DEFINING COMMUNITY CONTEXT IN TRANSPORTATION PROJECT PLANNING AND DEVELOPMENT PROCESS

Requested by:

American Association of State Highway and Transportation Officials (AASHTO)
Standing Committee on the Environment

Prepared by:

Leigh Lane and Ann Hartell with
The Center for Transportation and the Environment
At North Carolina State University

with:

Teresa Townsend and Ann Steedly
With Planning Communities, LLC

Under Subcontract to:
The Louis Berger Group, Inc.

August 2011

The information contained in this report was prepared as part of NCHRP Project 25-25, Task 69, National Cooperative Highway Research Program, Transportation Research Board.

SPECIAL NOTE: This report IS NOT an official publication of the National Cooperative Highway Research Program, Transportation Research Board, National Research Council, or The National Academies.
Acknowledgements

This study was requested by the American Association of State Highway and Transportation Officials (AASHTO) and conducted as part of the National Cooperative Highway Research Program (NCHRP) Project 25-25. The NCHRP is supported by annual voluntary contributions from the state Departments of Transportation. Project 25-25 is intended to fund quick response studies on behalf of the AASHTO Standing Committee on the Environment. The report was prepared by Leigh Blackmon Lane, Ann Hartell, and Matthew Watterson of The Center for Transportation and the Environment at North Carolina State University, with Teresa Townsend and Ann Steedly of Planning Communities, LLC. The work was guided by a task group chaired by Kelly C. Dunlap of the California Department of Transportation which included: Mr. Emmett R. Heltzel, Virginia Department of Transportation; Ms. Virginia Porta, Arkansas Department of Transportation; William Hauser, New Hampshire Department of Transportation; Julie Hunkins, North Carolina Department of Transportation; Colleen Vaughn, New Mexico Department of Transportation; George Ballo, Florida Department of Transportation; Jim Laughlin, Washington State Department of Transportation; Dr. Mohan Venigalla, George Mason University; Scott Bradley, Minnesota Department of Transportation; Anne Morris, Atkins, Inc; and Brenda Kragh, Federal Highway Administration. The project was managed by Nanda Srinivasan, NCHRP Senior Program Officer.

Eleven individuals across the country graciously provided their time as focus group participants. They included Christopher Douwes, David Aimen, George Ballo, Kathy Beaudoin, Peter Bond, Libby Rushley, Scott Bradley, Paul Shaefer, Jana Lynott, Eloisa Raynault, and Matthew Meservy.

The biggest thank you goes to the practitioners across the country who generously told us about the tools they have developed and used to improve communities.

Disclaimer

The opinions and conclusions expressed or implied are those of the research agency that performed the research and are not necessarily those of the Transportation Research Board or its sponsors. The information contained in this document was taken directly from the submission of the author(s). This document is not a report of the Transportation Research Board or of the National Research Council.

NOTE: The Transportation Research Board of the National Academies, the National Research Council, the Federal Highway Administration, the American Association of State Highway and Transportation Officials, and the individual states participating in the National Cooperative Highway Research Program do not endorse products or manufacturers. Trade or manufacturers’ names appear herein solely because they are considered essential to the object of this report.
# Table of Contents

I. **Executive Summary** ............................................................................................................. 4

II. **Introduction** ....................................................................................................................... 6

III. **Methodology** ..................................................................................................................... 11

IV. **Inventory of Community Context Tools** ........................................................................ 14

V. **Selecting Community Context Tools** ............................................................................... 23

VI. **Conclusions** ..................................................................................................................... 32

**Appendix A. Submission Form** .......................................................................................... A-1

**Appendix B. Focus Group Documentation** ......................................................................... A-7

**Appendix C. Factsheets** ...................................................................................................... A-26

**Appendix D. Context Tool Matrix** .................................................................................... A-82
I. EXECUTIVE SUMMARY

Context is the interrelated condition in which something exists in space and time. It encompasses everything about the people, place, and circumstances of a spatial unit, be it a neighborhood, city or region. Community context mirrors the concept of synergy in that the result is greater than the sum of the individual parts. The components of community context consist of both human and environmental factors including social, cultural, economic conditions, demographics, housing and education, public health and safety, natural environment, and resources as well as the built environment and mobility. These aspects are woven together by a set of needs, values, place characteristics, and quality-of-life concerns to create a unique community context for any type or scale of transportation plan or project. As such, understanding and defining community context calls upon transportation practitioners to use both quantitative and qualitative methods to identify both the tangible and intangible aspects of how communities experience their human and natural environments.

Transportation professionals need tools to collect and organize community data, including physical features of the natural and human environment as well as information on how communities value these features. Context tools can help practitioners think holistically, critically, and systematically about community context. With this in mind, the primary objective of this project was to provide an inventory of community context tools to transportation practitioners desiring to understand and incorporate community context variables into planning and project development processes.

This project included these four major tasks:

- Solicitation of tools to help define community context
- Collection of the tools submitted into a database
- Review and synthesis of tools by focus group
- Organization of tools by attributes of interest to practitioners and fact sheets presenting tools in an electronic searchable database

As a result of these tasks, forty-one tools were collected and organized into an online database of resources that can be searched by attribute filters. This database is available at http://www.cte.ncsu.edu/CommunityContext/tools-search.asp.

The searchable database allows users to search for tools based on a variety of project attributes as determined through extensive input from researchers and practitioners in the transportation field. Users are also able to review fact sheets (see Appendix C) about tools that meet their search criteria. Each fact sheet provides a brief description, purpose of the tool, key topics addressed, applicable project type, applicable phase of plan/project, geographic scale, users, outputs, data requirements, and any cost associated with using the tool.

Although the inventory collected during this project is relatively small, it is likely that interest in developing, improving, and using community context tools will increase. With the emerging national policy focus on livability and sustainability, new tools are being developed and piloted.
Furthermore, there has been an increasing interest among other disciplines and agencies in connecting transportation planning and project outcomes with community issues, with particularly strong interest from public health practitioners. The resulting anticipated growth in demand and use of context tools strongly suggests a continued effort to collect tools, building the database, and continuing to supplying practitioners with ready access to its contents. The database was designed with this inflexibility and easy editing in mind. Consequently, new tools can be added as resources become available for a sustained effort.

The resulting searchable database of tools, accompanying fact sheets, and discussion presented in this report provide a useful resource to planning and project development professionals in the transportation industry as well as other disciplines interested in defining community context. The information gathered from these tools and techniques can be used to develop a project’s purpose and need, select evaluation criteria, identify a range of possible solutions, select a preferred solution, and measure the success of the transportation project. The project also yields insights into how to advance the state of the practice and identify research directions that better incorporate community context considerations into transportation decisionmaking processes.
II. INTRODUCTION

WHAT IS COMMUNITY CONTEXT?

Context is the interrelated condition in which something exists and encompasses everything about the people, place, and circumstances of the place in question, be it a neighborhood, city or region. Community context mirrors the concept of synergy. That is, the result is greater than the sum of the individual parts: physical features like buildings, parks, landmarks, schools, and streets; community members’ interactions, and activity levels; and the natural environment, including air and water quality, forests, plants, and wildlife. These aspects are woven together by a set of needs, values, place characteristics, and quality of life concerns to create a unique community context.

Understanding and defining community context calls upon transportation practitioners to use both quantitative and qualitative methods to identify the tangible and intangible aspects of how communities experience their human and natural environments. Context tends to be misunderstood as it cannot easily be disaggregated into neat packages of quantifiable data or Yes/No formats, but requires qualitative data collection approaches to find out community values, perceptions, interests, and needs.

The Natural Environment

The natural landscape and its component processes are what most often come to mind when discussing natural environmental issues. Consequently, it is perhaps easier to understand contextually how the natural environment might affect the human one. For instance, natural topography, and geography affects settlement patterns that respond to climate, culture, economic activity, connections with other communities, and local building materials. For example, structures and site design that work well in an arid, flat environment would not necessarily work in a mountainous, temperate region. Extreme weather patterns in the summer and winter might also inform the types of transportation options that community members are willing to consider. The complex, interconnectedness of the natural environment, with its mutually dependent food chains, ecosystems, and processes, offers a fitting comparison to the...
Transportation infrastructure is a pivotal aspect of development, and modal choices available to community inhabitants can be inferred from the geography of the built environment. Denser development with sidewalks and narrow streets, for instance, may encourage pedestrian activity and make public transit more viable. Less dense development patterns may allow for greater autonomy and privacy, as well as more living space, but tend to encourage car dependency.

It is important to be aware that contextual issues within a community can manifest themselves in different ways. A heavy population of commuters, for instance, can be an indicator of a lack of available housing within a certain community or a lack of employment opportunities near commuters’ homes. Consistently heavy traffic can also be an indicator of a lack of multimodal transportation options.

The accessibility of a community is a large part of context, as certain aspects of a community can limit or encourage certain demographics. For instance, those without personal vehicles, such as the poor, young, or elderly, may find a community with public transit or more walkable areas to be more inviting than one dependent on the automobile. The accessibility of an area and the demographics of its inhabitants may also further affect the scale and type of development in the human environment.

Community context also informs the activities and recreational spaces available to members. In more densely developed areas or communities where the demand for recreation space is high, public spaces may be utilized for community activity. In communities that are more rural or offer a particularly picturesque landscape, recreational spaces may be secondary to natural spaces.
interconnected activities and contextual relationships of the human environment. In addition, natural environmental features affect how individuals choose to interact with their built environment, including type and quantity of outdoor activities, places to live and vacation, and general qualitative experiences valued through quality-of-life considerations such as peacefulness and tranquility.

**THE HUMAN ENVIRONMENT**

The physical, human environment includes the layout and general design elements of the community, including development patterns, architectural styles and setting, and the streetscape. These spatial aspects inform how one experiences the human environment and how that space might be utilized for various activities, as well as how that space may be used in the future and what type of community members it may attract. For instance, a downtown district with a gridded street pattern, sidewalks, and small city blocks function differently than a suburban area with a hierarchical road network, extensive strip-mall and big-box development. Both urban and suburban starkly contrast with rural settings that are characterized by dispersed development patterns. How these different human environments function informs the identification of transportation problems and; consequently, what type of strategies are most appropriate for solving these problems.

Other aspects of the human environment include housing, education, and business/employment aspects of a community. These are three neighborhood characteristics which are themselves influenced in varying degrees by one another. Age, income, and family demographics, for instance, are major factors in planning the residential areas and housing choices of a neighborhood. Furthermore, the taxable incomes and age of the members of a community may influence the quality and type of education available. Therefore, community context is not merely about understanding and acknowledging the various physical and socio-cultural dimensions of a community but recognizing that transportation is a means to many ends not an end in itself.

The current national focus on livability highlights the critical connections between transportation and other desired societal goals and outcomes, with the Partnership for Sustainable Communities being formed to better recognize the connections between housing, sustainable environment initiatives and transportation infrastructure. Therefore, decisions across agencies could be leveraged for delivering the best return on investment. The Partnership’s work recognizes the value in making sure community context is informing what, how, when, and where money is invested to improve community quality of life across the country.
Quality of Life: Values and Perspectives

The way a community experiences their environment is heavily informed by the values, interests, and needs of the members themselves. The concept of quality of life connects the physical aspects of the human and natural environment to the less tangible characteristics of context which, by and large, are what community members reference when queried about what they value in their communities. For example, one community may speak of their desire to walk or bike safely around their community. This value points to certain physical human and natural environmental aspects that may need to be considered when developing alternatives to meet transportation needs or solve a safety problem. However, it may not be considered a notable priority in another neighborhood that may value the privacy of sparse development patterns which depend primarily on auto travel to access amenities. Again, defining community context requires collecting information on the physical features of the natural and human environments as well as information on how communities value these features.

These human and natural environmental considerations, including quality-of-life perspectives, are not new concepts within transportation. Similar requirements are evidenced in the National Environmental Policy Act (1970) and other associated processes, including Community Impact Assessments (CIAs) and Environmental Justice (EJ) assessments. However, tools and methods that systematically and consistently define community context have not been inventoried as a resource for transportation practitioners.

**OBJECTIVE OF PROJECT**

Currently there is a lack of awareness of available community context tools that transportation environmental professionals may use to define and understand community context. Transportation professionals need tools (i.e., audits, checklists, surveys, questionnaires, assessment techniques, etc.) to help them think holistically, critically, and systematically about community context for different types and scales of transportation projects. The information gathered from these tools and techniques can be used to develop a project’s purpose and need, select evaluation criteria, identify a range of possible solutions, select a preferred solution, and measure the success of the transportation project. Many disciplines (including landscape architects, community planners, public health professionals, urban planners, as well as community groups, organizations, and coalitions) have experimented with tools and techniques that can inform the process of defining community context.

The subsequent chapters of this report document the activities of the research project beginning with a description of how the major tasks of the project were carried out (Chapter III). Chapter IV provides information on the types of tools collected as well as some
insights in current practice, and challenges and opportunities for implementing community context tools. Chapter V describes the organization of the collected tools along with instructions on how practitioners can search for appropriate tools for a given situation. Chapter VI offers some concluding comments and suggests areas for future investigation including future research needs related to developing new and improved tools to define community context.
III. **METHODOLOGY**

This project consisted of four major tasks:

- Solicitation of tools to help define community context
- Collection of the tools submitted into a database
- Review and synthesis of tools by focus group
- Organization of tools by attributes of interest to practitioners and fact sheets presenting tools in an electronic searchable database

**SOLICITATION**

Many disciplines, including the transportation profession, strive to understand community issues and needs as a necessary component of good decisionmaking. As such, this project reached out beyond the transportation community to compile the best practices of other disciplines, including landscape architects, community planners, public health professionals, urban planners, and environmental scientists as well as various community groups, organizations, and coalitions. The purpose of this wide outreach was to learn from other disciplines in order to expand the state of the practice for transportation practitioners.

First, in order to facilitate a consistent understanding of the definition of community context, a project website was developed for potential submitters of context tools. Specifically, the project web site contained the following:

1. A [brief video](#) that introduced the concept of community context and how it relates to transportation decisionmaking. The video encouraged agencies and practitioners to submit their tools and techniques for inclusion in the inventory, and provided a concise and efficient way to convey the intent of the solicitation for tools as well as basic information to anyone interested in the topic. The video was also reposted at TransWild (a Non-Governmental Organization working on issues of road ecology) and the Context Sensitive Solutions Clearinghouse.

2. A Web-based system for submitting a context tool or technique. Submitters were guided to a form with an intuitive combination of checkboxes and text fields that could be filled out electronically. The submission form is provided in Appendix A. The specific questions and checkbox options were designed to solicit the information that was of most interest to the project panel members and to promote the development of a rich synthesis of best practices to inform the organization of the tools as part of the final product. Once completed, the information entered on the form was submitted electronically, along with any supporting materials (documents, images, etc). The form was designed to collect information on the following general aspects of a tool or technique:
   
   a. Substantive elements including: what components the tool or technique gathers information on (community cohesion, demographics, access issues, public health and safety, cultural, multi-modal considerations, aesthetics, economics, land use, social,
natural environment, equity, etc.); the spatial scale it can be used for; the data sources it relies on, any weighting or prioritization built into the tool; and what outputs the tool generates (maps, rankings, etc.)

b. Process elements including: the stage of the decisionmaking process the tool is used in; who uses it; how stakeholders or partners are engaged in the application of the tool; and when it is most effective

c. Institutional elements including: challenges to implementing the tool, how the tool outputs are used to shape decisions, whether or not extensive training is needed to implement the tool, and what project partners are needed to effectively use the tool

d. Additional elements including: how implementation challenges were overcome and benefits to partners and stakeholders

The submission form was beta tested before the official project website launch on the tenth of September, 2010. In order to develop as rich and comprehensive an inventory as possible, a wide net was cast during the solicitation. Emails were sent to a wide range of potential submitters including representatives from State DOTs, Federal agencies, advocacy groups, research institutions and centers, TRB committees, several relevant listservs, and TIGER II grant awardees. There were three additional rounds of mass emails publicizing the solicitation from September 23rd through October 15th. Follow-ups were also conducted through phone or email inquiries. The solicitation was publicized at the Transportation Research Board’s Transportation for Livable Communities Conference in October, 2010. The website was revised on October 29th to close the solicitation and to advise that anyone wishing to submit a context tool should contact the research team.

**Collection of Tools**

The final product consists of 41 tools that were collected through web-based solicitation, a previous project on Context Sensitive Solutions, and from focus group participation described below. Submission forms for the previously collected tools were completed by the research team to augment the tools collected from the solicitation process. The information from the submission forms was transferred to common file formats to support the development of two practitioner-focused products: fact sheets for each tool and a web-based searchable database of tools. All data (checkbox and narrative) from the submission forms were loaded to a spreadsheet file and provided to the panel for preliminary review.

**Review and Synthesis Of Tools**

A focus group was convened to review the results of the context tools inventory and provide feedback on how to best organize the tools in a way that would allow transportation practitioners
to find the most useful tool(s) for a given situation or project. In addition, the research team used the expertise of the focus group participants to evaluate the usefulness and applicability of the tools to transportation planning and project development efforts. The outcome of this task was the selection of attributes to include on the fact sheets and to use as parameters for searching the tool database as well as input on the functionality of the database.

Focus Group Participation

The research team initially identified individuals and/or topical areas that represented the issues of concern for helping to select the appropriate attributes for a searchable database and fact sheet for each tool. The goal was to get approximately 10 to 12 individuals to participate in the focus group web meeting. Contacts were made with prospective participants which led to 11 individuals being available to participate in a web meeting held on March 10, 2011.

Web Meeting

Preceding the web meeting, a package of information was sent electronically to participants, with each participant being assigned three tools to review prior to the web meeting. The web meeting was scheduled to run for 3 hours using interactive web conferencing software (Elluminate Live) to facilitate participatory feedback in a virtual setting.

<table>
<thead>
<tr>
<th>Meeting Agenda</th>
<th>Time</th>
<th>Agenda Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00-1:15</td>
<td>Introductions</td>
<td></td>
</tr>
<tr>
<td>1:15 – 1:30</td>
<td>Project Overview and Purpose of Focus Group Meeting</td>
<td></td>
</tr>
<tr>
<td>1:30 – 2:30</td>
<td>Discussion of Tools: Round Robin Report out on Homework</td>
<td></td>
</tr>
<tr>
<td>2:30 – 2:45</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>2:45 – 3:30</td>
<td>Discussion on Organizing, Presenting and Making Accessible the Tool Inventory</td>
<td></td>
</tr>
<tr>
<td>3:30 – 3:50</td>
<td>Gaps Discussion (Both Process and Content)</td>
<td></td>
</tr>
<tr>
<td>3:50 – 4:00</td>
<td>Next Steps</td>
<td></td>
</tr>
</tbody>
</table>

Follow-up interviews were conducted afterward to collect input from focus group members unable to attend the web meeting. A summary of the focus group web meeting is provided in Appendix B.

Input from the project panel and the focus group was used to refine the database and fact sheet design. This input also led to four tools originally collected not being included in the final database. These tools were not included because they either contained outdated applications or did not produce outputs compatible with the needs of the transportation community of practice. The next chapter provides a summary of the collected tools with Chapter V describing in detail how the tools collected during this investigation are organized in the database and how the online database can be used by practitioners seeking a tool for a particular application.
IV. INVENTORY OF COMMUNITY CONTEXT TOOLS

The objective of this project is to provide an inventory of community context tools to transportation practitioners desiring to understand and incorporate community context variables into planning and project development processes. Community context tools offer an opportunity to collect, organize, and evaluate aspects of community quality of life that can be transferred to plans and projects. To this end, 41 tools (see table below) were collected and organized into a database of resources as a result of this project (see Appendix C for fact sheets on all tools inventoried). Most of the previously collected tools came from the transportation industry, with one focused on public health and equity issues, and thirteen of the 21 tools submitted through the website had a direct link to transportation issues. The tools originated from the following sources:

- Eight of the 21 new submissions came from entities outside the transportation industry, most of which were from public health entities.
- One of the 21 new submissions came from the private sector (ViaCity).

<table>
<thead>
<tr>
<th>Inventoried Community Context Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active Neighborhood Checklist</td>
</tr>
<tr>
<td>ADA Post Construction Checklist</td>
</tr>
<tr>
<td>Air Quality Measurements and Modeling</td>
</tr>
<tr>
<td>Atlas of Rural and Small Town America</td>
</tr>
<tr>
<td>Bicycle Environmental Quality Index (BEQI)</td>
</tr>
<tr>
<td>Blue Water Bridge Aesthetic Design Guide</td>
</tr>
<tr>
<td>Blueprint for Action: Developing a Livable Community for All Ages</td>
</tr>
<tr>
<td>Community Context Audit</td>
</tr>
<tr>
<td>Community Effects Considerations</td>
</tr>
<tr>
<td>FHWA Office of Safety Road Safety Audit</td>
</tr>
<tr>
<td>GIS platform for prioritization of brownfield sites for funding and redevelopment</td>
</tr>
<tr>
<td>Great Communities Collaborative Toolkit</td>
</tr>
<tr>
<td>Housing + Transportation Affordability Index</td>
</tr>
<tr>
<td>Integrated Transportation Information System</td>
</tr>
<tr>
<td>Irvine Minnesota Inventory</td>
</tr>
<tr>
<td>Making Your Community Walkable and Bikeable: A Guidebook for Change</td>
</tr>
<tr>
<td>Measuring Urban Design Qualities: An Illustrated Field Manual</td>
</tr>
<tr>
<td>Minnesota DOT’s Visual Quality Management</td>
</tr>
<tr>
<td>Multi-hazard Risk Tool For Buncombe County</td>
</tr>
<tr>
<td>Neighborhood Cohesion Calculator</td>
</tr>
<tr>
<td>Neighborhood Completeness Indicator</td>
</tr>
<tr>
<td>Parking Cost Calculator</td>
</tr>
<tr>
<td>Pedestrian Environmental Quality Index (PEQI)</td>
</tr>
<tr>
<td>PolicyMap</td>
</tr>
<tr>
<td>Project for Public Spaces (PPS) Street Audit</td>
</tr>
<tr>
<td>Protocol for Assessing Community Excellence in Environmental Health</td>
</tr>
<tr>
<td>Public Health Workbook to Define, Locate and Reach Special, Vulnerable and At-Risk Populations in an Emergency</td>
</tr>
</tbody>
</table>
Looking over the compiled tools, it is notable that most are focused on planning and the early phases of project development (including Purpose and Need as well as the Scoping Process). This demonstrates the pragmatic recognition that community context must be incorporated into the earliest phases of a project, and are critical components of any long-range planning efforts. Effectively incorporating community context requires the understanding of community conditions, needs, and values so that these elements can shape overall policies, visions, and goals across the life of the plan or project.

This is in line with the Context Sensitive Solutions (CSS) paradigm of decisionmaking, which emphasizes the importance of understanding context as part of the project scoping and purpose and need development. Initially, CSS was focused on roadway project design, but experience has demonstrated that effectively applying the principles of CSS to respond to community context requires the application of those principles in the early planning phases. Provisions in SAFETEA-LU offered an important push in this direction and transportation practitioners responded with CSS principle-driven approaches to long-range transportation planning. A few early examples were highlighted in the FHWA-sponsored project *Integration of Context Sensitive Solutions in the Transportation Planning Process*.

### Model Visioning Process: SHRP C08

Visioning exercises provide the most efficacious opportunity to incorporate community quality of life considerations into scenario planning efforts that inform transportation solutions complimentary to desired patterns of future development. The SHRP 2 C08 project provides a model framework for community visioning. Available at:

[http://shrp2visionguide.camsys.com](http://shrp2visionguide.camsys.com)
This evolution reflects the recognition that the latter phases of project development are usually too late to incorporate community context considerations into the project design without being caught in a costly and frustrating re-do loop. In contrast, investing time and effort in understanding community context in the planning phases is an effective way to incorporate community considerations into the project from the start. For long-range planning, expanding analysis and outreach to include community context factors will generate transportation policy and priorities for a state or region that closer aligns projects with community needs and values.

The tools collected under this project and made available to practitioners via a searchable, online database (see Chapter V) cover a broad range of topics and are applicable for a range of applications. The following sections offer an overview and some analysis of the tool inventory.

**Characteristics of Community Context**

Interestingly, the most common topic addressed is Livability/Quality of Life (68 percent of tools), a topic that includes some combination of aesthetics, public health, crime/community safety, housing, economic conditions, bicycle issues, pedestrian issues, traffic safety, accessibility, and mobility. The majority of tools address multiple considerations under this broader topic. The frequent occurrence of this topic indicates not only its overarching definition, but also the growing interest in incorporating livability factors into transportation.

The second most common topics addressed by tools are Land Use and Public Health (63 percent each), highlighting the relationship between health, the built environment, and transportation. These topics are followed by Mobility and Accessibility (56 percent and 53 percent, respectively), and then by Sense of Community and Pedestrian Issues (including pedestrian accessibility, infrastructure quality, and safety) at just over 40 percent each. In contrast, Traffic and Congestion are only represented in 7 percent of tools collected, while this issue is a primary focus of traditional traffic planning and engineering. The figure on the following page displays the community context issues and topics addressed by the tools.

*Key Community Context Issues/Topics Addressed by Collected Tools (multiple topics accepted, N = 49)*

<table>
<thead>
<tr>
<th>Topic</th>
<th>Percent of Tools (Number)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>53.7% (22)</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>26.8% (11)</td>
</tr>
<tr>
<td>Agricultural</td>
<td>12.2% (5)</td>
</tr>
<tr>
<td>Air quality</td>
<td>14.6% (6)</td>
</tr>
<tr>
<td>Bicycle issues</td>
<td>26.8% (11)</td>
</tr>
<tr>
<td>Community cohesion</td>
<td>31.7% (13)</td>
</tr>
<tr>
<td>Sense of community</td>
<td>41.5% (17)</td>
</tr>
<tr>
<td>Crime/community safety</td>
<td>31.7% (13)</td>
</tr>
<tr>
<td>Cultural resources</td>
<td>31.7% (13)</td>
</tr>
<tr>
<td>Economy</td>
<td>26.8% (11)</td>
</tr>
</tbody>
</table>
The emphasis of topics among the tools suggest that tools are frequently developed and implemented to incorporate issues that are important to communities, but have been underrepresented in transportation practice. Overall, the push to develop data-driven approaches to these issues reflects the challenge of integrating community issues, especially qualitatively evaluated elements, into professional practice and institutional processes that are traditionally quantitative and technical. This challenge may lie at the very heart of the recent growth and interest in community context tools.

As an illustration of this, the collection of tools contains a substantial number of pedestrian and/or bicycle facility audit tools. These tools seek to collect and compile information on a mode and user group traditionally addressed through only anecdotal or public-comment driven inputs. These audit tools offer a more systematic approach that can be effectively incorporated into planning and project development, giving these traditionally underserved users fuller consideration in a process that historically was driven...
by motor vehicle capacity and demand data. The recent explosion in research on active transportation and bicycle/pedestrian demand and safety is providing important information for practitioners as it is incorporated into the content, methodologies, and interpretation of bicycle- and pedestrian-related tools.

Similarly, the rising interest in the public health implications of transportation policies, projects and programs has buoyed the development of new tools to evaluate transportation projects and plans from a public health perspective. Over 60 percent of the collected tools address public health topics including air quality, noise impacts, bikability and walkability. The collected tools offer practitioners a range of tools to select from to incorporate public health considerations into transportation decisionmaking.

**Data Emphasis, Geographic and Temporal Scales**

Most of the inventoried tools use some combination of qualitative and quantitative data. Quantitative data sources are primarily demographic and land-use data; transportation and mobility data are also commonly used. Housing data and crash statistics are also mentioned as quantitative data sources. Qualitative data includes perceptions of safety, aesthetic quality, accessibility, community cohesion, and cultural experiences. Tools in the inventory use qualitative and quantitative data that are either drawn from existing datasets or make use of original data collected as part of using the tool.

Most of the tools in the inventory have been applied at smaller geographic scales (e.g. city and neighborhood), although they generally are also applicable to corridors or for project-specific analyses. Many of the street-audit tools are designed for evaluating individual street segments. Effective use of these tools will likely require a systematic approach using the audit tool repeatedly on a collection of segments to capture representative information for planning and project development purposes.

Not unexpectedly, most tools focus on current conditions. Only a few, unique tools have forecasting capability.

**Decision Points: When to Use a Tool**

As mentioned above, most of the tools capture current conditions, so it is not surprising that most tools are effectively applied early in the process to understanding current context and identify existing problems. This emphasizes the value of the inventory in supporting early integration of community context issues in the transportation decisionmaking process. These same tools can also provide effective approaches to evaluating improvement over time with repeated use. In further support of early consideration of community context, many tools are effectively used in visioning. A number of inventoried tools are also appropriate for evaluating options and outcomes. Several tools are also useful for the step of choosing a solution. A few tools are designed for developing evaluation criteria or for developing an outreach strategy.
Lessons Learned: Overcoming Challenges to Implementation

Important considerations in the selection, adoption, and implementation of a tool are related to implementation. Therefore, the solicitation for community context tools asked for information on challenges to implementation as well as how these challenges were overcome. The collected responses offer some important insights into current practice. It is important to note that tools submitted with complete responses to questions on implementation represent a subset of all tools in the database (17, or nearly 35 percent). Still, a simple analysis of responses reveals important patterns and suggestions for improvement of the practice as well as gaps that can be addressed by research.

Those submitting tools were asked to identify the most time-consuming (and therefore resource-intensive) elements of developing and implementing the tool. Their responses are provided in the figure on the following page. Unsurprisingly, the leading response (76 percent, 13 tools) was developing the tool itself, closely followed by data collection (58 percent). Interestingly, many tools also required effort to revise processes and policies to implement the tool (47 percent), indicating that organizational change is frequently required to integrate a community context tool into the transportation decisionmaking process. In most cases some combination of these three elements—data collection, tool development, and process/policy change—were cited together as requiring an investment in time and effort.

*Time-consuming activities during tool development and implementation (multiple responses accepted; N = 17)*
Practitioners were also asked about the challenges to implementing the tool and how those challenges were overcome. The responses to this question are presented in the figure on the following page. In line with the investment required in process/policy change noted above, respondents most frequently cited the lack of a mechanism to incorporate the tool into the transportation decisionmaking process as an implementation challenge (59 percent, or 10). This highlights the importance of flexibility and collaboration; agencies and project managers need to be open to the prospect of new methods and approaches to planning and project development. Further, practitioners must thoughtfully select a community context tool (or tools) and apply it at the point in the process where it can be most effective. In short, in order to expand the use of community context tools, both practitioners and agency managers need ready information on tool characteristics and effective implementation strategies. The information provided in the database of tools developed for this project is an important initial step in this direction.

Other important challenges reported include funding, data availability, staff capacity, and community trust and support. These responses confirm comments from practitioners and transportation agency managers. It is, however, noteworthy that several of these frequent challenges can be addressed within transportation agencies, either by re-aligning policies, processes, funding, and/or priorities toward greater emphasis on community-related issues and implementing community context tools to do so.

Greatest challenges to implementing the tool  
(multiple responses accepted; N = 17)

Respondents were asked how they overcame the challenges to implementation. The responses are displayed in the figure on the following page. The most frequent approach to overcoming implementation challenges was to conduct a pilot application of the tool (71 percent 12). Pilot
applications can demonstrate the effectiveness of the tool without requiring extensive investment or long-term commitment to an unproven or unfamiliar methodology. Further, piloting tools can be supported through new or alternative funding streams such as grants from state or federal agencies, educational institutions, or private foundations; creative approaches to piloting community context tools are strongly suggested as a way to improve overall practice.

Respondents also indicated challenges were overcome through building community support and interest (59 percent, 10), and, in parallel with the most common challenge noted above, revising the decisionmaking process to incorporate the tool (41 percent, 7). It is worth noting that these most common ways to overcome implementation challenges are within the purview of transportation agencies: piloting tools, working with communities and partners to build support for a tool, and updating the transportation decisionmaking process to incorporate a tool. The experience conveyed in the responses indicates that common challenges can and are being overcome and offers guidance to practitioners and agencies considering wider adoption of community context tools.

Methods for resolving challenges
(multiple responses accepted; N = 17)
The next Chapter provides the practitioners with information on how to select the right tool/s for a given situation. The searchable database is presented including how to use it and what attributes are contained within the search fields.
V. SELECTING COMMUNITY CONTEXT TOOLS

The appropriate community context tools for any given situation, out of the 41 included here, will vary depending on project purpose, characteristics, and needs. To assist practitioners in selecting the “right” tool for a project, the context tools database has been developed as a supplement to the report. This searchable database allows users to search for tools based on a variety of project attributes, as determined through extensive input from researchers and practitioners in the transportation field. Users are able to review fact sheets about tools that meet their search criteria. Through this online resource, users are able to conveniently review the tools collected through the NCHRP 25-25 Task 69 project and select the approaches that will best serve a particular transportation project planning purpose.

ORGANIZATION OF CONTEXT TOOLS DATABASE

The online database was developed to reflect organization and search functions that would be most useful to practitioners in conducting their work. The organization of tools and the search approach was based not only on detailed research and review of the collected tools, but also was refined through the focus group process described in Chapter III. Based on input from the focus group, project panel, and research team, the following six key attributes were selected as categories to organize tools in the database:

- Project or Study Type
- Project Phase
- Geographic Scale
- Purpose of Tool
- Community Context Issue
- Tool Users

The following sections provide information on the six categories and their relevance in searching for context tools.

Project or Study Type

Different types of projects require different tools. Projects and studies may vary by the types of issues addressed by the tool (for example bicycle or pedestrian planning) and the scope of analysis (a long-range transportation plan compared with an environmental study). Project/study types represented in the tool inventory include:

<table>
<thead>
<tr>
<th>Bicycle/pedestrian</th>
<th>Transit</th>
<th>Complete Streets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe Routes to School</td>
<td>Long-range transportation plans</td>
<td>Comprehensive plans</td>
</tr>
<tr>
<td>Master/small area plans</td>
<td>Redevelopment plans</td>
<td>Corridor studies</td>
</tr>
<tr>
<td>Environmental studies</td>
<td>Community Impact Assessments</td>
<td></td>
</tr>
</tbody>
</table>
Geographic Scale

Planners need to be able to determine the tools that will work for analysis at the geographic scale of their plan or project. Geographic scales in the tool inventory ranged from project/study area or neighborhood level up to State level, although as indicated previously, most tools inventoried are used at smaller geographic scales. Options for geographic scale in the inventory include:

<table>
<thead>
<tr>
<th>Project or study area</th>
<th>Neighborhood</th>
<th>Local/municipal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corridor</td>
<td>Regional</td>
<td>State</td>
</tr>
<tr>
<td>Watershed</td>
<td>Other/not relevant</td>
<td></td>
</tr>
</tbody>
</table>

Project Phase

Available data and desired outputs of the tool may differ greatly in various stages of a project. For example, tools that are useful for long-range planning may not be applicable when a project is being developed. Project phases identified ranged from local transportation planning and visioning to construction, operations, and maintenance. For a tool to be useful, it needs to provide outputs that support decisionmaking at any of these phases. The following project phases are included in the tool inventory:

<table>
<thead>
<tr>
<th>Local transportation planning</th>
<th>Visioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-range transportation planning</td>
<td>Final design</td>
</tr>
<tr>
<td>Project development and environmental review</td>
<td>Right of way</td>
</tr>
<tr>
<td>Programming/feasibility studies</td>
<td>Construction</td>
</tr>
</tbody>
</table>

Purpose of Tool

Equally important to the project phase in determining which tool can be used is the purpose of the tool. One tool may facilitate brainstorming and generating options, while another tool may help in comparing options and making decisions. Tools may be designed for various purposes, including the following purposes represented in the tool inventory:

<table>
<thead>
<tr>
<th>Build consensus/engage stakeholders</th>
<th>Collaborate</th>
<th>Compare options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create or set policies</td>
<td>Decisionmaking</td>
<td>Establish priorities</td>
</tr>
<tr>
<td>Generate scenarios or alternatives</td>
<td>Evaluation over time</td>
<td>Describe existing conditions</td>
</tr>
</tbody>
</table>

As previously stated, a useful tool needs to provide outputs that support the particular purpose a practitioner is trying to achieve at a given point in the project or planning cycle.
Community Context Issues

Tools may address a variety of community context issues or just a select few. The database allows the user to search for tools that address the context issues applicable for a plan or project effort. A wide range of community context issues is inventoried and searchable in the database, as described in the table below. Multiple issues may be involved for a particular plan or project.

<table>
<thead>
<tr>
<th>Accessibility</th>
<th>Aesthetics</th>
<th>Agricultural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air quality</td>
<td>Bicycle (including safety)</td>
<td>Community cohesion</td>
</tr>
<tr>
<td>Community character</td>
<td>Crime/community safety</td>
<td>Cultural resources</td>
</tr>
<tr>
<td>Economy</td>
<td>Education</td>
<td>Equity/environmental justice</td>
</tr>
<tr>
<td>Emergency management/response</td>
<td>Employment</td>
<td>Housing</td>
</tr>
<tr>
<td>Land use</td>
<td>Livability/quality of life</td>
<td>Mobility (any/all modes)</td>
</tr>
<tr>
<td>Natural resources</td>
<td>Pedestrian (including safety)</td>
<td>Public health</td>
</tr>
<tr>
<td>Recreation</td>
<td>Relocations/displacements</td>
<td>Special population groups</td>
</tr>
<tr>
<td>Traffic/congestion</td>
<td>Transit facilities/services</td>
<td>Vehicular safety</td>
</tr>
<tr>
<td>Water quality</td>
<td>Noise</td>
<td></td>
</tr>
</tbody>
</table>

Tool Users

Certain tools may be desired if a particular specialist, discipline, or type of analysis is envisioned. For example, if GIS staff is available and there is a desire for visual results, it may be important to select “GIS analyst” under the Tool User category. Context tools cover a broad range of issues and a similarly wide range of potential tool users, as described in the following inventory options:

<table>
<thead>
<tr>
<th>Community planner</th>
<th>Conservation planner</th>
<th>Economist/fiscal analyst</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental scientist</td>
<td>Environmental planner</td>
<td>Economic development planner</td>
</tr>
<tr>
<td>GIS analyst</td>
<td>Historian/archaeologist</td>
<td>Landscape architect</td>
</tr>
<tr>
<td>NEPA project manager</td>
<td>Policy maker</td>
<td>Public involvement specialist</td>
</tr>
<tr>
<td>Public health professional</td>
<td>Real estate appraiser/housing analyst</td>
<td>Right of way agent</td>
</tr>
<tr>
<td>Roadway designer/engineer</td>
<td>Stakeholders/community members</td>
<td>Social scientist</td>
</tr>
<tr>
<td>Traffic operations engineer</td>
<td>Transportation planner</td>
<td>Urban designer/architect</td>
</tr>
</tbody>
</table>
USING THE DATABASE IN “REAL-WORLD” SCENARIOS

This section provides information regarding how to utilize the capabilities of the searchable database in support of transportation decisionmaking. Instructions for accessing the database and navigating its functions are explained in the context of the “real-world” scenario of a community planner completing an environmental study for a project study area.

Database Access and Design

The community context tools database can be accessed online at the following domain: http://www.cte.ncsu.edu/CommunityContext/tools-search.asp. All identified tools have been compiled within this database and are categorized for convenient searching based on the six key attribute categories previously described.

It is important for practitioners to consider the decisions that need to be made at each step of the process as well as the information required to make these decisions. Tools should be selected that provide the necessary information for the right phase and step of the process. The context tools database itself is flexible and designed to locate the best tools based on the information provided in a specified search.

Searching for Tools by Key Attributes

The six key attribute categories appear along the left side of the user interface with a variety of options beneath each heading to describe potential project attributes.

To begin the tool selection process, users can choose one or more attributes from these categories based on the unique characteristics of the plan or project for which the tool will be used. The main categories are organized to guide the user through a logical flow of entering attribute information unique to their plan or project; however, a selection is not required in one category to make a selection in a subsequent category.

Multiple selections are allowed in any or all categories and users are provided with clear instructions for how to select multiple options and how to reset search attributes as needed.

Shown to the right is an image of what the final selections to be submitted by a community planner tasked with completing an environmental document for a project area would look like. The individual fields are explained in detail in the following pages.
Selecting Project or Study Type

Practitioners may first select an option to indicate the type of project or study for which the tool is needed.

In this scenario the community planner would scroll through the “Project or Study Type” options and select “Environmental study (CE, EA, EIS),” as shown in the image to the right.

Selecting Project Phase

The database also allows users to indicate the phase of the project for which the tool will be applied. The options in this category are grouped to indicate project phase (i.e. Long-Range transportation planning, Programming, Corridor Planning, or Environmental Review/NEPA Merged with Permitting).

In this scenario, the planner selects “Project development and environmental review” as the Project Phase.

Certain tools may be more suited for another phase such as long-range planning analyses, while different tools may be needed during project development and environmental review. Organizing the database to reflect this importance ensures that users will be able to select tools that are appropriate for specific phases in the transportation process.

Selecting Geographic Scale

Practitioners using the database may also refine their search based on the geographic scale of their project. This provides a method of identifying tools that will be appropriate for the unit of analysis that must be conducted.

In this scenario, the planner selects “Project or study area” to indicate that the environmental review will be conducted for the area surrounding a specific project.
Selecting Purpose of Tool

The database structure allows practitioners to search for tools based on their purpose, which is perhaps the most fundamental element in tool selection. Practitioners must know the decision they are trying to make and the information required in order to select a tool that can inform that decision. Generating information on existing conditions may be relevant in the early phases of a project, but different tool functionality and outputs may be needed for comparing or selecting between project alternatives.

The practitioner completing an environmental study might select “Establish priorities” and “Describe existing conditions,” suggesting that the tool will be used to establish the purpose, need, and goals of a project. This image also demonstrates the capability to select more than one attribute under the same category, which can be accomplished by holding the “Ctrl” (PC) or “Command” (Mac) key while making multiple selections.

Again, as with Project Phase, this is particularly important to support collaborative decisionmaking. Practitioners need to know the key decision they are trying to make and the information needed in order to select a tool that can inform that decision point. The organization of the Context Tools Database in this manner thus assists practitioners in selecting tools that are appropriate for specific steps in each phase of the process.

Selecting Community Context Issue(s)

Database users may also search for tools according to the community context issue(s) being analyzed. As with all categories, users may easily select multiple community context issues by following the instructions listed in the previous section.

In this scenario, the planner is primarily interested in equity and environmental justice issues, as indicated in the image above.

Selecting Tool Users

Finally, practitioners may refine their search based on the discipline of those who will be using the tool. This function allows database users to narrow their search to reflect the skillsets and interests of ultimate tool users.

In this scenario, the database user will also be the ultimate tool user and, therefore, selects “Community planner,” as shown in the image above.
Obtaining Search Results

When the selected attributes best match the specific project circumstances, users click a “Submit” button and a list of Context Tools fitting the specified characteristics appears to the right of the interface. The search returns only those tools that match all of the selected criteria, thus presenting a refined set of tools.

After clicking “Submit,” the community planner in this scenario is led to a tool (circled in yellow in the image to the right) that matches all specified search criteria. The name of each tool in the resulting list is hyperlinked to a PDF fact sheet providing more detailed tool information, as discussed in the following section.

FACT SHEETS: REVIEWING AND SELECTING TOOLS

Fact sheets have been developed to summarize information regarding each context tool in the database. Each fact sheet offers information on how to access the tool, a brief tool overview, and a list of all applicable attributes in the six searchable categories. Additionally, information is provided on output types, data requirements and costs. These non-searchable attributes may help the user in making the final section of the most appropriate context tool for their purposes.

Users can view a detailed PDF fact sheet about each tool in the search results list to compare and select between tools. Additionally, the fact sheets are presented in Appendix C of this report.

In this example, the practitioner clicks on the “Protocol for Assessing Community Excellence in Environmental Health” tool and views the following fact sheet:
Descriptions of the non-searchable attributes are offered below; these are also included in a compiled matrix of all tools and their searchable and non-searchable attributes presented in Appendix D.

**Tool Outputs**

Different projects may require different types of end products. The tool’s output types may therefore influence the applicability of a tool to a given project. Output types in the inventory include the following options:

- Maps/GIS
- Graphics/charts
- Scores/indices
- Strategic goals/strategies
- Evaluation criteria/ranked priorities
- Other (with detailed description)

**Data Requirements**

The usefulness of a tool for a given project may also depend on the data requirements involved in using it. Data requirements are categorized in the inventory as follows:

- **Low**: Tool can be used with readily available data; tool outputs provided and ready for use in project development; or data are readily gathered by non-technical staff or stakeholders
- **Medium**: Tool requires compiling measures from multiple sources; some non-technical field survey or outreach work; or specialized software and some technical skills
- **High**: Tool requires specialized skills, extensive surveys, focus group verification, monitoring, or field studies

**Costs**

Whether there are costs associated with using a tool is identified in the fact sheet as this may significantly influence tool selection. The fact sheet identifies whether the tool itself or the associated data are free to use or if there is a purchase/charge for use of either the tool or the data. These are broken down into the cost of the tool itself and the cost of the data required to use it.

By providing this detailed information on both searchable and non-searchable attributes in a concise format, the fact sheets play an important role in helping practitioners to make efficient and effective tool decisions using the context tools database. Most fact sheets also include links to the tools themselves.

**Benefits of the Database in Facilitating Decisionmaking**

Through these search functions, the context tools database helps practitioners to more effectively select the best tool for their specific circumstances. The database provides a way to navigate the
wide range of tools collected over the course of the NCHRP 25-25 Task 69 project, allowing users to review available approaches with a particular purpose in mind. The information collected for each tool is presented in a concise and straightforward manner, contributing to the usability of the database in day-to-day project planning.

While it is not part of the current research task to provide long-term maintenance for the context tools database, it is envisioned that the database would continue to reside at the project website hosted by the Center for Transportation and the Environment. An update process for the database is not currently defined, but it may be updated as new tools are brought to the attention of staff supporting the site.
VI. CONCLUSIONS

The goal of this project is to provide transportation practitioners with an inventory of tools that can help them better define community context as part of planning and project development activities. As a short turn-around project, the effort was sharply focused on delivering a product that met current practitioner needs rather than conducting a wide-ranging literature review or detailed analysis. The resulting searchable database of tools and accompanying fact sheets as well as the discussion provided in this report, provide a useful resource to planning and project development professionals in the transportation industry as well as other disciplines interested in defining community context. The project also yields insights into how to advance the state of the practice and identify research directions to better incorporate community context considerations into transportation decisionmaking processes.

SUPPLEMENTING AND MAINTAINING THE DATABASE

Although the inventory collected during this project is relatively small, it is likely that interest in developing, improving, and using community context tools will increase. With the emerging national policy focus on livability and sustainability, new tools are being developed and piloted by transportation practitioners. Furthermore, there has been an increase in interest among other disciplines and agencies seeking to connect transportation planning and project outcomes with community issues, with particularly strong interest from public health practitioners. The resulting anticipated growth in demand for and use of context tools strongly encourages a continuing effort to collect tools, building the database supplying practitioners with ready access to its contents. The database was designed with flexibility and easy editing in mind. Consequently, new tools can be added as resources become available for a sustained effort.

CONTENT GAPS

Many of the tools collected address numerous quality-of-life considerations. For example most tools that addressed the built environment also included aspects of mobility, safety, and accessibility. Also, the emerging focus on public health produced several tools reflecting this aspect of community quality of life. However, not many tools directly included information on economic or educational conditions. Given the current emphasis on linking state or federal funds to job growth and economic development, this is an area that needs additional attention and warrants further review by both practitioners and researchers.

Another area of interest is collecting or creating tools that can translate intangible quality of life factors into quantifiable measures. New research in social capital, happiness measurements, and other psychological constructs would benefit the transportation community when trying to establish a baseline of affected community environment and how this might change from different transportation strategies or solutions. While this is a challenging topic due to the lack of definitive empirical evidence linking transportation actions to these community impacts, there is a growing body of research in this area.
PROCESS GAPS

Most of the tools collected focus on current conditions. This leads to the conclusion that the outputs for these tools are best suited for vision-and-goals identification as well as needs assessment during the long-range planning process. As part of a corridor planning process, the tools are most applicable for problem definition. For the environmental review process, the tools are best suited for the scoping process, and development of the Purpose and Need Statement. For tools to be fully integrated into decisionmaking, their outputs need to directly connect with establishing evaluation criteria and/or performance measures. This is an area that needs more attention, particularly for creating new tools. Another challenge is developing tools that create outputs in units that translate into different decisionmaking frameworks. Often practitioners must respond to legal requirements that dictate specific measurement units which may not correspond to context tool outputs.

Other process concerns relate to how easy the tools are to use. For example some tools require expertise in complex data management systems. Some transportation planning agencies or organizations do not have this expertise, therefore prohibiting their usage of such tools. This is of concern when considering collecting and creating new tools.

A closely related issue of concern is making sure that individuals with the right skill sets are available to use the tools. For example, working with communities requires the use of “soft skills.” These skill sets rely not on technical knowledge, but on skills such as effectively listening to stakeholder concerns about intangible aspects of the community and incorporating those concerns into plans and project outcomes in meaningful ways, or perhaps how to develop a strategy to bring diverse partners into a consensus-building process. For agencies that recognize the need to develop or strengthen staff skills in these areas, community context tools can provide frameworks to guide improvement. Several tools in the database are largely reliant on the use of soft skills to effectively use them. Further work to build the catalog of soft skill-driven tools could help agencies identify more ways to build staff capacity.

A commonly cited challenge to adopting community context tools is a lack of data. While a common complaint among researchers, the lack of investment in collecting and maintaining high-quality data has real-world implications: It compromises the work of practitioners and makes it difficult to be certain that community issues are meaningfully and consistently considered in transportation plans and projects without launching extensive outreach campaigns. The tool inventory collected by this project can address this issue, albeit somewhat indirectly, by showing a wide range of data that is useful for transportation decisionmaking. The inventory also provides examples of partnerships with organizations and agencies that may have common interests and could become partners not only in a specific transportation planning or project effort, but in sustained programs to collect and maintain community data.

MOVING FORWARD

It is critical to point out that no one tool can be created to serve all the needs of all transportation professionals across all modes and functional areas of decisionmaking from planning through to operations and maintenance. The best that can be achieved is a resource that provides a range of tools that can be selected to meet unique settings for plan or project circumstances such that the
results can be utilized and understood by professionals and their stakeholders. This project provides a new and unique resource for practitioners, allowing them to query a database of tools by key attributes to find a tool that can help them understand community context and, consequently, improve the decisionmaking process for plans and projects. The research team is confident that this project will inform future efforts to expand this resource as well as stimulate research needs to move the practice of defining community context to the next level.
APPENDIX A. SUBMISSION FORM
Part 1. Background

Name of Tool: __________________________________________

Author/Developer: ________________________________________

Year Developed: __________________________________________

Tool Website (if applicable): ________________________________

Agencies/Organizations Using Tool: __________________________

Contact for this Submission (name and contact information):

______________________________________________________

1.a. List any specific applications, processes, or projects that have used this tool.

______________________________________________________

1.b. Provide a brief abstract describing the tool.

______________________________________________________

Part 2. Description

2.a. What characteristics of community context does this tool evaluate? (check all that apply)

☐ Natural environment and resources  ☐ Economy  ☐ Housing

☐ Education  ☐ Public health  ☐ Socio-cultural

☐ Built environment and land use  ☐ Mobility (any/all modes)  ☐ Accessibility

☐ Safety

Other: ____________________________________________________
2.b. What **quantitative** data are used? Please provide a brief note on type/source/method of collecting data. For example: Demographic US Census; Mobility modal split from regional travel model; Wetlands state GIS maps.

<table>
<thead>
<tr>
<th>Data Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic</td>
<td></td>
</tr>
<tr>
<td>Land use</td>
<td></td>
</tr>
<tr>
<td>Health and health care</td>
<td></td>
</tr>
<tr>
<td>Schools incl. Safe Routes to School</td>
<td></td>
</tr>
<tr>
<td>Crime</td>
<td></td>
</tr>
<tr>
<td>Economy and employment</td>
<td></td>
</tr>
<tr>
<td>Housing</td>
<td></td>
</tr>
<tr>
<td>Crashes and road safety</td>
<td></td>
</tr>
<tr>
<td>Mobility (any/all modes)</td>
<td></td>
</tr>
<tr>
<td>Water quality</td>
<td></td>
</tr>
<tr>
<td>Air quality</td>
<td></td>
</tr>
<tr>
<td>Habitat suitability and fragmentation</td>
<td></td>
</tr>
<tr>
<td>Wetlands</td>
<td></td>
</tr>
<tr>
<td>Viewsheds</td>
<td></td>
</tr>
</tbody>
</table>

Other or N/A: ________________________________________________________________

2.c. What **qualitative** data are used? Please provide a brief note on type/source/method of collecting data. For example: Sense of place importance of community gathering places from public mtgs; Safety and crime neighborhood perceptions from online survey; Economic conditions and outlook future business plans from Chamber of Commerce focus group.

<table>
<thead>
<tr>
<th>Data Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community cohesion</td>
<td></td>
</tr>
<tr>
<td>Community livability</td>
<td></td>
</tr>
<tr>
<td>Social networks</td>
<td></td>
</tr>
<tr>
<td>Sense of place</td>
<td></td>
</tr>
<tr>
<td>Cultural experiences</td>
<td></td>
</tr>
<tr>
<td>Economic conditions and outlook</td>
<td></td>
</tr>
<tr>
<td>Environmental quality</td>
<td></td>
</tr>
<tr>
<td>Safety and crime</td>
<td></td>
</tr>
</tbody>
</table>

Other or N/A: ________________________________________________________________

2.d. At what geographic scale is this tool effective? (check all that apply)

<table>
<thead>
<tr>
<th>Geographic Scale</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional</td>
<td></td>
</tr>
<tr>
<td>City/Town</td>
<td></td>
</tr>
<tr>
<td>Neighborhood or Downtown</td>
<td></td>
</tr>
<tr>
<td>Corridor</td>
<td></td>
</tr>
<tr>
<td>Project level</td>
<td></td>
</tr>
<tr>
<td>Watershed</td>
<td></td>
</tr>
</tbody>
</table>

Other: ________________________________________________________________

2.e. What time scale does this tool address? (check all that apply)

<table>
<thead>
<tr>
<th>Time Scale</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current conditions (e.g., benchmark tool)</td>
<td></td>
</tr>
<tr>
<td>Near term (e.g., 1 to 5 years)</td>
<td></td>
</tr>
<tr>
<td>Long term (e.g., 5+ years)</td>
<td></td>
</tr>
</tbody>
</table>

Other: ________________________________________________________________

2.f. What outputs does the tool produce? (check all that apply)

<table>
<thead>
<tr>
<th>Output</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maps/GIS</td>
<td></td>
</tr>
<tr>
<td>Graphics, charts, etc.</td>
<td></td>
</tr>
<tr>
<td>Scores or indices</td>
<td></td>
</tr>
<tr>
<td>Strategic goals or targets</td>
<td></td>
</tr>
<tr>
<td>Ranked priorities</td>
<td></td>
</tr>
</tbody>
</table>

Other: ________________________________________________________________
Part 3. Process

3.a. Indicate the lead organization using the tool:

☐ Federal agency or organization  Specify: __________________________________________

☐ State agency or organization  Specify: __________________________________________

☐ Regional agency or organization  Specify: __________________________________________

☐ Local agency or organization  Specify: __________________________________________

☐ Community group  Specify: __________________________________________

☐ Educational institution  Specify: __________________________________________

☐ Private entity  Specify: __________________________________________

Other: __________________________________________

3.b. List any partner organizations or agencies involved. What roles did they play? (e.g., Data collection or data sharing, joint analysis, communication of tool outputs, etc.)


3.c. Who uses the tool? (check all disciplines that apply)

☐ Transportation engineer  ☐ Traffic operations engineer  ☐ Transportation planner

☐ Landscape architect  ☐ Urban designer or architect  ☐ Community planner (i.e. land use planner)

☐ Urban forester  ☐ Conservation planner  ☐ Environmental scientist

☐ Public health professional  ☐ Social scientist  ☐ Historian or archeologist

☐ Project manager  ☐ Public involvement specialist  ☐ Stakeholders or community members

☐ Economist or fiscal analyst  ☐ Real estate appraiser or housing market analyst

Other: __________________________________________

3.d. Who is the audience for the tool outputs? (check all that apply)

☐ Elected officials  ☐ Community leadership (non-elected)  ☐ Community members or neighborhood groups

☐ Grant agencies  ☐ Federal agency or organization  ☐ State agency or organization

☐ Regional agency or organization  ☐ Local agency or organization  ☐ Community planners (incl. land use)

☐ Transportation planners  ☐ Transportation facility designers  ☐ Transportation agency managers or project managers

Other: __________________________________________

3.e. How were outputs from the tool communicated? (check all that apply)

☐ Public meetings  ☐ Charrettes  ☐ Advisory or focus group meetings

☐ Social media techniques  ☐ Meetings between agencies/organizations  ☐ Meetings within the lead agency

Other: __________________________________________
4.a. How long did it take to adopt and implement the tool in your organization?

4.b. List the most time consuming activities during tool development and implementation.
- Staff or user training
- Discussions with management to obtain buy in
- Data collection
- Process improvement and policy changes
- Tool development
- Other:

4.c. What were the greatest challenges to implementing the tool? (check all that apply)
- Funding
- Community trust and support
- Management interest and support
- Staff capability
- Specific discipline expertise not held in lead agency
- No formal mechanism for including the tool in an established decision-making process
- Data availability
- Data validity (measures the elements of interest)
- Community trust and support
- Specific discipline expertise not held in lead agency
- Process improvement and policy changes
- Other:

4.d. How were these challenges resolved? (check all that apply)
- Secured new or expanded funding
- Staff training in technical skills
- Staff training in cultural competencies
- Partnered to secure new staff expertise of data
- Pilot implementation to demonstrate effectiveness
- Built community support and interest in the tool
- Revised decision-making process to institutionalize the tool
- Other:

Part 5. Outcomes and Results
5.a. Indicate what components of the decision-making process the tool informs. (check all that apply)
- Understanding current conditions (Where are we today?)
- Establish a vision (Where do we want to go?)
- Evaluate options & alternatives (How do our options compare?)
- Designing and executing an outreach strategy (How can we reach out to a full range of stakeholders?)
- Evaluate improvements over time (How well is our solution performing?)
- Identify problems (What do we want to change?)
- Select evaluation criteria (What do we want to measure?)
- Choose a solution (What is going to work the best?)
- Evaluate outcomes (What outcomes do we expect and are we complying with regulatory requirements?)
- Other:

5.b. How does the tool influence decisions? (check all that apply)
- Brings new issues to an existing process
- Helps define project study area
- Changes the relative influence or prioritization of factors considered
- Communicates trade offs among alternatives to stakeholders and decision makers
- Resolves potential legal or political conflicts
- Reinforces the case for previously made decisions
- Communicates benefits and value of project or program to stakeholders and decision makers
- Accelerates final decisions and delivery of a project or program
- Other:
5.c. What are the benefits to the lead implementing organization from using the tool? (check all that apply)

- Prioritizing financial resources
- Linking planning to project development activities
- Increased risk management and liability protection
- Developing accountability including performance indicators and measures
- Greater opportunities for partnering
- Improved impact assessment practices
- Improved understanding of community quality of life goals and objectives
- Greater reliability in projections of cost and delivery time
- Documenting decision-making process
- Increased staff capacity for future projects
- Better coordination and integration among agencies
- Better coordination and integration within lead organization
- Helped meet federal requirements for public involvement, fiscal constraint, or project prioritization
- Greater community support for funding a solution
- Decision making linked to performance

Other: ____________________________

5.d. What are the benefits to stakeholders and community members? (check all that apply)

- Meaningful community participation influences solutions
- Solutions directly address community needs
- Capacity building for future engagement
- Better understanding of problems to be solved
- Community ownership of solutions community needs

Other: ____________________________

5.e. What are the benefits to partners? (check all that apply)

- Financial or cost sharing
- More effective at solving problems for the community
- Better coordination and integration among agencies
- Better coordination of projects and programs in the region or community
- Data sharing
- More effective outreach and communication
- Greater staff capacity and expertise

Other: ____________________________

Part 6. Additional Information

6.a. Any additional information you wish to provide.

______________________________

6.b. List any attachments you will be including for supporting documentation.

______________________________

Complete your submission by using the submit button below.

Thank you for your participation!
APPENDIX B. FOCUS GROUP DOCUMENTATION
Focus Group Pre Meeting Materials and Overview

FROM: Leigh Lane, Principal Investigator, Task 69 Project
TO: Focus Group Participants

Thank you so much for agreeing to participate on the focus group for the NCHRP project, “Defining Community Context in Transportation Project Planning and Development Process.” As you know this project is sponsored by the American Association of State Highway and Transportation Officials’ (AASHTO) Standing Committee on the Environment (SCOE). Therefore, the final products associated with this project will be geared towards state DOT practitioners working in the area of environmental planning and project development including their partners (internal and external). The goal of this project is to provide practitioners with a wide range of tools that can help define and describe community context in a way that shapes transportation decisions so that projects are planned, developed, and delivered to be in harmony with community context. For more information on this project please see our website: http://itre.ncsu.edu/cte/communitycontext/. The project website has some additional information along with a short video orientation to community context in general.

This past summer and fall, we collected and compiled tools for practitioners to use in planning and project development. Your role is to help us think about how to best organize and present this information in a way that is accessible and easily understood by practitioners desiring to define community context to inform transportation planning and project development. In order to facilitate your contribution to this end we are asking you to do a little homework before the focus group web meeting to be held on March 10th from 1pm to 4pm. Below I have laid out your assignment, described the purpose of the focus group meeting, included an agenda and provided web meeting details. Please do not hesitate to call me at 919-515-8034 if you have questions.

Homework Assignment

Please open the file called focus group assignments. Each participant has been assigned 3 tools to review and answer 2 questions for each tool. A link is provided to the tool you are to review in the table. Please review these tools and answer the following questions:

- What stands out about this tool?
- Give an example of how you might use it (to influence transportation planning and/or development decisions)?

In addition, I am attaching a table that includes all the tools collected and organized by community context characteristics, data emphasis, geographic scale at which the tool is effective, time scale addressed with the tool and tool outputs. You may find it interesting to glance through the table to see the overall collection and by all means look at any tools that you may be interested in. We just need you to make sure you review the 3 assigned to you before the March 10th meeting. You will be asked to report out on your assigned tools during the web meeting.

Purpose of Web Meeting

The purpose of the March 10th meeting is to cover the following items:
Task 2 Deliverable

- Discuss how practitioners might use the community context tools inventoried such that the final product is useful.
- Gain insight into the decision factors that practitioners might use us to choose a tool for a specific project or plan (how they think about choosing the right tool).
- Identify different types of projects (safety projects, bridge projects, widening projects, new location, maintenance projects, bike and pedestrian projects, etc.) that may benefit from results of tool outputs and discuss how tools might be used.
- Identify any concerns related to utilizing the tools inventoried.
- Identify the key features of the tool factsheets and searchable electronic database such that a practitioner can enter certain attributes and be directed to tools applicable for their given circumstances and needs.
- Identify substantive gaps in current inventory of tool database (what context characteristic categories are not receiving adequate attention from the current inventory of tools and how might this gap be filled).
- Identify process gaps within the transportation decision-making process (is there a lack of good tools applicable to certain points in transportation decision-making).
- Identify other community context tools.

Meeting Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:00- 1:15</td>
<td>Introductions</td>
<td>Leigh Lane</td>
</tr>
<tr>
<td>1:15 – 1:30</td>
<td>Project Overview and Purpose of Focus Group Meeting</td>
<td>Leigh Lane</td>
</tr>
<tr>
<td>1:30 – 2:30</td>
<td>Discussion of Tools: Round Robin Report out on Homework</td>
<td>Ann Hartell</td>
</tr>
</tbody>
</table>

Purpose: Introduce and discuss the inventoried tools to gain insights into practitioner needs and tool applications.

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:30 – 2:45</td>
<td>Break</td>
<td></td>
</tr>
<tr>
<td>2:45 – 3:30</td>
<td>Discussion on Organizing, Presenting and Making Accessible the Tool Inventory</td>
<td>Teresa Townsend</td>
</tr>
</tbody>
</table>

Purpose: Identify key features of factsheet and searchable database

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>3:30 – 3:50</td>
<td>Gaps Discussion (Both Process and Content)</td>
<td>Leigh Lane</td>
</tr>
<tr>
<td>3:50 – 4:00</td>
<td>Next Steps</td>
<td>Leigh Lane</td>
</tr>
</tbody>
</table>
Task 2 Deliverable

**Web Meeting Details**

You have been invited to attend the following online Elluminate Live web conferencing session.

**Session Name:**
CTE Task 69 Web Meeting

**Session Details:**
- Starts: Mar 10, 2011 1:00 PM
- Ends: Mar 10, 2011 4:00 PM
- Join Session: [http://elluminate.wolfware.ncsu.edu:80/join_meeting.html?meetingId=1261500575565](http://elluminate.wolfware.ncsu.edu:80/join_meeting.html?meetingId=1261500575565)

You may join the session 15 minutes prior to the start time.

*If this is your first time using Elluminate Live,* you may be prompted to download free Java software which may take anywhere from 2 to 20 minutes depending upon your Internet connection speed.

It is strongly recommended that, at least 24 hours prior to the meeting date, you pre-configure your system with the required software by going to the Elluminate support page at [http://www.elluminate.com/support/](http://www.elluminate.com/support/). Follow each of the steps, including connecting to the **Configuration Room** to test your connection and settings. Contact Eugene Murray at CTE ([eugene_murray@ncsu.edu](mailto:eugene_murray@ncsu.edu), 919-515-8037) if you have any problems.

Note: Elluminate Live supports audio via your computer using a microphone and speakers or headset but, for this meeting, we will be using a conference call phone line for the discussion.

**Toll-free Conferencing Access Number (U.S. Domestic and Canada participants):** 1-877-732-0228

**Conferencing Room Number:** *6356301*

The Star (*) key must be pressed before and after the room number.

<table>
<thead>
<tr>
<th>Assignments</th>
<th>TOOL NAME</th>
<th>WEBLINK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christopher Douwes</td>
<td>Active Neighborhood Checklist</td>
<td><a href="http://www.cte.ncsu.edu/CTE/CommunityContext/documents/documentation/ActiveNeighborhoodChecklist_StLouisUniv.pdf">http://www.cte.ncsu.edu/CTE/CommunityContext/documents/documentation/ActiveNeighborhoodChecklist_StLouisUniv.pdf</a></td>
</tr>
<tr>
<td>David Aimen</td>
<td>Air Quality Measurements and Modeling</td>
<td><a href="http://www.sfphes.org/HIA_Tools_Air_Quality.htm">http://www.sfphes.org/HIA_Tools_Air_Quality.htm</a></td>
</tr>
<tr>
<td>Christopher Douwes</td>
<td>Bicycle Environmental Quality Index (BEQI)</td>
<td><a href="http://www.sfphes.org/HIA_Tools_BEQI.htm">http://www.sfphes.org/HIA_Tools_BEQI.htm</a></td>
</tr>
<tr>
<td>Scott Bradley</td>
<td>Blue Water Bridge Aesthetic Design Guide</td>
<td><a href="http://www.michigan.gov/mdot/0,1607,7-151-9621_11058_22978--,00.html">http://www.michigan.gov/mdot/0,1607,7-151-9621_11058_22978--,00.html</a></td>
</tr>
<tr>
<td>George Ballo</td>
<td>Community Context Audit</td>
<td><a href="http://www.cte.ncsu.edu/CTE/CommunityContext">http://www.cte.ncsu.edu/CTE/CommunityContext</a></td>
</tr>
<tr>
<td>Task 2 Deliverable</td>
<td>Description</td>
<td>URL</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------</td>
<td>-----</td>
</tr>
<tr>
<td>Kat Beaudoin</td>
<td>Community Effects Considerations</td>
<td><a href="http://www.cte.ncsu.edu/CTE/CommunityContextAudit_PennDOT.pdf">t/documents/documentation/CommunityContextAudit_PennDOT.pdf</a></td>
</tr>
<tr>
<td>Teresa Townsend</td>
<td>GIS platform for prioritization of brownfield sites for funding and redevelopment</td>
<td><a href="http://www.cte.ncsu.edu/CTE/CommunityContextAudit/ChrysochoouPosterTRB.pdf">http://www.cte.ncsu.edu/CTE/CommunityContextAudit/ChrysochoouPosterTRB.pdf</a></td>
</tr>
<tr>
<td>David Aimen</td>
<td>Housing + Transportation Affordability Index</td>
<td><a href="http://htaindex.org/">http://htaindex.org/</a></td>
</tr>
<tr>
<td>Jana Lynott</td>
<td>Pedestrian Environmental Quality Index (PEQI)</td>
<td><a href="http://www.sfphes.org/HIA_Tools_PEQI.htm">http://www.sfphes.org/HIA_Tools_PEQI.htm</a></td>
</tr>
<tr>
<td>Paul Shaefer</td>
<td>Smart Growth Checklist, A Checklist for Municipal Land Use Planning and Management</td>
<td><a href="https://www.nysdot.gov/programs/smart-planning/repository/SGCheck_Municipal_PRINT.pdf">https://www.nysdot.gov/programs/smart-planning/repository/SGCheck_Municipal_PRINT.pdf</a></td>
</tr>
<tr>
<td>Kelly Dunlap</td>
<td>Thinking Beyond the Pavement</td>
<td><a href="http://www.cte.ncsu.edu/CTE/CommunityContextAudit">http://www.cte.ncsu.edu/CTE/CommunityContextAudit</a></td>
</tr>
<tr>
<td>Task 2 Deliverable</td>
<td>Checklist</td>
<td>Link</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------</td>
<td>------</td>
</tr>
<tr>
<td>Scott Bradley</td>
<td>Transportation Mitigation for Wildlife Connectivity</td>
<td><a href="http://www.rockies.ca/crossroads/">http://www.rockies.ca/crossroads/</a></td>
</tr>
<tr>
<td>Kat Beaudoin</td>
<td>ViaCity</td>
<td><a href="http://www.viacity.info">www.viacity.info</a></td>
</tr>
<tr>
<td>Christopher Douwes</td>
<td>West Peterborough Road Audit</td>
<td><a href="http://www.cte.ncsu.edu/CTE/CommunityContext/documents/documentation/WestPeterboroughRoadAudit_NHDOT_PPS.pdf">http://www.cte.ncsu.edu/CTE/CommunityContext/documents/documentation/WestPeterboroughRoadAudit_NHDOT_PPS.pdf</a></td>
</tr>
</tbody>
</table>
COMMUNITY CONTEXT TOOLS FOCUS GROUP WEB MEETING: MARCH 10, 2011

8-36 NCHRP TASK 69 Project

Introductions

- Research Team Members
  - Leigh Lane, CTE, Principal Investigator
  - Ann Hartell, CTE
  - Ann Steedly/Teresa Townsend, Planning Communities
  - Eugene Murray, CTE

Meeting Agenda

- Focus Group Participants
  - Name and Agency
  - Discipline Expertise
  - Example of Project Currently Working On

Introductions

- Focus Group Participants
  - Name and Agency
  - Discipline Expertise
  - Example of Project Currently Working On

What Is Community Context?

Meeting Agenda

- 1:00 – 1:20 Introductions
- 1:20 – 1:30 Project Overview and Purpose of Focus Group Meeting
- 1:30 – 2:30 Discussion of Tools: Round Robin Report out on Homework
  - Purpose: Introduce and discuss the inventoried tools to gain insights into practitioner needs and tool applications.
- 2:30 – 2:45 Break
- 2:45 – 3:30 Discussion on Organizing, Presenting and Making Accessible the Tool Inventory
  - Purpose: Identify key features of factsheet and searchable database
- 3:30 – 3:50 Gap Discussion (Both Process and Content)
- 3:50 – 4:00 Next Steps

Homework Assignment

- Christopher Douwes
  - Active Neighborhood Checklist
  - Bicycle Environmental Quality Index (BEQI)
  - West Peterborough Road Audit
- David Aimen
  - Air Quality Measurements and Modeling
  - Housing + Transportation Affordability Index
  - THRIVE: Tool for Health and Resilience in Vulnerable Environments
- George Ballo
  - Community Context Audit
  - Measuring Urban Design Qualities: An Illustrated Field Manual
Homework Assignment

Kelly Dunlap
- Thinking Beyond the Pavement Checklist
- Making Your Community Walkable and Bikeable: A Guidebook for Change
- Libby Rushley
- San Francisco Noise Model
- Walkability and Bikeability Checklists
- Kat Beaudoin
- Community Effects Considerations
- ViaCity

Homework Assignment

Scott Bradley
- Blue Water Bridge Aesthetic Design Guide
- Systematic Pedestrian and Cycling Environmental Scan (SPACES) Audit Instrument
- Transportation Mitigation for Wildlife Connectivity
- Paul Shaefer
- Great Communities Collaborative Toolkit
- Smart Growth Checklist, A Checklist for Municipal Land Use Planning and Management
- Smart Growth Checklist, A Checklist for Proposed Development in Your Community
- Nashville MPO
- Roadway Audit Tool, Analytic Version
- Roadway Audit Tool, Checklist Version
- Multi-hazard Risk Tool For Buncombe County

Homework Assignment

Eloisa Raynault
- Irvine Minnesota Inventory
- Project for Public Spaces (PPS) Street Audit
- Winning with ACEs! How You Can Work Toward Active Community Environments: A Policy Guide for Public Health Practitioners and Their Partners
- Jana Lynott
- Blueprint for Action: Developing a Livable Community for All Ages
- Pedestrian Environmental Quality Index (PEQI)
- Vehicle-Pedestrian Injury Collision Forecasting Model

Homework Assignment

Focus group input
- Overview of tools compiled
- Searchable database categories
- Sharing the digital inventory
- Context tool fact sheet

Organizing, Presenting and Making Accessible the Tool Inventory

Tool collection process
- Range of tools compiled
- Attribute information collected
- Context tools quick table

Organizing, Presenting and Making Accessible the Tool Inventory

Question/polling format
- Definition of scale
  - A = Very important
  - B = Somewhat important
  - C = Neither important nor unimportant
  - D = Not important
- Using participant input
Organizing, Presenting and Making Accessible the Tool Inventory

Potential search attribute categories:
- Community context issues/topic
- Type of data available for analysis
- Forecast capability
- Geographic scale
- Decision-making phase/timing

How important is it to search for a tool by the types of community context issues or topics addressed?
- A = Very important
- B = Somewhat important
- C = Neither important nor unimportant
- D = Not important

Community context issues/topics:
- Economy
- Housing
- Education
- Public health
- Socio-cultural

Quantitative data types:
- Demographic
- Land use
- Mobility
- Accessibility
- Safety
- Other?

Economic data
- Crash/safety data
- Water quality
- Air quality
- Habitat
- Wetlands
- Other?

Qualitative data types:
- Community cohesion
- Community livability
- Social networks
- Sense of place
- Cultural experiences
- Economic outlook
- Environmental quality
- Sense of safety
- Other?

How important is it to search for a tool by whether it determines existing conditions/context or forecasts and assesses future conditions (near-term, long-term)?
- A = Very important
- B = Somewhat important
- C = Neither important nor unimportant
- D = Not important
Organizing, Presenting and Making Accessible the Tool Inventory

- How important is it to search for a tool by the geographic scale of the plan or project (e.g. neighborhood, corridor, city/town, regional)?
  - A = Very important
  - B = Somewhat important
  - C = Neither important nor unimportant
  - D = Not important

- How important would it be to be able to search for a tool by the timing relative to decision-making?
  - A = Very important
  - B = Somewhat important
  - C = Neither important nor unimportant
  - D = Not important

- Decision points:
  - Understanding existing conditions
  - Identify problems
  - Establish vision
  - Set evaluation criteria
  - Evaluate options and alternatives
  - Choose solution
  - Evaluate outcomes
  - Other?

- How important would it be to view the discipline or expertise involved in using the tool (e.g. community planner, engineer, cultural resource specialist, GIS analyst, community members)?
  - A = Very important
  - B = Somewhat important
  - C = Neither important nor unimportant
  - D = Not important

Organizing, Presenting and Making Accessible the Tool Inventory

- Online sidebar search

Example output – online sidebar search
Organizing, Presenting and Making Accessible the Tool Inventory

- Searchable form sample output

Searchable form sample output

- Which type of online interface do you prefer for the searchable tools database?
  - A = Sidebar search with predefined categories
  - B = Searchable form

- Additional search attributes
- Optimizing usability
- Distribution methods
- Long-term maintenance/updates
- Other thoughts?

Gaps Discussion: What Are We Missing?

- What community aspects or characteristics do you most struggle with in terms of understanding how a project might impact that community?
  - Is there a community context characteristic that we are missing or have very few tools that address?
- At what point in the decision-making process (purpose and need (scoping), alternatives development, alternatives assessment, and identification of solution) do you most struggle with finding the right tool to understand community context?
  - Does the current inventory of tools provide enough support for the decision points you struggle with?
Gaps Discussion:
What Are We Missing?

- What type of projects are most difficult for you to work with in terms of defining and understanding community context?
- Does the current list of tools help with these types of projects?

What’s Next

- What do we plan to do with your input?
- The information today will be synthesized to inform the development of the final products including the fact sheets, searchable database and final report.
- Additional involvement with the focus group would be conducted through email and/or survey input.
- When will the product be available for use?
- We will let you know when report is finalized.
- Post to our website: http://itre.ncsu.edu/cte/communitycontext/
- It will also be posted at http://144.171.114.40/cmsfeed/TRBNetProjectDisplay.asp?ProjectID=761

If You Have Questions

- Contact Leigh Lane:
  - 919-515-8034
  - lblane@ncsu.edu

THANK YOU
March 10, 2011 Focus Group Web Meeting Notes

On March 10, 2011 from 1pm to 4pm EST, a webinar was held to accomplish the following:

- Discuss how practitioners might use the community context tools inventoried such that the final product is useful.
- Gain insight into the decision factors that practitioners might use to choose a tool for a specific project or plan (how they think about choosing the right tool).
- Identify different types of projects (safety projects, bridge projects, widening projects, new location, maintenance projects, bike and pedestrian projects, etc.) that may benefit from results of tool outputs and discuss how tools might be used.
- Identify any concerns related to utilizing the tools inventoried.
- Identify the key features of the tool factsheets and searchable electronic database such that a practitioner can enter certain attributes and be directed to tools applicable for their given circumstances and needs.
- Identify substantive gaps in current inventory of tool database (what context characteristic categories are not receiving adequate attention from the current inventory of tools and how might this gap be filled).
- Identify process gaps within the transportation decision-making process (is there a lack of good tools applicable to certain points in transportation decision-making).
- Identify other community context tools.

Eleven individuals were invited to participate in the meeting. Nine individuals were able to attend. One person was contacted following the meeting to obtain input. Please refer to the attachments to view meeting notifications, participant contact information and a copy of the presentation.

The following is a summary of the March 10 meeting.

First Hour and Half of the Meeting

Technical support worked at the beginning of the call to resolve participant connection issues. Leigh Lane introduced the research team and led a round of self-introductions of participants. Leigh also introduced individuals who could not participate in the call, but who were assigned projects. These individuals would be providing their input separately. *Three participants were not able to connect to the web meeting information but did have audio contact. These participants were able to review the PowerPoint materials from a file sent separately (Paul Shaefer, Scott Bradley and Matt Meservy).* The following is a list of team members and participants:

Research Team:
Leigh Lane, CTE, Principal Investigator
Ann Hartell, CTE
Ann Steedly, Planning Communities
Teresa Townsend, Planning Communities*
Eugene Murray, CTE

Participants:
Christopher Douwes, FHWA, Washington, DC
David Aimen, Consultant
George Ballo, FDOT and on Project Panel
James Martin, CTE
Kat Beaudoin, Retired Maine DOT
Task 2 Deliverable

transportation. The tool is very technical as it involves running a noise model. One potential area for use is transit planning.

- The Walkability and Bikeability Checklists were mentioned as potentially useful for Safe Routes to Schools planning and Complete Streets initiatives, especially the bikeability checklist. The tool may also be appropriate for developing bike/ped plans. The checklists are based on an individual perspective or assessment of the walking/biking experiences; therefore, compiling and using the information could take significant effort.

- It was noted that the Socioeconomic Guidance Manual, "A Practitioner's Guide" is very useful. It was noted that this document was developed for the New Jersey DOT. The tool’s packaging was met with approval: forms, simple questions, clear and concise, covering a full range of topics. It was suggested that definitions could be included for many of the terms to make it usable to folks outside of project development. It could also serve as a good scoping tool and be used in the development of community outreach plans.

- The Community Effects Considerations shortcomings were also noted, including containing redundant/overlapping sections and information, and unclear outputs.

- The participant in question also indicated that ViaCity (proprietary) appears to have potential and be technically driven. It requires a sophisticated user. The tool may be more useful for MPOs rather than small, rural areas. It is also good for a system-wide approach.

- The next participant was asked to talk about the Systematic Pedestrian and Cycling Environmental Scan (SPACES) Audit Instrument. They stated that the Minnesota DOT would not use the tool and indicated certain aspects like comprehensiveness, core issues like user comfort, safety, perceived effectiveness of selected elements, multimodal user needs and ADA issues limited its utility for this database.

- They also thought the Blue Water Bridge Aesthetic Design Guide could be useful as it relates to visual resources and evaluations and noted this was a good tool for delivering a systematic approach during the preliminary design process. It was also noted that MNDOT has a similar program and may submit related information to the research team.

- The participant also discussed the Transportation Mitigation for Wildlife Connectivity tool. He described that it had a technical workshop approach with transportation agency and environmental stakeholder participants. Priorities and recommendations were developed and compiled in a report, as well as shared with the broader public. A drawback is that the broader public was not integrated into the technical workshop process. It was indicated that with a few modifications, is the tool was something their agency could find useful.

- One participant was asked to comment on the Smart Growth Checklist, A Checklist for Municipal Land Use Planning and Management and the Smart Growth Checklist, A Checklist for Proposed Development in Your Community. They felt that both checklists are very good tools and help balance community issues and transportation. The checklists developed for New York state clearly defined smart growth. The checklists include easy to read information, address all aspects of community context, would allow for an agency to see how well a plan is progressing (do elements hinder or encourage smart growth?), and/or determine what a plan might need to include. It could be used in comprehensive/area planning and as a checkpoint in the project development process.

- They also touched on the Great Communities Collaborative Toolkit, which he indicated would be a good toolkit for private citizens, informing them how to interact with organizations and planners. It was, however, mentioned that the tool could be somewhat better arranged, and that the participant was not sure how the tool might be implemented on the agency/organization side.
Task 2 Deliverable
Libby Rushley, Ohio DOT
Peter Bond, Senior Environmental Planner, Veltran, standing in for Kelly Dunlap, Chair on Project Panel
Scott Bradley, Minnesota DOT
Paul Shaefner, Washington County, Oregon
Matt Meservy, Nashville MPO
Jana Lynott, AARP* (follow-up call)

*Individual did not participate on the call.

Leigh provided an overview of the Task 69 project and reviewed the purpose and agenda for the webinar. Ann H. described the tools collected and the homework assignments that had been given to participants. She then invited participants to briefly report out on their findings. Ann asked participants to focus on one of their two to three assigned tools.

- to the first tool discussed was the Bicycle Environmental Quality Index (BEQI). It was indicated that the tool developers had conducted a lot of research and it could be of interest in transportation planning. The tool was adapted for the San Francisco Department of Public Health and emphasizes community-based planning.
- It was also noted that the other two assigned tools, the Active Neighborhood Checklist and the West Peterborough Road Audit, had more shortcomings.
- to the next tool commented on was THRIVE: Tool for Health and Resilience in Vulnerable Environments. THRIVE was discussed as having a strong focus on public and individual health, the social environment. The term “resilience” is used – the ability to thrive despite the presence of risk factors, focusing on actions that can be used to help foster community elements. The participant in question was not sure about its applicability to transportation, but the tool could be useful for a community planning effort during strategic planning or needs assessment. The tool uses clusters and grouping of issues around clusters, similar to other comprehensive screening tools/approaches. It was stated that this tool would be relevant when public involvement is a key issue.
- The Measuring Urban Design Qualities: An Illustrated Field Manual tool was discussed next. This tool was noted as being complex, requiring significant time to gain familiarity. The tool was liked conceptually, but would require a steep learning curve and focuses on development at a very detailed level for specific uses. It was indicated that the tool was more suited to the local government or community development level in relation to development. Its use in transportation would be limited.
- The participate noted that the Community Context Audit was useful, but was somewhat specific. The tool was developed for use by PennDOT. They liked the tool because of its ease of use. It could even be used as a drive by (windshield survey) tool.
- One participant was asked to discuss Making Your Community Walkable and Bikeable: A Guidebook for Change, and thought it was a good tool. It provides great advice on what to look for and how to incorporate features. While useful for transportation planners, it could be particularly useful for community groups involved in planning. It might be very helpful in community mitigation development and planning. Ann H. asked how much training would be needed for communities. The participant indicated very little, and that training is included in the tool.
- They also noted that the Thinking Beyond the Pavement Checklist was a checklist for visual elements. that the participant said the checklist can be used for scoping of projects, but it is not useful otherwise.
- A participant next discussed the San Francisco Noise Model. It was noted as being interesting, but geared toward implementation of the state building code, as opposed to a focus on transportation. The tables used for noise analysis are not up to date with the most current practice for noise analysis in
Task 2 Deliverable

- One participant noted that a certain MPO was working on an MPO area land use and transportation effort. The effort integrates modeling and is running from allocation to assignment of volumes (vehicles and transit).
- They were asked to speak about the Roadway Audit Tool, Analytic and Checklist Versions, and noted the analytics tool is quality oriented. The tool determines the number of elements (single family homes, commercial destination types). The checklist focuses on whether something is there (visible) or not (absent). Both tools focus on active lifestyle issues.
- The participant also discussed the Multi-hazard Risk Tool for Buncombe County, and found the tool very interesting. The tool consists of an interactive web-based mapping feature that deals with the parcel level. Ann S. asked whether there could be issues with data availability. The participant indicated that they would have this type of data at their agency, but it could be a challenge in smaller communities.

Ann H. mentioned the projects assigned to participants unable to attend and stated that input would be sought outside of the webinar. A conversation with one of these participants was scheduled for April 15. The following information was provided by the other participant.

- This panelist was asked to speak about the Blueprint for Action: Developing a Livable Community for All Ages. They noted that the tool would be most applicable to comprehensive planning, general plan development. The tool provides good community examples, including examples from different sectors. They also said the tool would not be as applicable to long range transportation planning or project planning and development, as it does not have a lot of depth in any particular area. She indicated that information is basic and generalized (e.g., improve signs and lighting). Jana discussed that a planner would need to know more than this information to incorporate older population needs into a project. They stated that the blueprint is a good educational tool for planners to familiarize themselves with these issues, review case studies that can be investigated to see specific applications, and utilize references to other tools within the document. While this is useful, the tool has limited utility. They noted that their agency would agree with the checklist.

- They also provided comments on the Pedestrian Environmental Quality Index (PEQI) and noted that this could potentially be a really good tool and with some updates could replace most well-known pedestrian level of service (LOS) tools. The participant then discussed that the pedestrian LOS model has some key limitations. For example, crowded sidewalks receive a low LOS, as there is no accounting for places you want to walk, and where crowding (up to a point) would be desirable. This tool is more robust and has a lot of potential. They noted that the tool does require a little training, but the needs appear to be pretty minimal. Training would be possible for community members. They noted that the tool involves a Microsoft Excel platform linked to GIS. It addresses pedestrian links (linear) and intersections in a way that is stronger than the existing tool with which the participant is familiar. The output was considered friendly, with a colored map that is very easy to understand illustrating the links and intersections. They liked the health focus of this tool and stated that the PEQI assumes walking speed as a factor; this helps with calculation of timing, a particularly important factor for older pedestrians. This will help push the new MUTCD standards forward, perhaps encouraging communities to implement ahead of schedule. They also noted the following deficiencies:
  - The tool doesn’t appear to distinguish between different street types (road classifications of arterial, collector, neighborhood), and of course some traffic calming is not appropriate on certain road types;
  - Parameters were listed, but there wasn’t a correlation between the road type and recommended traffic calming features; and
  - The tool does not seem to account for ADA compliance as it did not address night vision, maintenance issues (brick pavers, etc.), or number of driveways (while more of them lowers the
Task 2 Deliverable

score, if driveways are not ADA compliant, then a link may be poor quality even with fewer driveways).

They noted that some improvements to address these issues would make the tool very useful. With these improvements, the PEQI would have a lot of utility in different types of planning including: project evaluation; area plans; assessment of current conditions; long range transportation planning; proposed improvements; bike/ped plans, safety plans; and maintenance plans. For example: For long range transportation planning, a user could combine this with a pedestrian crash analysis. The PEQI would help you identify improvement locations and establish priorities. A unique application is transition plans required by ADA; few communities have done them and the participant’s agency taking legal action with certain states and communities as a result. An example of a successful suit includes CalTrans for a California community that resulted in a settlement providing 20 percent of transportation funding to sidewalks and other ADA improvements.

- They stated that understanding how a tool connects to decision-making is key to making any tool effective.
- The participant was not able to review the third assigned tool, the Vehicle-Pedestrian Injury Collision Forecasting Model. They indicated that the link went to another tool on the list and they hadn’t researched finding the correct link.

Last Hour of the Meeting

Ann S. provided an overview of the tool collection process and the tools collected to date. She then led participants through an interactive series of polling and discussion questions regarding attributes to be incorporated in an online searchable database of community context tools and tool fact sheets. Feedback was obtained per each potential attribute.

Community context issues

- Topics very important for organization
- Community cohesion is missing from the checklist. This is especially important in California.
- One participant said they liked the topic areas. In the Quality of Life group, natural environment is missing plus transportation options and multimodal.
- One participant said that EJ should be placed at a high level, like in the THRIVE tool. Another participant agrees. EJ thread is woven through most everything.
- Consider breaking out socio-cultural into subtopics.
- Aesthetics might be a new category.
- Another participant: Listing at least the 8-10 most desired topics in any search or pull-down would be helpful.

Votes on the importance of including types of community context issues as search feature:

- 8 votes for very important
- 1 votes for less important

Quantitative data

- There can be availability issues.
- Data are usually there; it’s a matter of finding and accessing the data.
- Schools are too narrow for community facilities. Also include social services, medical access, architectural/historical.
Task 2 Deliverable

**Qualitative data**

- People and norms influencing health include social trust and willingness to act and make a difference (capacity).
- Consider a drop-down list of effects or impacts.

**Existing conditions vs forecasts**

- Is it about effects? Concern expressed about understanding cumulative effects: is this important for this project?
  - No mostly about current conditions.
- This is a gap—what are the effects?
- Whether a tool assesses existing conditions, future conditions or both, this would be a secondary consideration.

*Votes taken on the importance of being able to sort tools by their applicability to determining existing conditions verses future conditions:*

- 3 votes for very important
- 6 votes for less important

**Geographic scale**

- Important for most

*Votes of how important:*

- 7 votes for very important
- 1 vote for less important

**Timing in process** (Clarification was provided that this question was more related to the project development process: scoping, purpose and need, alternatives development, preferred alternative, mitigation, etc.). This question is related more to depth rather than breadth which would be more geared to planning through operations and maintenance.

- Scott pointed out that consensus building at any decision points is really the focus: which tools help build consensus?
- Many tools could be used for lots of points
- Perhaps a two-tiered approach by agency type—important info for lots of DOTs. Consider not only identifying decision points, but also the functional areas of decision making that a tool may be applicable (planning through maintenance).
- Valuable to know, but okay to include in a fact sheet rather than as a search parameter; several tools could be used at multiple steps.

*Votes taken on the importance of being able to sort tools by relative decision-making:*

- 1 vote for very important
- 4 votes for relatively important
- 3 votes for not very important
Task 2 Deliverable

**Discipline Expertise**

- Maybe add no special expertise needed
- Add consensus building expertise
- Helpful, but not critical
- Maybe for the fact sheet, not database parameter

*Votes for importance of including discipline expertise involved with using a tool:*

- 4 votes for very important
- 2 votes for not as important

**Search format (a side bar search and searchable form was provided as choices)**

- Searchable form preferred—greater flexibility

*Votes:*

- 2 votes for sidebar search with predefined categories
- 6 votes for searchable form

**Fact sheets**

- Participants asked for examples of good searchable inventories.
- Long-term maintenance of the database/resource critical. The search needs to return the best stuff *first.*
- Replying participant: emphatic agreement on long-term maintenance question—this is critical for ongoing research and effort by TRB/NCHRP.
- Comparability of fact sheets—consistency and potentially the ability to compare side-by-side once you have a shortlist, showing the search-selected tools.

**Other topics important for the database**

- Awareness of tools—marketing and education about the research and online database
- Relevance, quality of tool—possibly incorporating a user evaluation

Leigh wrapped up the call saying that there may be a short survey distributed related to gaps in tools. She provided the websites that the final project would be posted to, including CTE’s website and TRB’s website. Leigh said each participant would be notified of the availability of the report once finalized. The report is expected to be complete in August of this year. She thanked everyone for their participation and provided her contact information for follow-up questions.
APPENDIX C. FACTSHEETS

ACTIVE NEIGHBORHOOD CHECKLIST
ADA POST CONSTRUCTION CHECKLIST
AIR QUALITY MEASUREMENTS AND MODELING
ATLAS OF RURAL AND SMALL TOWN AMERICA
BICYCLE ENVIRONMENTAL QUALITY INDEX (BEQI)
BLUE WATER BRIDGE AESTHETIC DESIGN GUIDE
BLUEPRINT FOR ACTION: DEVELOPING A LIVABLE COMMUNITY FOR ALL AGES
COMMUNITY CONTEXT AUDIT
COMMUNITY EFFECTS CONSIDERATIONS
FHWA OFFICE OF SAFETY ROAD SAFETY AUDIT
GIS PLATFORM FOR PRIORITIZATION OF BROWNFIELD SITES FOR FUNDING AND REDEVELOPMENT
GREAT COMMUNITIES COLLABORATIVE TOOLKIT
HOUSING + TRANSPORTATION AFFORDABILITY INDEX
INTEGRATED TRANSPORTATION INFORMATION SYSTEM
IRVINE MINNESOTA INVENTORY
MAKING YOUR COMMUNITY WALKABLE AND BIKEABLE: A GUIDEBOOK FOR CHANGE
MEASURING URBAN DESIGN QUALITIES: AN ILLUSTRATED FIELD MANUAL
MINNESOTA DOT’S VISUAL QUALITY MANAGEMENT
MULTI-HAZARD RISK TOOL FOR BUNCOMBE COUNTY
NEIGHBORHOOD COHESION CALCULATOR
NEIGHBORHOOD COMPLETENESS INDICATOR
PARKING COST CALCULATOR
PEDESTRIAN ENVIRONMENTAL QUALITY INDEX (PEQI)
POLICYMAP
PROJECT FOR PUBLIC SPACES (PPS) STREET AUDIT

PROTOCOL FOR ASSESSING COMMUNITY EXCELLENCE IN ENVIRONMENTAL HEALTH

PUBLIC HEALTH WORKBOOK TO DEFINE, LOCATE AND REACH SPECIAL, VULNERABLE AND AT-RISK POPULATIONS IN AN EMERGENCY

SAN FRANCISCO NOISE MODEL

SMART GROWTH CHECKLIST, A CHECKLIST FOR MUNICIPAL LAND USE PLANNING AND MANAGEMENT

SMART GROWTH CHECKLIST, A CHECKLIST FOR PROPOSED DEVELOPMENT IN YOUR COMMUNITY

SOCIAL VULNERABILITY INDEX FOR HAZARDS

SOCIOECONOMIC GUIDANCE MANUAL, “A PRACTITIONER’S GUIDE”

TDOT’S CONTEXT SENSITIVE SOLUTIONS PROJECT DEVELOPMENT PROCESS—MATRIX OF KEY ACTIVITIES

THRIVE: TOOL FOR HEALTH AND RESILIENCE IN VULNERABLE ENVIRONMENTS

TIME-BASED TRANSIT SERVICE AREA TOOL

TOOLKIT FOR THE ASSESSMENT OF BUS STOP ACCESSIBILITY AND SAFETY

TRANSPORTATION MITIGATION FOR WILDLIFE CONNECTIVITY

VEHICLE-PEDESTRIAN INJURY COLLISION FORECASTING MODEL

VIACITY

WALKABILITY AND BIKEABILITY CHECKLISTS

WINNING WITH ACES! HOW YOU CAN WORK TOWARD ACTIVE COMMUNITY ENVIRONMENTS: A POLICY GUIDE FOR PUBLIC HEALTH PRACTITIONERS AND THEIR PARTNERS
### Active Neighborhood Checklist

The Active Neighborhood Checklist is an observational tool designed to assess key street-level features of the neighborhood environment that are thought to be related to physical activity behavior. The checklist covers five general areas: land use, public transit stops, street characteristics, quality of the environment for a pedestrian, and places to walk and bicycle. 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.

| Key topics: | • Land use | • Accessibility |
| • Vehicular safety | • Livability |
| • Public health | • Aesthetics |
| • Mobility (any/all modes) | • Bicycle incl. safety |
| • Mobility (any/all modes) | • Recreation |

| Plan/Project phase: | • Local transportation planning |
| • Programming/feasibility studies |
| • Operations and maintenance |

| Applicable Project(s) Types: | • Complete Streets |
| • Bicycle/pedestrian |
| • Corridor |
| • Safe Routes to School |

| Geographic scale: | • Neighborhood |
| • Local/municipal |
| • Combine street segment audits for neighborhood or city level use |

| Purpose of Tool | • Current context/existing conditions |
| • Evaluation over time |

| Users: | • Transportation planner |
| • Community planner |
| • Engineer |
| • Landscape architect |
| • Public involvement specialist |
| • Public health professional |
| • Urban designer/architect |
| • Stakeholders/community members |

| Output: | • Scores or indices |
| • Tool designed for data collection; audit data could be processed for mapping, prioritization, goal development |

| Data requirements: | • Medium |
| Data Cost: | • Free |
| Tool Cost: | • Free |

| Author/Developer: | • St. Louis University School of Public Health |

For more information: [www.cte.ncsu.edu/CTE/CommunityContext/documents/documentation/ActiveNeighborhoodChecklist_StLouisUniv.pdf](http://www.cte.ncsu.edu/CTE/CommunityContext/documents/documentation/ActiveNeighborhoodChecklist_StLouisUniv.pdf)
**ADA Post Construction Checklist**

This checklist is designed for post-project inspections to ensure ADA compliance for signals, sidewalks, entrances, ramps, detectable surfaces, medians, and crosswalks. It includes sketch and photo examples for clarity and can be used by individuals with little familiarity with ADA-compliant designs. Although designed for post-construction inspections, it could also serve as an audit tool to identify locations requiring improvement or retrofits.

### Key topics:
- Accessibility
- Mobility (any/all modes)
- Pedestrian incl. safety
- Special population groups (elderly, youth, LEP, etc.)

### Plan/Project phase:
- Construction
- Operations and maintenance

### Applicable Project(s) Types:
- Corridor
- Bicycle/pedestrian
- Complete Streets
- Master/small area plan

### Geographic scale:
- Corridor
- Project or study area

### Purpose of Tool
- Current context/existing conditions

### Users:
- Landscape architect
- Roadway designer/engineer
- Public health professional
- Attorney
- Traffic operations engineer
- Transportation planner
- Urban designer/architect

### Output:
- Checklist recording yes/no on ADA compliance

### Data requirements:
- Low

### Data Cost:
- Free

### Tool Cost:
- Free

### Author/Developer:
- Missouri DOT

### For more information:
The San Francisco Department of Public Health utilizes several existing tools to characterize air pollutant concentrations and hot spots within the City. Nitrogen dioxide passive dosimetry and particulate matter monitoring can characterize the relative concentrations of these pollutants using both short and long term samples; portable devices permit measurement within and among residences and at different points along a single street. Physical dispersion models use computer algorithms to predict the ambient concentrations of pollutants from roadway traffic and industrial sources taking into account meteorological conditions, pollutant type, traffic counts, vehicle types, and other parameters. Land use regression models characterize the spatial distribution of exposure in a city or region based on zoning, topology, traffic volume, prevailing meteorology, and other land use characteristics.

As a routine method to assess air pollutant impact from roadways in the context of land use planning, SFDPH uses the California Air Resources Board’s, EMFAC 2007 vehicle emissions model and the USEPA approved CAL3QHCR Line Source Dispersion Model to model PM 2.5 exposures. Areas with high estimated emission rates are reported to the Planning Department, where mitigation measures are required to reduce emission levels by 80 percent. In addition AERMOD, an air dispersion based model on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain, is being used to assess street level emissions exposure for three toxic pollutants (PM 2.5, NOx, and Benzene) citywide. The emission outputs can then be assigned to residential populations to determine mitigation measures to improve health outcomes.

Key topics:
- Air quality
- Equity/environmental justice
- Livability/quality of life
- Public health
- Special population groups (elderly, youth, LEP, etc.)

Plan/Project phase:
- Long-range transportation planning
- Project development and environmental review

Applicable Project(s) Types:
- Corridor
- Comprehensive plan
- Community impact assessment
- Long-range transportation plan
- Environmental study (CE, EA, EIS)

Geographic scale:
- Neighborhood
- Local/municipal
- Corridor
- Project or study area

Purpose of Tool
- Current context/existing conditions
- Generate scenarios or alternatives
- Compare scenarios or alternatives
- Determine an action
- Collaborate with partners
- Evaluation over time
| Users: | • Environmental planner  
• GIS analyst  
• NEPA project manager  
• Public health professional  
• Transportation planner |
|---|---|
| Output: | • Maps/GIS  
• Graphics/charts  
• Evaluation criteria/ranked priorities  
• Emission exposure levels |
| Data requirements: | • High |
| Data Cost: | • Free |
| Tool Cost: | • Free |
| Author/Developer: | • Edmund Seto, University of California - Berkeley; San Francisco Department of Public Health, Environmental Health Section |
| For more information: | • [http://www.sfphes.org/HIA_Tools_Air_Quality.htm](http://www.sfphes.org/HIA_Tools_Air_Quality.htm) |
### Atlas of Rural and Small Town America

The Atlas highlights the value of several federal data surveys by aggregating measures of demographics, jobs, agricultural activity, and poverty. Users can view county-level maps; view the entire country or zoom into specific regions, States, or county areas; view a selected socioeconomic indicator; view a pop-up window showing all the indicators for that county; print a version of the map or save the image in a graphics-file format that may be added to documents or presentations. A few clicks can provide a visual display of trends affecting transportation use, such as the percentage of persons over 65 living alone, retirement destinations projected to expand in the next ten years, and the shape of employment changes throughout the country.

<table>
<thead>
<tr>
<th>Key topics:</th>
<th>• Agricultural</th>
<th>• Education</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Community cohesion</td>
<td>• Employment</td>
</tr>
<tr>
<td></td>
<td>• Economy</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th>• Visioning</th>
<th>• Project development and environmental review</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Long-range transportation planning</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
<th>• Comprehensive plan</th>
<th>• Long-range transportation plan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Community impact assessment</td>
<td>• Environmental study (CE, EA, EIS)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th>• Regional</th>
<th>• State</th>
</tr>
</thead>
</table>

| Purpose of Tool            | • Current context/existing conditions     | • Evaluation over time                        |

<table>
<thead>
<tr>
<th>Users:</th>
<th>• Community planner</th>
<th>• NEPA project manager</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Conservation planner</td>
<td>• Public involvement specialist</td>
</tr>
<tr>
<td></td>
<td>• Economist/fiscal analyst</td>
<td>• Public health professional</td>
</tr>
<tr>
<td></td>
<td>• Environmental planner</td>
<td>• Social scientist</td>
</tr>
<tr>
<td></td>
<td>• Economic development planner</td>
<td>• Transportation planner</td>
</tr>
<tr>
<td></td>
<td>• GIS analyst</td>
<td></td>
</tr>
</tbody>
</table>

| Output:                    | • Maps/GiS                               |                                               |

| Data requirements:        | • Low                                    |                                               |
|----------------------------|------------------------------------------|                                               |

| Data Cost:                | • Free                                   |                                               |

| Tool Cost:                | • Free                                   |                                               |

| Author/Developer:         | • Economic Resource Service              |                                               |

The Bicycle Environmental Quality Index (BEQI) is a quantitative observational survey to assess the bicycle environment on roadways and evaluate what streetscape improvements could be made to promote bicycling in San Francisco. The survey has 22 empirically-based indicators, each of which has been shown to promote or discourage bicycle riding and connectivity to other modes of transport. Several of the indicators have been used in other bicycle indices from different regions in the country, while others are new concepts that have been found significant through other studies regarding healthy bicycle environments. SFDPH identified five main categories which embody important physical environmental factors for bicyclists: Intersection Safety, Vehicle Traffic, Street Design, Safety, and Land Use. Table 1 details each BEQI indicator under its broader environmental category. These indicators can be aggregated to create the final index (the BEQI), which can be reported as an overall index score, and/or deconstructed by bicycle environmental categories.

### Key topics:
- Accessibility
- Bicycle incl. safety
- Livability/quality of life
- Mobility (any/all modes)
- Public health
- Vehicular safety
- Recreation

### Plan/Project phase:
- Local transportation planning
- Visioning
- Long-range transportation planning
- Programming/feasibility studies
- Project development and environmental review
- Final design

### Applicable Project(s)
- Bicycle pedestrian
- Corridor
- Complete Streets
- Safe Routes to School
- Master/small area plan
- Long-range transportation plan

### Geographic scale:
- Neighborhood
- Corridor
- Project or study area

### Purpose of Tool:
- Current context/existing conditions
- Compare scenarios or alternatives
- Establish priorities or evaluation criteria
- Evaluation over time

### Users:
- Public health professional
- Stakeholders/community members
- Transportation planner
- Urban designer/architect

### Output:
- Maps/GIS
- Scores/indices
- Strategic goals/targets
- Evaluation criteria/ranked priorities

### Data requirements:
- Medium

### Data Cost:
- Free

### Tool Cost:
- Free

### Author/Developer:
- San Francisco Department of Public Health, Environmental Health Section

For more information: [http://www.sfphes.org/HIA_Tools_BEQI.htm](http://www.sfphes.org/HIA_Tools_BEQI.htm)
## Blue Water Bridge Aesthetic Design Guide

As part of their commitment to applying Context Sensitive Solutions (CSS) principles to all projects, the Michigan Department of Transportation (MDOT) established a Community Advisory Group (CAG) for the Blue Water Bridge Plaza and I-94/I-69 project. Recognizing that this large project can influence and create beneficial improvements to the greater community as well as the adjacent neighborhoods, the CAG was charged to work with the design team to develop an Aesthetic Design Guide. Composed of members of the governmental agencies that operate at the border crossing and the Port Huron community that is the host, the CAG included representatives from: Neighborhoods, Local businesses, Port Huron Chamber of Commerce, St. Clair County, City of Port Huron, Port Huron Township, Federal Highway Administration (FHWA), General Services Administration (GSA), Historic District Commission, Bridge Plaza Business and Community Coalition, and the Michigan Department of Transportation.

### Key topics:
- Accessibility
- Aesthetics
- Community cohesion
- Community character
- Natural resources
- Crime/community safety
- Cultural resources
- Land use
- Livability/quality of life
- Pedestrian incl. safety

### Plan/Project phase:
- Visioning
- Final design
- Project development and environmental review

### Applicable Project(s) Types:
- Corridor
- Master/small area plan
- Environmental study (CE, EA, EIS)

### Geographic scale:
- Neighborhood
- Local/municipal
- Corridor
- Project or study area

### Purpose of Tool:
- Generate scenarios or alternatives
- Compare scenarios or alternatives
- Determine an action
- Create or set policies
- Establish priorities or evaluation criteria
- Collaborate with partners
- Build consensus/engage stakeholders

### Users:
- Community planner
- Environmental planner
- Historian/archeologist
- Landscape architect
- NEPA project manager
- Public involvement specialist
- Roadway designer/engineer
- Stakeholders/community members
- Transportation planner

### Output:
- Maps/GIS
- Graphics/charts
- Strategic goals/targets
- Evaluation criteria/ranked priorities

### Data requirements:
- High

### Data Cost:
- Free

### Tool Cost:
- Free

### Author/Developer:
- Michigan Department of Transportation, Community Advisory Group, HNTB Corporation, Wilbur Smith Associates

### For more information:
- [http://www.michigan.gov/mdot/0,1607,7-151-9621_11058_22978---,00.html](http://www.michigan.gov/mdot/0,1607,7-151-9621_11058_22978---,00.html)
The purpose of this guide is to provide local leaders with tools to build the collaborations needed to create livable communities for people of all ages. Every area of local government has a role to play in this effort. Each day, decisions affecting residents’ ability to age successfully in their communities are made by housing officials, transportation planners, planning and zoning specialists, parks and recreation officials, and economic development leaders. Early recognition of the impact that an aging population has on a community will enable these diverse departments to hone their planning and identify new opportunities. Creating livable communities for all ages calls for partnerships across agencies and among different sectors within communities. The guide can be used as a quick-reference kit for practitioners looking for tools, resources, and best practices. It includes information based on community experiences in building local leadership and solving specific challenges relating to aging. The guide includes a checklist of essential features of an aging-friendly community that will help you assess your community’s readiness for an aging population—and enable you to set priorities for improvements.

<table>
<thead>
<tr>
<th>Key topics:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>Housing</td>
</tr>
<tr>
<td>Community cohesion</td>
<td>Livability/quality of life</td>
</tr>
<tr>
<td>Community character</td>
<td>Public health</td>
</tr>
<tr>
<td>Crime/community safety</td>
<td>Vehicular safety</td>
</tr>
<tr>
<td>Cultural resources</td>
<td>Special population groups (elderly, young, LEP, etc.)</td>
</tr>
<tr>
<td>Equity/environmental justice</td>
<td>Recreation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Local transportation planning</td>
<td>Long-range transportation planning</td>
</tr>
<tr>
<td>Project development and environmental review</td>
<td>Visioning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit</td>
<td>Long-range transportation plan</td>
</tr>
<tr>
<td>Comprehensive plan</td>
<td>Environmental study (CE, EA, EIS)</td>
</tr>
<tr>
<td>Community impact assessment</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Local/municipal</td>
<td>Regional</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current context/existing conditions</td>
<td>Collaborate with partners</td>
</tr>
<tr>
<td>Create or set policies</td>
<td>Evaluation over time</td>
</tr>
<tr>
<td>Establish priorities or evaluation criteria</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Community planner</td>
<td>Public health professional</td>
</tr>
<tr>
<td>NEPA project manager</td>
<td>Stakeholders/community members</td>
</tr>
<tr>
<td>Policy maker</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluation criteria/ranked priorities</td>
<td>Checklist to identify strengths and weaknesses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data requirements:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td></td>
</tr>
<tr>
<td>Author/Developer:</td>
<td>• Partners for Livable Communities and the National Association of Area Agencies on Aging</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>For more information:</td>
<td>• <a href="http://www.n4a.org/pdf/07-116-n4a-blueprint4actionwcovers.pdf">http://www.n4a.org/pdf/07-116-n4a-blueprint4actionwcovers.pdf</a></td>
</tr>
</tbody>
</table>
### 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.

<table>
<thead>
<tr>
<th>Key topics:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>Cultural resources</td>
</tr>
<tr>
<td>Community cohesion</td>
<td>Livability/quality of life</td>
</tr>
<tr>
<td>Community character</td>
<td>Mobility (any/all modes)</td>
</tr>
<tr>
<td>Crime/community safety</td>
<td>Natural resources</td>
</tr>
<tr>
<td>Pedestrian incl. safety</td>
<td>Vehicular safety</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Visioning</td>
<td>Comprehensive plan</td>
</tr>
<tr>
<td>Project development and environmental review</td>
<td>Community impact assessment</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit</td>
<td>Environmental study (CE, EA, EIS)</td>
</tr>
<tr>
<td>Bicycle/pedestrian</td>
<td>Master/Small Area Plan</td>
</tr>
<tr>
<td>Corridor</td>
<td></td>
</tr>
<tr>
<td>Complete Streets</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Corridor</td>
<td></td>
</tr>
<tr>
<td>Project or study area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current context/existing conditions</td>
<td>Build consensus/engage stakeholders</td>
</tr>
<tr>
<td>Collaborate with partners</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental planner</td>
<td>Roadway designer/engineer</td>
</tr>
<tr>
<td>NEPA project manager</td>
<td>Stakeholders/community members</td>
</tr>
<tr>
<td>Public involvement specialist</td>
<td></td>
</tr>
<tr>
<td>Right of way agent</td>
<td>Transportation planner</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Indication of the present and future importance of various aspects of context</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data requirements:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author/Developer:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>PennDOT</td>
<td></td>
</tr>
</tbody>
</table>

The audit form asks the practitioner to answer a series of questions to ensure that all angles of potential community impacts from the project have been addressed. The tool presents a series of questions under seven headings; for each question, suggested data sources and key analyses are listed to assist the practitioner in answering the question. Suggested data sources and analysis are very detailed, providing ideas and instructions for practitioners. This version has been adapted from the Sociocultural Effects Considerations, which was developed by Florida DOT in 2005 and is included in the Sociocultural Effects Handbook (http://www.dot.state.fl.us/emo/pubs/sce/Appendix%20A-E/Appendix%20D_SCE%20Considerations.pdf).

<table>
<thead>
<tr>
<th>Key topics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
</tr>
<tr>
<td>Aesthetics</td>
</tr>
<tr>
<td>Bicycle incl. safety</td>
</tr>
<tr>
<td>Community cohesion</td>
</tr>
<tr>
<td>Employment</td>
</tr>
<tr>
<td>Land use</td>
</tr>
<tr>
<td>Mobility (any/all modes)</td>
</tr>
<tr>
<td>Pedestrian incl. safety</td>
</tr>
<tr>
<td>Special population groups</td>
</tr>
<tr>
<td>Recreation</td>
</tr>
<tr>
<td>Community character</td>
</tr>
<tr>
<td>Crime/community safety</td>
</tr>
<tr>
<td>Cultural resources</td>
</tr>
<tr>
<td>Economy</td>
</tr>
<tr>
<td>Equity/environmental justice</td>
</tr>
<tr>
<td>Livability/quality of life</td>
</tr>
<tr>
<td>Relocations/displacements</td>
</tr>
<tr>
<td>Vehicular safety</td>
</tr>
<tr>
<td>Traffic congestion</td>
</tr>
<tr>
<td>Transit facilities/services</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visioning</td>
</tr>
<tr>
<td>Project development and</td>
</tr>
<tr>
<td>environmental review</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community impact assessment</td>
</tr>
<tr>
<td>Environmental study (CE, EA, EIS)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood</td>
</tr>
<tr>
<td>Corridor</td>
</tr>
<tr>
<td>Project or study area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current context/existing</td>
</tr>
<tr>
<td>conditions</td>
</tr>
<tr>
<td>Collaborate with partners</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Community planner</td>
</tr>
<tr>
<td>Conservation planner</td>
</tr>
<tr>
<td>Environmental scientist</td>
</tr>
<tr>
<td>Environmental planner</td>
</tr>
<tr>
<td>NEPA project manager</td>
</tr>
<tr>
<td>Public involvement specialist</td>
</tr>
<tr>
<td>Right of way agent</td>
</tr>
<tr>
<td>Roadway designer/engineer</td>
</tr>
<tr>
<td>Transportation planner</td>
</tr>
<tr>
<td>Resources agencies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A variety of analyses that can</td>
</tr>
<tr>
<td>indicate potential impacts of</td>
</tr>
<tr>
<td>the project to the community</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Cost:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool Cost:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
</tr>
</tbody>
</table>

Community Context Tool – Community Effects Considerations
Community Context Tool – Community Effects Considerations

Author/Developer:  • Adapted from Florida DOT

FHWA has developed a software package and user manual for agencies to collect and maintain information on roadway safety and operations conditions. The software can generate and compile audit checklists, and allows for analysis of audit information by type of problem (e.g. pedestrian crossing hazards, vehicle turning conflicts) or by geographic location (e.g. corridor, neighborhood). The software tool is supported by a peer-to-peer network so agencies can talk directly with other agencies using the tool, FHWA sponsored training workshops, and many electronic resources available from the RSA website. Toolkits tailored to local roads and federal and tribal lands are also available.

### Key topics:
- Bicycle incl. safety
- Pedestrian incl. safety
- Public health
- Vehicular safety

### Plan/Project phase:
- Local transportation planning
- Project development and environmental review
- Programming/feasibility studies
- Final design

### Applicable Project(s) Types:
- Corridor
- Bicycle/pedestrian
- Safe Routes to School
- Complete Streets
- Long-range transportation plan
- Master/small area plan

### Geographic scale:
- Neighborhood
- Local/municipal
- Corridor
- Project or study area

### Purpose of Tool:
- Current context/existing conditions
- Establish priorities or evaluation criteria
- Evaluation over time

### Users:
- Public health professional
- Roadway designer/engineer
- Traffic operations engineer
- Transportation planner

### Output:
- Strategic goals/targets
- Evaluation criteria/ranked priorities

### Data requirements:
- High

### Data Cost:
- Free

### Tool Cost:
- Free

### Author/Developer:
- FHWA

### For more information:
**Community Context Tool - Quick Facts**

**GIS platform for prioritization of brownfield sites for funding and redevelopment**

The tool was developed with the end goal to assess brownfield sites based on their location-specific characteristics, independently of the end use and specific development project and to rank them according to three sets of criteria: socioeconomic (e.g. unemployment, property values), smart growth (street density, transit availability) and environmental (prior use, proximity to sensitive receptors). Brownfields are then mapped on a GIS system that also provides visualization of the factors that go into the ranking of the brownfield system. In this way urban planners can assess which areas or specific sites should be targeted for redevelopment even before a specific end use is envisioned for the site. This can help promote alternative end uses to brownfield sites such as parks or community centers, which can catalyze the revitalization of a neighborhood.

<table>
<thead>
<tr>
<th>Key topics:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>Land use</td>
</tr>
<tr>
<td>Economy</td>
<td>Public health</td>
</tr>
<tr>
<td>Employment</td>
<td>Special population groups (elderly, youth, LEP, etc.)</td>
</tr>
<tr>
<td>Equity/environmental justice</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Visioning</td>
<td>Programming/feasibility studies</td>
</tr>
<tr>
<td>Long-range transportation planning</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive plan</td>
<td></td>
</tr>
<tr>
<td>Redevelopment plan</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Local/municipal</td>
<td></td>
</tr>
<tr>
<td>Regional</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current context/existing conditions</td>
<td>Determine an action</td>
</tr>
<tr>
<td>Generate scenarios or alternatives</td>
<td>Collaborate with partners</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Community planner</td>
<td>GIS analyst</td>
</tr>
<tr>
<td>Environmental scientist</td>
<td>Policy maker</td>
</tr>
<tr>
<td>Environmental planner</td>
<td>Urban designer/architect</td>
</tr>
<tr>
<td>Economic development planner</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Scores or indices</td>
<td></td>
</tr>
<tr>
<td>Maps/GIS</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data requirements:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author/Developer:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Connecticut</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For more information:</th>
<th></th>
</tr>
</thead>
</table>
The Great Communities Toolkit is a free compendium of resources to help those participating in planning for neighborhoods near transit. The toolkit was developed to help community groups make sure these plans will result in neighborhoods of affordable homes, shops, accessible job centers, and community services. Users of this toolkit will have the tools to influence their city’s plans for neighborhoods near transit. The Toolkit has the following: 1. Stories of people whose lives improved by living or working near transit. 2. Policy Fact Sheets with detailed information on compact development, displacement, and other key issues. 3. Handout sheets to get your community informed about key aspects of station area plans such as parking, traffic, affordable housing, compact development, and community benefit agreements. Several handouts include checklists to help users evaluate station area plans. * Step-by-step instructions for creating a station plan campaign. * Tips for working with the media to get out your message. * Technical tools and references for getting more in-depth information. * Background on why we need to get involved in station area planning processes, who the members of the Great Communities Collaborative are and what the overall Collaborative goals are.

<table>
<thead>
<tr>
<th>Key topics:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>Community character</td>
</tr>
<tr>
<td>Air quality</td>
<td>Equity/environmental justice</td>
</tr>
<tr>
<td>Bicycle incl. safety</td>
<td>Housing</td>
</tr>
<tr>
<td>Community cohesion</td>
<td>Land use</td>
</tr>
<tr>
<td>Livability QUALITY OF life</td>
<td>Public health</td>
</tr>
<tr>
<td>Mobility (any/all modes)</td>
<td>Vehicular safety</td>
</tr>
<tr>
<td>Pedestrian incl. safety</td>
<td>Transit facilities/services</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Local transportation planning</td>
<td>Long-range transportation planning</td>
</tr>
<tr>
<td>Visioning</td>
<td>Project development and environmental review</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transit</td>
<td>Complete Street</td>
</tr>
<tr>
<td>Corridor</td>
<td>Master/small area plan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood</td>
<td>Project or study area</td>
</tr>
<tr>
<td>Corridor</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current context/existing conditions</td>
<td>Collaborate with partners</td>
</tr>
<tr>
<td>Establish priorities or evaluation criteria</td>
<td>Build consensus/engage stakeholders</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Community planner</td>
<td>Public health professional</td>
</tr>
<tr>
<td>Environmental planner</td>
<td>Stakeholders/community members</td>
</tr>
<tr>
<td>Landscape architect</td>
<td>Transportation planner</td>
</tr>
<tr>
<td>Policy maker</td>
<td>Urban designer/architect</td>
</tr>
<tr>
<td>Public involvement specialist</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The toolkit is meant to help community members engage in transit station area plans, so output is informal public participation.</td>
<td>Community Context Tool – Great Communities Collaborative Toolkit</td>
</tr>
<tr>
<td>Data requirements:</td>
<td>• High</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------</td>
</tr>
<tr>
<td>Data Cost:</td>
<td>• Free</td>
</tr>
<tr>
<td>Tool Cost:</td>
<td>• Free</td>
</tr>
<tr>
<td>Author/Developer:</td>
<td>• Published by TransForm for The Great Communities Collaborative; Ann Cheng, Principal Author and Layout Design.</td>
</tr>
</tbody>
</table>
The Housing + Transportation (H+T) Affordability Index is a new and more comprehensive way of thinking about the cost of housing and its true affordability by exploring the impact that transportation costs associated with location have on a household’s economic bottom line. The H+T Index is an innovative tool that measures the true affordability of housing. The traditional measure of affordability used by planners, lenders, and most consumers recommends that housing should cost less than 30% of income. The H+T Index, in contrast, takes into account not just the cost of housing, but the costs of housing and transportation. The H+T Index is the nation’s most comprehensive assessment of household transportation costs by location. It is an innovative tool that analyzes transportation costs at a neighborhood level and allows users to view housing and transportation data through maps, charts and statistics for 337 metro areas covering more than 80% of the nation’s population, revealing the relative costs of different communities within a region.

### Key topics:
- Economy
- Equity/environmental justice
- Housing
- Land use
- Livability/quality of life
- Mobility (any/all modes)

### Plan/Project phase:
- Local transportation planning
- Visioning
- Long-range transportation planning
- Project development and environmental review

### Applicable Project(s) Types:
- Bicycle/pedestrian
- Transit
- Comprehensive plan
- Community impact assessment
- Master/small area plan
- Long-range transportation plan
- Environmental study (CE, EA, EIS)
- Redevelopment plan

### Geographic scale:
- Neighborhood
- Local/municipal
- Corridor
- Regional
- Project or study area

### Purpose of Tool:
- Current context/existing conditions
- Compare scenarios or alternatives
- Create or set policies
- Evaluation over time

### Users:
- Community planner
- Economist/fiscal analyst
- Environmental planner
- Landscape architect
- NEPA project manager
- Policy maker
- Real estate appraiser/housing market analyst
- Social scientist
- Stakeholders/community members
- Transportation planner
- Urban designer/architect

### Output:
- Scores or indices
- Maps/GIS
- Graphics/charts

### Data requirements:
- Low

### Data Cost:
- Free

### Tool Cost:
- Free

### Author/Developer:
- Center for Neighborhood Technology
For more information:  * http://htaindex.org/
### Integrated Transportation Information System

A web portal that integrates demographic, transportation project development, and public outreach information for public information officers and transportation planners. The maps and reports generated by IT IS support closer planning coordination in the region as well as stronger and more consistent public outreach work. Community Background Reports provide narrative descriptions of community characteristics and context. Matrix of public involvement strategies provides guidance on effective techniques for specific population groups. Limited to Dade, Palm Beach and Broward Counties; Community Background Reports available for select communities in these counties.

<table>
<thead>
<tr>
<th>Key topics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Accessibility</td>
</tr>
<tr>
<td>• Aesthetics</td>
</tr>
<tr>
<td>• Agricultural</td>
</tr>
<tr>
<td>• Bicycle incl. safety</td>
</tr>
<tr>
<td>• Community cohesion</td>
</tr>
<tr>
<td>• Community character</td>
</tr>
<tr>
<td>• Crime/community safety</td>
</tr>
<tr>
<td>• Cultural resources</td>
</tr>
<tr>
<td>• Economy</td>
</tr>
<tr>
<td>• Education</td>
</tr>
<tr>
<td>• Employment</td>
</tr>
<tr>
<td>• Equity/environmental justice</td>
</tr>
<tr>
<td>• Housing</td>
</tr>
<tr>
<td>• Land use</td>
</tr>
<tr>
<td>• Livability/quality of life</td>
</tr>
<tr>
<td>• Mobility (any/all modes)</td>
</tr>
<tr>
<td>• Natural resources</td>
</tr>
<tr>
<td>• Pedestrian incl. safety</td>
</tr>
<tr>
<td>• Public health</td>
</tr>
<tr>
<td>• Relocations/displacements</td>
</tr>
<tr>
<td>• Vehicular safety</td>
</tr>
<tr>
<td>• Special population groups (elderly, youth, LEP, etc.)</td>
</tr>
<tr>
<td>• Traffic/congestion</td>
</tr>
<tr>
<td>• Water quality</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Local transportation planning</td>
</tr>
<tr>
<td>• Visioning</td>
</tr>
<tr>
<td>• Long-range transportation planning</td>
</tr>
<tr>
<td>• Programming/feasibility studies</td>
</tr>
<tr>
<td>• Project development and environmental review</td>
</tr>
<tr>
<td>• Final design</td>
</tr>
<tr>
<td>• Right of way</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Corridor</td>
</tr>
<tr>
<td>• Complete Streets</td>
</tr>
<tr>
<td>• Community impact assessment</td>
</tr>
<tr>
<td>• Master/small area plan</td>
</tr>
<tr>
<td>• Long-range transportation plan</td>
</tr>
<tr>
<td>• Environmental study (CE, EA, EIS)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Neighborhood</td>
</tr>
<tr>
<td>• Local/municipal</td>
</tr>
<tr>
<td>• Corridor</td>
</tr>
<tr>
<td>• Regional</td>
</tr>
<tr>
<td>• Project or study area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Current context/existing conditions</td>
</tr>
<tr>
<td>• Generate scenarios or alternatives</td>
</tr>
<tr>
<td>• Determine an action</td>
</tr>
<tr>
<td>• Collaborate with partners</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Community planner</td>
</tr>
<tr>
<td>• Environmental planner</td>
</tr>
<tr>
<td>• GIS analyst</td>
</tr>
<tr>
<td>• NEPA project manager</td>
</tr>
<tr>
<td>• Public involvement specialist</td>
</tr>
<tr>
<td>• Roadway designer/engineer</td>
</tr>
<tr>
<td>• Stakeholders/community members</td>
</tr>
<tr>
<td>• Transportation planner</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Maps/GIS</td>
</tr>
<tr>
<td>• Community background reports</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Low</td>
</tr>
<tr>
<td>Data Cost:</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Tool Cost:</td>
</tr>
<tr>
<td>Author/Developer:</td>
</tr>
<tr>
<td>For more information:</td>
</tr>
</tbody>
</table>
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. 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.

<table>
<thead>
<tr>
<th>Key topics:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Aesthetics</td>
<td>Land use</td>
</tr>
<tr>
<td>Community character</td>
<td>Livability/quality of life</td>
</tr>
<tr>
<td>Education</td>
<td>Pedestrian incl. safety</td>
</tr>
<tr>
<td>Housing</td>
<td>Public health</td>
</tr>
<tr>
<td>Recreation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Local transportation planning</td>
<td>Final design</td>
</tr>
<tr>
<td>Project development and environmental review</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle/pedestrian</td>
<td>Community impact assessment</td>
</tr>
<tr>
<td>Corridor</td>
<td>Master/small area plan</td>
</tr>
<tr>
<td>Complete Streets</td>
<td>Environmental study (CE, EA, EIS)</td>
</tr>
<tr>
<td>Safe Routes to School</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Neighborhood</td>
<td>Project or study area</td>
</tr>
<tr>
<td>Local/municipal</td>
<td>Combine street segment audits for neighborhood or city level use</td>
</tr>
<tr>
<td>Corridor</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Current context/existing conditions</td>
<td>Collaborate with partners</td>
</tr>
<tr>
<td>Generate scenarios or alternatives</td>
<td>Build consensus/engage stakeholders</td>
</tr>
<tr>
<td>Compare scenarios and alternatives</td>
<td>Evaluation over time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Community planner</td>
<td>Public health professional</td>
</tr>
<tr>
<td>Environmental planner</td>
<td>Roadway designer/engineer</td>
</tr>
<tr>
<td>Landscape architect</td>
<td>Stakeholders/community members</td>
</tr>
<tr>
<td>NEPA project manager</td>
<td>Transportation planner</td>
</tr>
<tr>
<td>Public involvement specialist</td>
<td>Urban designer/architect</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Scores or indices</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data requirements:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author/Developer:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kristen Day, Ph.D., Marlon Boarnet, Ph.D., Mariela Alfonzo, MURP, and Ann Forsyth, Ph.D.</td>
<td></td>
</tr>
</tbody>
</table>

For more information:  https://webfiles.uci.edu/kday/public/index.html
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. It includes a "Walking Suitability Assessment Form", which is a short one-page tool that can be used by area residents to evaluate a road segment under 2 miles in length and its ability to support pedestrian movements (available in the main document Appendix 6, or at http://www.eatsmartmovemorenc.com/NCWalksToSchool/Texts/w2s_walk-suitability.pdf). It also includes a "Bicycle Suitability Assessment Form", which is a one-page audit form to be used by area residents to assess the condition of a corridor and its suitability to support bicycle movements. The audit form is divided into three short sections: general road factors; pavement factors; and location factors (available in the main document Appendix 7, or at http://www.eatsmartmovemorenc.com/NCWalksToSchool/Texts/w2s_bike-suitability.pdf).

Key topics:
- Accessibility
- Land use
- Livability/quality of life
- Recreation
- Mobility (any/all modes)
- Pedestrian incl. safety
- Public health

Plan/Project phase:
- Local transportation planning
- Visioning
- Long-range transportation planning
- Project development and environmental review
- Operations and maintenance

Applicable Project(s) Types:
- Bicycle/pedestrian
- Corridor
- Complete Streets
- Safe Routes to School
- Master/small area plan

Geographic scale:
- Neighborhood
- Local/municipal
- Corridor
- Project or study area
- Combine street segment audits for neighborhood or city level use

Purpose of Tool:
- Current context/existing conditions
- Establish priorities or evaluation criteria
- Collaborate with partners
- Build consensus/engage stakeholders
- Evaluation over time

Users:
- Community planner
- Public health professional
- Stakeholders/community members
- Transportation planner

Output:
- Scores or indices

Data requirements:
- Low

Data Cost:
- Free

Tool Cost:
- Free

Author/Developer:
- James Emery, Carolyn Crump, Philip Bors (UNC School of Public Health)

For more information:
This manual provides a qualitative introduction to several key urban design qualities from the urban design literature, and then will provide guidance on how to objectively measure each quality for a typical street. Includes a scoring sheet for measuring urban design qualities. 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.

### Key topics:
- Aesthetics
- Land use
- Livability/quality of life
- Mobility (any/all modes)
- Noise
- Pedestrian incl. safety
- Public health

### Plan/Project phase:
- Local transportation planning
- Visioning

### Applicable Project(s) Types:
- Corridor
- Complete Streets
- Master/small area plan
- Redevelopment plan

### Geographic scale:
- Neighborhood
- Local/municipal
- Corridor
- Project or study area
- Combine street segment audits for neighborhood or city level use

### Purpose of Tool:
- Current context/existing conditions
- Establish priorities or evaluation criteria
- Collaborate with partners
- Build consensus/engage stakeholders
- Evaluation over time

### Users:
- Community planner
- Landscape architect
- Urban designer/architect
- Stakeholders/community members
- Real estate appraiser/housing market analyst

### Output:
- Scores or indices

### Data requirements:
- Medium

### Data Cost:
- Free

### Tool Cost:
- Free

### Author/Developer:
- Active Living Research Program, Robert Wood Johnson Foundation

### For more information:
- [http://www.activelivingresearch.org/node/10637](http://www.activelivingresearch.org/node/10637)
Community Context Tool - Quick Facts

**Minnesota DOT’s Visual Quality Management**

Programmatic approach to integrating aesthetics and community design preferences into project design. Landscape architects work with communities to establish the aesthetic values that should be part of the project. The program serves as a roadmap to gathering community input and translating it into project design elements.

<table>
<thead>
<tr>
<th>Key topics:</th>
<th>Land use</th>
<th>Livability/quality of life</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>Aesthetics</td>
<td>Mobility (any/all modes)</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>Bicycle incl. safety</td>
<td>Natural resources</td>
</tr>
<tr>
<td>Community cohesion</td>
<td>Community character</td>
<td>Pedestrian incl. safety</td>
</tr>
<tr>
<td>Community character</td>
<td>Crime/community safety</td>
<td>Vehicular safety</td>
</tr>
<tr>
<td>Crime/community safety</td>
<td>Cultural resources</td>
<td>Special population groups (elderly, youth, LEP, etc.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th>Visioning</th>
<th>Project development and environmental review</th>
</tr>
</thead>
</table>

| Applicable Project(s)   | Community impact assessment                   | Environmental study (CE, EA, EIS)             |
| Types:                  |                                               |                                               |

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th>Corridor</th>
<th>Project or study area</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
<th>Generate scenarios or alternatives</th>
<th>Establish priorities or evaluation criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Compare scenarios and alternatives</td>
<td>Collaborate with partners</td>
</tr>
<tr>
<td></td>
<td>Determine an action</td>
<td>Build consensus/engage stakeholders</td>
</tr>
<tr>
<td></td>
<td>Create or set policies</td>
<td></td>
</tr>
</tbody>
</table>

| Users:                  | Environmental planner                        | Roadway designer/engineer                     |
|                        | Landscape architect                          | Transportation planner                        |
|                        | NEPA project manager                         | Urban designer/architect                      |
|                        | Public involvement specialist                |                                               |

<table>
<thead>
<tr>
<th>Output:</th>
<th>Strategic goals/targets</th>
<th>Guidelines for design of specific project</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Evaluation criteria/ranked priorities</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data requirements:</th>
<th>High</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Data Cost:</th>
<th>Free</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Tool Cost:</th>
<th>Free</th>
<th></th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Author/Developer:</th>
<th>Minnesota DOT</th>
<th></th>
</tr>
</thead>
</table>

|------------------------|----------------------------------------------|----------------------------------------------|
## Multi-hazard Risk Tool For Buncombe County

The Buncombe County Multi-Hazard Risk Tool was developed by RENCI at UNC Asheville to help emergency responders and planners prepare response and mitigation plans for the County by providing information about:

- the hazards that affect Buncombe County
- the areas of the County that are affected by each hazard
- the number of and total value of property parcels at risk from each hazard
- the key infrastructure and critical resources at risk during a hazard event

<table>
<thead>
<tr>
<th>Key topics:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Education</td>
<td>• Housing</td>
<td></td>
</tr>
<tr>
<td>• Equity/environmental justice</td>
<td>• Land use</td>
<td></td>
</tr>
<tr>
<td>• Emergency management/response</td>
<td>• Natural resources</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Visioning</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Comprehensive plan</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Neighborhood</td>
<td>• Regional</td>
</tr>
<tr>
<td>• Local/municipal</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Current context/existing conditions</td>
<td>• Build consensus/engage stakeholders</td>
</tr>
<tr>
<td>• Establish priorities or evaluation criteria</td>
<td>• Evaluation over time</td>
</tr>
<tr>
<td>• Collaborate with partners</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Community planner</td>
<td>• Policy maker</td>
</tr>
<tr>
<td>• Environmental scientist</td>
<td>• Roadway designer/engineer</td>
</tr>
<tr>
<td>• Environmental planner</td>
<td>• Stakeholders/community members</td>
</tr>
<tr>
<td>• GIS analyst</td>
<td>• Emergency management planner</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Maps/GIS</td>
<td>• Strategic goals/targets</td>
</tr>
<tr>
<td>• Graphics/charts</td>
<td>• Evaluation criteria/ranked priorities</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data requirements:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Medium</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Free</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Free</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author/Developer:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• RENCI at UNC Asheville (Todd Pierce)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For more information:</th>
<th></th>
</tr>
</thead>
</table>

Community Context Tool – Multi-hazard Risk Tool For Buncombe County
Community Context Tool - Quick Facts

**Neighborhood Cohesion Calculator**

The consulting firm Parametrix developed this tool as part of their environmental analysis work for a multimodal bridge project. The Neighborhood Cohesion Calculator generates a comparative analysis of the numerous neighborhoods that will be potentially impacted by the project. The Calculator helps to compare and contrast factors which determine a neighborhood's level of cohesion. The tool is flexible and can be customized to fit the needs of any neighborhood or community, based on the characteristics of the area. When using the Calculator, the user group will want to "tune" the calculator to mirror the community being assessed, including working with community to establish weighting factors for various measures. The Calculator reveals, through its use as well as its outputs, the strengths and weaknesses of a given neighborhood’s cohesion. Using the Calculator is intended to lead to the development of neighborhood action plans. The Calculator is available free of charge to government agencies, non-profit community development organizations and neighborhood associations.

**Key topics:**
- Community cohesion
- Community character

**Plan/Project phase:**
- Visioning
- Project development and environmental review

**Applicable Project(s) Types:**
- Corridor
- Community impact assessment
- Environmental study (CE, EA, EIS)

**Geographic scale:**
- Neighborhood
- Local/municipal
- Corridor
- Regional
- Project or study area

**Purpose of Tool**
- Current context/existing conditions
- Collaborate with partners
- Build consensus/engage stakeholders
- Evaluation over time

**Users:**
- Community planner
- NEPA project manager
- Policy maker
- Public involvement specialist

**Output:**
- Scores or indices

**Data requirements:**
- High

**Data Cost:**
- Free

**Tool Cost:**
- Purchase/charge for use; free for government agencies, non-profit community development organizations, and neighborhood associations

**Author/Developer:**
- Parametrix

**For more information:**
The Neighborhood Completeness Indicator (NCI) is a quantitative spatial assessment tool measuring the proximity of San Francisco residents to daily goods and services in their neighborhoods. It was created as part of the Healthy Development Measurement Tool to advance the Public Infrastructure objective of assuring access to daily goods and service needs. Included in the NCI are 11 key public and 12 key retail services, necessary for meeting the daily needs of neighborhood residents. Although geographic distance is one dimension of accessibility, proximity to services promotes increased walking and biking, reduced daily vehicle trips and miles traveled, increased possibilities for healthful and meaningful work, and increased interactions among neighbors and others on the street. The Indicator stems from a fundamental vision that all communities should have equal access to health resources. The more key public and retail services a neighborhood has, the greater the chance for residents and workers to walk or bike to access those services, increasing physical activity, social interactions, and “eyes on the street”. Research has found the presence of a supermarket in a neighborhood predicts higher fruit and vegetable consumption and a reduced prevalence of overweight and obesity. Neighborhoods with diverse and mixed land uses can create closer proximity between residences, employment, and goods and services, thereby reducing vehicle trips and miles traveled and as a result, reducing air and noise pollution. List of measures and benchmarks provided at: http://www.thehdmt.org/objectives/view/62

<table>
<thead>
<tr>
<th>Key topics:</th>
<th>Accessibility</th>
<th>Air quality</th>
<th>Bicycle incl. safety</th>
<th>Community cohesion</th>
<th>Community character</th>
<th>Special population groups (elderly, youth, LEP, etc.)</th>
<th>Pedestrian issues</th>
<th>Economy</th>
<th>Equity/environmental justice</th>
<th>Housing</th>
<th>Land use</th>
<th>Public health</th>
<th>Crime/community safety</th>
<th>Livability/quality of life</th>
<th>Mobility (any/all modes)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th>Local transportation planning</th>
<th>Project development and environmental review</th>
<th>Visioning</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s)</th>
<th>Bicycle/pedestrian</th>
<th>Transit</th>
<th>Corridor</th>
<th>Comprehensive plan</th>
<th>Community impact assessment</th>
<th>Master/small area plan</th>
<th>Long-range transportation plan</th>
<th>Environmental study (CE, EA, EIS)</th>
<th>Redevelopment plan</th>
<th>Complete Streets</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th>Neighborhood</th>
<th>Local/municipal</th>
<th>Project or study area</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
<th>Current context/existing conditions</th>
<th>Generate scenarios or alternatives</th>
<th>Compare scenarios or alternatives</th>
<th>Establish priorities or evaluation criteria</th>
<th>Collaborate with partners</th>
<th>Evaluation over time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Users:</td>
<td>Output:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td>-------------------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Community planner</td>
<td>• Maps/GIS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Environmental planner</td>
<td>• Scores or indices</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Economic development planner</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Landscape architect</td>
<td>•</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• NEPA project manager</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Policy maker</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Public health professional</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Social scientist</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Transportation planner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Urban designer/architect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Data requirements: | Free       |
|                   | Medium     |

| Data Cost:       | Free      |
|                 |           |

| Tool Cost:       | Free      |
|                 |           |

| Author/Developer: | San Francisco Department of Public Health |

| For more information: | http://www.sfphes.org/HIA_Tools_Neighborhood_Completeness.htm |

Community Context Tool – Neighborhood Completeness Indicator
### Community Context Tool - Quick Facts

**Parking Cost Calculator**

This tool includes three spreadsheets with embedded calculations to determine parking facility costs, cost recovery pricing, and revenue generation. Users can adjust inputs to represent various conditions and assumptions. The calculator allows a planner or analyst to evaluate a range of parking policies and pricing scenarios as part of estimating lifecycle costs of a project or to calculate full costs of driving to users and facility owners/developers.

<table>
<thead>
<tr>
<th>Key topics:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Economy</td>
</tr>
<tr>
<td>• Land use</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Local transportation planning</td>
</tr>
<tr>
<td>• Project development and environmental review</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Corridor</td>
</tr>
<tr>
<td>• Master/small area plan</td>
</tr>
<tr>
<td>• Redevelopment plan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Neighborhood</td>
</tr>
<tr>
<td>• Local/municipal</td>
</tr>
<tr>
<td>• Corridor</td>
</tr>
<tr>
<td>• Project or study area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Generate scenarios or alternatives</td>
</tr>
<tr>
<td>• Compare scenarios or alternatives</td>
</tr>
<tr>
<td>• Determine an action</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Community planner</td>
</tr>
<tr>
<td>• Economist/fiscal analyst</td>
</tr>
<tr>
<td>• Economic development planner</td>
</tr>
<tr>
<td>• Policy maker</td>
</tr>
<tr>
<td>• Real estate appraiser/housing market analyst</td>
</tr>
<tr>
<td>• Transportation planner</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Projected costs and revenues</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data requirements:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Low</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Cost:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Free</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool Cost:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Free</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author/Developer:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Todd Litman, Victoria Transport Policy Institute</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For more information:</th>
</tr>
</thead>
</table>
The Pedestrian Environmental Quality Index (PEQI) has been developed to assess the quality of the physical pedestrian environment and inform pedestrian planning needs. The PEQI draws on published research and work from numerous cities to assess how the physical environment impacts on whether people walk in a neighborhood. The PEQI is an observational survey which quantifies street and intersection factors empirically known to affect people’s travel behaviors, and is organized into five categories: traffic, street design, land use, intersections, and safety. Within these categories are 30 indicators that reflect the quality of the built environment for pedestrians and comprise the survey used for data collection. SFDPH aggregates these indicators to create a weighted summary index, which can be reported as an overall index or deconstructed by pedestrian environmental category or even by each indicator. The PEQI survey is designed to be simple to use in the field, requiring a trained observer to visually assess street segment and intersection features and check the corresponding box on the survey form. Once collected, data is entered into a user-friendly database that automatically scores the data. A PEQI score, reflecting the quality of the physical pedestrian environment, is created for each street segment and intersection in a defined area.

### Key topics:
- Accessibility
- Community character
- Crime/community safety
- Cultural resources
- Land use
- Livability/quality of life
- Mobility (any/all modes)
- Noise
- Pedestrian incl. safety
- Public health
- Recreation

### Plan/Project phase:
- Local transportation planning
- Long-range transportation planning
- Project development and environmental review

### Applicable Project(s) Types:
- Bicycle/pedestrian
- Complete streets initiative
- Corridor
- Master/small area plan

### Geographic scale:
- Corridor
- Neighborhood
- Project or study area

### Purpose of Tool:
- Build consensus/engage stakeholders
- Collaborate with partners
- Compare scenarios or alternatives
- Describe existing conditions/issues
- Establish priorities or evaluation criteria
- Evaluation over time
- General scenarios or alternatives

### Users:
- Community planner
- NEPA project manager
- Public health professional
- Stakeholders/community members
- Transportation planner
| Output: | • Evaluation criteria/ranked priorities  
• Maps/GIS  
• Scores/indices  
• Strategic goals/targets |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Data requirements:</td>
<td>• Medium</td>
</tr>
<tr>
<td>Data Cost:</td>
<td>• Free</td>
</tr>
<tr>
<td>Tool Cost:</td>
<td>• Free</td>
</tr>
<tr>
<td>Author/Developer:</td>
<td>• San Francisco Department of Public Health, Environmental Health</td>
</tr>
<tr>
<td>For more information:</td>
<td>• <a href="http://www.sfphes.org/HIA_Tools_PEQI.htm">http://www.sfphes.org/HIA_Tools_PEQI.htm</a></td>
</tr>
</tbody>
</table>
# Community Context Tool - Quick Facts

## PolicyMap

Commercial provider of customized GIS maps. Includes some 10,000 indicators in customized combinations; customers can manipulate data and maps using an online system without the need to purchase GIS software or data.

## Key topics:
- Air quality
- Crime/community safety
- Economy
- Education
- Employment
- Housing
- Land use
- Livability/quality of life
- Noise
- Water quality

## Plan/Project phase:
- Local transportation planning
- Long-range transportation planning
- Project development and environmental review

## Applicable Project(s) Types:
- Community impact assessment
- Comprehensive plan
- Environmental study (CE, EA, EIS)
- Long-Range Transportation Plan

## Geographic scale:
- Corridor
- Neighborhood
- Local/municipal
- Regional
- Project or study area
- State
- Any scale may be applied

## Purpose of Tool:
- Build consensus/engage stakeholders
- Collaborate with partners
- Describe existing conditions/issues
- Determine an action
- Evaluation over time

## Users:
- Community planner
- Economist/fiscal analyst
- Economic development planner
- Environmental planner
- NEPA project manager
- Policy maker
- Public involvement specialist
- Real estate appraiser/housing market analyst
- Social scientist
- Stakeholders/community members
- Transportation planner

## Output:
- Maps/GIS
- Graphics/charts
- Reports

## Data requirements:
- Low

## Data Cost:
- Cost to purchase data

## Tool Cost:
- Purchase/Charge for use

## Author/Developer:
- The Reinvestment Fund (TRF)

## For more information:
## Project for Public Spaces (PPS) Street Audit

Project for Public Spaces designed Street Audit to evaluate how well streets and adjacent land uses are performing as places, and to identify opportunities to enhance them in the future. See also description in the Planning Commissioners Journal: [http://pcj.typepad.com/planning_commissioners_jo/2010/06/circling-the-square.html](http://pcj.typepad.com/planning_commissioners_jo/2010/06/circling-the-square.html)

### Key topics:
- Accessibility
- Aesthetics
- Bicycle incl. safety
- Community character
- Cultural resources
- Land use
- Livability/quality of life
- Mobility (any/all modes)
- Pedestrian incl. safety
- Public health

### Plan/Project phase:
- Local transportation planning
- Long-range transportation planning
- Operations and maintenance
- Project development and environmental review
- Visioning

### Applicable Project(s) Types:
- Bicycle/pedestrian
- Complete streets initiative
- Comprehensive plan
- Corridor
- Master/small area plan
- Transit
- Redevelopment plan

### Geographic scale:
- Corridor
- Local/municipal
- Neighborhood
- Project or study area

### Purpose of Tool
- Build consensus/engage stakeholders
- Describe existing conditions/issues
- Generate scenarios or alternatives

### Users:
- Community planner
- Landscape architect
- Public involvement specialist
- Roadway designer/engineer
- Stakeholders/community members
- Transportation planner
- Urban designer/architect

### Output:
- Maps/GIS
- Strategic goals/targets

### Data requirements:
- Medium

### Data Cost:
- Free

### Tool Cost:
- Free

### Author/Developer:
- PPS

### For more information:
Florida’s PACE-EH is unique as an initiative that assesses community-identified problems by communicating directly with the residents. This community-based process is a product of the National Association of County and City Health Officials (NACCHO) and is aligned with the Healthy People 2010 initiatives. The Florida Department of Health has a long history with this process, dating back to membership on the project’s steering committee in the mid-1990s. The methodology is specific to environmental health: http://www.naccho.org/topics/environmental/CEHA.cfm Florida’s project results show a strong need to closely examine the way we build, develop, and provide services to our communities in the context of impacts on our public health. The PACE-EH process has been successful in improving conditions in several of these communities. Its use demonstrates how a consistent process needs to be in place for public health to have a role in local land use planning decisions.

### Key topics:
- Air quality
- Community cohesion
- Community character
- Crime/community safety
- Cultural resources
- Economy
- Education
- Employment
- Equity/Environmental Justice
- Housing
- Land use
- Livability/quality of life
- Natural resources
- Public health
- Water quality

### Plan/Project phase:
- Project development and environmental review
- Visioning

### Applicable Project(s) Types:
- Comprehensive plan
- Environmental study (CE, EA, EIS)

### Geographic scale:
- Local/municipal
- Neighborhood
- Project or study area

### Purpose of Tool
- Build consensus/engage stakeholders
- Collaborate with partners
- Compare scenarios or alternatives
- Create or set policies
- Describe existing conditions/issues
- Establish priorities or evaluation criteria
- Evaluation over time
- Generate scenarios or alternatives

### Users:
- Community planner
- Environmental planner
- Public health professional

### Output:
- Evaluation criteria/ranked priorities

### Data requirements:
- High

### Data Cost:
- Free

### Tool Cost:
- Free

### Author/Developer:
- Centers for Disease Control/National Association for City and County Health Officials

### For more information:
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.

<table>
<thead>
<tr>
<th>Key topics:</th>
<th>Plan/Project phase:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Community cohesion</td>
<td>• Project development and environmental review</td>
</tr>
<tr>
<td>• Community character</td>
<td>• Construction</td>
</tr>
<tr>
<td>• Equity/environmental justice</td>
<td></td>
</tr>
<tr>
<td>• Emergency management/response</td>
<td>• Operations and Maintenance</td>
</tr>
<tr>
<td>• Mobility (any/all modes)</td>
<td></td>
</tr>
<tr>
<td>• Public health</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
<th>Purpose of Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Transit</td>
<td>• Build consensus/engage stakeholders</td>
</tr>
<tr>
<td>• Corridor</td>
<td>• Collaborate with partners</td>
</tr>
<tr>
<td>• Safe Routes to School</td>
<td></td>
</tr>
<tr>
<td>• Community Impact Assessment</td>
<td>• Create or set policies</td>
</tr>
<tr>
<td>• Environmental study (CE, EA, EIS)</td>
<td>• Describe existing conditions/issues</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th>Users:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• County</td>
<td>• Community planner</td>
</tr>
<tr>
<td>• Local/municipal</td>
<td>• Environmental planner</td>
</tr>
<tr>
<td>• Regional</td>
<td>• NEPA project manager</td>
</tr>
<tr>
<td></td>
<td>• Public involvement specialist</td>
</tr>
<tr>
<td></td>
<td>• Public health professional</td>
</tr>
<tr>
<td></td>
<td>• Social scientist</td>
</tr>
<tr>
<td></td>
<td>• Transportation planner</td>
</tr>
<tr>
<td></td>
<td>• Emergency management planner</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Data collection tools that feed into</td>
<td>• Data collection tools that feed into emergency</td>
</tr>
<tr>
<td></td>
<td>management planning</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data requirements:</th>
<th>Data Cost:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Medium</td>
<td>• Free</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Free</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author/Developer:</th>
<th>For more information:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Center for Disease Control and Prevention</td>
<td>• <a href="http://www.bt.cdc.gov/workbook/">http://www.bt.cdc.gov/workbook/</a></td>
</tr>
</tbody>
</table>
### San Francisco Noise Model

The San Francisco Noise Model estimates community noise levels in all areas of the City based on the generation and dispersion of traffic and industrial point source of noise emissions. It has the capacity to include airports and mass transit when appropriate. The model can estimate current or future noise levels for a street, land use parcel, neighborhood, community, or an entire city. The model can also identify the need for noise mitigation measures which include: barriers, substitution of quieter vehicles and equipment, and rerouting of noisy traffic. The model is an integral part of the citywide noise enforcement program and is especially useful in determining the various permitted noise levels associated with zoning districts in the noise ordinance and the implementation of acoustical building code standards. The Noise Model can be used to identify those populations exposed to excessive noise. When coupled with other land use strategies, the Model can protect residents of new developments by ensuring that these homes are built to modern acoustical insulation standards. In addition the Model enables the identification of areas exposed to excessive noise and enables the implementation of mitigation measures which could include sound walls, electric trolley cars, hybrid buses, rerouting of heavy trucks, and reduced use of police and fire sirens.

<table>
<thead>
<tr>
<th>Key topics:</th>
<th>Livability/quality of life</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Equity/Environmental Justice</td>
<td>• Noise</td>
</tr>
<tr>
<td>• Housing</td>
<td>• Public health</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th>Project development and environmental review</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Final design</td>
<td>• Right of way</td>
</tr>
<tr>
<td>• Long-range transportation planning</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
<th>Environmental study (CE, EA, EIS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Community impact assessment</td>
<td>• Master/small area plan</td>
</tr>
<tr>
<td>• Comprehensive plan</td>
<td>• Long-range Transportation plan</td>
</tr>
<tr>
<td>• Corridor</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th>Establish priorities or evaluation criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Corridor</td>
<td>• Evaluation over time</td>
</tr>
<tr>
<td>• Local/municipal</td>
<td></td>
</tr>
<tr>
<td>• Neighborhood</td>
<td></td>
</tr>
<tr>
<td>• Project or study area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Compare scenarios or alternatives</td>
<td>• Establish priorities or evaluation criteria</td>
</tr>
<tr>
<td>• Describe existing conditions/issues</td>
<td>• Evaluation over time</td>
</tr>
<tr>
<td>• Determine an action</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Environmental planner</td>
<td>• Public health professional</td>
</tr>
<tr>
<td>• GIS Analyst</td>
<td>• Transportation planner</td>
</tr>
<tr>
<td>• NEPA project manager</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Evaluation criteria/ranked priorities</td>
<td>• Maps/GIS</td>
</tr>
<tr>
<td>• Graphics/charts</td>
<td>• Noise exposure levels</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data requirements:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• High</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Free</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool Cost:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Free</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author/Developer:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• San Francisco Department of Public Health, Environmental Health</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For more information:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• <a href="http://www.sfphes.org/HIA_Tools_Noise.htm">http://www.sfphes.org/HIA_Tools_Noise.htm</a></td>
<td></td>
</tr>
</tbody>
</table>

Community Context Tool – San Francisco Noise Model
This easy-to-use tool is a guide designed to assess how well planning and land use decisions in a community follow the principles of Smart Growth. The Checklist is not intended to be used to critique current development conditions or past land use planning and management decisions. Instead, the Checklist simply provides a method with which to evaluate whether current land use planning and management practices in your community align with the Principles of Smart Growth and are likely to guide public investments and private developments to achieve larger, broader and more durable benefits in your community. This Checklist assumes some familiarity with existing municipal plans, with zoning and subdivision codes, with community investment practices and with ongoing site plan and subdivision permitting activities. It is offered as a way for municipal planners and other officials to identify actions that communities might take to attract and to achieve growth that reflects the Smart Growth Principles. Your answers to the questions provided in the Checklist indicate areas where your community may want to reshape its land-use planning and management practices.

### Key topics:
- Accessibility
- Aesthetics
- Agricultural
- Community character
- Crime/community safety
- Cultural resources
- Housing
- Land use
- Livability/quality of life
- Mobility (any/all modes)
- Pedestrian incl. safety
- Public health
- Vehicular safety

### Plan/Project phase:
- Long-range transportation planning
- Visioning

### Applicable Project(s)
Types:
- Comprehensive plan
- Long-range Transportation plan
- Master/small area plan
- Redevelopment plan

### Geographic scale:
- Could apply to other geographies (downtown area, etc.) if those areas correspond to a planning/land use control entity
- Local/municipal
- Regional

### Purpose of Tool
- Collaborate with partners
- Compare scenarios or alternatives
- Create or set policies
- Describe existing conditions/issues
- Determine an action

### Users:
- Community planner
- Conservation planner
- Economic development planner
- Environmental planner
- Landscape architect
- Policy maker
- Stakeholders/community members
- Transportation planner
- Urban designer/architect

### Output:
- Strategic goals/targets

### Data requirements:
- Low
<table>
<thead>
<tr>
<th>Data Cost:</th>
<th>• Free</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tool Cost:</td>
<td>• Free</td>
</tr>
<tr>
<td>Author/Developer:</td>
<td>• NYSDOT</td>
</tr>
<tr>
<td>For more information:</td>
<td>• <a href="https://www.nysdot.gov/programs/smart-planning/repository/SGCheck_Municipal_PRINT.pdf">https://www.nysdot.gov/programs/smart-planning/repository/SGCheck_Municipal_PRINT.pdf</a></td>
</tr>
</tbody>
</table>
This easy-to-use tool is a guide that can be used by communities to determine how a proposed development project would contribute to the overall well-being of a community. The Checklist is not intended to be used to critique current land-use conditions or past decisions. Instead, the Checklist simply provides a method with which to consider whether a proposed or potential project is likely to result in larger, broader and more durable benefits to the community. This Checklist also is not a regulatory tool but simply provides an easy way to evaluate proposed projects relative to the impacts and benefits they may bring to the community. This Checklist will be successful if it stimulates a constructive dialogue among you, your community leaders, developers and agencies such as NYSDOT and the other members of the Governor’s Smart Growth Cabinet; this engagement leads to changes that are to the greater benefit of the community.

**Key topics:**
- Accessibility
- Aesthetics
- Agricultural
- Community character
- Crime/community safety
- Cultural resources
- Housing
- Land use
- Livability/quality of life
- Mobility (any/all modes)
- Pedestrian incl. safety
- Public health
- Vehicular safety

**Plan/Project phase:**
- Project development and environmental review

**Applicable Project(s) Types:**
- Complete streets initiative
- Comprehensive plan
- Master/small area plan
- Redevelopment plan

**Geographic scale:**
- Corridor
- Local/municipal
- Neighborhood
- Project or study area

**Purpose of Tool:**
- Build consensus/engage stakeholders
- Collaborate with partners
- Compare scenarios or alternatives
- Determine an action

**Users:**
- Community planner
- Conservation planner
- Economic development planner
- Environmental planner
- Landscape architect
- Stakeholders/community members
- Urban designer/architect

**Output:**
- Strategic goals/targets

**Data requirements:**
- Low

**Data Cost:**
- Free

**Tool Cost:**
- Free

**Author/Developer:**
- NYSDOT

**For more information:**
The Social Vulnerability Index (SOVI™) measures the social vulnerability of U.S. counties to environmental hazards. The index is a comparative metric that facilitates the examination of the differences in social vulnerability among counties. SOVI™ is a valuable tool for policy makers and practitioners. It graphically illustrates the geographic variation in social vulnerability. It shows where there is uneven capacity for preparedness and response and where resources might be used most effectively to reduce the pre-existing vulnerability. SOVI™ also is useful as an indicator in determining the differential recovery from disasters. The index synthesizes 32 socioeconomic variables, which the research literature suggests contribute to reduction in a community’s ability to prepare for, respond to, and recover from hazards. The data were culled from national data sources, primarily those from the United States Census Bureau. While primarily focused on hazards, SOVI also identifies the locations and characteristics of populations that are vulnerable to other economic or accessibility disruptions. The measures were identified by a thorough review of research on community resiliency and vulnerability, which provides insight into transportation-related factors such as Environmental Justice, community cohesion, and impacts of displacement and relocations.

### Key topics:
- Employment
- Equity/Environmental Justice
- Emergency management/response
- Housing
- Land use
- Public health
- Special population groups (elderly, youth, LEP, etc.)

### Plan/Project phase:
- Local transportation planning
- Long-range transportation planning

### Applicable Project(s) Types:
- Comprehensive plan
- Community impact assessment

### Geographic scale:
- State
- Regional

### Purpose of Tool:
- Collaborate with partners
- Describe existing conditions/issues
- Evaluation over time

### Users:
- Community planner
- Environmental planner
- GIS Analyst
- NEPA project manager
- Public involvement specialist
- Public health professional
- Social scientist
- Transportation planner
- Emergency management planner

### Output:
- Maps/GIS
- Scores/indices

### Data requirements:
- Low

### Data Cost:
- Free

### Tool Cost:
- Free

### Author/Developer:
- Hazards and Vulnerability Research Institute (HVRI), Univ. of South Carolina

### For more information:
- http://webra.cas.sc.edu/hvri/products/sovi.aspx

Tool provides guidance on identification of key community elements including demographics, community facilities, community organizations, etc. that form the context of proposed transportation improvements. Manual also sets out a framework for assessing impacts to communities, addresses environmental justice issues, and recommends effective forms of community/public stake holder involvement in the decision making process. Manual relates all these factors to federal regulations and guidance materials for this subject.

Key topics:
- Accessibility
- Aesthetics
- Agricultural
- Air Quality
- Bicycle incl. safety
- Community cohesion
- Community character
- Crime/community safety
- Cultural resources
- Economy
- Education
- Employment
- Equity/Environmental Justice
- Housing
- Land use
- Livability/quality of life
- Mobility (any/all modes)
- Noise
- Natural resources
- Pedestrian incl. safety
- Public health
- Relocations/displacements
- Vehicular safety
- Special population groups (elderly, youth, LEP, etc.)
- Traffic/congestion

Plan/Project phase:
- Local transportation planning
- Long-range transportation planning

Applicable Project(s) Types:
- Community Impact assessment
- Environmental study (CE, EA, EIS)

Geographic scale:
- Project or study area
- For larger scale projects some regional or corridor, city/town data can be collected

Purpose of Tool:
- Compare scenarios or alternatives
- Describe existing conditions/issues
- Determine an action
- Generate scenarios or alternatives

Users:
- Community planner
- Environmental scientist
- Environmental planner
- GIS Analyst
- NEPA project manager
- Public involvement specialist
- Social scientist
- Transportation planner

Output:
- Evaluation criteria/ranked priorities
- Graphics/charts
- Maps/GIS
- Strategic goals/targets
<table>
<thead>
<tr>
<th>Data requirements:</th>
<th>• High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Cost:</td>
<td>• Free</td>
</tr>
<tr>
<td>Tool Cost:</td>
<td>• Free</td>
</tr>
<tr>
<td>Author/Developer:</td>
<td>• NJDOT in collaboration with Management Interventions, Inc. &amp; The Louis Berger Group</td>
</tr>
</tbody>
</table>
TDOT’s Context Sensitive Solutions Project Development Process-Matrix of Key Activities

This tool is used primarily in TDOT’s Context Sensitive Training and throughout the department and with partners in understanding how to utilize CSS principles in ALL projects. It is a companion piece to our Statement of Commitment stating that TDOT will incorporate these principles in some fashion in all projects. It does not address specific community issues, but rather is a tool for how to integrate any community issues and contexts into the decision-making process.

### Key topics:
- Accessibility
- Aesthetics
- Bicycle incl. safety
- Community character
- Economy
- Equity/environmental justice
- Land use
- Livability/quality of life
- Mobility (any/all modes)
- Natural resources
- Pedestrian incl. safety
- Vehicular safety
- Special population groups (elderly, youth, LEP, etc.)
- Traffic/congestion

### Plan/Project phase:
- Final design
- Project development and environmental review
- Right of way
- Visioning

### Applicable Project(s) Types:
- Community Impact assessment
- Long-range Transportation Plan
- Environmental study (CE, EA, EIS)

### Geographic scale:
- Program/Organizational level
- Project or study area

### Purpose of Tool:
- Collaborate with partners
- Describe existing conditions/issues
- Generate scenarios or alternatives

### Users:
- Community planner
- Environmental scientist
- Environmental planner
- Historian/archaeologist
- NEPA project manager
- Public involvement specialist
- Right of way agent
- Roadway designer/engineer
- Transportation planner

### Output:
- Loose targets, in terms of the activities that should be completed
- Strategic goals/targets

### Data requirements:
- Medium

### Data Cost:
- Free

### Tool Cost:
- Free

### Author/Developer:
- Tennessee Department of Transportation, Interdisciplinary group

### For more information:
- [http://www.tdot.state.tn.us/contextsensitive/default.htm](http://www.tdot.state.tn.us/contextsensitive/default.htm)
THRIEVE: Tool for Health and Resilience in Vulnerable Environments

THRIEVE is a community resilience assessment tool that helps communities identify and foster elements and characteristics in the community environment that promote positive health and safety outcomes for racial and ethnic minorities. These elements are shaped by root factors such as oppression and racism and THRIEVE helps frame a practical approach for addressing these elements to improve health outcomes. The tool is designed to help answer such questions as: How can I identify key factors that affect health in my community and rate their importance? How are these factors related to health outcomes? What can I do to address each factor? Where can I go for more information?

### Key topics:
- Air quality
- Community cohesion
- Community character
- Crime/community safety
- Cultural resources
- Economy
- Education
- Employment
- Equity/Environmental Justice
- Housing
- Land use
- Livability/quality of life
- Public health
- Special population groups (elderly, youth, LEP, etc.)
- Vehicular safety

### Plan/Project phase:
- Long-range transportation planning
- Project development and environmental review
- Visioning

### Applicable Project(s) Types:
- Community Impact assessment
- Comprehensive plan
- Long-range Transportation Plan
- Master/small area plan

### Geographic scale:
- Local/municipal
- Neighborhood
- Regional

### Purpose of Tool:
- Build consensus/engage stakeholders
- Collaborate with partners
- Create or set policies
- Describe existing conditions/issues
- Establish priorities or evaluation criteria
- Evaluation over time

### Users:
- Community planner
- Environmental planner
- Landscape architect
- NEPA project manager
- Policy maker
- Public involvement specialist
- Public health professional
- Social scientist
- Stakeholders/community members
- Urban designer/architect

### Output:
- Evaluation criteria/ranked priorities
- Scores/indices
- Sample actions to address prioritized conditions
- Strategic goals/strategies

### Data requirements:
- High

### Data Cost:
- Free

### Tool Cost:
- Free
Community Context Tool – THRIVE: Tool for Health and Resilience in Vulnerable Environments
Transit agencies have never had an accurate indicator of the extent of their service area based on riders’ door-to-door travel time. This is an important gap in knowledge, because travel time is one of the most important factors determining whether or not people will use public transit. This paper presents a powerful new travel time-based method to visualize and analyze transit service coverage—a computer application called the Time-Based Transit Service Area Tool (TTSAT). Unlike other service area metrics, TTSAT incorporates total trip travel time into the transit service area maps it generates. Trip times can be calculated based on users accessing transit by walking or cycling, or some combination of walking and cycling. To make these travel-time estimates realistic, TTSAT integrates all segments of a complete, door-to-door transit trip into the trip time calculations. TTSAT’s mapping and analysis capabilities offer numerous potential applications for planners, developers, and members of the public working to create transit-accessible communities and address equity concerns.

Key topics:
- Accessibility
- Land use
- Livability/quality of life

• Mobility (any/all modes)
• Transit facilities/services

Plan/Project phase:
- Long-range transportation planning
- Local transportation planning

Applicable Project(s) Types:
- Complete streets initiative
- Transit

Geographic scale:
- Corridor
- Local/municipal
- Neighborhood

- Regional
- Transit service area

Purpose of Tool:
- Compare scenarios or alternatives
- Describe existing conditions/issues
- Determine an action

- Establish priorities or evaluation criteria
- Evaluation over time
- Generate scenarios or alternatives

Users:
- GIS Analyst
- Public Health Professional

- Transportation planner
- Transit service planner

Output:
- Evaluation criteria/ranked priorities
- Maps/GIS

Data requirements:
- High

Data Cost:
- Free

Tool Cost:
- Free

Author/Developer:
- Chao-Lung Chen, Corporate Synergy Development Center, Taiwan and Asha Weinstein Agrawal, San Jose State University

For more information:
**Toolkit for the Assessment of Bus Stop Accessibility and Safety**

Bus stop checklist that evaluates accessibility, safety, barriers to users, and maintenance issues at bus stops. Focus on ADA and universal design, but evaluates conditions for all transit users. Toolkit includes informative report covering principles of bus stop design, safety training for operators, how to conduct a bus stop inventory, and effective interagency and -departmental collaboration plus a special section on rural bus stops. Checklist provided in full (19 pages) and abbreviated (9 pages) formats; designed for transit agency staff, public works departments and advocacy organizations. Website maintains a list of updates and recommended revisions in between checklist revisions.

<table>
<thead>
<tr>
<th>Key topics:</th>
<th>Toolkit for the Assessment of Bus Stop Accessibility and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>• Accessibility</td>
</tr>
<tr>
<td>Equity/environmental justice</td>
<td>• Equity/environmental justice</td>
</tr>
<tr>
<td>Mobility (any/all modes)</td>
<td>• Mobility (any/all modes)</td>
</tr>
<tr>
<td>Pedestrian incl. safety</td>
<td>• Pedestrian incl. safety</td>
</tr>
<tr>
<td>Public health</td>
<td>• Public health</td>
</tr>
<tr>
<td>Transit facilities/services</td>
<td>• Transit facilities/services</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th>Toolkit for the Assessment of Bus Stop Accessibility and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Final design</td>
<td>• Final design</td>
</tr>
<tr>
<td>Long-range transportation planning</td>
<td>• Long-range transportation planning</td>
</tr>
<tr>
<td>Local transportation planning</td>
<td>• Local transportation planning</td>
</tr>
<tr>
<td>Operations and maintenance</td>
<td>• Operations and maintenance</td>
</tr>
<tr>
<td>Programming/feasibility studies</td>
<td>• Programming/feasibility studies</td>
</tr>
<tr>
<td>Right of way</td>
<td>• Right of way</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
<th>Toolkit for the Assessment of Bus Stop Accessibility and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete streets initiative</td>
<td>• Complete streets initiative</td>
</tr>
<tr>
<td>Corridor</td>
<td>• Corridor</td>
</tr>
<tr>
<td>Long-range Transportation Plan</td>
<td>• Long-range Transportation Plan</td>
</tr>
<tr>
<td>Master/small area plan</td>
<td>• Master/small area plan</td>
</tr>
<tr>
<td>Transit</td>
<td>• Transit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th>Toolkit for the Assessment of Bus Stop Accessibility and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corridor</td>
<td>• Corridor</td>
</tr>
<tr>
<td>Local/municipal</td>
<td>• Local/municipal</td>
</tr>
<tr>
<td>Neighborhood</td>
<td>• Neighborhood</td>
</tr>
<tr>
<td>Project or study area</td>
<td>• Project or study area</td>
</tr>
<tr>
<td>Transit service area</td>
<td>• Transit service area</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
<th>Toolkit for the Assessment of Bus Stop Accessibility and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build consensus/engage stakeholders</td>
<td>• Build consensus/engage stakeholders</td>
</tr>
<tr>
<td>Collaborate with partners</td>
<td>• Collaborate with partners</td>
</tr>
<tr>
<td>Describe existing conditions/issues</td>
<td>• Describe existing conditions/issues</td>
</tr>
<tr>
<td>Evaluation over time</td>
<td>• Evaluation over time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users:</th>
<th>Toolkit for the Assessment of Bus Stop Accessibility and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landscape architect</td>
<td>• Landscape architect</td>
</tr>
<tr>
<td>Public involvement specialist</td>
<td>• Public involvement specialist</td>
</tr>
<tr>
<td>Public health professional</td>
<td>• Public health professional</td>
</tr>
<tr>
<td>Right of way agent</td>
<td>• Right of way agent</td>
</tr>
<tr>
<td>Roadway designer/engineer</td>
<td>• Roadway designer/engineer</td>
</tr>
<tr>
<td>Stakeholders/community members</td>
<td>• Stakeholders/community members</td>
</tr>
<tr>
<td>Transit service planner</td>
<td>• Transit service planner</td>
</tr>
<tr>
<td>Transportation planner</td>
<td>• Transportation planner</td>
</tr>
<tr>
<td>Urban designer architect</td>
<td>• Urban designer architect</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output:</th>
<th>Toolkit for the Assessment of Bus Stop Accessibility and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graphics/charts</td>
<td>• Graphics/charts</td>
</tr>
<tr>
<td>Maps/GIS</td>
<td>• Maps/GIS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data requirements:</th>
<th>Toolkit for the Assessment of Bus Stop Accessibility and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td>• Medium</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Cost:</th>
<th>Toolkit for the Assessment of Bus Stop Accessibility and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td>• Free</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tool Cost:</th>
<th>Toolkit for the Assessment of Bus Stop Accessibility and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free</td>
<td>• Free</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author/Developer:</th>
<th>Toolkit for the Assessment of Bus Stop Accessibility and Safety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easter Seals Project ACTION</td>
<td>• Easter Seals Project ACTION</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>For more information:</th>
<th>Toolkit for the Assessment of Bus Stop Accessibility and Safety</th>
</tr>
</thead>
</table>

Community Context Tool – Toolkit for the Assessment of Bus Stop Accessibility and Safety
Transportation Mitigation for Wildlife Connectivity

This tool provides maps that combine wildlife-vehicle crash location data and habitat connectivity data to identify locations along a corridor where wildlife mitigation would be most effective and where broader conservation planning is needed to sustain habitat. The tool then provides an economic analysis based on crash costs (property damage, loss of human life), cost of mitigation strategies, and the effectiveness of various mitigation strategies. The tool also provides an economic cost-benefit analysis for wildlife mitigation for specific locations along the corridor. The analysis also presents short-term mitigation strategies that can be implemented independent of major highway projects (fences, signs, etc.) as well as long-term mitigation strategies best implemented as part of a construction or reconstruction project (wildlife underpasses, etc.)

<table>
<thead>
<tr>
<th>Key topics:</th>
<th>• Economy</th>
<th>• Vehicular safety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Natural resources</td>
<td></td>
</tr>
<tr>
<td>Plan/Project phase:</td>
<td>• Final design</td>
<td>• Project development and environmental review</td>
</tr>
<tr>
<td></td>
<td>• Programming/feasibility studies</td>
<td></td>
</tr>
<tr>
<td>Applicable Project(s) Types:</td>
<td>• Environmental study (CE, EA, EIS)</td>
<td></td>
</tr>
<tr>
<td>Geographic scale:</td>
<td>• Corridor</td>
<td>• Describe existing conditions/issues</td>
</tr>
<tr>
<td></td>
<td>• Regional</td>
<td>• Establish priorities or evaluation criteria</td>
</tr>
<tr>
<td>Purpose of Tool</td>
<td>• Collaborate with partners</td>
<td>• Generate scenarios or alternatives</td>
</tr>
<tr>
<td></td>
<td>• Compare scenarios or alternatives</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Create or set policies</td>
<td></td>
</tr>
<tr>
<td>Users:</td>
<td>• Conservation planner</td>
<td>• GIS Analyst</td>
</tr>
<tr>
<td></td>
<td>• Economist/fiscal analyst</td>
<td>• NEPA project manager</td>
</tr>
<tr>
<td></td>
<td>• Environmental scientist</td>
<td>• Roadway designer/engineer</td>
</tr>
<tr>
<td></td>
<td>• Environmental planner</td>
<td>• Transportation planner</td>
</tr>
<tr>
<td>Output:</td>
<td>• Evaluation criteria/ranked priorities</td>
<td>• Strategic goals/strategies</td>
</tr>
<tr>
<td></td>
<td>• Maps/GIS</td>
<td></td>
</tr>
<tr>
<td>Data requirements:</td>
<td>• High</td>
<td></td>
</tr>
<tr>
<td>Data Cost:</td>
<td>• Free</td>
<td></td>
</tr>
<tr>
<td>Tool Cost:</td>
<td>• Free</td>
<td></td>
</tr>
<tr>
<td>Author/Developer:</td>
<td>• Western Transportation Institute (Montana State Univ.), Miistakis Institute</td>
<td></td>
</tr>
<tr>
<td>For more information:</td>
<td>• <a href="http://www.rockies.ca/crossroads/">http://www.rockies.ca/crossroads/</a></td>
<td></td>
</tr>
</tbody>
</table>
Vehicle-Pedestrian Injury Collision Forecasting Model

The Vehicle-Pedestrian Injury Collision Model predicts change in the number of collisions resulting in pedestrian injury or death associated with area-level changes in street, land use and population characteristics due to new development or transportation system changes. Significant predictors in the current model (at the census tract level) are: traffic volume, resident and employee populations, arterial streets (%), neighborhood commercial areas (%), population below poverty level (%), population age 65 and older (%), and land area. The San Francisco Department of Public Health (SFDPH) developed this model to understand how changes in traffic and other environmental factors impacted by development and planning decisions predict vehicle-pedestrian injury collisions. SFDPH uses this model to inform the need for pedestrian safety mitigations and improvements in the course of land use and transportation planning, to prevent people from being injured or killed by motor vehicles while walking on San Francisco streets. Potential area-level interventions that improve pedestrian safety include planning and design decisions that reduce traffic volumes, speeds, and the need to drive, while promoting more walkable, safe environments, including: transportation-land use planning coordination, transportation demand management measures, traffic calming, and street and intersection engineering countermeasures and amenities.

<table>
<thead>
<tr>
<th>Key topics:</th>
<th>• Land use</th>
<th>• Pedestrian incl. safety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Livability/quality of life</td>
<td>• Public health</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th>• Final design</th>
<th>• Programing/feasibility studies</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Local transportation planning</td>
<td>• Project development and environmental review</td>
</tr>
<tr>
<td></td>
<td>• Long-range transportation planning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Operations and maintenance</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
<th>• Bicycle/pedestrian</th>
<th>• Master/small area plan</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Complete streets initiative</td>
<td>• Redevelopment plan</td>
</tr>
<tr>
<td></td>
<td>• Community impact assessment</td>
<td>• Safe Routes to School</td>
</tr>
<tr>
<td></td>
<td>• Corridor</td>
<td>• Transit</td>
</tr>
<tr>
<td></td>
<td>• Environmental study (CE, EA, EIS)</td>
<td>• Long-range transportation plan</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th>• Local/municipal</th>
<th>• More suitable for larger projects with impacts on traffic volume, residential, and employee populations.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Neighborhood</td>
<td>• Regional</td>
</tr>
<tr>
<td></td>
<td>• Project or study area</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Purpose of Tool</th>
<th>• Collaborate with partners</th>
<th>• Establish priorities or evaluation criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Compare scenarios or alternatives</td>
<td>• Evaluation over time</td>
</tr>
<tr>
<td></td>
<td>• Describe existing conditions/issues</td>
<td>• Generate scenarios or alternatives</td>
</tr>
<tr>
<td></td>
<td>• Determine an action</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users:</th>
<th>• Community planner</th>
<th>• Public health professional</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• GIS Analyst</td>
<td>• Roadway designer/engineer</td>
</tr>
<tr>
<td></td>
<td>• NEPA project manager</td>
<td>• Transportation planner</td>
</tr>
</tbody>
</table>
| Output:             | • Maps/GIS  
|                   | • Scores/indices  
| Data requirements: | • High  
| Data Cost:        | • Free  
| Tool Cost:        | • Free  
| Author/Developer: | • San Francisco Department of Public Health, Program on Health, Equity and Sustainability  
| For more information: | • www.sfphes.org/HIA_Tools_Ped_Injury_Model.htm  

Community Context Tool – Vehicle-Pedestrian Injury Collision Forecasting Model
"Transpo Group has developed a new methodology to systematically measure Route Directness Index (measured as a ratio of ‘crow flight’ distance to actual travel distance for transportation system or non-motorized system evaluation), used to quantify the quality of non-motorized systems as a direct measure of connectivity throughout neighborhoods and cities. The method is designed to integrate available street centerline files and local tax parcel databases, from which tax parcel-level connectivity scores are identified and mapped. These measures include the full street system (highways, arterials, collectors and local streets) plus any additional exclusive non-motorized facilities. The method is also flexible to account for more elaborate pedestrian and bicycle system modeling and integration of land use data to address emerging sustainability and environmental planning policies (e.g. reducing vehicle miles traveled and greenhouse gas per capita).

The method includes steps to (a) demonstrate improved non-motorized system connectivity and access to specific land uses (e.g. transit-oriented development, transit stations, and schools), and (b) calculate numerical metrics to evaluate the quality of a connection between an origin location and one or more destinations. These metrics can be mapped thematically at the origin location to highlight areas of connectivity quality.

The new RDI method provides a consistent and uniform accessibility measure that: • is applicable on a regional, city-wide basis, or neighborhood basis, • can be developed using readily available GIS data, • evaluates project alternatives, including planned networks, • can be applied in a variety of transportation/land use settings and studies, and • is well-suited for more rigorous pedestrian and bicycle system modeling (network character and quality).

For local government application, particularly small communities, the usability of the software was key in its development. Most communities have street centerline and tax parcel data readily available for use by their GIS staff. The software acts as a GIS extension and can be purchased for similar price as other GIS-based applications. The results of the analysis have also received positive feedback from citizens and elected officials, as the software produce a more intuitive map-based outcome to help inform decision-making."

<table>
<thead>
<tr>
<th>Key topics:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessibility</td>
<td>Mobility (any/all modes)</td>
</tr>
<tr>
<td>Land use</td>
<td>Pedestrian safety</td>
</tr>
<tr>
<td>Livability/quality of life</td>
<td>Public health</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Plan/Project phase:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>Project development and environmental review</td>
</tr>
<tr>
<td>Final design</td>
<td>Visioning</td>
</tr>
<tr>
<td>Local transportation planning</td>
<td></td>
</tr>
<tr>
<td>Long-range transportation planning</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable Project(s) Types:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle/pedestrian</td>
<td>Long-range Transportation Plan</td>
</tr>
<tr>
<td>Complete streets initiative</td>
<td>Master/small area plan</td>
</tr>
<tr>
<td>Corridor</td>
<td>Safe Routes to School</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Geographic scale:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Corridor</td>
<td>Project or study area</td>
</tr>
<tr>
<td>Local/municipal</td>
<td>Regional</td>
</tr>
<tr>
<td>Neighborhood</td>
<td></td>
</tr>
<tr>
<td>Purpose of Tool</td>
<td>Users:</td>
</tr>
<tr>
<td>----------------</td>
<td>--------</td>
</tr>
</tbody>
</table>
| • Build consensus/engage stakeholders  
• Collaborate with partners  
• Compare scenarios or alternatives  
• Describe existing conditions/issues | • Community planner  
• Economic development planner  
• GIS Analyst  
• Landscape Architect  
• Public health professional  
• Roadway designer/engineer  
• Transportation planner  
• Urban designer/architect  
• Transit service planner |

<table>
<thead>
<tr>
<th>Output:</th>
<th>Data requirements:</th>
</tr>
</thead>
</table>
| • Evaluation criteria/ranked priorities  
• Graphics/charts  
• Maps/GIS  
• Scores/indices | • Low |

<table>
<thead>
<tr>
<th>Data Cost:</th>
<th>Tool Cost:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Free</td>
<td>• Purchase/Charge for use</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Author/Developer:</th>
<th>For more information:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Transpo Group, Inc.</td>
<td>• <a href="http://www.viacity.info/">http://www.viacity.info/</a></td>
</tr>
</tbody>
</table>

Note: The program has several features to analyze the data for things such as impedances, cost-benefit, and suitability.
## Walkability and Bikeability Checklists

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.

### Key topics:
- Accessibility
- Bicycle incl. safety
- Livability/quality of life
- Recreation
- Mobility (any/all modes)
- Pedestrian incl. safety
- Public health

### Plan/Project phase:
- Local transportation planning

### Applicable Project(s) Types:
- Bicycle/pedestrian
- Corridor
- Complete streets initiative
- Master/small area plan
- Safe Routes to School

### Geographic scale:
- Corridor
- Local/municipal
- Neighborhood
- Project or study area
- Designed for audit of a single trip; would need to compile multiple forms to evaluate city or downtown level conditions

### Purpose of Tool:
- Build consensus/engage stakeholders
- Describe existing conditions/issues
- Evaluation over time

### Users:
- Public involvement specialist
- Stakeholders/community members

### Output:
- Scores/indices

### Data requirements:
- Low

### Data Cost:
- Free

### Tool Cost:
- Free

### Author/Developer:
- U.S. Department of Transportation, Pedestrian and Bicycle Information Center, National Highway Traffic Safety Administration, Partnership for a Walkable America, U.S. Environmental Protection Agency

### For more information:
### Community Context Tool - Quick Facts

#### Winning with ACEs! How You Can Work Toward Active Community Environments: A Policy Guide for Public Health Practitioners and Their Partners

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.

| Key topics: | • Accessibility  
|            | • Bicycle incl. safety  
|            | • Land use  
|            | • Livability/quality of life  
|            | • Mobility (any/all modes)  
|            | • Public health  
|            | • Transit facilities/services  
|            | • Recreation  
| Plan/Project phase: | • Local transportation planning  
| Applicable Project(s) Types: | • Bicycle/pedestrian  
|            | • Complete streets initiative  
|            | • Master/small area plan  
|            | • Safe Routes to School  
|            | • Transit  
| Geographic scale: | • Local/municipal  
|            | • Neighborhood  
|            | • Project or study area  
|            | • Regional  
| Purpose of Tool | • Build consensus/engage stakeholders  
|            | • Collaborate with partners  
|            | • Describe existing conditions/issues  
|            | • Evaluation over time  
|            | • Generate scenarios or alternatives  
| Users: | • Community planner  
|            | • Landscape architect  
|            | • Public health professional  
|            | • Roadway designer/engineer  
|            | • Stakeholders/community members  
|            | • Traffic operations engineer  
|            | • Transportation planner  
|            | • Urban designer/architect  
| Output: | • Scores/indices  
| Data requirements: | • Low  
| Data Cost: | • Free  
| Tool Cost: | • Free  
| Author/Developer: | • North Carolina Division of Public Health  
| For more information: | • [http://www.eatsmartmovemorenc.com/ACEs/ACEs.html](http://www.eatsmartmovemorenc.com/ACEs/ACEs.html)  

Community Context Tool – Winning with ACEs! How You Can Work Toward Active Community Environments: A Policy Guide for Public Health Practitioners and Their Partners
<table>
<thead>
<tr>
<th>Phase/Stage of the Project/Study</th>
<th>Key Community Context Issues/Topics</th>
<th>Test Outputs</th>
<th>Test/Case</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bikeability Checklists</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Environmental Health</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Community Walkable Community</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Design Qualities: An Affordability Index</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Winning with ACEs!</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>San Francisco Noise Information System</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Community for All</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Use Planning and Project for Public</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>THRIVE: Tool for Minnesota DOT's GIS platform for redevelopment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Illustrated Field Considerations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Injury Collision</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Visual Quality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Environmental Excellence in Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Pedestrian Housing + Change</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Key Community Context Issues/Topics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Crime/community safety</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Emergency management/response</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Traffic/congestion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Accessibility</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aesthetics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Key Community Context Issues/Topics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Accessibility</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Aesthetics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Traffic/congestion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>