophisticated data collection programs are in place will require a greater level of effort to create and then apply similar measures or indicators.

Improved Methods for Assessing Social, Cultural, and Economic Effects of Transportation Projects Final Report

Principal Author/Authors: The Center for Transportation and the Environment, North Carolina State University, Under Subcontract to Cambridge Systematics, Inc.
Date of Publication/Presentation/Access: April 2008

Description

This paper identifies existing and emerging community and social impact assessment practices that can be used as indicators of the quality of a community's life. The literature discusses the development of performance measures to evaluate mobility/accessibility, structural functionality, and safety by transportation. The work also discusses advancements in environmental assessment (primarily related to biological resources), economic analysis, and cultural assessment

practices (i.e., historical significance studies) in recent years and examines the state of progress that has been made in characterizing and measuring social and community considerations. The work identifies and explores how communities care deeply about their social well-being, how communities look for ways to improve quality of life, and what the transportation community is doing to address this. The paper recognizes that community/social well-being is multifaceted and has many overlapping and interacting components. It reflects three major domains of community/social well-being:

- Interactions with the environment through measures related to physical health;
- Interactions of an economic nature through measures of neighborhood quality, job opportunities, and investment value; and
- Interactions with other people through measures of social capital.

The work undertaken for this project confirms the hypothesis that the use of quantifiable indicators can serve as a valuable supplement to the results of public involvement and CIA. In particular chapters four, five, and six were reviewed and used to identify measures and indicators related to economic and social factors. The report's Appendix B discusses data sources for measures/indicators in detail and is a good collection of available data sources. The report also includes a list of communities that have participated in social capital surveys (see page 98). This is useful for identifying available data and best practices that could be emulated in new surveys conducted as part of the visioning process. This report covers a wide range of measures and the data needs for those measures. This information will be invaluable to the visioning process at multiple geographic scales and across the community context spectrum. The effective application of many of the performance measures and indicators in this study will be dependent on the necessary data availability within the study area. For example, social capital surveys have not been completed in many areas. Future studies in areas without existing social capital surveys will require more effort and access to resources to create data available in areas in which social capital surveys already have been completed.

Guide to Context Sensitive Solutions Report NM05DSG-01

Principal Author/Authors: Alliance for Transportation Research Institute, University of New Mexico
Publisher: University of New Mexico
Date of Publication/Presentation/Access: June 2006

Description

This report reviews how context sensitive solutions are being implemented by the New Mexico Department of Transportation (NMDOT) in its transportation planning and project delivery processes. The CSS methodologies and techniques being incorporated into the planning, design, construction, and maintenance of NMDOT transportation projects also are discussed. The purpose of this report is to function as a guide for the uniform implementation of CSS processes and training throughout NMDOT. This report specifically illustrates performance measures for each stage in the life of a transportation project and provides a compilation of these by stage and chapter of the report. This is a good resource for transportation planning and project development to use in the vision process to better understand what performance measures are and how they can be successfully applied in the transportation realm. This report also is a good source for other elements important to the visioning process, such as identifying stakeholders (see page 44).

The vast number of performance measures better lend themselves to an appendix sorted by project development stage.

Ecotransology: Integrated Design for Urban Mobility

Principal Author/Authors: Mitchell Whitney Joachim
Date of Publication/Presentation/Access: 2006

Description

This literature piece is a thesis that demonstrates a new urban mobility paradigm that incorporates elements of ecological design. Ecotransology, although still a burgeoning field of study, has potentially far-reaching applications. The thesis identifies road ecology, urban design, transportation planning, automotive engineering, and energy consultation as the principle disciplines with potential for cross-study and relevance. The thesis establishes four primary elements:

- Ideation, the survey of visions on cities illustrating original concepts, such as Gentle Congestion, Transport User Interface (TUI) Valley Section, and Netwheels;
- Ecos—the principles of ecological design in projects such as MATscape and Fab Tree Hab;
- Trans—the principles of smart mobility; and
- Ecotrans—the synthesis of these approaches into a series of design for circulation in PeristalCity or bridged tall building clusters.

Ecotransology is the new field of study resulting from the joining multiple fields of study that support mobility and ecology. This rethinking of urban mobility through an ecological design framework for the purpose of advancing human mobility is the central thread of this work.

This may be a useful part of a visioning process through the field's ability to blend many related fields of expertise that are commonly stovepiped and viewed as mutually exclusive by much of the mainstream transportation profession.

Community Cohesion as a Transport Planning Objective

Principal Author/Authors: Todd Litman
Publisher: Victoria Transport Policy Institute
Date of Publication/Presentation/Access: 2009
Website Link: www.vtpi.org/cohesion.pdf

Description

This describes the concept of community cohesion through how much residents of a study area (community) know and care about their fellow residents. Community cohesion value and the effect of transportation decisions are examined. The piece also illustrates planning strategies that can help improve community cohesion, generally through concepts such as walkability, accessibility, and affordability.

The paper defines community cohesion as the quantity and quality of interactions among people in a community as indicated by the degree residents know and care about their neighbors and participate in community activities. The author examines the way transportation and land use decisions can impact this cohesion. Human happiness is directly impacted by the location and accessibility of activities and the quality of the public realm (places where people naturally interact, including parks, public transportation, and sidewalks). In the planning realm, community cohesion is categorized as a land use impact, a social impact, and a community livability impact.

Planning strategies for improving community cohesion are organized into five categories; pedestrian improvements; improving transport system diversity and affordability; universal design; public transportation; and smart growth.

Indicators of community cohesion:

- People personally assisting strangers in their community (such as helping others find their way or search for a lost article);
- Strangers engaging in spontaneous conversation;
- Neighbors cooperating on community projects;
- Children playing in public;
- Diverse people in public places, including people from different segments of society (income, age, cultural, physical abilities); and

- Children, seniors, and people with disabilities traveling independently.

These indicators are related to the visioning process through their impacts on land use, social interaction, and community livability. These indicators are common responses and further descriptions of the more common "good quality of life" goals that tend to be an end product of the visioning process. More detailed discussions of these indicators during the visioning process may yield more productive objectives and achievable goals.

Community and Quality of Life—Data Needs for Informed Decision-making, Chapter 3: Measurement and Analysis of Livability

Principal Author/Authors: Committee on Identifying Data Needs for Place-Based Decision-Making; Committee on Geography; Board of Earth Sciences and Resources; Division on Earth and Life Studies; National Research Council
Date of Publication/Presentation/Access: 2002

Description

Chapter three, Measurement and Analysis of Livability, discusses spatial and temporal issues involved in measuring and analyzing livability. These include how to measure place-based indicators and how to measure accessibility. Place-based indicators involve issues that range from arbitrary geographic boundaries and the potential for ecological fallacy to consideration of incompatible data units, statistical methodology, and measurement of accessibility to opportunities and resources. The chapter looks at how accessibility can be a complex concept that involves challenges such as space–time accessibility and socioeconomic accessibility. The chapter reviews several cases studies and how geospatial data were used to analyze livability. The level at which data used in an analysis are collected and then analyzed is one of the key issues identified. An example illustrated in the chapter cites the common use of administrative areas (TAZs, school districts, zip codes, census tracts) for analysis despite the all too common mismatch with the definition of place or community. This will be an important factor in the visioning process. Many projects that utilize a visioning process have their boundaries determined not by the place or community but some administrative area. More often, as the geographic scale is reduced (project, neighborhood, corridor) the study area boundary is more arbitrary (i.e., 5th Street Corridor Study, one-mile buffer study, downtown area study). These more arbitrary boundaries can create misleading spatial patterns that will have unintentional impacts on the visioning process. The chapter identifies accessibility as the key component to livability.

This literature does not identify specific performance measures or indicators but analyzes and discusses how data are used and misused in measuring livability, primarily through accessibility. This is useful in the visioning process to ensure that performance measures and indicators that are not misused. This can be accomplished through:

- Sensitivity analysis of livability indicators with respect to boundary changes;
- Sensitivity analysis of livability indicators with respect to changes in aggregation and zoning;
- Reduction of potential ecological fallacy and misrepresentation of livability differences across individuals through the use of both place- and people-based perspectives;
- Livability data should be analyzed over time and space at a variety of time scales using place- and people-based perspectives;
- Livability data should be recorded/reported using appropriate spatial basis transfer methods. This will be dependent on beliefs or assumptions about the spatial variability of the data within spatial units;
- Spatial statistical methods that consider spatial dependence and heterogeneity should be used; and
- Space-time constraints in accessibility measures that capture the influence of individuals' activity schedules and major anchor points on their access to resources, opportunities, and activities should be used. The literature also noted that these can vary greatly by social class, cultural, life cycle, and gender roles.

Using Context Sensitive Solutions (CSS) Performance Measures to Assess the Effectiveness of a CSS Process During the Preliminary Design of a Major Highway Project: The Mon/Fayette Expressway

Principal Author/Authors: Lisa M. Olszak, Robert L. Goldbach, and James R. Long, Ph.D.
Date of Publication/Presentation/Access: March, 2007

Description

This research project worked to build upon previous work undertaken by TRB. The research initiative evaluated the Design Advisory Teams (DAT) effort and based results on the relevant and available literature on CSS processes and outcomes. The goal of the research effort was to establish a foundation for future research aimed at improving the reliability of CSS success criteria within community-oriented transportation design practices. This study provides a review of the chronology of the CSS techniques and strategies in a major federal highway project. The study identified the

cost-effectiveness of using CSS strategies to advance the design process without significant negative impacts to project schedules. The study further demonstrated how using CSS strategies in the process can be used to successfully balance community and transportation needs. Design Advisory Teams and the associated DAT process were established to involve designers, planners, and the community in the overall process. A secondary goal was to promote public trust and confidence in the project and the PTC.

Nine CSS performance and outcome measures were studied with specific data collection strategies applied throughout the 2-year research study period. Criteria for success were defined in advance of the study. The results were well documented and indicate that the DATs met the predetermined study criteria for success on all nine CSS Public Involvement and Outcome Performance Measures. The study's range of characteristics allows for replication across the geographic scale and context spectrum.

This resource identified nine lessons learned that focused on more and better involvement of stakeholders and the public in the visioning process. It also suggests five key areas where future research can further examine the incorporation of CSS into the transportation planning process. These include: retesting this project's results and lessons learned between and among DATs and within other types of transportation projects in other geographical regions; adapting the data collection methods in part or whole to other large or small transportation projects across all project phases; tracking differences between community and technical team perceptions in order to strengthen the reliability of some of the survey item results; expanding FHWA's CSS definition to include enhancement in addition to preservation and reconsidering the essential nature of proposed CSS processes such as visioning; expanding the CSS performance measures themselves to include other aspects, particularly those that are developed as a result of the concurrent study through the NCHRP (Project 15-32, Context Sensitive Solutions: Quantification of the Benefits in Transportation); and expanding CSS performance measures within the broader context of overall project success, keeping in mind the current environment of streamlining the environmental process while improving efficiency.

SHRP 2 C02 Performance Measurement Framework for Highway Capacity Decision Making

Principal Author/Authors: Cambridge Systematics, Inc.
Publisher: SHRP 2/TRB
Date of Publication/Presentation/Access: February 2009
Website Link: http://shrp2webtool.camsys.com/Default.aspx

Description

Summary: The SHRP 2 C02 Performance Framework Study provided an extensive overview of performance measures and indicators, culminating in a series of case studies that are summarized in matrix form, and represented in an online tool that has a rapid search capability.

A key element of the C02 report is its emphasis on developing a broad array of performance measures to be used across all phases of project development, e.g., long-range systems plans to corridor studies to environmental assessments. The principal output of this study was a web-based tool arranging performance measures around a number of planning factors. There are many specific performance measures listed in the C02 report for each of these factors (potentially useful for general purpose planning projects).

Two of the four factors for community are land use and social. As with the other factors, each comes with its own set of performance measures.

This project also led to the development of an online toolkit that, after navigating through an instructional home page, summarizes these metrics into the same headings as those shown in Table E.6 of Appendix E of the report. The tool provides connections to the case studies conducted as part of the research, as well as if the measure is forecastable, the data requirements, and the appropriate study scale(s) for each measurement's use. The online tool is not searchable, but instead uses the primary categories to "drill down" to relevant measures. Often, units of measurement and the exact calculation method are not provided, and some of the measurement areas are still under development. The site is not openly available as yet for public use.

The entire report is devoted to describing various performance measures; the report is highly relevant, particularly discussions through the land use and community factors.

SHRP 2 C03 Report (Interactions Between Transportation Capacity, Economic Systems, and Land Use, Economic Development Research Group, Inc.)

Principal Author/Authors: Cambridge Systematics, Inc.
Publisher: SHRP 2/TRB
Date of Publication/Presentation/Access: Ongoing (2009)

Description

Tasks 4-10 of this project are completed in draft form only. The principal products of this research are: 1) a compilation of case studies that relate how transportation projects have impacted land use and economic conditions, with the cases stratified by Region, Urban/Rural Class, Population Density,

Economic Distress, and (secondarily) economic growth, transportation and market access, topography, and development capacity; and 2) an online, searchable database that allows the user to select a case based on conditions of a project under study. Nine categories of project type were chosen, totaling 189 case studies:

1. Interstates/Limited Access Roads;
2. Bypasses;
3. Widening Projects;
4. Beltways;
5. Multimodal;
6. Bridges;
7. Connectors;
8. Access Roads; and
9. Interchanges.

All of these case studies were ranked and then assigned to one of six tiers for further analysis. There were 70 case studies assigned to Tier One for full case studies; lower tiers indicated that more work would need to be done to develop the cases. Fewer of these cases were assigned to the Far West Region, indicating a lack of observations in that area of the country (regionality/location was deemed to be an important consideration for the cases).

Task 9.0 describes the data to be collected for each case (e.g., description of project, sponsor, dates of construction, cost, latitude/longitude coordinates); location classification (by region of the country), distance to airport, distance to Interstate highway, and a topography rating; and measures of impact, including job creation, population, unemployment level, wages, sales, capital investment, property values, tax revenues, traffic volumes, and congestion (V/C ratios). This chapter also describes the questions asked of each interviewee, basically directed toward acquiring information on the impact measures mentioned previously.

Task 10.0 describes a "meta-analysis" process for entering data into a database for 60 core case studies. Task 10.0 also describes the expert system used to design the search engine for the user to access cases that are similar to the project under study. Outputs include write-ups of the matching case studies; average and ranges of impact values from the 60 core case studies; and averages and ranges of impact values from the 60 core cases as well as additional cases.

The connectivity of this project to the C08 project lies entirely within the case study framework and outputs, because that is nearly the entirety of the C03 project (unlike other SHRP 2 products, the C03 project is devoted to case studies as opposed to the cases feeding into other aspects of the project). Determining the economic benefits would certainly play into quality of life variables in the visioning exercise, and provide information to the assignment of performance measures in economic and environmental (land consumption) categories, as well as secondary traffic impacts from project development.

Guidelines for Environmental Performance Measurements—Final Report (NCHRP 25-25, Task 23)

Principal Author/Authors: Cambridge Systematics, Inc.
Publisher: NCHRP/TRB
Date of Publication/Presentation/Access: 2008
Publisher/Source: Government
Type/Nature of Study: Guide

Description

The goal of this project was to aid in the introduction of environmental performance measures into transportation project development, including planning, design, and maintenance. The report cites a major evolution in the way transportation agencies are managed, noting trends of increased collaboration; superior environmental management systems (EMS); broader ranges of economic, social, and environmental concerns; and a tendency toward customer-orientation through the increased use of focus groups, surveys, and so forth. The report clarifies the meaning of performance measurement, and cites characteristics of good performance measurements: simplicity, objectivity, availability of data and supporting analysis methods, cost, number, and controllability.

A literature review noted significantly that inadequate data collection is cited as the cause for failure or inadequacy in the implementation of performance management systems. A survey with 13 MPO and state DOT respondents—four of which were not using performance measurements at all— was used to develop a dialogue concerning the use of performance management. A number of case studies, some traditional and well known such as the Florida ETDM process and WSDOTs "Gray Notebook," were detailed. These cases included not only six examples from state DOTs, but also the FHWA/Maryland Green Streets Partnership, two MPO cases, and others, such as the CSS movement. Some of the resulting performance measurements are nontraditional, such as Wisconsin's employment of number of signs recycled or Oregon's fish passage at state-maintained culverts.

Most of the environmental measurements are more expected, such as fuel consumption (or clean fuel consumption); traveler delay; people within walking distance of public transportation; and so forth. However, most of the measurements cited do adhere to the sound practice of capitalizing on already available data, such as undeveloped land converted,

NPDES permit violations, or Florida's extensive measurement and target system for assessing its NEPA development process. Although not single-agency driven programs per se, efforts such as context sensitive solutions, the Green Highways Partnership and Cooperative Agreements also were described, with performance measurements, including number of redo loops; minority homes affected; and retrofitted trucks and idle reduction output measures.

The report specifically identifies performance measurements relating to many aspects of the natural environment, including a number of innovative, or nontraditional, measures. There is no explicit description of the resources required, although in many cases the raw data required to populate the performance measure would exist, but are simply not being systematically catalogued.

How to Create and Implement Healthy General Plans: A toolkit for building healthy, vibrant communities through land use policy change

Principal Author/Authors: Peter Stair, Heather Wooten, and Matt Raimi
Date of Publication/Presentation/Access: 2008
Type/Nature of Study: Toolkit

Description

Described at one point in the early material as food deserts, today's neighborhoods are characterized by low rates of physical activity, congested with cars, and not what planners had intended when these communities were first conceptualized. One of the first steps toward achieving the goal of a healthier community is informally disseminating information.

The metrics categories described are frequently related to transportation-health issues, such as levels of physical activity, proximity to full-service supermarkets, locations of vulnerable (e.g., elderly, asthmatic, youth) populations, and a variety of transportation indexes. All of these and many other indicators should be mapped to produce a baseline conditions report of the study area.

A moderate listing of (often California-centric) case studies and data resources follows, then discusses specific data collection techniques. These techniques include bikeability/walkability audits, development of traffic calming strategies, addressing parking deficiencies, and promoting street connectivity, to name a few.

The report does a commendable job of including resources; however, the most valuable data from the community and detailed land use and behavior information would still require considerable efforts and talent to map effectively.

Sustainable Measures

Principal Author/Authors: Maureen Hart (website design by Subject Matters)
Date of Publication/Presentation/Access: Accessed August, 2009
Website Link: www.sustainablemeasures.com

Description

This website, copyrighted by Maureen Hart, explains and identifies measures of sustainability in a community. A foundation principal expressed by Ms. Hart is that sustainability indicators express the strength or weakness of a linkage between the economy, environment, and society. Sustainability itself is a measure of the strengths of such linkages, in their totality expressed by Ms. Hart as a "web" of interactions that cannot successfully be viewed independently, one from another. For the same reason, multiple indicators are preferred to represent the complex and multifaceted interests of a community.

An example comparison is made between Gross Domestic Product (GDP) and the Index of Sustainable Economic Welfare (ISEW). The GDP is explained as simply how much money is being spent in a country: the more money being spent, the higher and better the GDP. However, GDP may not accurately express the misery encountered by the people involved in a 10-car pileup on the freeway, and reflect a net positive good as these people expend money on hospitals, insurance costs, and the purchase of new cars. The ISEW, on the other hand, is a complex index indicator that subtracts from the GDP the costs of replacing or repairing resources to present a more accurate picture of a fixed system's health.

The following Table B.2a-h provides a sampling of indicator measures from the website. Other indicators are available through an online searchable database or can be accessed in list form from one of several headings, including economy, education, environment, government, health, housing, population, public safety, recreation, resource use, society, and transportation.

An extensive resource listing is provided as well, including some case studies of communities that are working towards sustainable measures. The website also offers an online workshop for those wishing to know more about sustainable measures and test their knowledge base. The training course covers definitions of sustainability, traditional versus nontraditional indicators, additional resources, and how to develop your own indicators for a specific purpose or project.

Over 100 performance indicators are provided on the website, including transportation, resource, and diversity indicator typologies. Due to the purpose of keeping the indicators

Table B.2a. Community Quality of Life Indicator: Economy

Businesses are Healthy and Have Opportunities for Growth and Investment	Businesses Serve the Local Community	Appropriate Mix of Jobs for All Income and Education Levels	Stable Property Values and Equitable Taxation
Average number of jobs accessible within 15, 30, and 45 min by transit and automobile Percent of employers that cite difficulty in accessing desired labor supply due to transportation Percent of wholesale and retail sales in the significant economic centers served by unrestricted (10-ton) market artery routes Office vacancy rate Percent of companies developing new products or services New business starts Number of environmental services, products, and technologies exported Manufacturing productivity Number of commercial crop varieties Job growth among new businesses Number and value of business loans Retail trade increased/decreased Freight transport modal split by group of goods Percent of manufacturing industries within 30 mi of interstate or four-lane highway Ton-mi traveled by congestion level Delay per ton-mile traveled Percent of all manufacturing freight transported by rail, air, or water Freight shipping availability in nonmetro areas Quantity and quality of delivery services (international/intercity courier, and stores that offer delivery)	Change in the percent of people generally satisfied with local shopping conditions (access, variety, crowdedness) Dollars spent in locally owned businesses Retail sales per capita Regional accessibility of markets Number of locally owned businesses	Number of new long-term and short-term jobs provided Change in numbers and percent employed, unemployed, and underemployed Unemployment rate by ethnicity Employment by sector Employment by top five employers Percent of residents who want to work full-time who actually work full-time Long-term unemployment Manufacturing wage and salary jobs as a percent of total jobs Professional, technical, and managerial occupations as percent of total Agricultural employment Total wage and salary jobs per employed resident Net job growth Percent of jobs that pay a livable wage for a family of two Percent of jobs that did not pay a self-sufficiency wage Cost of living index Median family income as percent of U.S. median Per capita income as percent of state average Per capita income in non-metropolitan areas Percentage of people leaving the area to work	Change in land values Reduction in distortive tax policies Value of homes on heavier traffic streets as opposed to lower traffic streets Value of industrial and commercial property Value of residential and business properties Assessed value of real estate per capita, inflation adjusted Property values

Table B.2b. Community Quality of Life Indicator: Natural Environment and Resources

Local and Regional Air Quality is at Levels Healthy for Residents, Wildlife, and Natural Environment	Water Bodies are Clean and Support a Variety of Uses	Energy Sources are Reliable and Affordable	Strategies are in Place to Curb Carbon Emissions and Climate Change Impacts	Natural Resources are Managed for Environmental Quality and Habitat Preservation	Preservation of Natural and Scenic Resources
Expected pollutant emissions from construction and operation of new transportation infrastructure	Degree of intrusion of transportation infrastructure into water quality protection area	Per capita energy consumption, by fuel and mode	Expected change in greenhouse gas emissions as a result of capacity investments (e.g., using EPA's Motor Vehicle Emissions Stimulator)	Acres of fragmented or threatened habitat in the state or region	Acquisition of scenic or historic easements and sites
Expected concentrations of mobile source air toxics as a result of capacity investments	Proximity of transportation projects to receiving waters	Energy consumption per freight ton-mile	Level of vulnerability (e.g., extremely vulnerable, vulnerable, not vulnerable) to sea level rises expected as a result of climate change	Change in number of acres of a specific habitat	Amount and percent change in greenery and open space
Number of days that Pollution Standard Index is in an unhealthful range	Proximity of transportation projects to water bodies with established TMDLs	Average energy efficiency rating of homes	Level of vulnerability (e.g., extremely vulnerable, vulnerable, not vulnerable) to storm frequencies and severity expected as a result of climate change	Change in composition and structure of habitat	Number of people whose views or sightlines are blocked, degraded, or improved
Transport emissions of air pollutants	Change in pollutant loadings for nutrients	Final energy consumption in transport by mode and energy sources		Change in the amount of habitat edge (locations where habitat stops or starts)	Acres of open space land protected from development
Percentage of funding spent on "green transportation" or mode share vs. air quality improvements over time (input-and-outcome measure)	Percent of water samples collected that meet state quality standards for clarity	Share of final energy consumption in transport produced from renewable energy sources	Level of vulnerability (e.g., extremely vulnerable, vulnerable, not vulnerable) to temperature changes expected as a result of climate change	Change in the acreage of interior habitat	
Change in air quality conformity status due to increased emissions	Extent of modification of a water body as a result of new capacity investment	Ratio of fuel-efficient/fuel-inefficient vehicles	Sequestration capacity of existing vegetation	Distance of habitat fragments from each other	
Number of urban areas (or population in areas) classified as nonattainment status	Change in sediment load (predicted or observed)	Energy consumed per trip	Sequestration capacity of planned vegetation	Preservation of high-quality wildlife habitat (wetlands, old-growth forests, etc.)	
Expected impact of new capacity investments on criteria pollutants	Change in nutrient load (predicted or observed)	Energy use per passenger mile, in British thermal units (BTU)	Climate change emissions—Per capita fossil fuel consumption, and emissions of CO_2 and other climate change emissions (Energy and Emission Reductions)	Number of acres of priority conservation areas acres protected annually	
Carbon Monoxide and Particulate Matter Concentrations—Contribution of projects to localized CO or PM violations in nonattainment and maintenance areas	Change in temperature (predicted or observed)			Population size of indicator species	
Change in level of air pollutants and change in number of people at risk or bothered by pollution	Acres of riparian areas disturbed or degraded			Have existing ecosystem protection and related efforts (e.g., habitat conservations plans) been identified and screened for relevancy?	
	Average pollutant concentrations of various metals, suspended solids, and toxic organics in road runoff			Number of vehicle collisions with animals listed on the endangered species list	
	Change in pollutant loads due to change in highway capacity based on VMT			Change in animal-vehicle collisions	
	Change in pollutant loads due to change in highway capacity based on new lane-miles			Change in health and diversity of native plant community	
				Change in acres of native plants relative to nonnative plants	

Table B.2b. Community Quality of Life Indicator: Natural Environment and Resources (continued)

Local and Regional Air Quality is at Levels Healthy for Residents, Wildlife, and Natural Environment	Water Bodies are Clean and Support a Variety of Uses	Energy Sources are Reliable and Affordable	Strategies are in Place to Curb Carbon Emissions and Climate Change Impacts	Natural Resources are Managed for Environmental Quality and Habitat Preservation	Preservation of Natural and Scenic Resources
	Percentage of urea (deicing compound) discharged directly to surface waters		Percent of city fleet converted to reduced emission fuels	Percent of native vegetation preserved	
	Pollutant loads during "first flush" events		Transport emissions of greenhouse gases	Degree of steam bank and shoreline erosion (predicted or observed)	
	Quantity of oil and grease loading via road runoff		Proportion vehicle fleet meeting certain emission standards	Change in velocity on receiving water body (predicted or observed)	
	River miles, lakes, and ocean shore miles impaired by urban runoff (not just highways)		Per capita carbon footprint of passenger transportation	Change in ecological function of riparian areas impacted by a capacity investment	
	Amount of road salts generated per VMT or per lane-mile		Car CO_2 emissions per capita, in pounds	Amount of watershed improvement achieved after five or more years through appropriate measures	
	Per capita vehicle fluid losses			Annual acreage of wetlands destroyed versus wetlands created	
	Increase in impervious surfaces due to direct facility construction			Change in acreage of high-quality wetlands	
	Increase in impervious surfaces due to development induced by facility construction			Expected change in ecological function of wetlands as a result of mitigation for capacity investments	
	Water quality degradation from point sources			Total amount of nonrecycled waste generated by transport mode and by type of waste	
	Water quality degradation from non-point sources			Soil loss from multiple, uncoordinated activities	
	Saltwater intrusion into aquifers			Loss of fish and wildlife due to multiple barriers (e.g., dams and bridge crossings)	
	Change in the level of water pollutants, and number of persons affected, for each body of water			Percent of harvested forest successfully restocked	
				Industrial use of toxic chemicals	
				Percent of roadway landscaping made up of wildflowers or other indigenous species	

Table B.2c. Community Quality of Life Indicator: Mobility

Convenient Access and Proximity to Daily Needs (live, work, shop, play)	Appropriate Choice of Reliable and Affordable Transportation Facilities and Services
Proximity to jobs	Transit affordability
Access to basic services	Number of car trips per day taken by area residents
Access to community services increased/decreased	Mode choices available
Percent of population close to a college and close to a hospital (within 20 min by automobile and 40 min by transit)	Percent of all trips made by car, transit, bike, walking
Change in the number of stores and services, by type, available within x distance	Bus lanes and traffic signal priority
	Portion of trips that involve some active transport
Access to transport services	Percent of household budget for transportation
Mobility substitutes: Internet access and delivery service quality (measure of "Overall Accessibility")	Vehicle ownership costs
	Transport costs (consumer expenditures on transport)
Average distance traveled per person per day, in mi	Number or percent of transportation system users using non-SOV travel means (e.g., transit, bicycle, high-occupancy vehicle travel)
Trip length	
Vehicle miles of travel (VMT) growth relative to population, employment growth	Delay per VMT (by mode)
	Percentage of population group with transit access to the central business district
VMT per capita	Percentage of roads with sidewalks on both sides
VMT per employee	Mobility of nondrivers
Average person miles of travel (PMT)	Commuters driving alone
PMT per capita	Weekday commercial flights in/out of airport
PMT per worker	Ratio of bike paths to streets
Vehicle hours of travel (VHT) per employee	Percent of street miles designated bike route miles
VHT per capita	Total length of bicycle routes
Average travel time for work trips	Number of businesses promoting transportation demand management program
Percent of working population with commute time 25 min or less	Ridership on fixed-route transit buses
Average travel time for home-based shopping trips, home-based other trips	Percentage of people choosing transit over car

Table B.2c. Community Quality of Life Indicator: Mobility (continued)

Convenient Access and Proximity to Daily Needs (live, work, shop, play)	Appropriate Choice of Reliable and Affordable Transportation Facilities and Services
Average travel time to the central business district	Miles of fixed-route bus service
Average person hours of travel (PHT) times average speed	Number of transit-rider trips per capita
Street connectivity	Percent of transit service miles to total street miles
Land use accessibility: average number of basic services (schools, shops, and government offices) within walking distance of residences	Number of cyclists increased/decreased
	Passenger transport modal split by purpose
Children's accessibility: portion of children who can walk or bicycle to schools, shops, and parks from their homes	Travel options for nondrivers
Pedestrian destinations per ¼ mi (e.g., WalkScore)	Transit service: Public transit service quality, including coverage (portion of households and jobs within 5-min walking distance of 15-min transit service), service frequency, comfort (portion of trips in which passenger can sit and portion of transit stops with shelters), affordability (fares as a portion of minimum wage income), information availability, and safety (injuries per billion passenger-miles)
Parks, schools, churches, and small shops are found at walkable distances from each home	
Children's accessibility: portion of children who can walk or bicycle to schools, shops, and parks from their homes	Children, seniors, and people with disabilities traveling independently
Forecasted change in walking trips	Reduction in traffic volumes by 10–15% on the most congested roads
Destinations with direct flights in/out of airport	Buffer Index: difference between the 95th percentile travel time and the average (or median) travel time, normalized by the average (or median) travel time (i.e., the percent extra time)
User rating: overall satisfaction rating of transport system and services by users (surveys)	Misery Index: average of the highest 5% of travel times divided by the free-flow travel time
Number of minutes between buses on scheduled routes	Waiting time at intersections with traffic signals
Minutes of walking to and from public transit per day	Construction-related traffic delays
Average number of low-income jobs accessible within 30 min by transit	Average delay savings with incident response (minutes)
Average number of schools, food stores, health services, social services accessible within 30 min by transit and automobile	Percent of highways not congested during peak hours
	Lost time due to congestion (per vehicle or experienced by all vehicles)
Annual per capita transit passenger-miles	Percentage of time average speed is below threshold value (including travel time indexes)
Change in likelihood of finding a satisfactory parking space within *x* distance from destination or residence	Percentage of congested miles of state-maintained highways by functional class (interstate, priority, etc.)
Parking supply	
Parking costs	

Table B.2d. Community Quality of Life Indicator: Public Services

Physical Infrastructure and Services are Managed to Be Cost-Effective and Efficient	Well-Maintained Physical Infrastructure and High Quality Public Services
Infrastructure costs: expenditures on roads, public transit, parking, ports, etc. (measure of economic productivity)	Condition of roads
Facility costs: per capita expenditures on roads, traffic services and parking facilities (transport costs)	Condition of bridges
External costs of transport	Pavement condition
Number and percent of students having to switch schools or busing status (from walking to busing or vice versa).	Physical condition of schools
Funding for bike/pedestrian projects and programs	Average number of students per classroom
Public expenditure on public transit	Diminished flood control capacity
Regional integration of transit services and financing	Electronic accessibility: portion of population with Internet service
Regionwide fare integration across transit operators	
Unified information systems for users across regional transit systems	
Transit revenues per transit-rider trip, inflation adjusted	
Cost per transit-rider trip, inflation adjusted	

(continued from page 119)

broad enough to address economic, environmental, and societal aspects, a singular context is seldom presented in isolation. However, environmental and financial measurements are included in nearly every metric.

Performance-Based Needs Assessment

Principal Author/Authors: Joseph A. Guerre
Publisher: AASHTO Standing Committee on Planning
Date of Publication/Presentation/Access: 2008

Description

This white paper developed for AASHTO's Standing Committee on Planning outlines the interface between transportation planning and asset management by enhancing the planning process through detailed needs assessment. The core principles of asset management are that it is policy-driven; performance-based; uses an analysis of options and tradeoffs; makes decisions based on quality information; and uses monitoring to provide clear accountability and feedback to the planning system. One of the three work types (including preservation and operations) of asset management is capacity expansion to roadways, including the movement of both people and freight.

Because assets to be managed include all types of roadway facilities, from pavement condition to structures to guardrail, a variety of performance metrics are required to fulfill the analysis, decision-making, and monitoring aspects cited previously. The paper makes clear distinctions between traditional and performance-based needs assessment, with the latter approach focusing on forward-looking condition forecasts, system management, fiscal constraint, and action-related policy development. An example of a forward-looking performance measure is "percent of pavement in good condition in 10 years" as opposed to the more traditional "percent of pavement in good condition (now)." This differentiation highlights the shift between a measure and an indicator; the other relevant shift between an indicator and a measure that of comparative performance, is cited in this white paper as a comparison of relative conditions over time or against other, similar (peer) systems. These targets are to be determined by comparing, for example, various investment scenarios and their anticipated outcome in terms of the condition of some asset in the management system.

SEMCOG (Southeast Michigan Council of Governments) is a metropolitan planning organization that has embraced asset management as a core principle of its planning practice. The pavement preservation program at SEMCOG relies on measures of capital preventive maintenance (CPM), rehabilitation, and reconstruction. Depending on how much is spent in these three areas, the future condition of the asset—pavement—can be forecasted. SEMCOG also has implemented an application of AssetManagerNT (see also NCHRP 20-57), recently adopted by AASHTO. AssetManagerNT allows the comparison of tradeoffs between multiple assets being managed to allow tradeoffs to be assessed, such as the relative benefits of applying preventive maintenance of roadways, bridges, capacity expansion, or safety improvements. SEMCOG used this tool to assess four different long-term

Table B.2e. Community Quality of Life Indicator: Public Health and Safety

Transportation Facilities and Services for All Modes That are Safe and Accessible (including for people with disabilities)	Affordable and Accessible Health Care and Healthy Food Choices	Well-Maintained Recreation Facilities to Promote Physical Activity
Crash costs: per capita crash fatalities, disabilities, and monetized crash costs	Change in number of citizens who are beyond *x* minutes travel time from a hospital emergency room (using such time as the community considers reasonable)	Number of nonmotorized connectors through neighborhoods (like trails)
Traffic crash economic costs (measure of traffic risk)	Change in average number of days of waiting time for hospital admittance for elective surgery	Number of people walking
Transport accident fatalities	Sales of locally produced food at farmers market	Number of parks
Traffic fatalities per 100,000 residents		Average distance to exercise locations
Percent of children walking to school		Change in perceived pleasantness of recreational experience
Health and fitness: portion of population that regularly uses active transport modes (walking and cycling)		Preservation of abandoned railway corridors
Integration of bike/pedestrian measures with traffic calming		Environments that promote walking, bicycling, and other forms of incidental or recreational activity
Quality of transport for disadvantaged people		
Number of pedestrian crashes		
Number of pedestrian fatalities		
Number of pedestrian crashes resulting in an incapacitating injury or a fatality		
Number of highway crashes involving a heavy vehicle		
Fatal and incapacitating injury crashes involving a heavy vehicle		
Rate of heavy vehicle crashes on the highway (using heavy vehicle miles traveled as exposure)		
Percent who perceive public transit unsafe		
Number and percent of citizens perceiving a change in neighborhood traffic hazard; and change in pedestrian usage of streets, sidewalks, and other outdoor space		
Street width		
Sidewalk width		
Signal timing accounts for cyclist safety		
Percent of intersections with crosswalks		
Percent of intersections that are ADA compliant		
Availability of bicycle parking		
Barrier effect (delay and risk to pedestrians and cyclists)		

Table B.2f. Community Quality of Life Indicator: Socio-Cultural

Active Neighborhood and Community Groups to Program Events and Provide Opportunities for Civic Engagement, Community Cohesion, and Social Networking	Places to Gather and Evidence of Their Use	Preservation of Historic & Cultural Resources	Promotion of Social Equity
Business participation in school and civic events	Children playing in public	Ecological and cultural degradation: habitat and cultural sites degraded by transportation facilities	Ratio of corporate executive to production worker wages
Neighbors cooperating on community projects	Change in travel times to neighborhood points of congregation	Cultural site degradation due to visual intrusion, pollution, or vandalism	Income distribution
Length of time at current address	Change in usage as a % of capacity; waiting times; number of people turned away; facility space per resident; and citizen perceptions of crowdedness at recreational facilities	Fragmentation of historic districts	Average income of the bottom and top 20%
Change in the % of people perceiving their neighborhood as friendly		Perceived importance of cultural, historic, or scientific landmarks	Population areas with poverty more than 1.5 times state rate
Change in % of people who perceive their community as a good place to live			People living below the poverty line
Community-based organizations	Change in the number of people within or beyond a reasonable distance (x miles or y minutes) from recreational facilities, by type of facility		Food stamp recipients
Cultural/artistic opportunities			Length of time on welfare
Availability of community gathering places	Diversity of age groups using streets		Number or % of residents receiving welfare assistance
Number of times attended public meeting			Income disparity among counties
Number of times worked on community project			Households with incomes more than 200% above poverty line
Served as officer of community group			Population in areas with per capita income less than 70% of U.S.
Intent to stay in current community			Change in access to jobs and markets for disadvantaged populations compared to entire population
			Change in person-hours of delay for disadvantaged populations compared to entire population
			Change in noise levels for disadvantaged populations compared to entire population
			Change in air quality for disadvantaged populations compared to entire population
			Change in sidewalk connectivity for disadvantaged populations compared to entire population
			Percent of region's unemployed or poor who cite transportation access as a principal barrier to seeking employment
			Environmental justice cases that remain unresolved over one year
			Intergenerational equity
			Degree to which transport policies make lower-income people relatively better off
			Occupational distribution of women and minorities
			Level of access for disadvantaged populations to jobs, services, and market centers

Table B.2g. Community Quality of Life Indicator: Built Environment

Infrastructure Capacity Supports the Degree of Development	Development and Infrastructure Provide a Sense of Character and Aesthetics	Good Mix of Housing of All Types and Income Levels
Capacity of infrastructure networks Percentage of congested miles of state-maintained highways by area (urban, rural) Supply of roads per 1,000 inhabitants Number of travel lanes Annual capital dollars invested in municipal infrastructure Census tract density Miles of arterial streets with significant "land use conflicts" (frequent driveway spacing, etc.) measured using a level of service scale (A to F)	Visual attractiveness of the development as rated by citizens and experts Ratio of street trees to street length Control and removal of outdoor advertising Houses are located close to the street Set-back of buildings from curb Locate surface parking behind or adjacent to buildings (not in front) Portion of population exposed to high levels of traffic noise Increase in noise levels on schools, churches and public gathering places Loss of neighborhood character or affordability due to encroachment of new development patterns and types Encroachment on developed lands—number of residential, commercial, public, and mixed-use property impacts Change in the percent of people who perceive their neighborhood as too crowded Land devoted to transport facilities	Change in number and percent of housing units by type (price or rent range, zoning category, owner-occupied and rental, etc.) relative to demand or to number of families in various income classes in the community Housing affordability in accessible locations Residential building permits Number and value of home purchase loans by census tract Number and value of refinancing and home improvement loans by census tract Loan denial rate by census tract

Table B.2h. Community Quality of Life Indicator: Governance

Democratic Processes Engage Citizens and are Broadly Applied	Government Enacts and Enforces Laws and Ordinances to Protect Community Values Within Fiscal Constraints
Citizen involvement: public involvement in transport planning process Planning process: range of solutions considered in transport planning Degree of consistency with future land use plans Transportation planning spread across multiple agencies Distribution of costs (benefits and burdens assessment) Development guidelines and requirements (zoning codes and development incentives) are consistent with local and regional plans Local jurisdictions are permitting housing units in a manner consistent with the regional growth strategy—distribution of issued housing permits, by regional geography, by county	The share of project expenses beyond requirements that are paid for by local or regional governments Net change in government fiscal flow Life-cycle costs Tax revenues Property crime

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funding scenarios, marking a significant departure from the traditional method of developing scenario-based long-range transportation plans, but one that still allowed for the input of public opinion into the analysis.

A number of relevant indicators are cited, notably as examples of system condition (e.g., pavement condition or bridge condition) with economics as the typical context of the indicators. The white paper also shows a way of integrating asset management and long-range transportation planning to explore ways of assessing tradeoffs between capacity expansion and maintenance scenarios. The data needs that are required to maintain these systems are considerable and ongoing, requiring a clear understanding of the extent of the system to be managed (typically primary and state-numbered routes) without overextending the data collection costs to an agency.

Stakeholder Outreach Resources

Task 3 Literature Reviews–Community/ Stakeholder Outreach and Participation in Collaborative Transportation Projects

Planning for the Future: A Handbook on Community Visioning, 3rd Edition

Principal Author/Authors: The Center for Rural Pennsylvania
Publisher: The Center for Rural Pennsylvania
Date of Publication/Presentation/Access: 2006
Website Link: www.ruralpa.org/visioning3.pdf

Description

The Center for Rural Pennsylvania designed this handbook to help communities begin thinking and planning for the future. To that end, the handbook focuses on the process of visioning and not the outcome. It is not intended to be a cookbook on community visioning. The handbook is designed for smaller, rural communities, to help them find common ground and allow them the freedom to decide what their visioning plans might include.

This guide is divided into the following sections:

- What is Community Visioning?
- How to Create a Vision for the Future.
- Elements of Success.
- Nuts-and-Bolts of Visioning.
- Lessons Learned.

This guide also includes a list of recommended readings, a list of federal, state, and private resources that can be used.

The first section is a description of community visioning, which the guide describes as

> Community visioning is both a process and a product. The process gives residents the opportunity to express what they

value about their community and to develop a consensus on what they would like to change or preserve. During this process, residents discuss their ideas on what they would like their community to look and feel like in the next five to 10 years. The product of these discussions is a vision statement.

> This short statement describes what residents value about their community and what they would like their community to look like in the future. The process of developing a vision statement is more important than the actual statement. The process helps residents to take a realistic look at their community; not to assign blame but to establish an honest appraisal of what their community is. This information is critical for developing a strategy for change.

The second section describes how to create a vision for the future. Based on examples throughout Pennsylvania and their research, they outline the following steps for the vision process.

- Define community boundaries.
- Inventory and analyze community resources.
- Write and adopt a vision statement.
- Develop an action plan.
- Implement the action plan.

The third section of the handbook outlines elements of success in the visioning process. Citizen participation is listed as the most important resource for any community in the visioning process. The handbook states,

> Each member of the community must be given the opportunity to participate in the visioning process. The vision cannot be created or driven by local or state government, the chamber of commerce or some special interest group alone because, chances are, it will fail. To create an effective vision for the future, every resident must be given an opportunity to participate in its formation.

> Local buy-in is the reason why citizen participation is so critical. The more people and groups that participate in the visioning process, the more likely they are to invest in its outcome and work towards its achievement.

A key element to reach out to, according to the guide, is area youth, to help them develop a greater sense of community commitment and involvement.

The fourth section reviews techniques in the visioning process: the nuts and bolts, as the guide calls it. It lists the three principal outreach and participation components in developing a community vision. They are: The Steering Committee, Community Workshops, and Task Forces. The handbook then breaks out typical schedule steps with benchmarks to achieve at each point in the process. The steps are listed as:

- **First Community Workshop:** Steering committee provides an overview of the visioning process and asks participants to identify issues affecting their community.
- **Establishing Task Forces:** Steering committee tallies results, develops list of task forces, and plans for second workshop.
- **Second Community Workshop:** Steering committee reviews activities to date and breaks participants into small task forces, giving each a specific issue to examine in detail.
- **Keeping on Track:** Steering committee ensures that task forces are meeting regularly and plans for the third workshop.
- **Third Community Workshop:** Task forces report major findings to the community. Participants are asked to discuss what they want their community to look like in the future.
- **Drafting the Visioning Statement:** The Steering committee ensures that task forces are meeting regularly and drafts a tentative vision statement.
- **Fourth Community Workshop/Celebration:** Public unveiling of vision statement and celebration of the community and its residents.
- **Marketing and Making the Vision a Reality:** Steering committee and task forces present the vision statement to community groups, local governments, and other groups for their formal approval of the statement. Committee and task forces request these groups to use the statement when making decisions affecting the community.
- **Action Plan:** Working with various community organizations and governments, the steering committee develops an action plan by implementing the task force recommendations and other elements of the vision statement.
- **Annual Progress Report:** The steering committee plans a meeting that reviews the activities and accomplishments to date and what activities will be implemented the following year.

The last section of the handbook lists lessons learned as part of visioning processes in Pennsylvania and through research. They include:

- Every community is unique;
- Regionalism;
- Geographic limits;
- Wealth/poverty not important;
- Leadership;
- Citizen participation;
- Visioning is not economic development;
- Community inventory;
- Outcomes are not predetermined;
- Community visioning is challenging; and
- Visioning should be fun.

Applicability to the C08 Project

- Visioning element of document (if applicable): This document reviews the visioning process through analyzing previous projects and research.
- Transportation planning focus: Transportation is not listed specifically as part of the visioning process.
- Visioning outreach techniques and tools used (if applicable): The tools and techniques are listed in the appendix of the handbook, including sample meeting checklists, flyers, press releases, agendas, and visioning worksheets.

Outreach Techniques and Tools

- Tools, techniques, and methods used for community participation and outreach:
  - Flip chart listing of values;
  - Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis;
  - Community meetings and project-specific stakeholder groups;
  - Materials at public events; and
  - Sample meeting checklists, flyers, press releases, agendas, and visioning worksheets.
- Tools and techniques for nontraditional stakeholders:
  - No, not specifically.
- Visioning technologies or visual tools used:
  - The examples were not technical in nature.

Effectiveness of Outreach Tools and Techniques

- Successful tools and techniques: The handbook works through a sample visioning process. The tools and techniques recommended are listed in the process.
- Tools and techniques that were not successful: Not applicable to this document.
- Performance measures established for the outreach methods: No.
- Outreach used in the decision-making process: Outreach was the main component of the visioning process.

Public Involvement Best Practices; Linking Land Use and Transportation

Principal Author/Authors: Harrison B. Rue
Publisher: Terrain.org Issue No. 17
Date of Publication/Presentation/Access: Fall/Winter 2005
Website Link: www.terrain.org/articles/17/rue.htm

Description

This online article is an outline of effective public involvement practices and techniques for the transportation planning process. It focuses on linking land use and transportation planning strategies, enhanced safety through reengineering, and encouraging more compact development patterns. The basic components, developed and tested by the Citizen Planner Institute, include: interagency teams, facilitator training, community education, hands-on charrette-style workshops, engaging presentations, group workbooks, and inspiring and buildable plans.

Core Principles are identified as:

- Grassroots planning techniques are applied to statutory agency policies and process;
- The process is used across the country, neighborhoods to regions, and workshops for a dozen to 1,200 people;
- The process works for transportation, land use, housing, workforce, environment, economy—any topic, project, or agency; and
- The process is most effective when multiple topics, partners, and funding streams are combined with new design solutions and built examples.

These core principles are the basis of a comprehensive approach which "relies on: 1) getting people to the table; 2) a well-designed process—including facilitator and staff training, issues-oriented focus groups, and hands-on public workshops; 3) comprehensive, exciting, visual plans with innovative designs and local examples; 4) an action plan to get buy-in and determine priorities; and 5) funding and implementation of model projects."

The approach is mirrored in a case study of The United Jefferson Area Mobility Plan, or UnJAM 2025, a regional long-range transportation plan linking transportation, land use, economy, and environment. A number of other case studies are referenced and linked within the online article for more examples.

The challenges, strengths, and key considerations of the approach are detailed with emphasis on the fact that "in a well-designed process the people 'own' the process, the designers do their work, the developers or agencies 'own' the projects, the elected decision-makers still make the tough decisions, and, most importantly, the plans get built."

Applicability to the C08 Project

- Visioning element of document (if applicable): Describes visioning techniques without labeling them visioning.
- Transportation planning focus: Yes, and its relationship to land use.
- Visioning outreach techniques and tools used (if applicable): Yes.

Outreach Techniques and Tools

- Tools, techniques, and methods used for community participation and outreach:
  - Efficient agency and leadership training and formalized facilitator rules;
  - Blueprint-sized group workbooks to encourage discussion and interaction;
  - High volume of meetings throughout the project process; the high level of public participation led to actual changes in the project;
  - Walking audits: taking public groups through a project site to help participants understand their own neighborhoods, while looking for areas where change is appropriate;
  - Keeping discussion between smaller groups to encourage creativity and discourage mudslinging; and
  - One-on-ones. The audience is asked to divide into twos and share a key issue with each other, with one caveat—each has to listen and report the other's comment back to the group.
- Tools and techniques for nontraditional stakeholders:
  - No, not particularly, though it did focus on training average citizens in planning.
- Visioning technologies or visual tools used:
  - Post-it visions. Each person is given five Post-it notes and a few minutes to write down five phrases that describe their long-term vision for the community. These are then self-sorted on the wall into topics that invariably demonstrate how much the group already holds in common.
  - Dot-Vote. List all the problem areas, visioning ideas, and potential solutions (big paper, big print), then post those lists on the wall for participants to vote for their top priority with a dot sticker—which again demonstrates group preferences.
  - CorPlan.

Effectiveness of Outreach Tools and Techniques

- Successful tools and techniques in addition to those listed above:
  - Efficiency for transportation projects—2-h, well-organized sessions can be all that is needed, whereas

community design workshops can typically take an entire day.

- ○ Effective use of technology—especially clear and well-organized PowerPoint presentations to lay the ground-work and define option. Also image-rich examples (i.e., Digital 3D models, sketches, CorPlan scenario modeling tool, and interactive applications) should be used and commented on.
- Tools and techniques that were not successful:
  - ○ Unsuccessful techniques were not described, however these challenges to the process were listed:
    - ▪ Getting people to the table—especially at the regional scale;
    - ▪ Coordinating public infrastructure and developers' investments with a long-range transportation plan;
    - ▪ Interjurisdictional cooperation and coordination; and
    - ▪ Long-term action on implementation tools and funding.
- Performance measures established for the outreach methods:
  - ○ Yes, measures referenced included whether or not a public meeting resulted in changes in the project.
- Outreach used in the decision-making process:
  - ○ Yes, through public meetings. Public meeting input could result in changes to the project.

Additional Findings and Documents Applicable to C08

- Other cases cited in the literature:
  - ○ Honolulu's Islandwide Traffic Calming Project in 1998;
  - ○ Oahu Trans 2K; and
  - ○ The United Jefferson Area Mobility Plan, or UnJAM 2025.
- Other documents cited in the literature:
  - ○ Lovingston Safety Study:
    - ▪ www.tjpdc.org/transportation/report_Lovingston_Safety_Study.asp.
  - ○ Design Manual for Small Towns:
    - ▪ www.tjpdc.org/pdf/rep_comm_designManual.pdf.
  - ○ Lake Monticello Community Plan:
    - ▪ www.tjpdc.org/pdf/commPlan_Lake_Monticello_FINAL.pdf.

Environmental Planning for Communities: A Guide to the Environmental Visioning Process Utilizing a Geographic Information System (GIS)

Principal Author/Authors: Office of Research and Development
Publisher: U.S. EPA
Date of Publication/Presentation/Access September 2000

Website Link: http://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryId=64145&CFID=2375688&CFTOKEN=38626446&jsessionid=2e30cc078215e6ab3ac35e231b2c29603596TR4a302e3020302830

Description

This document is an overview of the Community-Based Environmental Protection (CBEP) approach, and the use of graphical tools, specifically Geographic Information Systems (GIS), during the CBEP visioning phase. The document emphasizes the local stakeholder's role in addressing community-wide environmental issues, especially with respect to the preferred green community development. The document is intended to help communities make decisions about alternative land uses and landscape futures. It examines the issues involved in the use of GIS to enable and enhance this process. The document is intended to empower community members to make environmentally sound decisions about future programs and community planning toward sustainable growth and development. It contains a brief description of the Community-Based Environmental Protection approach to planning. It also describes some of the available tools for environmental visioning.

The guide is divided into the following sections:

- Introduction/Purpose of This Guide;
- Overview of Community-Based Environmental Protection (CBEP);
- Overview of Environmental Visioning;
- GIS-Based Environmental Visioning; and
- Creating a GIS to Support Environmental Visioning.

The first section describes how the EPA has shifted the focus of many of its ecosystem protection programs from command-and-control to the Community-Based Environmental Protection (CBEP) approach. The CBEP approach relies on the local stakeholders to address community-wide environmental issues. The CBEP approach utilizes tools such as GIS to create an environmental vision for the community. Key steps of the CBEP include:

- Establish partnerships and develop an environmental vision;
- Assess ecosystem; and
- Develop ecosystem strategies.

The next section describes the history of CBEP, starting with the inception of the EPA. In an effort to have the local community stakeholders drive the decision making, the CBEP approach was established. Although there are no prescriptions for CBEP, EPA has defined the following key components of an effective CBEP program:

- Partnerships and stakeholder involvement from all levels of government, public interest groups, industry, academia, private landowners, concerned citizens, and others. These relationships established with regional and community organizations will bring about a better understanding of environmental problems and effective solutions.
- A geographic focus, which allows for a more comprehensive approach to environmental protection. Environmental protection efforts become more effective when they are directed towards specific watersheds or other ecosystems.
- A focus on environmental results over an entire area of concern, looking beyond facility-by-facility progress. Environmental programs that have integrated multimedia approaches are now emphasized over the traditional end-of-pipe regulatory approach.

The next section gives an overview of environmental visioning.

Applicability to the C08 Project

- Visioning element of document (if applicable):
  - The CBEP process includes an environmental visioning step. This step asks "where do we want to be?" and the answer becomes the "driving force for implementation of CBEP efforts." The environmental visioning step also includes the use of GIS tools for scenario-type analysis. The environmental visioning can be applied to any project, but examples in this document show they are often used on a regional scale. The environmental visioning process addresses the following questions: "where are we now," "where are we going," "where do we want to be," "how do we get there," and "how do we know that it works?"
- Transportation planning focus:
  - Not specifically, the subject of this document primarily focuses on environmental planning issues and environmental protection. However, the CBEP is meant to be a holistic approach that considers as many attributes of both the natural and man-made environment as possible, including some transportation components.
- Visioning outreach techniques and tools used (if applicable):
  - Yes, identifying stakeholders and visiting community organizations that may be interested in the CBEP process is noted. Examples of community groups and other local organizations are listed. See below for a more detailed description.

Outreach Techniques and Tools

- Tools, techniques, and methods used for community participation and outreach:

- Efforts often start at the grassroots level;
- Develop partnerships with stakeholders and establish a common vision;
- Establishing branding for the project and/or project team; and
- A publication to document activities and decisions made are important tools in the outreach campaign as well as draw in more interested parties.
- Tools and techniques for nontraditional stakeholders:
  - No, not specifically.
- Visioning technologies or visual tools used:
  - Graphic tools:
    - General data display (graphs, charts, and tables);
    - Maps of local resources;
    - Regional and local planning maps;
    - Drawings and illustrations; and
    - Photographs and aerial maps.
  - Geographic Information Systems:
    - GPS integration;
    - Gathering data from many sources;
    - Used as analysis tool; and
    - Generate graphics.
  - Other software tools:
    - Multimedia (computer-based video, audio, and interactive presentation of information); and
    - Using virtual reality software programs to create a vision.

Effectiveness of Outreach Tools and Techniques

- Successful tools and techniques:
  - Using GIS to create "what if . . . ?" scenarios and data modeling in CBEP Visioning; and
  - Using a GIS database to help decision makers assess the environmental risk of a project with multiple environmental attributes as well as local resources and man-made features.
- Tools and techniques that were not successful:
  - Pitfalls of GIS analysis were mentioned, including misunderstanding of the requirements to obtain a vision, unclear definition of the tools needed, and that it is not always a user-friendly technology.
- Performance measures established for the outreach methods:
  - No.
- Outreach used in the decision-making process:
  - Outreach was not specified; only the use of the GIS tools by community involvement groups and others using it in visioning processes.

Additional Findings and Documents Applicable to C08

- The Franklin Land Trust (Ashfield, Massachusetts).
- Sustainable Urban/Rural Enterprise (SURE) (City of Richmond, Wayne County, Indiana).

- The Groundwater Guardian Program (Lincoln, Nebraska).
- EPA "Green Communities website" at www.epa.gov/region3/greenkit.
- West Muddy Creek Benton County, Oregon.
- Monroe County, Pennsylvania.
- Camp Pendleton, California.

Other documents cited in the literature:

- "Storefront of Community Environmental Tools" (epa.gov); and
- Also see extensive bibliography.

The Community Visioning and Strategic Planning Handbook

Principal Author/Authors: National Civic League
Publisher: National Civic League Press
Date of Publication/Presentation/Access: 2000

Description

This comprehensive guide, developed by the National Civic League, reviews and offers approaches to the community visioning process and strategic planning. The guide is broken down into seven chapters and contains a substantial section on community outreach. The chapters are divided to form a step-by-step process guide for a visioning project. This review will concentrate mainly on the public outreach components of the guide.

For guidance on outreach and participation, two main stakeholder groups are suggested: the Initiating Committee and a Core Planning Group. The Initiating Committee is composed of 10 to 15 individuals, with diversity and credibility as key objectives. This guide states, "The purpose of the Initiating Committee is to focus on the process and logistics required to move the project forward. The content of the community vision will be developed during the broader stakeholder planning phase. The diverse voices on the Initiating Committee must create and agree to methods by which stakeholders can equitably address complex and controversial issues." The Core Planning Group will be made up of 100 to 150 individuals, and "The stakeholder group must be as diverse as possible and represent every major interest and perspective in the community. Even more than the Initiating Committee, the stakeholder group must represent the community's demographic diversity in terms of age, race, gender, preferences, and places of residence and employment." A sampling of categories is given for identifying stakeholders and includes:

- Business type (small, corporate, and industrial);
- Old/new resident;
- Political leanings;
- Geographic location;
- Age;
- Ethnicity and/or race;
- Service provider;
- Income level;
- Education reform;
- Elected or appointed leadership;
- Household type;
- Institutions (i.e., school and police); and
- Resident and nonresident.

The guide also outlines a public outreach strategy. It notes that all desired target groups may not be reached, but some of the outreach process techniques can assist with reaching out to all audiences. The outreach process includes:

- Project kickoff;
- Surveys;
- Focus groups;
- Town meetings;
- Press releases;
- Flyers;
- Speakers Bureau;
- Op-ed articles;
- Public service announcements;
- Websites and project home pages; and
- Special activities and events.

Applicability to the C08 Project

- Visioning element of document (if applicable): This document reviews the community visioning process.
- Transportation planning focus: Transportation is not listed specifically as part of visioning process.
- Visioning outreach techniques and tools used (if applicable): The tools and techniques are listed above in the Description Section.

Outreach Techniques and Tools

- Tools, techniques, and methods used for community participation and outreach: Yes, the tools and techniques are listed above in the Description Section.
- Tools and techniques for nontraditional stakeholders: Yes, it discusses neighborhood meetings and flyers as good techniques.
- Visioning technologies or visual tools used: The examples were not technical in nature.

Effectiveness of Outreach Tools and Techniques

- Successful tools and techniques: The tools and techniques recommended are listed above.
- Tools and techniques that were not successful: Not applicable to this document.
- Performance measures established for the outreach methods: No.
- Outreach used in the decision-making process: Outreach was the main component of the visioning process.

Additional Findings and Documents Applicable to C08

- None applicable to SHRP 2 C08.

Moving Forward: A 25-Year Transportation Vision for Marin County

Principal Author/Authors: Nelson\Nygaard Consulting Associates
Publisher: Marin County Congestion Management Agency, Board of Supervisors, and Transit District
Date of Publication/Presentation/Access: February 2003
Website Link: www.tam.ca.gov/index.aspx?page=79

Description

Moving Forward is a long-range planning document that seeks to create attainable and unique transportation solutions for the future of Marin County. This includes recognizing the causes of current congestion and a visioning process to address these concerns. The following causes were identified as a starting point in the visioning process:

- Marin County residents are making more trips;
- More trips are being made inside the county;
- Peak-period trips are made for many purposes;
- Marin County's position in the Bay Area makes it a magnet for regional travel;
- The scenic beauty of Marin County attracts recreational trips; and
- There are few alternatives for travel within Marin County.

The document details the facts that identify these causes, based on a Texas Institute of Transportation study. Both the planning and visioning processes are outlined, as well as a guide to making vision a reality. Some of the outreach and participation tools are listed below in a subsequent section (under Outreach Techniques and Tools). The vision that was defined includes the following:

- Increasing travel choices is the only way to manage congestion and improve mobility;

- All modes will be linked together in a seamless, comprehensive transportation network;
- Local trips will be served by a variety of new and expanded options, improving mobility for all Marin County residents;
  - The increasing demand for commute trips within the county will be served by a major increase in local bus and shuttle transit, a major school transportation initiative, and an emphasis on streets and roads;
  - Improvements to the local bus and shuttle transit system are a critical component of Moving Forward, providing the glue that links all modes;
  - A major school initiative will combine Safe Routes to Schools with new school-oriented transit service;
  - Bicycle and pedestrian facilities will be improved throughout the county;
  - Interchange projects will help relieve local congestion; and
  - Supportive programs and public–private partnerships work together with these major capital investments to make the entire system work better.
- Regional and interregional trips will be served by completion of the HOV system on Highway 101, the implementation of a new commuter rail line, increased express bus service, and increased ferry service:
  - A new commuter rail service could carry over 5,000 daily riders;
  - Rail stations will become intermodal hubs, with convenient service from local and express buses, and with at least one major ferry link;
  - The completion of the High-Occupancy Vehicle (HOV) system will allow for faster and more effective express bus service;
  - Express buses within the county and entering the county from all directions will take full advantage of the HOV investment; and
  - Increased ferry service is expected to help keep interregional trips on transit.

Applicability to the C08 Project

- Visioning element of document (if applicable): This document is mainly regarding visioning.
- Transportation planning focus: Yes, in its entirety.
- Visioning outreach techniques and tools used (if applicable): Listed below.

Outreach Techniques and Tools

- Tools, techniques, and methods used for community participation and outreach:
  - Workshops and additional public meetings;
  - Key stakeholder interviews and presentations;

- ○ Meetings with partner agencies;
- ○ Public roundtables;
- ○ Surveys of bus riders;
- ○ Parent telephone survey;
- ○ Mailings and media outreach (numerous articles, press, and cable announcements);
- ○ Surveys of bicyclists and walkers throughout the county;
- ○ Public forums; and
- ○ Access to documents and two-way communication through Internet website.
- • Tools and techniques for nontraditional stakeholders:
  - ○ Surveys of schoolchildren; and
  - ○ Community bike rides.
- • Visioning technologies or visual tools used:
  - ○ Technologies are not addressed.

Effectiveness of Outreach Tools and Techniques

- • Successful tools and techniques: Those listed under Outreach Techniques and Tools.
- • Tools and techniques that were not successful: Not applicable to this document.
- • Performance measures established for the outreach methods: No.
- • Outreach used in the decision-making process: Yes.

Community Visioning Handbook

Principal Author/Authors: Maine State Planning Office
Publisher: Maine State Planning Office
Date of Publication/Presentation/Access: 2003
Website Link: www.state.me.us/spo/

Description

The Maine State Planning Office designed this handbook to help communities implement the visioning process in comprehensive planning. This handbook's goal is twofold: to introduce the concept of visioning to the comprehensive planning process; and to create a guide that will help simplify the visioning process and reduce its cost. To that end, the handbook is designed to provide enough details to be useful while leaving enough flexibility for community differences. The guide explains that "community creates the vision through a process (such as that described in this handbook), and the comprehensive planning committee takes the vision and translates it into the community's blueprint or comprehensive plan. The vision describes what people want; the comprehensive plan describes how to get there. As with houses, a great community needs a great vision to realize its potential." Vision is defined in this guide as a mental picture of what residents want their community to look like in 20 years.

This guide is divided into the following sections:

- • Why Vision?
- • Visioning Toolbox.
- • Sample Vision Statement.

This guide also includes an Appendix of additional resources.

The first section is a description of visioning and reasons why it should be used, and how it can be successfully implemented. It lists some considerations to undertake when starting a visioning process. These include:

- • Context: The community needs to be clear on the issues that the vision is intended to address.
- • Pace.
- • Place and time: where and when should the visioning exercises take place?
- • End date.
- • Resources.

The first section also contains a section on visualization tools. Tools described to help engage participants include:

- • Graphs;
- • Aerial photos;
- • Old and new land use maps;
- • Special purpose maps (environmental features);
- • Blank maps for interactive exercises;
- • Build-out analysis software; and
- • Visual preference surveys.

The second section presents a visioning toolbox and is organized through a sample visioning project. The steps include three planning meetings, the actual visioning session, and final plan approval. Topics to cover in each meeting and the visioning session are detailed in the guide. The guide notes that the visioning process should be open to the public, however a Visioning Planning Committee should be set up to lead the process. The committee should include every group a community wants (represented at the visioning session itself, represented on the sponsoring or planning committee). The guide lists three reasons for this: 1) to ensure that every topic of interest to different groups will be represented in one way or another at the session; 2) to identify ways to schedule and promote the session that will make attendance easiest; and 3) to actively recruit citizens to attend.

For the actual visioning meeting, the guide outlines a 1-day visioning session and notes:

Public participation is critical. To maximize the amount of participation, randomly assign participants to small groups.

Ideal group sizes are between five and eight people. When a group is too large, participants feel their voices aren't heard. When a group is too small, there are not enough opinions to spark a really good discussion. It is important to summarize each exercise by asking the groups to share their notes. Ask one group for one idea; check to see how many other groups had that issue; and then ask for the next issue. Everything should be written down so that it can be recorded later. This ensures that the groups feel they've had the opportunity to express themselves.

The remaining portion of the guide is made up of actual project reviews and examples of comprehensive plan visioning exercises.

Applicability to the C08 Project

- Visioning element of document (if applicable): This document reviews the comprehensive plan visioning process through a step-by-step guide.
- Transportation planning focus: Transportation not listed specifically as part of visioning process, but is a component of comprehensive planning.
- Visioning outreach techniques and tools used (if applicable): The tools and techniques are listed in the handbook, including sample meeting checklists, agendas, facilitator checklists, and visioning exercises.

Outreach Techniques and Tools

- Tools, techniques, and methods used for community participation and outreach:
  - Use of maps;
  - Use of a Visioning Planning Committee;
  - Involving stakeholders with diverse backgrounds; and
  - Focus groups.
- Tools and techniques for nontraditional stakeholders:
  - No, not specifically.
- Visioning technologies or visual tools used:
  - Build-out scenario software.
  - Visual preference surveys.

Effectiveness of Outreach Tools and Techniques

- Successful tools and techniques: The handbook works through a sample visioning process. The tools and techniques recommended are listed in the process.
- Tools and techniques that were not successful: Not applicable to this document.
- Performance measures established for the outreach methods: No.
- Outreach used in the decision-making process: Outreach was a main component of the visioning process. Focus groups made recommendations on the comprehensive plan.

Innovations in Public Involvement for Transportation Planning: "Technique B: Visioning"

Description

This document is set up as a notebook of several leaflets, together creating a broad guide to public involvement for transportation planning. It includes 14 chapters detailing different techniques:

- Charrette;
- Visioning (Technique B);
- Brainstorming;
- Citizens' Advisory Committee;
- Transportation Fair;
- Focus Groups;
- Collaborative Task Force;
- Media Strategies;
- Facilitation;
- Citizen Surveys;
- Telephone Techniques;
- Video Techniques;
- Public Meetings/Hearings; and
- Americans with Disabilities.

These techniques are all designed to be used as part of public involvement efforts in compliance with the federal Intermodal Surface Transportation Act of 1991 (ISTEA) as well as related federal acts, such as the Clean Air Act and the Americans with Disabilities Act. The notebook is geared toward state and municipal bodies such as MPOs, especially those that are smaller and less experienced in terms of public involvement.

The visioning section of this document describes how visioning can be of use to public involvement efforts in transportation planning, how the information can be gathered, and how it can then be used. Visioning is defined as a tool to lead to a goals statement by way of long-range planning, determining priorities and performance standards, and establishing benchmarks. The usefulness of visioning is examined in terms of policy making and "maximizing concern for public input." It is critical to put proper time into the visioning process to do this, giving multiple opportunities and methods by which stakeholders can input their ideas to the greater vision.

The conclusion of the section notes that visioning is useful in order to:

- Set the stage for short-range planning activities;
- Set new directions in policy;
- Review existing policy;
- Determine when integration between issues is required;
- Determine when a wide variety of ideas should be heard; and
- Determine when a range of potential solutions is needed.

Applicability to the C08 Project

- Visioning element of document (if applicable): This entire section (Technique B) specifically addresses the role visioning in context of transportation planning and how it can be of use. However it does not give any best practices, and is a fairly basic overview.
- Transportation planning focus: Yes.
- Visioning outreach techniques and tools used (if applicable): The document briefly lists that visioning activities can be applied to: symposiums, workshops, newspaper tabloid inserts, public hearings, open houses, surveys, and community meetings.

Outreach Techniques and Tools

- Tools, techniques, and methods used for community participation and outreach:
  - Small and large public meetings;
  - Establishing or revising goals, priorities, performance standards, and benchmarks;
  - Invitations to participate given to all citizens or a representative panel;
  - Distribution of information; and
  - Surveys or questionnaires.
- Tools and techniques for nontraditional stakeholders:
  - None cited.
- Visioning technologies or visual tools used:
  - Drawing pictures or descriptive words of participant visions on large sheets of paper.

Effectiveness of Outreach Tools and Techniques

- Successful tools and techniques: None cited.
- Tools and techniques that were not successful: None cited.
- Performance measures established for the outreach methods: There was not a standard scale in this report. Some examples cited meeting attendance numbers or feedback/public comments/questionnaires forms as measures to assess successful outreach.
- Outreach used in the decision-making process: The different examples cited different methods.

Additional Findings and Documents Applicable to C08

Some cases were cited for examples of different practices, however no sources were cited. A "more info" section listed the noted programs that use visioning:

- Iowa Department of Management (Futures Agenda), State Capitol Building, Des Moines, Iowa 50319, (515) 281-3322.
- Jacksonville Community Council (Quality Indicators for Progress), Jacksonville, Florida, (904) 356-0800.
- Minnesota Planning (Minnesota Milestones), 658 Cedar Street, St. Paul, Minnesota 55155, (612) 296-3985.
- Ohio Department of Transportation (Access Ohio), 25 South Front Street, Columbus, Ohio 43216, (614) 466-7170.
- Oregon Progress Board (Oregon Shines/Oregon Benchmarks), 775 Summer Street, NE, Salem, Oregon 97310, (503) 373-1220.
- Puget Sound Regional Council (Vision 2020), 216 First Avenue South, Seattle, Washington 98104, (206) 464-7090.

Visioning versus Modeling: Analyzing the Land Use-Transportation Futures of Urban Regions

Description

This is a research paper contrasting newer visioning methods of thinking about a region's future to older modeling techniques calibrated by historical data. The document describes that the two approaches are innately so different that comparison would not really be relevant. However, the goal of the paper is to explore the ways in which visioning and modeling differ and understand that both offer their own relative advantages. In an effort to exemplify these contrasts and advantages, this paper features the Austin Metropolitan Statistical Area (MSA) as a case study. It is noted that the preferred vision, produced by the Envision Central Texas (ECT) organization, offers the greatest potential for public involvement in identifying regional development goals for the future. The land use models, on the other hand, have a strong theoretical foundation and allow for more direct interactions with a transportation model, and they can be used to identify key strategies that can be used in achieving the region's goals. The combination of these two approaches is recommended to offer the greatest opportunities for planners to achieve a future that accommodates all stakeholders.

While the paper also exposes the flaws in both techniques, it recommends using the techniques. Moreover, it is concluded that both offer specific advantages that the other lacks and that incorporation of both techniques together in the planning process could be quite valuable. This way, one can be calibrated to provide more insight where the other lacks, and the end result is a more comprehensive image of future land use.

Applicability to the C08 Project

- Visioning element of document (if applicable): Visioning is contrasted with land use modeling as a method of thinking about a region's future.
- Transportation planning focus: Yes.
- Visioning outreach techniques and tools used (if applicable): Listed below.

Outreach Techniques and Tools

- Tools, techniques, and methods used for community participation and outreach:
  - Workshops, interviews, committees, and other meetings; and
  - Focus groups and telephone surveys helping to generate guiding principles.
- Tools and techniques for nontraditional stakeholders:
  - No.
- Visioning technologies or visual tools used:
  - Workshops included games to generate a number of preferred scenarios.

Effectiveness of Outreach Tools and Techniques

- Successful tools and techniques:
  - They are listed in Outreach Techniques and Tools.
- Tools and techniques that were not successful:
  - As a whole, visioning disadvantages identified included:
    - Did not consider contextual changes during its long process time;
    - Did not address scenario feasibility; and
    - Failed to integrate land use behavior with travel demand models.
- Performance measures established for the outreach methods:
  - Not specifically.
- Outreach used in the decision-making process:
  - Outreach was used in the general visioning processes; and
  - Outreach was not used in the more mathematical modeling process.

Additional Findings and Documents Applicable to C08

- Other cases cited in the literature:
  - Baltimore Vision 2030;
  - Phoenix Valley Vision 2025;
  - Envision Utah;
  - Los Angeles's Southern California Compass Visioning Project (SCAG 2004);
  - San Diego's Regional Comprehensive Plan (SANDAG 2004); and
  - Vision 2020 in Seattle.
- Other documents cited in the literature:
  - As this is an in-depth research paper, there are over four pages of references and appendices.

Regional Visioning Public Participation

Principal Author/Authors: Robert H. Lurcott, FAICP
Publisher: Sustainable Pittsburgh
Date of Publication/Presentation/Access: January 2005
Website Link: www.sustainablepittsburgh.org/pdf/Regional_Visioning_Jan_05.pdf

Description

This document reviews successful current practices in visioning with public participation, through Internet resources and interviews with key participants. The document is written as a brief overview, with case study examples listed in the appendices. The results of this research were to be used to identify outreach and participation strategies for Pittsburgh's visioning process. Approximately 20 visioning process projects were screened and reviewed. The examples of visioning processes that were examined addressed a fairly consistent set of issues or themes, including: economic development; social equity and access; environmental protection and quality of life; efficient infrastructure, particularly transportation; and responsive governance. Public participation was a key part of all of the broad visioning processes examined in the review. The approaches and the magnitude of participant commitment varied, but, in general, the level of participation and the creativity of the means of encouraging it were high.

In addition to visioning outreach and participation, the document addressed specific core topics involved in the visioning process that were anticipated to be specifically relevant to the Pittsburgh study. These included tools, consultant assistance, costs, and involvement of young professionals. For tools, the study found that tools utilized included: various types of subregional stakeholders meetings (based on geography or interests), GIS computer simulations for developing alternative scenarios, newspapers and media for broad dissemination of information, and interactive websites to permit voting and feedback. In most of the processes reviewed,

consultants were utilized to help design the participation process and/or facilitate public discussion. In the discussion on visioning costs, the authors found that the costs varied widely, from $150,000 for a 4-month consultant/facilitator contract in a Boston process, to a $3.75 million overall budget for a 3-year Chicago program. Involvement of young professionals was a specific topic of interest to Pittsburgh, as the city has a higher than average loss of this group through outmigration. Issues identified that may be important to young professionals based on other case studies included environmental protection, open land conservation, access to natural resources and recreation, diversity and social equity, a strong education system, a range of cultural and entertainment activities and vibrant downtowns.

Conclusions of the document identify key ideas that were common trends in the cases examined. These included:

- The process needs to provide for full stakeholder collaboration;
- Incorporate community opinions/interests routinely, clearly, and consistently in the planning process;
- The participation process needs to be seen as a place with no walls, where anyone who wants to partake, can do so;
- The door to participation always needs to be seen as open;
- Barriers to participation need to be addressed early;
- Engage the development community actively;
- Seek the involvement of local universities;
- Develop means to engage persons who typically have limited voice in public policy: youth, poor, and minorities;
- Young knowledge workers anticipate a process of involvement;
- Seek to educate elected leaders, public officials, and the public about smart growth and sustainability;
- Employ workshop and charrette formats to engage knowledgeable people actively;
- Use newspapers, media, and Internet techniques to reach a broader public;
- Use interactive techniques for feedback;
- Use modeling and GIS techniques to generate alternative future scenarios;
- A product of the effort should be an easy and convenient way to reach decision makers on a regular basis;
- Place regionalism in a globalization context;
- Consistently, in the processes reviewed, when the participants were asked to vote on alternative scenarios, they overwhelmingly voted for the most restrictive, compact, smart growth development alternative, providing the minimum amount of land for development, the most for conservation; and
- Processes were initiated by private organizations as well as regional planning agencies; most effective were those that evolved to a partnership of business, government, and the civic communities.

Applicability to the C08 Project

- Visioning element of document (if applicable): This document reviews case studies for regional visioning projects.
- Transportation planning focus: Transportation is listed as a component of the overall regional visioning process.
- Visioning outreach techniques and tools used (if applicable): Tools and techniques are listed in the next section.

Outreach Techniques and Tools

- Tools, techniques, and methods used for community participation and outreach:
  - Goal setting;
  - Subregional community brainstorming sessions;
  - Interest group forums;
  - Leadership conferences (business, civic, government—elected/agency);
  - Mass mailing summary conclusions brochure;
  - Analysis and conclusions CD for stakeholders and general requests;
  - Follow-up functional task forces for implementation and monitoring;
  - Ongoing process for updating public on progress and obtaining feedback;
  - Random telephone surveys;
  - Public/community access TV coverage;
  - Online, interactive website—including voting;
  - Newspaper insert for voting;
  - Regional meeting—electronic voting;
  - Electronic town meetings; and
  - Rental videos for background information.
- Tools and techniques for nontraditional stakeholders:
  - Yes, outreach to schoolchildren.
- Visioning technologies or visual tools used:
  - Interactive website for teaching school kids ("Box City");
  - Mapping workshops;
  - Computer simulations (scenarios and zoning codes); and
  - Functional/scenario analysis, modeling, and testing.

Effectiveness of Outreach Tools and Techniques

- Successful tools and techniques: The conclusions listed in the Description section provide a comprehensive list of the recommended tools and techniques.
- Tools and techniques that were not successful: Not addressed in this document.
- Performance measures established for the outreach methods: No.
- Outreach used in the decision-making process: Varying examples are provided in the individual case studies.

Additional Document Related to C08

Ames, Steven, *A Guide to Community Visioning,* Oregon Visions Project 1998.

How to Engage Low Literacy and Limited-English Proficiency Populations in Transportation Decision-Making

Principal Author/Authors: PBS&J
Publisher: FHWA
Date of Publication/Presentation/Access: February 2006
Website Link: www.fhwa.dot.gov/hep/lowlim/webbook.pdf

Description

This report and guide, published by the FHWA, identifies best practices in identifying and engaging low literacy and limited-English proficiency populations in transportation decision making. The best practices were collected during telephone interviews with individuals in 30 states, including national technical experts in adult literacy and limited-English proficiency and experts from federal, state, county, and city government. The information obtained from interviews and a peer review has been "organized into a six-step process that planning and project development practitioners can employ during planning, project development, right-of-way acquisition, construction, operation and maintenance. This process provides a range of references, tools, techniques."

The six process steps are:

1. Defining low literacy and limited-English proficiency;
2. Find reliable data on low literacy and limited-English proficiency at a substate level;
3. Find documented indicators of literacy and limited-English proficiency at a substate level;
4. Special approaches needed to reach out to low literacy and limited-English proficiency populations;
5. Best ways to contact low literacy and limited-English proficiency populations; and
6. Lessons learned.

The report begins with a definition of low literacy and limited-English populations, and specifically how they are defined by the U.S. government. Approximately 48% of the United States has literacy levels below a seventh grade reading level (Level 1 and 2), and according to the 2000 U.S. Census approximately 18% of the population spoke a language other than English at home. The next two sections, or steps, review ways in which a practitioner can collect data and common indicators related to low literacy and limited-English proficiency populations.

The fourth section of the report discusses special approaches needed to reach out to low literacy and limited-English proficiency populations. The approaches include:

- Looking for clues that people cannot read English or another language (focusing on speaking, leaving glasses at home);
- Train staff members and use residents from the neighborhood;
- Provide food at meetings; and
- Be aware that public meetings may not be part of some cultures, and/or government may have a negative connotation.

The fifth section discusses the best ways to contact low literacy and limited-English proficiency populations. These best practices include:

- Exploring websites, national publications, and local newspapers to help assess where targeted populations may live;
- Talk to local officials and community insiders;
- Form alliances with existing organizations;
- Attend scheduled and public events;
- Visit Laundromats, grocery stores that accept food stamps, and discount stores;
- Use word of mouth, radio, television, and newspapers;
- Involve school students;
- Let the public choose the meeting time, place, and size;
- Use interpreters and translated materials;
- Play an interactive involvement game;
- Incorporate magnets, color, and symbols; and
- Use photographs, 3D animations, and videos.

The final section of the report discusses lessons learned in the experts' experiences. The first lesson is how many practitioners are unaware of the state of literacy in America and the impact of limited-English proficiency. The second lesson is that there are ways to include low literacy and limited-English proficiency populations. The third lesson is that low literacy and limited-English proficiency will continue to be a long-term issue.

Applicability to the C08 Project

- Visioning element of document (if applicable): This document is strictly about public involvement.
- Transportation planning focus: The techniques discussed were developed by FHWA and can be used on a transportation project.
- Visioning outreach techniques and tools used (if applicable): None.

Outreach Techniques and Tools

- Tools, techniques, and methods used for community participation and outreach:
  - Using the media (newspapers, websites, radio, television) and word of mouth;
  - Communication with local officials and community insiders;
  - Alliances with existing organizations;
  - Attendance at scheduled special events;
  - Visit businesses that cater to lower-income clients (i.e., stores that accept food stamps);
  - Involve school students;
  - Let the public choose the meeting time, place, and size;
  - Use interpreters and translated materials; and
  - Play an interactive game and incorporate magnets, color, symbols, photographs, 3D animations, and videos.
- Tools and techniques for nontraditional stakeholders:
  - This document is focused on nontraditional stakeholders; in this case those with low literacy or limited-English proficiency. The tools are listed above.
- Visioning technologies or visual tools used:
  - Using visual games to better communicate with low literacy and non-English speaking participants.

Effectiveness of Outreach Tools and Techniques

- Successful tools and techniques:
  - Identifying the low literacy and limited-English-proficiency populations:
    - Seek out local advocacy groups, interest groups, clubs, schools, and agencies;
    - Explore websites that may provide indicators (i.e., food stamp program and administration on aging); and
    - Pay attention in public meetings; if signs of low literacy are apparent, take steps to accommodate; i.e., have a staff member ask people's names as they enter rather than requesting them to sign in.
  - Marketing to low literacy and limited-English-proficiency populations:
    - Have flyers added to grocery bags;
    - Set up displays at events like weekly concerts in public parks or fairs;
    - Visiting Laundromats, grocery stores, and discount stores;
    - Radio advertisements or participation in radio call-in shows on local and ethnic stations; and
    - Address students in schools to "beta-test" a survey and also bring home information about a meeting/project to their parents or guardians.

- Soliciting participation:
  - Provide full meals at meetings and/or organize around a community meal;
  - Hold a raffle at state/county fair with an entry requirement to fill out a questionnaire, survey, or comment form; and
  - Have a community-based organization decide the time, date, and size of a meeting.
- Meeting activities and facilitation:
  - Use a translator in meetings or provide literature in multiple languages. Know the most common languages in the area;
  - Bilingual staff can add to the success of meetings;
  - Games that incorporate magnets, maps, colors, symbols, photographs, 3D animations, and videos; and
  - Uniformed staff (i.e., same colored t-shirts) to identify facilitators.
- Tools and techniques that were not successful:
  - Although all the tools and techniques cited appear to have been successful, there were some warnings of problems or issues that could affect the outcome of a public meeting or outreach effort:
    - Locational bias: What may be a common meeting location in one region may be viewed differently in another community. A city hall, for example, might be a standard meeting place in one community, but another community may view that location with resentment due to taxes being paid there and would better attend a meeting at a local school. Ask a variety of locals to identify the best meeting places in their area.
    - Dangerous locations: Worse than a general bias to a location could be an instance in which a location is seen as dangerous to a part of the population. An example was given that low African-American attendance at a town hall in South Carolina was found to be the result of its location in a white neighborhood where the Ku Klux Klan was still active.
    - Lack of childcare availability can be another deterrent to public outreach. Having childcare at a meeting, however, can be a successful tool to help foster involvement.
- Performance measures established for the outreach methods:
  - There was not a standard scale in this report. Some examples cited are meeting attendance numbers or feedback/public comments/questionnaires forms completed, in comparison.
- Outreach used in the decision-making process:
  - The different examples cited different methods.

SHRP 2 C01: A Framework for Collaborative Decision Making on Additions to Highway Capacity—Innovative Practices Involving Stakeholders

Principal Author/Authors: ICF International
Publisher: SHRP 2/TRB

Description

This document lists and recommends many strategies and techniques for involving communities and stakeholders in the transportation project process. The majority of the strategies can be implemented for a project incorporating visioning. The following tools and techniques were identified as best practices:

- Use of the collaborative planning process;
- Early and frequent communication with partner agencies and stakeholders;
- Engagement of nonexperts, decision makers, stakeholders, and the public—involving multiple groups with different values and interests to promote a holistic planning process; and
- Technical scenario planning tools—allowing planners and stakeholders to instantly depict alternatives based on their input and view cost/benefits, impacts, and opportunity for potential tradeoffs.

Applicability to the C08 Project

- Visioning element of document (if applicable): This document deals with public involvement. Some examples involve visioning.
- Transportation planning focus: Yes.
- Visioning outreach techniques and tools used (if applicable): Techniques are discussed, but not directly related to visioning.

Outreach Techniques and Tools

- Tools, techniques, and methods used for community participation and outreach: Tips for recruiting stakeholders.
- Tools and techniques for nontraditional stakeholders: No, not specifically.
- Visioning technologies or visual tools used: There was general mention of technical tools, and MetroQuest was specified as an example.

Effectiveness of Outreach Tools and Techniques

- Successful tools and techniques: Tools and techniques are listed here in the Description section.
- Tools and techniques that were not successful: Not applicable to this document.

- Performance measures established for the outreach methods: No.
- Outreach used in the decision-making process: Varying examples are listed as case studies.

Public Involvement Techniques for Transportation Decision-Making

Principal Author/Authors: Howard/Stein-Hudson Associates, Inc., and Parsons Brinckerhoff Quade and Douglas
Publisher: FHWA
Date of Publication/Presentation/Access: 1996
Website Link: www.fhwa.dot.gov/reports/pittd/cover.htm

Description

This is a comprehensive reference work designed to make a wide variety of public involvement techniques available to transportation agencies. It includes 10 techniques originally published in "Innovations in Public Involvement for Transportation Planning" by FHWA. There are four chapters with subsections that group techniques thematically by function. The organizing principle for each technique is a series of questions, such as "Why is it useful?" or "What are the drawbacks?" This guide, although dated, has been extremely useful in assisting practitioners with public involvement for transportation projects. The report is designed to be a quick lookup reference for each topic. The four sections and 10 techniques are as follows:

- Informing people through outreach and organization:
  - Bring a core participation group together;
  - Include people who are underserved by transportation; and
  - Provide substantive information and establishing methods of communication.
- Involving people face-to-face through meetings:
  - Determine the type of meeting needed; and
  - Select an organizing feature for a meeting.
- Getting feedback from participants:
  - Establish places people can find information and interact; and
  - Design programs to bring out community viewpoints and resolve differences.
- Using special techniques to enhance participation:
  - Hold special events;
  - Change a meeting approach; and
  - Find new ways to communicate.

Applicability to the C08 Project

- Visioning element of document (if applicable): This document is strictly about public involvement outreach and participation.

- Transportation planning focus: The guide is published by the FHWA, and the tools and techniques can be used in transportation planning.
- Visioning outreach techniques and tools used (if applicable): None.

Outreach Techniques and Tools

- Tools, techniques, and methods used for community participation and outreach:
  - Outreach:
    - Civic advisory committees;
    - Citizens on decision and policy bodies;
    - Collaborative task forces;
    - Mailing lists;
    - Public information materials;
    - Key person interviews;
    - Briefings;
    - Video techniques;
    - Telephone techniques;
    - Media strategies; and
    - Speakers' bureaus and public involvement volunteers.
  - Community participation:
    - Public meetings/hearings;
    - Open houses/open forum hearings;
    - Conferences, workshops, and retreats;
    - Establishing places people can find information and interact;
    - Designing programs to bring out community viewpoints and resolve differences;
    - Transportation fairs; and
    - Nontraditional meeting places and events.
- Tools and techniques for nontraditional stakeholders:
  - ADA requires specific participation activities—particularly for paratransit plans. These include:
    - Consultation with individuals with disabilities;
    - Accessible formats;
    - Summaries of significant issues raised during the public comment period; and
    - Ongoing efforts to involve the disability community in planning.
  - For ethnic minority and low-income groups:
    - Convey issues in ways that are meaningful to various cultural groups;
    - Bridge cultural and economic differences that affect participation;
    - Use communication techniques that enable people to interact with other participants;
    - Develop partnerships on a one-to-one or small group basis to assure representation; and
    - Increase participation by underrepresented groups so they have an impact on decisions.

- Visioning technologies or visual tools used:
  - Brainstorming;
  - Charrettes;
  - Visioning;
  - Small group techniques;
  - Games and contests;
  - Role playing; and
  - Site visits.

Effectiveness of Outreach Tools and Techniques

- Successful tools and techniques: The guide recommends tools and/or techniques by assessing when it is useful (for a certain situation).
- Tools and techniques that were not successful: The guide addresses applicable drawbacks to each tool and/or and technique.
- Performance measures established for the outreach methods: No.
- Outreach used in the decision-making process: No, this document is a guide, and thus there was no specific decision-making process. However, the participation tools and techniques referenced in this guide are intended to incorporate outreach into the decision-making process.

Guide to Community Visioning

Principal Author/Authors: Steven Ames
Publisher: APA Press
Date of Publication/Presentation/Access: 2001

Description

This book, a product of the Oregon Visions Project, helps citizens understand the connection between the kind of place they want their community to be and the policies that will support their vision. It shows how to design and implement an effective visioning process, while providing ideas on how to use graphics in visioning. It is based on experiences from projects in Oregon. The author notes that community visioning processes are becoming more commonplace and can take a variety of forms which are often unique to each locality. However, most visioning processes generally ask four fundamental questions: 1) Where are we now? 2) Where are we going? 3) Where do we want to be? and 4) How do we get there? Stakeholder outreach and participation play a part in answering all four fundamental questions.

Applicability to the C08 Project

- Visioning element of document (if applicable): Book addresses community visioning.

- Transportation planning focus: Book addresses community visioning, of which transportation is a component.
- Visioning outreach techniques and tools used (if applicable): None.

FHWA: Planning—The Tools
(online web resource)

Principal Author/Authors: FHWA
Publisher: FHWA (online)
Website Link: www.fhwa.dot.gov/Planning/landuse/tools.cfm#involvement

Description

The FHWA has developed a resource webpage dedicated to planning tools. A section of the webpage is devoted to tools for public involvement. Tools are broken down into four categories: Community Outreach Tools, Community Visioning Workshops and Charrettes, Land Use Scenario Development, and Visualization/Simulation Techniques. In each category, case studies are used as examples of best practices. The website also addresses GIS and technical analysis tools, which all could be used in the visioning process. The GIS and technical analysis tools and descriptions listed are:

- **CommunityViz:** A tailored GIS software package that allows users to create a virtual representation of a town and explore different land use scenarios.
- **CorPlan:** A GIS- and spreadsheet-based model to assist in creating alternative regional development scenarios as input to a travel demand model.
- **GIS Environmental Mapping/Analysis:** State, regional, and local agencies, as well as nonprofit organizations, have undertaken database development, mapping, and analysis of land use, community, and environmental features using geographic information systems (GIS).
- **MetroQuest:** A regional scenario planning/analysis tool that allows agency staff and workshop participants to create regional transportation and land use scenarios on the fly, see scenarios evolve over time, evaluate key tradeoffs, examine scenarios in detail, and compare scenarios side by side.
- **Paint the Town/Paint the Region:** A GIS-based tool used to develop demographic forecasts at municipal and regional levels.
- **PLACE3S** (Planning for Community Energy, Environmental, and Economic Sustainability): A GIS-based analytical tool to support community land use and transportation planning.
- **Rural Traffic Shed Model:** A method for allocating development permits based on the capacity of the roadway system.

- **Smart Growth Index:** A sketch-planning transportation, land use, and community impact model that allows future land use patterns to be forecast based on transportation network accessibility measures.
- **Space Syntax/Ped-GRiD** (Pedestrian Geographic Resources Information Database): GIS-based modeling techniques to identify urban locations that have a potential to increase pedestrian use, based on location of pedestrian-oriented land uses and other facilities.

Applicability to the C08 Project

- Visioning element of document (if applicable): This is general public involvement guidance; many of the tools and techniques are used in visioning.
- Transportation planning focus: The public involvement guidance in this web guide is designed for land use and transportation planning projects.
- Visioning outreach techniques and tools used (if applicable): The tools and techniques are listed on the website and discussed here.

Streamlining Success of Southeast Arkansas Interstate 69 Connector Project: Integrating Geographic Information System and Stakeholder Involvement

Principal Author/Authors: Timothy J. Smith, Marion Butler
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2005

Description

One section of the nationally designated Interstate 69 (I-69) corridor, the proposed north–south Interstate from Canada to Mexico, used a project study process that combined geographic information system (GIS) technology with early, proactive coordination with state and federal resource agencies, Native American tribes, and the public to expedite the National Environmental Policy Act project development process.

The Southeast Arkansas I-69 Connector Project (I-69 connector) successfully integrated the development and management of a project-specific GIS with early and continuous stakeholder outreach. This approach fostered a cooperative project atmosphere in which alternatives were developed that responded to the concerns of all stakeholders. This approach proved invaluable in consensus building and in achieving concurrence in a compressed time frame from the public and regulatory resource agencies on the ultimate location of the new facility.

Applicability to the C08 Project

- Visioning element of document (if applicable): Visioning through the use of GIS technology, although the document does not use the term "visioning" proper.
- Transportation planning focus: Transportation is the main focus of the document.
- Visioning outreach techniques and tools used (if applicable): Case study has a technology-focused approach to visioning outreach.

Public Outreach in Pedestrian Plan for Durham, North Carolina: Effectiveness in a Diverse Community

Principal Author/Authors: Jennifer Lewis, J. Scott Lane
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2007

Description

Durham, North Carolina, undertook the preparation of a pedestrian plan. The process was accompanied by an intensive public involvement and outreach program, which took a two-pronged approach. First, a stakeholder committee was established. Second, the public outreach effort created a series of opportunities for the general public to learn more about the plan and to provide comment. The Durham Pedestrian Plan does not support the oft-cited claim that insufficient project funding is an insurmountable obstacle to conducting a successful public involvement effort. Recommendations for improving public outreach programs include implementing a variety of techniques to incorporate diverse citizens, clearly stating public outreach objectives early and often, and devoting time and resources to assessing the effectiveness of public outreach efforts, both during and after the study.

Applicability to the C08 Project

- Visioning element of document (if applicable): None.
- Transportation planning focus: Pedestrian planning is the main focus.
- Visioning outreach techniques and tools used (if applicable): Outreach and participation techniques are the main focus of the document, however, visioning is not referenced.

Integrating Visualization into Structured Public Involvement: Case Study of Highway Improvement in Central Kentucky

Principal Author/Authors: Keiron Bailey, Joel Brumm, Ted Grossardt

Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2002

Description

The integration of advanced technologies, such as visualization, into the public involvement process is increasing. The characteristics of advanced technologies, such as visualization, and their capacities for gathering useful feedback in public forums is evaluated within a structured public involvement (SPI) framework. The properties, capacities, and transportation-related uses of three visualization modes are evaluated, and their operational features are discussed.

A case study dealing with highway improvement in central Kentucky reveals that three-dimensional renderings are significantly preferred to two-dimensional and virtual reality modes; the case study also shows that visualization should complement, not replace, other performance information. The role of electronic scoring as an integral component of this SPI protocol is emphasized, resulting in fast assessment and free expression of views. Factors affecting the efficiency of visualization are analyzed, and recommendations are presented for implementing SPI protocols that rely on visualization.

Applicability to the C08 Project

- Visioning element of document (if applicable): It covers visualization and not visioning per se. The context of the project may be considered visioning.
- Transportation planning focus: Transportation is the subject of the document.
- Visioning outreach techniques and tools used (if applicable): Visualization technologies.

Envision Houston Region: Shaping the Future Together in Texas

Principal Author/Authors: Patricia Waskowiak, Keith Garber, Christy Durham
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2007

Description

The public involvement process initiated by the Houston–Galveston Area Council was used to engage residents in a discussion of the region's future growth and development. The process, called Envision Houston Region, began with a series of workshops held during 2005 to develop alternate growth scenarios or visions. Community leaders, residents,

elected officials, developers, and others participated in a board game for adults to map out alternatives for how the region might grow. These workshops were followed by a series of community forums held in May 2006. The community forums focused on local development and growth issues as well as the technical results from the 2005 workshops. The Envision Houston Region initiative was a successful public outreach exercise with nearly 2,000 participants.

Applicability to the C08 Project

- Visioning element of document (if applicable): For future growth and development scenarios.
- Transportation planning focus: Transportation is addressed as a planning component.
- Visioning outreach techniques and tools used (if applicable): Outreach and participation techniques are discussed, including scenario board games.

Modeling Long-Range Transportation and Land Use Scenarios with Citizen-Generated Policies in the Sacramento, California, Region

Principal Author/Authors: Robert A. Johnston, Shengyi Gao, Michael J. Clay
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2005

Description

The Sacramento, California, region engaged in an innovative long-range visioning process in 2004 and 2005. The regional transportation planning agency defined and modeled several 50-year growth scenarios. The plan worked with environmental and social equity citizens' groups to define policies that would reduce emissions, serve lower-income travelers better, and preserve habitats and agricultural lands in the region.

The citizens' groups involved with the process rejected the new freeways planned for the region as well as the substantial freeway widenings for high-occupancy vehicle lanes. In addition, they defined a more ambitious transit system, involving new bus rapid transit lines and shorter headways for all rail and bus service. This transit-only plan was modeled by itself with a land use policy for an urban growth boundary and a pricing policy for higher fuel taxes and parking charges for work trips.

A new version of the MEPLAN model was used to simulate these scenarios over 50 years, and findings about total travel, mode shares, congestion, emissions, land use changes, and economic welfare of travelers are described in the paper.

Applicability to the C08 Project

- Visioning element of document (if applicable): For long-range transportation planning.
- Transportation planning focus: Long-range transportation planning is the main component.
- Visioning outreach techniques and tools used (if applicable): For scenario building and alternatives development.

Structured Public Involvement: Problems and Prospects for Improvement

Principal Author/Authors: Ted Grossardt, Keiron Bailey, Joel Brumm
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2003

Description

The authors propose a new protocol, structured public involvement (SPI), to ensure that public involvement in transportation planning and design is meaningful to the transportation professional and the public. Principles of SPI are presented, and a series of steps useful for engaging the general public in a complex design or planning problem is given. SPI is intended to be transparent, accountable, democratic, and efficient. SPI places the use of technology within a public involvement framework built on community design experience.

Applicability to the C08 Project

- Visioning element of document (if applicable): Components of visioning may be present.
- Transportation planning focus: Transportation is the main focus.
- Visioning outreach techniques and tools used (if applicable): SPI techniques, which involve the use of technology.

Wasatch Choices 2040: A New Paradigm for Public Involvement and Scenario Development in Transportation Planning

Principal Author/Authors: Shaunna K. Burbidge, Ted Knowlton, Alan Matheson, Jr.
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2007

Description

Wasatch Choices 2040 was a partnership between Envision Utah and the two major metropolitan planning organizations

along Utah's Wasatch Front. The purpose of the partnership was to involve the public through a scenario planning process and to consider the role of land use in developing the region's long-range transportation plan. Through 13 public workshops and five open houses held in 2005, members of the public expressed their preferences for transportation and land use in their communities. The input from the public informed the development of regional growth principles that have since been adopted by elected officials and will guide transportation and land use decisions in Wasatch Front communities.

Results from the public process were used to create four regional transportation and land use scenarios that ultimately led to the creation of a regional vision. Each scenario was tested by using the CentreSim forecasting model, and a vision scenario was created to depict one version of how the Wasatch Front could develop if guided by regional growth principles.

Modeling of the regional vision demonstrates that it performs significantly better than the existing long-range plan for several quality-of-life measures, including traffic congestion.

Applicability to the C08 Project

- Visioning element of document (if applicable): Transportation and land use planning.
- Transportation planning focus: Transportation is a main component.
- Visioning outreach techniques and tools used (if applicable): Extensive outreach, scenario building, and CentreSim software.

Context-Sensitive Solution for Arizona State Route 179: Needs-Based Implementation Plan

Principal Author/Authors: Ethan Rauch
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2005

Description

The paper documents an approach called a needs-based implementation plan (NBIP) to improve State Route 179, in Sedona, Arizona. The NBIP process consists of a coordinated, collaborative team effort to assess needs and develop solutions for this corridor.

Throughout the NBIP process, Arizona DOT solicited input and involvement from the community by using a variety of methods, such as advisory panels, focus groups, workshops, a website, and charrettes (collaborative planning events with a specific goal and a limited time frame that harness the talents and energies of all interested parties to create and support a feasible outcome).

The NBIP process takes a context-sensitive solutions approach by balancing safety, mobility, and the preservation of scenic, aesthetic, historic, environmental, and other community values. A key component of the approach is that citizens play an active role in the planning, design, and construction of the corridor.

The NBIP process is structured around a series of three charrettes. First, a planning charrette was held, in which the community articulated its core values and long-range vision for the corridor. A second charrette, in which participants worked in small groups to build their road, followed. In addition, an evaluation program, which consisted of evaluation criteria and performance measures, was developed to screen planning concepts resulting from the small-group results. At two screening workshops and a third charrette, the community screened 12 planning concepts to produce a single preferred planning concept consisting of a greatly improved two-lane facility.

Applicability to the C08 Project

- Visioning element of document (if applicable): Visioning components involved, but not specifically defined as visioning.
- Transportation planning focus: Transportation is a main component.
- Visioning outreach techniques and tools used (if applicable): Charrettes and performance measures.

Public Involvement Practices and Perspectives of Florida's Metropolitan Planning Organizations

Principal Author/Authors: Christina Hopes, Jeff Kramer, Kristine Williams
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2006

Description

The study describes results from a statewide survey on current public involvement practices of Florida's metropolitan planning organizations (MPO). The most commonly used techniques by MPOs were newsletters and public meetings, followed closely by brochures, individual and small-group briefings, and newspaper advertisements in general circulation publications. Although public meetings and hearings were widely used, many MPOs identified them as their least-effective public involvement technique and emphasized the importance of "going to the public, rather than asking people to come to you."

Most respondents indicated that they would rate the public's response to their public involvement process as favorable

or better, but nearly as many said that they would rate the public's response to their process as fair.

Florida MPOs believed that the greatest challenges they face in the public involvement process include poor attendance at meetings (60%), lack of adequate resources (i.e., staff or funding) (56%), lack of public understanding of the transportation planning process (48%), and difficulty involving people in the early planning process (44%).

MPOs responding to the survey acknowledged the benefits of an effective public involvement process, including improved relationships with affected citizens and interested parties (76%), improved public understanding of the transportation planning process (72%), improved public trust and credibility of the agency (60%), better projects—more effective transportation solutions (44%) and fewer adverse impacts on the community or the environment (44%).

Applicability to the C08 Project

- Visioning element of document (if applicable): Not specifically, although some projects may have contained visioning.
- Transportation planning focus: Transportation is a main component.
- Visioning outreach techniques and tools used (if applicable): Commonly used techniques—mainly standard outreach (not visioning specific).

Consensus Building in Transportation Planning Practice: Case Evaluation of Process and Outcomes

Principal Author/Authors: Ernesto Chaves, Esmeralda Garcia, Susan Gilmore
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2006

Description

An adaptive public participation process aligned to the complex political and social realities of the I-710 corridor was introduced to replace a more traditional process that had not achieved the needed consensus.

Transportation planners initiated a new series of consensus-building efforts with the objective of generating strategies and alternatives that would be acceptable to the affected communities while meeting the purpose and need for mobility improvements in the corridor. The consensus subsequently reached through the more adaptive process helped to reprioritize and bring out latent problems in the study area. Previously, either these problems had not been identified or their importance had been underestimated. Through the process of clearly identifying the problems and potential solutions, participants were able to come to consensus on an alternative set of strategies. By helping to clarify the public debate, this process strengthened the overall transportation planning effort.

Applicability to the C08 Project

- Visioning element of document (if applicable): Not specifically.
- Transportation planning focus: Transportation is a main component.
- Visioning outreach techniques and tools used (if applicable): Outreach tools and techniques are discussed (consensus building).

Growth Visioning for the Westside Cities of Los Angeles County, California: Land Use and Transportation Factors Influencing Congestion and Jobs-Housing Imbalances

Principal Author/Authors: Krute Singa, Ria Hutabarat, Mary Chou
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2004

Description

The Southern California Association of Governments (SCAG) is working with its 14 subregions on a growth visioning project called the Southern California Compass. Complementary growth visioning efforts have been conducted by SCAG subregions, including the Westside cities of Beverly Hills, Culver City, Santa Monica, West Hollywood, and a number of unincorporated communities in western Los Angeles County.

This study describes the Westside cities' growth visioning project and focuses on performance measures, community aspirations, and strategies to accommodate projected growth in a manner specific to the subregion. Community input was combined with information from performance measures to identify policy options to accommodate growth in the Westside cities subregion. Performance measures were developed with population, household, and employment projections. The projected growth scenarios are expected to further strain housing, transportation, and community services.

Applicability to the C08 Project

- Visioning element of document (if applicable): The context is regional visioning.
- Transportation planning focus: Not specifically, but transportation is usually a component of regional visioning.

- Visioning outreach techniques and tools used (if applicable): Yes.

Views of the Street: Using Community Surveys and Focus Groups to Inform Context-Sensitive Design

Principal Author/Authors: Carolyn McAndrews, Josefina Flórez, Elizabeth Deakin
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2006

Description

Surveys and focus groups were used to involve residents in the planning for the redesign and revitalization of San Pablo Avenue, an urban arterial running along the eastern edge of the San Francisco Bay, California. Residents have intimate knowledge of the way the street functions and malfunctions and can offer useful suggestions for street redesign, operational improvements, land use changes, and related social programs.

The paper shows that context-sensitive design needs to respond not only to the physical environment but also to social and economic conditions, including neighborhood concerns and aspirations.

Applicability to the C08 Project

- Visioning element of document (if applicable): Not specifically.
- Transportation planning focus: Transportation is the main component.
- Visioning outreach techniques and tools used (if applicable): Outreach tools and techniques are discussed (community surveys and focus groups). However, visioning is not specifically addressed.

Travel Demand Modeling for Regional Visioning and Scenario Analysis

Principal Author/Authors: Norm Marshall, Brian Grady
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2005

Description

This study summarizes model enhancements that have proved useful in regional visioning and scenario analysis projects from the experiences in the Baltimore, Maryland; Chicago, Illinois; and Austin, Texas regions. The enhancements focus on key goals in regional visioning and scenario analysis projects, including increasing sensitivity to micro-scale effects on land use, that affect a response by choice riders to high-quality transit service, and that account for induced travel from increased roadway capacity. Regional visioning and scenario analysis projects are becoming an increasingly important focus in the modeling of regional travel demand.

Applicability to the C08 Project

- Visioning element of document (if applicable): Visioning is used for regional transportation planning.
- Transportation planning focus: Transportation is a main component.
- Visioning outreach techniques and tools used (if applicable): Not specifically, the document is more about improvements in travel demand models.

Collaboration: The Key to Success in Transportation

Principal Author/Authors: D. Meyer, Sarah Campbell, Dennis Leach, Matt Coogan
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2005

Description

This paper presents the results of a transit cooperative research project that examined collaborative efforts in the transportation sector. Concepts of collaboration as practiced in several transportation contexts are examined.

The paper defines collaboration, describes characteristics that are necessary for success, and illustrates the evolution of collaborative efforts from initial efforts at simple coordination to more complex organizational relationships. Questions are provided for those interested in assessing the health of collaboration at any particular phase of development.

Applicability to the C08 Project

- Visioning element of document (if applicable): Not specifically. The paper addresses collaboration, which can support visioning.
- Transportation planning focus: Transportation is a main component.

- Visioning outreach techniques and tools used (if applicable): The collaborative process is the technique reviewed.

Geography of Public Participation: Using Geographic Information Systems to Evaluate Public Outreach Program of Transportation Planning Studies

Principal Author/Authors: Daniel L. Prevost
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2006

Description

This paper shows how geographic information systems (GIS) can provide an appropriate and productive means of quantitatively evaluating the effectiveness of an agency's public involvement outreach program.

The study reinforces many traditional stereotypes in public participation, but, more importantly, it demonstrates a method by which deficiencies in outreach efforts can be identified and measures taken to improve participation. By using GIS-generated maps, agencies can readily identify geographic areas that may be affected by the project yet have low participation rates, and use this information to develop additional outreach tools to target these populations.

Applicability to the C08 Project

- Visioning element of document (if applicable): This study does not have a visioning element, but evaluates an agency's outreach program.
- Transportation planning focus: No.
- Visioning outreach techniques and tools used (if applicable): Outreach was obtained via technology tools through the use of GIS.

Integrated Transportation and Land Use Scenario Modeling by Visual Evaluation of Examples: Case Study of Jeffersonville, Indiana

Principal Author/Authors: Benjamin Blandford, Ted Grossardt, John Ripy, Keiron Bailey
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2008

Description

A structured public involvement protocol was developed to allow large groups of citizens to participate efficiently and effectively in the comprehensive planning process for a moderate-sized town in Indiana, and to help in partially overcoming this problem. This research demonstrates a practical way to involve citizens in an orderly, useful manner in questions of joint transportation and land use planning.

CommunityViz was used as the visualization tool to help residents understand better the differences between potential land development patterns. Fuzzy set modeling was used to derive the complex interplay of development pattern properties that were most and least preferred by citizens. The development patterns varied by percentage mixture of housing types, percentage mixture of land use types, percentage given over to green space, ratio of sidewalk to total paved area, and connectivity of the road network. These five parameters were chosen as the most useful and fundamental measures of differences between development patterns. Citizens' preferences were derived on that basis. Public input for this town was successfully modeled. Resulting preference patterns were made available to city planners for use in updating their comprehensive plan.

Applicability to the C08 Project

- Visioning element of document (if applicable): Yes, for comprehensive planning.
- Transportation planning focus: Transportation is a component of comprehensive planning.
- Visioning outreach techniques and tools used (if applicable): SPI techniques and CommunityViz for scenario building.

Picking Publics Properly: An Artful Science

Principal Author/Authors: Philancy Sarra Comeau, Donald A. Rodriguez
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2000

Description

This research presented an exploratory analysis of 15 public involvement experts' experiences, attitudes, and beliefs about the public involvement process.

Four generalizations were developed from this exploratory analysis:

1. Experts attempt to be as inclusive as possible when choosing publics based on a public's perceived salience and interest in an issue and group composition;

2. Issue development directly affects how experts choose publics for public involvement processes;

3. Issue development occurs through various communication methods driven by affected values and beliefs; and

4. Improper choices of publics for public involvement processes can lead to failure.

The authors propose a public involvement model to illustrate the effects of issue development and level of involvement on these processes. Management implications include a necessity to understand how the issue is developing; which underlying affected values and beliefs are driving current communication activities; and the various publics' perspectives regarding their level of involvement and preferred participation level.

Choosing appropriate publics in the life cycle of an issue is a critical component for a successful public involvement program.

Applicability to the C08 Project

- Visioning element of document (if applicable): Not specifically, this is more of a general guide on public involvement.
- Transportation planning focus: Not specifically.
- Visioning outreach techniques and tools used (if applicable): A public involvement model was developed.

St. Louis Redefines Community Engagement

Principal Author/Authors: Janeen Smith Hansen, Margaret Campbell Jackson
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2001

Description

In addition to community engagement playing an integral part of major public project planning, a study recently completed in St. Louis, Missouri, demonstrates the importance of project sponsor and technical team commitment to the process.

The East-West Gateway Coordinating Council (EWGCC), the metropolitan planning organization in St. Louis, conducted a comprehensive community engagement process in three study areas aimed at "fully engaging the community at the earliest stages of planning." Furthermore, EWGCC created a three-agency umbrella organization to sponsor the studies, with the organization facilitating interagency cooperation from the inception of the work. By negotiating independent contracts with the community engagement and technical teams, the project sponsor ensured that community engagement would direct and guide the technical work rather than respond to technical analysis after the fact.

In a unique partnership of public agencies, community engagement specialists, and technical experts, the St. Louis study illustrates the essential ingredients for a successful community engagement process:

- First, there was commitment from the top of each organization;
- Second, the project sponsors place customers first in analyzing the region's transportation needs;
- The technical team was wholly committed to the community engagement process, working hand in hand with the community engagement team; and
- Building and maintaining a successful team was an ongoing, multistep process in which all parties participated from the beginning to the end of the study.

Applicability to the C08 Project

- Visioning element of document (if applicable): Not specifically, it is more focused on general public involvement.
- Transportation planning focus: Not specifically.
- Visioning outreach techniques and tools used (if applicable): Public involvement outreach techniques are discussed, but not visioning outreach per se.

Enhancing Public Involvement Through Full Utilization of Communications Technology

Principal Author/Authors: Scott Russell, Jeffrey K. Herzer
Publisher: Transportation Research Record: Journal of the Transportation Research Board
Date of Publication/Presentation/Access: 2002

Description

Communications technology applications such as websites and e-mail play an increasingly important role in public involvement programs. Many agencies also produce multimedia CDs and place interactive kiosks throughout communities. This proliferation of communications technology applications is creating new opportunities and new demands on the public involvement process. Although this technology enhances public access to projects, it also requires creative approaches for presenting information and documenting public comments.

Public involvement and technology professionals must work together closely to ensure that communications technology applications create effective interaction between members of the public, projects, and clients and to ensure that technology enhances public involvement activities for the widest audience possible.

Examples of current communications technology applications, guidelines that ensure that technology enhances public involvement activities, and processes that ensure online public involvement activities are effectively documented are presented, along with examples of client-side applications to ensure effective use of online input.

Case studies that illustrate these principles and offer guidance concerning when and where technology can replace or supplement traditional public involvement approaches are presented.

Applicability to the C08 Project

- Visioning element of document (if applicable): No, the paper is more focused on general public involvement.
- Transportation planning focus: Not specifically.
- Visioning outreach techniques and tools used (if applicable): Current technology-driven outreach and participation tools are documented, although visioning is not mentioned specifically.

Commitment Tracking

Literature Review

The commitment tracking literature review performed to supplement the case studies identified a total of six relevant documents published between 2003 and 2009. Most of these are syntheses of best practice that describe implementation in multiple agencies. Several include descriptions of commitment tracking processes and/or requirements for systems supporting commitment tracking. The documents identified through the search are detailed below, followed by a summary of agency practice.

Domestic Scan: Environmental Commitment Implementation—Innovative and Successful Approaches (2003)

This report describes a domestic scan performed by FHWA to review commitment tracking and implementation approaches in use by the departments of transportation of seven states: Colorado, Indiana, Kentucky, New Jersey, New York, Texas, and Wyoming. Through the scan FHWA identified 10 common themes in successful commitment tracking efforts. These include:

- Environmental ethic/stewardship;
- Staffing;
- Training;
- Guidance documents;
- Commitment assurance;
- Tracking mechanisms;
- Public involvement;
- Interagency coordination;
- Resource-specific initiatives; and
- Tools and technology.

The report describes best practices from each agency, organized based on these themes. Practices related to commitment tracking are described for six of the seven agencies. In describing the lessons learned from the scan, the authors emphasize the importance of proactive efforts, communications, training, building strong stakeholder relationships, and learning from past efforts.

NCHRP Web Document 103: Final Report for NCHRP Research Results Digest 317, Prototype Software for an Environmental Information Management and Decision Support System (2006)

This report describes the results of NCHRP Project 25-23(2), focused on developing a prototype Environmental Information Management System (EIMS). In developing the conceptual design for the EIMS, the authors reviewed existing practices in environmental management, including commitment tracking. The review performed for the study describes environmental commitment tracking and related processes in 11 states.

Further, the prototype EIMS developed as part of this effort supports tracking of environmental commitments in planning, project development, and maintenance. The commitment tracking functionality in the system was developed based on the results of the review. Figure D.1 illustrates a commitment tracking report generated using EIMS. Commitments in the system must be associated with a particular asset, project, or long-term plan. One or more specific actions can be defined for a given commitment. The system tracks action status, deadlines, and responsibility, and can link documents or photos to the record for a given commitment.

The report details the commitment tracking functionality and describes an effort undertaken to populate the system with representative commitment data as part of system testing.

Figure D.1. Sample EIMS commitment tracking report.

American Association of State Highway and Transportation Officials (AASHTO) Practitioner's Handbook 04: Tracking Compliance with Environmental Commitments/Use of Environmental Monitors (2006)

This document discusses key issues to consider in commitment tracking, provides general background information on this topic, and provides a set of "practical tips" for establishing a commitment tracking process. Tips are provided in the following areas:

- Making environmental commitments;
- Creating a commitment tracking database;
- Identifying commitments;
- Tracking status;
- Using the database during design and construction;
- Organizing an environmental monitoring team;
- Environmental monitoring procedures;
- Guidance on design-build projects; and
- Overall keys to success.

The guide lists data items that should be collected as part of a formal commitment tracking process, based on the tracking process developed for NCHRP Project 25-23(2). The guide emphasizes themes, including the importance of training and coordination, consistent with the prior FHWA review, as well as the need for clear responsibilities and documentation.

Benchmarking State DOT Environmental Commitment Tracking Systems (2007)

This paper, presented at the 2007 TRB annual meeting, describes an effort performed for Federal Lands Highways (FLH) to benchmark state department of transportation (DOT) commitment tracking systems in six states (Kentucky, Illinois, Maryland, New York, Texas, and Washington). Also, it describes project-specific tracking approaches used for mega-projects in California, Maryland, and Nevada. The paper establishes a set of functional and nonfunctional requirements for a commitment tracking system, and evaluates how well the systems in each of the states meet each of the requirements. Figure D.2, reproduced from the paper, provides the list of functional requirements and assesses the degree to which each of the DOT systems meets the requirements.

Implementation of Community and Cultural Resource Commitments (2009)

This report was prepared for NCHRP Project 25-25(41). The research was intended to supplement previous research on commitment tracking with detail on tracking community and cultural resource commitments. In practice, to the extent

SYSTEM CAPABILITIES AND FEATURES	Kentucky	Illinois	Maryland	New York	Texas	Washington
Functional						
Track Commitments	●	●	●	●	●	●
Prioritize Commitments or Actions	○	○	○	○	○	○
Categorize Commitments (including commitments other than environmental)	○	○	◐	●	●	●
Commitment Checklist	○	○	○	●	●	●
Track Permits	○	◐	●	●	●	○
Filter, Sort, and Search to View Commitments and Permits	○	○	●	●	○	◐
Automatic Notifications (i.e.: send notification when prior to permit due date).	○	○	○	○	○	○
Automatic Escalating Notifications	○	○	○	○	○	○
User Initiated Notifications	○	○	○	○	●	○
Store Microsoft Word and Adobe PDF Documents	●	●	○	●	●	○
Document Management Version Control	○	○	○	○	○	○
Document Scanning	○	○	○	○	●	○
Ad-hoc Reporting	○	○	○	●	●	○
Standard Reports (i.e.: for annual reporting to regulatory agencies)	○	○	●	●	●	●
Performance Measurement	○	○	○	○	●	○
GIS compatible	○	○	●	○	○	○
Integrated with Project Management System	●	●	●	○	◐	○
Technical Specifications / Non-functional						
Web-based	○	○	○	◐	○	●
Oracle/SQL Server database	○	○	●	◐	○	●
Enterprise Level Capacity (No limits to the number of users or commitments)	●	○	●	◐	○	●
Scalable (More users can be added without affecting performance)	●	○	●	◐	●	●
Flexible Security (i.e.: role-based)	◐	○	◐	●	●	◐
Shared with other organizations	○	○	◐	◐	◐	○

● Fully meets requirement ◐ Partially meets requirement ○ Doesn't meet requirement

Source: Benchmarking State DOT Environmental Commitment Tracking Systems (2007).

Figure D.2. Assessment of state DOT commitment tracking systems.

there are systems and approaches used for tracking these types of commitments, they are the same as those used for tracking other agency commitments. Thus, the report is a useful review of department of transportation (DOT) commitment tracking processes in general.

One element of the NCHRP 25-25(41) research was a literature review. To review previous work in this area, the report describes the 2003 FHWA report 2006 AASHTO Guide and 2007 TRB paper summarized above. To supplement the literature review, the researchers surveyed 53 state DOTs and other agencies. A total of 14 agencies responded to the survey.

All 14 of the survey respondents had some form of commitment tracking approach, at least for environmental commitments made during development of a project Environmental Impact Statement and/or documented in the Record of Decision for a project. Most of the respondents tracked commitments through "green sheets" listing environmental commitments for a given project, or through entering commitments for one or more projects in a spreadsheet or some other form of electronic file. Two of the respondents, Virginia DOT and Washington state, had well-developed approaches for commitment tracking supported by information systems. The report provides extensive detail on the systems used by these agencies: Virginia's Comprehensive Environmental Data and Reporting (CEDAR), Washington state's Commitment Tracking System (CTS), as well as on the Kentucky Transportation Cabinet (KYTC) Communicating All Promises (CAP) System.

Based on the review and survey, the researchers compared existing practices to the best practices recommended in the 2006 AASHTO Guide and developed a set of best practice recommendations. Consistent with the AASHTO Guide, the recommendations focus on the need to support commitment tracking with a formalized process and database system.

Management of Environmental Features and Assets (2009)

This paper describes an effort to survey agencies to gain information on management of environmental features. One aspect of the study related to tracking of environmental commitments. The authors found that a few of the DOTs contacted for the study had developed commitment and mitigation tracking mechanisms. As noted in previous research, the most common approach to tracking commitments was to list commitments made, though there are several examples of more formal approaches. The paper describes commitment tracking approaches used in California, Maryland, Virginia, and Washington state. The paper offers a series of recommendations regarding maintenance of environmental features. With respect to commitment tracking, the researchers note that even where it has been implemented, there is frequently a disconnect between project development and maintenance, and generally commitments made during project development do not get translated into ongoing maintenance commitments.

In addition to these documents, additional information on commitment tracking has been disseminated online by FHWA and AASHTO. The FHWA Environmental Review Toolkit (www.environment.fhwa.dot.gov/strmlng/es3stateprac.asp) contains a database of state practices in streamlining and stewardship. The AASHTO Center for Environmental Excellence web site (www.environment.transportation.org/) contains a variety of descriptions of state practices. These web resources appear either to incorporate or to have been incorporated by the other published literature described above.

Agency Practice

Together the materials reviewed provide information on DOT commitment tracking processes and systems in 15 states and reflect survey results for a number of additional agencies. Table D.1 details which agency practices are described in each of the sources reviewed. A checkmark indicates that a given state DOT's commitment tracking practices are described in the indicated report/paper. States are indicated only where their practices are specifically described. For instance, for the NCHRP 25-25(41) report, the report synthesizes the practices of a number of agencies, but details practices in a subset of these. The AASHTO Guide recommends best practices for commitment tracking, but does not detail practices in particular agencies, and thus is not listed in the table.

Table D.1. Commitment Tracking Practices Described in the Literature

State	Domestic Scan (FHWA, 2003)	NCHRP 25-23(2) (CS, 2006)	FLH Bench-Marking (ICF, 2007)	NCHRP 25-25(41) (Venner, 2009)	Environ. Features (Venner, 2009)
California		✔	✔		✔
Colorado	✔	✔			
Florida		✔			
Illinois		✔	✔		
Indiana	✔				
Kentucky	✔	✔	✔	✔	
Maryland		✔	✔		✔
Nevada			✔		
New Jersey	✔				
New York	✔	✔	✔		
Pennsylvania		✔			
Texas	✔	✔	✔		
Virginia				✔	✔
Washington		✔	✔	✔	✔

The following paragraphs describe the practices for each of the 14 agencies listed in the table. The descriptions rely on the sources described above, as well as upon additional agency-specific materials where noted in the text. For each of the agencies we have attempted to determine:

- What is the scope of the commitment tracking process?
- To what extent is the process supported by a system?
- How formalized is the process? Have accountability for meeting commitments, review processes, public reporting or other means been introduced to help institutionalize the commitment tracking process?
- What benefits have been attributed to use of the process?
- What aspects of the process may be relevant for a general commitment tracking process to support visioning?

California DOT (**Caltrans**) uses a commitment tracking process called Environmental Commitments Record (ECR) (Land, 2005). This process is used to track environmental commitments during project development and construction. Caltrans districts are responsible for establishing an ECR for each of their projects. The ECR specifies each environmental mitigation, compensation, and/or enhancement commitment for a project, documents how the commitment will be met, and tracks completion of the commitment.

Caltrans guidance on developing an ECR (Land) lists the following categories for which commitments may be met, though it specifies this list is not all-inclusive:

- Environmental mitigation affecting timing of advertising;
- Biology;
- Cultural resources;
- Air quality;
- Hazardous material investigation/treatment;
- Visual/landscape;
- Construction;
- Noise attenuation;
- Water quality;
- Community/social/land use impacts;
- Paleontology;
- Wild and scenic rivers;
- Other commitments;
- Order of work; and
- Permits and approvals.

Each commitment, as well as the actions to be taken to comply with the task, is described in the ECR. The ECR identifies the person responsible for the commitment in addition to the timing and location of the commitment. The person in charge of the commitment will record the completion of the commitment and potential problems with completion on the ECR.

The commitment tracking process is well defined, but is not supported by a specific system. Each district is responsible for developing its own ECR. Individual districts have developed their own ECR forms in Microsoft Excel. For instance, District 11 has developed a Mitigation Monitoring and Reporting Record (MMRR) form, and District 4 has developed a Permits, Agreements, and Mitigation (PAM) form. Both of these meet Caltrans' requirements for the ECR.

Colorado DOT commitment tracking processes are referenced in two of the reports included in the literature review. The 2003 FHWA scan reports that Colorado DOT uses its Quality Assurance Reviews (QAR) to review fulfillment of environmental commitments made for a given project. Further, the report notes that Colorado DOT's Region 6 developed a mitigation tracking system for storing and tracking project-level commitment data.

The NCHRP 25-23(2) report notes that a spreadsheet approach (with environmental commitments listed and tracked in a spreadsheet) was used for tracking commitments on particular high-profile CDOT projects, such as the Northwest Parkway and the Denver-area Transportation Expansion Project (TREX).

Florida DOT has implemented Efficient Transportation Decision-making (ETDM) Process for streamlining project planning and development. The NCHRP 25-23(2) report describes ETDM, as do the AASHTO and FHWA web sites described previously. Strictly speaking, ETDM is not in and of itself a commitment tracking system. However, as part of ETDM Florida DOT has implemented a Performance Management Program (PMP) that tracks key performance measures related to ETDM and reports on these on a periodic basis. The PMP is detailed in the *ETDM Performance Management Program Practitioner's Guide.* Figure D.3 illustrates the PMP, showing review steps and feedback reports planned over a typical year. The process is notable in that it serves to monitor outcomes of the ETDM process, it establishes performance measures for evaluating the process, and demonstrates how a DOT can work with its planning partners and resource agencies on performance monitoring and review.

Illinois DOT tracks project-level environmental commitments using a Microsoft Access system called the Project Monitoring Application (PMA). This system is used for tracking during Illinois DOT's environmental survey process through the submittal of the Environment Survey Request (ESR) forms. Local agencies, engineers, or other parties may submit a form online through the Illinois DOT website. The system is used for managing ESR form submittals, listing project commitments, tracking internal compliance, and integrating ESR submittals with Illinois DOT's project management system. The system can track commitments made during any phase of a project (e.g., planning, preconstruction, design). The PMA is used by Environmental

ETDM Performance Management Program Practitioner's Guide.

Figure D.3. ETDM performance management process.

Section chiefs to track commitments by environmental area and produce annual reports.

Indiana DOT includes a Mitigation Commitment Summary in NEPA documents and in its electronic project tracking system. Figure D.4 shows a sample Mitigation Commitment Summary included in a project Record of Decision (ROD), listing basic project information, commitments made related to the project, and relevant notes on the implementation of the commitment.

Kentucky Transportation Cabinet (KYTC) uses an online commitment tracking process called Communicating All Promises (CAP) for tracking project-level commitments. CAP is designed to track all commitments through all the phases of project development and implementation. The use of CAP is mandatory at KYTC for all types of projects. The NCHRP 25-25(41) report notes that the project manager has discretion concerning what sort of commitments to enter into the system. Consequently, the process is used different ways by different project managers. Often it is used for tracking unusual or nonstandard commitments (e.g., commitments made to property owners) not otherwise reported in environmental documents. CAP is implemented through a set of screens in KYTC's Oracle-based project management system. Figure D.5 shows a sample commitment recorded through CAP.

Maryland State Highway Administration (MDSHA) commitment tracking processes are described in the NCHRP 25-23(2) report, the 2007 Benchmarking paper, and the NCHRP 25-25(41) report. The NCHRP 25-23(2) report

Commitments Summary Form

Des. No.:	0200094
Project No.:	
County:	Howard and Tipton
Description:	New Terrain Bypass of City of Kokomo
Project Termini:	Two miles south of State Road (SR) 26 and one mile north of the US Route (US) 35 northern junction (County Road 450 North), a distance of approximately 12 miles.
Average R/W Width:	300 feet

Committed Items: (If implementation is not possible, section that made commitment must document review.)	Implemented: Yes/No (reason)
Relocation assistance and benefits will be made available to all individuals displaced by the proposed US 31 Kokomo Corridor Project in accordance with the following guidelines: • Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1964: United States Code (USC) Title 42, Articles 4601 through 4655 (42 USC 4601-4655) • Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs: Code of Federal Regulations (CFR), Title 49, Subtitle A, Part 24 (49 CFR 24) • Title VI of the Civil Rights Act of 1964 Indiana State Relocation Assistance: Indiana Code (IC) Title 8 Article 23 Chapter 17 (IC 8-23-17)	
Benefits will be made available for all commercial properties displaced by the proposed US 31 Kokomo Corridor Project in accordance with 42 USC 4601-4655, 49 CFR Part 24, Title VI of the Civil Rights Act of 1964, and IC 8-23-17. Mitigation measures for displaced businesses include moving expenses, retribution for direct loss of tangible property, and replacement property search (IC-8-23-17 §13).	

Source: www.in.gov/indot/div/projects/us31/kokomo/pdfs/rod/Commitments SummaryForm.pdf, accessed October 2009.

Figure D.4. Sample Indiana DOT mitigation commitment summary.

describes MDSHA's effort to build a desktop application for tracking permits, and extending that application to track project-level commitments. Further, the report notes that MDSHA prepares an Environmental Compliance/Consideration Checklist for major projects for commitment tracking, and has developed Access databases for tracking commitments on major projects, such as the Woodrow Wilson Bridge. The 2009 paper describes MDSHA's efforts to develop an environmental monitor toolkit for communicating status of environmental efforts between MDSHA and resource agencies. The toolkit is a web-based database program for tracking the wetland permitting process.

Nevada Department of Transportation developed a web-based system for mitigation monitoring system for the Nevada Transportation Rail Access Corridor (ReTRAC) project, a below-grade corridor replacing 11 at-grade rail crossings. The system, ReTRAC.info was used from 2002 to 2005 to summarize mitigation reports. Handheld units were used to collect data in the field and upload reports to the

Source: http://cms.transportation.org/sites/design/docs/SCOE-SCOD,%20Mettille,%20KY,
%20CAP%20and%20Fact.pdf, accessed October 2009.

Figure D.5. Sample project commitment from KTC CAP.

system. Nevada DOT, State Historic Preservation Office, Department of Environmental Protection, and permitting agencies were given access to the system to review the status of environmental mitigation reporting. Also, selected data were made available online for public review. Figure D.6 is an example screen from the system, listing available mitigation reports.

New Jersey DOT uses two types of lists for tracking project commitment detailed in the 2003 FHWA scan: environmental plan sheets and checklists; and cultural resource commitments lists. The environmental plan sheets and checklists communicate environmental commitments throughout all phases of a project. The checklist contains commitments listed in project environmental documentation, including

permit information, agency approvals, executive orders for wetlands and floodplains, and an environmental inventory of impacted resources. The cultural resource commitment list contains project descriptions, names of program and project managers, target dates for activities, estimates of mitigation costs, and progress status. The cultural resource commitment list is shared with the State Historic Preservation Office (SHPO).

New York State DOT commitment tracking efforts are described in the 2003 FHWA scan, NCHRP 25-23(2) report and 2007 Benchmarking paper. As detailed in these references, New York State DOT has developed a form for listing project-level environmental commitments called the Environmental Commitment and Obligations Package for Construction (ECOPAC).

New York State DOT has developed a process, structured around completing ECOPAC, for detailing and tracking environmental commitments. The Project Designer is responsible for completing a portion of ECOPAC during the design phase of the project detailing environmental commitments. The engineer in charge is responsible for completing the second portion of the form, and for monitoring environmental commitments during and following construction. New York State DOT has prepared a standard version of the form, as well as specific versions for certain regions. Figure D.7 provides an example of a portion of Region 1's version of the form.

In addition to developing ECOPAC, New York State DOT has built an environmental permit tracking database called ETRACK linked to the agency's Program Support System (PSS). The agency plans to implement a web-based version of ETRACK that incorporates ECOPAC.

Source: www.retrac.info/ accessed October 2009.

Figure D.6. Example ReTRAC.info screen.

ENVIRONMENTAL COMMITMENTS & OBLIGATIONS PACKAGE FOR CONSTRUCTION (ECOPAC) – REGION 1				
LEFT SIDE TO BE COMPLETED BY PROJECT DESIGNER BEFORE PS&E			*RIGHT SIDE TO BE COMPLETED BY EIC*	
Environmental Issue	Permit / Approval Obtained	Audit Reg. No.	Compliance Requirements	Noncompliance (Rank)#
SEQR All phases and proposed work included in this project and/or any additional work to be completed has been reviewed and processed under and with SEQR completed. ECL Article 8, and 6NYCRR Part 15.	☐ SEQR Completed for all work shown included in Design Approval Document ☐ SEQR completed for all work shown in contract documents or for work added after Design Approval ☐ SEQR Completed for all additional project work added during construction not included in Design Approval Document	48 48 48	☐ All work done as per plan with no major project changes ☐ All additional work processed as per SEQR Regulations, for additional work RLA/EM was contacted, SEQR completed ☐ SEQR completed for all work :~)	☐ Not in Compliance (Rank N____)# ☐ Not in Compliance (Rank N____)# ☐ Not in Compliance (Rank N____)#
NEPA All phases and proposed work included in this project and/or any additional work to be completed has been reviewed and processed under and with NEPA completed. For projects with Federal Funding of Federal Permits. ☐ No Federal Funding of Federal Permits Required	☐ NEPA Completed for all work shown in contract documents ☐ NEPA completed for all work shown in contract documents or for work added after Design Approval	N/A	☐ All work done as per plan or approved as per NEPA Regulations ☐ All additional work processed as per NEPA Regulations, RLA/EM was contacted, NEPA completed ☐ NEPA completed for all work :~)	☐ Not in Compliance (Rank N____)# ☐ Not in Compliance (Rank N____)# ☐ Not in Compliance (Rank N____)#
WETLANDS A DEC, APA, and/or US ACOE permit is required for any construction, grading, filling, excavating, clearing, stockpiling, storing, staging, or other activity in a wetland. Activities within 100 feet (30 meters) of a state wetland are also regulated. Any wetland impacts incurred during construction, such as those associated with off-site disposal, may require a separate permit. ***There is a potential that regulated wetlands exist within the project limits. Do to the nature of the work these wetlands may not be shown in the contract documents. Any work, storage of placements of materials or field offices needs to be reviewed for any wetlands or other environmental factors. ☐ *Based on investigations during design, wetlands will not be impacted by this project.*	☐ DEC Article 24 permits ☐ APA Wetlands Permit ☐ DEC Section 401 Water Quality Certificate ☐ COE Section 404 Individual permit ☐ COE Section 404 Nationwide permits List NWP#_____ ☐ FHWA Executive Order 11990 ☐ Mitigation Plan Required	20 20 49 N/A N/A N/A	☐ All work completed as per contract documents and previously obtained permits / approvals ☐ Complied with APA Permit Requirements ☐ Complied with DEC Section 401 Water Quality Certificate ☐ Complied with Section 404 Individual permit ☐ Submitted NWP Compliance Certificate and Post-Construction Report (if required) ☐ Mitigation Plan Implemented ☐ *Wetlands were not encountered during construction*	☐ Not in Compliance (Rank N____)# ☐ Not in Compliance (Rank N____)# ☐ Not in Compliance (Rank N____)# ☐ Not in Compliance (Rank N____)# ☐ Not in Compliance (Rank N____)# ☐ Not in Compliance (Rank N____)#

Figure D.7. Example region 1 ECOPAC form.

Pennsylvania. NCHRP Report 25-23(2) reports that the Pennsylvania Turnpike Commission has developed a spreadsheet to track environmental commitments, including right-of-way requirements, changes in environmental impacts, and fulfillment of mitigation commitments during construction.

Texas DOT has developed the Environmental Tracking System (ETS) for tracking projects during project development. This system helps track environmental permitting requirements and other commitments, particularly prior to construction. ETS has an Environmental Permits, Issues and Commitments (EPIC) tab that lists permits, issues, and commitments and that enables the design personnel to verify that all commitments are addressed in the project plans.

ETS is used by a range of users, including project engineers, district staff tracking project status, environmental staff tracking commitments, and FHWA staff. The system was originally developed as a client-server system. Subsequently, Texas DOT began development of a web-based version of the system.

Virginia DOT has established the Comprehensive Environmental Data and Reporting (CEDAR) system for facilitating project-level environmental review. CEDAR is detailed in the NCHRP 25-25(41) report, and Virginia DOT's procedures related to use of CEDAR are described on the Virginia DOT website. VDOT uses CEDARs for identifying environmental issues on proposed projects, organizing environment-related documents in a single repository, and communicating environmental commitments and decisions. CEDAR is web-based and systems-integrated with GIS, and offers full integration with VDOT project management systems.

Figure D.8 shows an example list of environmental commitments entered for a particular project. Commitments are organized by category, with date initiated, party that entered the commitment, a description of the commitment, and date the commitment was closed shown on the list. Figure D.9 shows an example of the detailed data for a commitment, providing additional information, such as the party responsible for implementing the commitment and date notified.
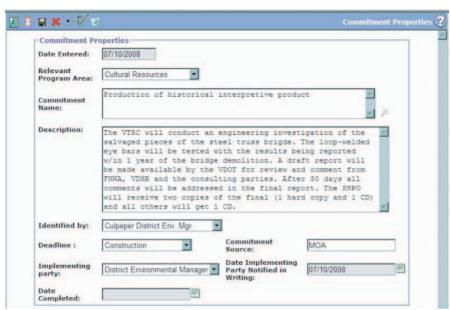
Source: NCHRP 25-25(41) Final Report.

Figure D.8. CEDAR commitment list.

Washington State DOT (WSDOT) has recently developed the Commitment Tracking System (CTS) for entering and tracking project-level environmental and other commitments. The system is described in the NCHRP Project 25-25(41), and WSDOT procedures for use of the system have been incorporated in WSDOT's Environmental Procedures Manual. CTS is a web-based system that tracks all environmental, design, cultural, resource, and right-of-way commitments made for a project through design, construction, and maintenance.

Figure D.10 shows an example commitment list from CTS. For each commitment made for a given project, the list shows data, including: description of the commitment, relevant standard specifications, special provisions, reference to project plans, the party responsible for fulfilling the commitment, commitment status, and the next action. Figure D.11 shows

Source: NCHRP 25-25(41) Final Report.

Figure D.9. CEDAR commitment detail.

example commitment detail. This screen is used to assign the commitment to a particular party, identify the next action (notify, monitor, report, submit, inspect, or other), and edit other details concerning the commitment. In addition to the data shown here, WSDOT stores location details on each commitment to facilitate spatial queries.

References

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