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Areas of Interest: Finance (Highway Transportation, Public Transit) **Responsible Staff Engineer: Dan A. Rosen**

Financing Highway Improvements Through Public and Private Partnerships

An NCHRP digest of the findings from the final report and other deliverables provided in NCHRP Project 2-14, "Public/Private Partnerships for Financing Highway Improvements," conducted by Kimley-Horn and Associates, Laurence J. Meisner, Principal Investigator.

THE PROBLEM AND ITS SOLUTION

Because revenues available for highway construction and maintenance have not kept pace with increasing needs in recent years, many state and local transportation agencies have been considering different approaches to financing highway improvements. Thus, in both the public and private sectors of the economy, the possibilities for greater private participation in these traditionally public activities are being explored. Such participation may be especially appropriate for improvements required to meet increased traffic demands generated by new major private developments like shopping centers, employment centers, and residential projects. The type and scale of improvements may range from intersection upgrading to road widening and even construction of new facilities; maintenance activities may also be included.

Experience in developing and implementing the needed forms of public-private partnerships is limited. Few systematic and organized ways of facilitating them exist. This research was planned, therefore, to define the possible nature of partnerships and related decision processes, and to identify necessary legislation and example ordinances.

The overall objective of the research project was to provide guidance to state and local highway officials, and to private developers, on existing and potential public-private partnership mechanisms, including present statutes and ordinances related to private participation in financing highway improvements.

The project consisted of three phases. Phase I included five tasks, several aimed at examining and reviewing: existing and potential mechanisms, characteristics of successful partnerships, constraints and barriers to success, and legislation and court decisions. Other tasks included identification of potential case studies and the preparation of an interim report. Phase II, with four tasks, conducted the case studies, developed example legislation and guidelines for implementation, and the initial project, involved the preparation and conduct of a one-day workshop designed to disseminate the research results.

FINDINGS

The results of the project appear in several forms. First, after the conclusion of Phase I, Research Results Digest 161, "Public and Private Partnerships for Financing Highway Improvements," was published to present findings from a review of legal issues. The digest addresses the considerations related to alternative funding mechanisms and is divided into four sections: Overview of Legal Doctrine; Special Assessments; Exactions and Impact Fees; and Contingent Zoning and Development Agreements.

Assessments, fees, and agreements are three mechanisms found to be applicable to the public-private partnership issue. They are treated in terms of their theoretical underpinnings, authority, relative role of public and private sectors, division of responsibility within the private sector, and method of implementation. The text provides a framework understandable to non-lawyers; extensive citations, for those interested in more information, are also given.

The principal report from the project is NCHRP Report 307, "Public and Private Partnerships for Financing Highway Improvements," published in June 1988. In addition to a summary of the legal issues, the report contains a chapter on three mechanisms for private sector funding, another on the five case studies, and another on the implementation guidelines.

Table 1 from that report (also reproduced here) summarizes the major characteristics of the three funding mechanisms, particularly as related to the legal issues and as they are applied in various states.

The chapter on guidelines begins with a summary of current practice and a description of the conditions desirable for successful implementation. Benefits and costs are discussed and an analysis procedure is suggested and demonstrated. The guidelines provide a well-defined eight step process that can be used at the state or local level to implement legislation facilitating partnership arrangements.

Under "Current Practice", the guidelines provide examples of the use of special assessment districts, traffic impact fees, and development agreements. The advantages and disadvantages of each mechanism are discussed, based on practical, financial, and legal issues. Table 2 shows five applications of special assessment districts, ten of traffic impact fees, and four of development agreements.

The guidelines go on to show the kinds of conditions desirable to ensure success in public/private partnerships for highway improvements. Table 3 provides a set of six environmental conditions and four project specific conditions and how they are applied in each of the five cases studied in the research. As the table shows, almost all of the desirability criteria were satisfied by the projects.

The Benefit and Cost Analysis Technique identifies benefits and costs for both the public and private sectors as summarized in Table 4. The technique also calculates the net benefits for both parties--ideally, these are positive for both. The discussion points out that some factors are subjectively estimated, and some are nonquantifiable. Public sector officials, particularly, may have to weigh results, in contrast to private sector decisions that will usually be favorable only with high net benefits. A positive benefit to cost ratio may not necessarily imply an acceptable rate of return and, in most cases, limited budgets will not allow the construction of all projects with positive benefit to cost ratios.

Finally, the guidelines outline the considerations appropriate to the recommended implementation process, which consists of the following eight steps:

1. Form task force.
2. Develop goals and objectives.
3. Conduct initial studies.
4. Draft legislation.
5. Provide information and obtain support.
6. Enact legislation.
7. Implement program.
8. Continue planning and review process.

Three appendices are part of the project findings. The first, not published but available on request to NCHRP, provides detailed accounts of the following case studies:

Orange County, California: Development Fees for Transportation Corridors.

Palm Beach County, Florida: Traffic Impact Fees.

Chester County, Pennsylvania: Public/Private Interchange Reconstruction and Road Widening.

San Antonio, Texas: Public/Private Expressway Financing.

Travis County, Texas: Road District Financing.

Table 1. Summary of selected highway financing mechanisms.

	SPECIAL ASSESSMENT	TRANSPORTATION IMPACT FEE	DEVELOPMENT AGREEMENT
SOURCE OF POWER	Taxing power, although some states (e.g., Florida, Texas, Colorado) also have implemented hybrid mechanisms using both taxing powers and police powers. All 50 states have express special assessment enabling legislation.	Police power, usually derived from zoninng and subdivision enabling legislation or home rule power. A few states have express impact fee enabling legislation (e.g., Texas, New Jersey) and others are considering the same (e.g., Florida, Illinois).	Police power, usually derived from zoning and subdivision enabling legislation or home rule power. A few states have express development agreement enabling legislation (e.g., California, Florida, Hawaii, Nevada, New Jersey).
REQUIRED ENABLING LEGISLATION	Requires express enabling legislation in all states.	Requires enabling legislation in Dillon's Rule states. Enabling legislation desirable, but not required in non-Dillon's Rule states; may rely on police powers or home rule authority.	Formal development agreement requires ennabling legislation; however, contingent zoning allowed under certain circumstances without enabling legislation.
LEGAL DEF-ENSIBILITY	Traditionally upheld in courts throughout nation.	Upheld in courts in several states.	Not fully tested, but contingent zoning upheld in certain circumstances.
WHERE USED	All 50 states have special assessment legislation, but only a few, such as Colorado, Florida, Texas and Washington, use it for highway financing.	California, Colorado, Florida, Illinois, Maryland, New Hampshire, New Jersey, North Carolina, Oregon, Pennsylvania, Texas, Utah, and Washington.	Formal development agreements are used primarily in California, Florida, Hawaii, Nevada & new Jersey, but most states use some form of contingent zoning and development exactions (e.g., Virginia "proffers" system).
HOW USED	Used to finance public facilities which specially benefit the property assessed.	Used to finance new development's fair share of public facilities which benefit the entire community.	Used to finance public facilitaties which may benefit the development and/or the entire community.
LEGAL STANDARD	Special benefit	Rational nexus	Contract
WHO ASSESSED	New and existing landowners within district.	New development only.	Developer entering into agreement.
LAND OR DEVELOPMENT ASSESSED	All land specially benefited (limited to district) is assessed.	All impact generating development is assessed.	Development subject to agreement is assessed.
TYPE OF PROPERTY OR DEVELOPMENT ASSESSED	Any type within district.	Any type (residential, commercial &in-dustrial) generating impact.	Any type, but primarily large scale development.
TYPE OF PUBLIC FACILITY FINANCED	Any type of public facility allowed by statute, but usually not including areawide road system.	Any type of public facility, including areawide road system.	Any type of public facility including road system.
ON-SITE OR OFF-SITE PUBLIC FACILITY FINANCED	Primarily on-site, but trend toward off-site as well.	Off-site.	On-site and off-site.

Table 1. Continued

	SPECIAL ASSESSMENT	TRANSPORTATION IMPACT FEE	DEVELOPMENT AGREEMENT
AMOUNT ASSESSED	A landowner's proportionate share of the benefit of public facilities.	New development's proportionate share ("fair share") of public facilities needed by the development.	Amount varies with each agreement, but should be reasonable.
ADMINISTRATIVE COSTS	Low administrative costs to establish, but may be higher for bond issues or annual adjustments.	Higher administrative costs to implement, but less for annual adjustments.	Least administrative costs, but may vary with agreement.
PREDICTABILITY OF REVENUE	Steady, predictable source of revenue.	Revenue fluctuates with rate of development.	Revenue determined at time of agreement and may vary with each agreement.
TIME OF PAYMENT	After commitment to improvement and after time of assessment. May be on installatment basis.	Generally at issuance of building permit, but may be at plat approval or issuance of certificate of occupancy.	At time of execution of agreement or as specified in agreement.
BONDING	Often used to secure or apy for bond issues to finance public facilities.	Rarely used to secure bonds and then only when restricted to those aspects of bond attributable to expansion of public facility system necessitated by new development. Rarely, if ever, used to pay bonds.	Not used.
EQUITY	Equitable to extent of type of method of apportionment employed.	Most equitable if appropriate credits are given.	Less equitable to developer and may vary with agreement.
POLITICAL ACCEPTABILITY	Generally acceptable to land owners within district.	Most acceptable to existing residents and development, and less acceptable to newcomers and developers.	Depends on terms of agreement.

Table 2. Examples of public and private highway funding.

Funding Mechanism	Location	Comments
Special Assessment District	Chester County, Pennsylvania	Funding of $20 million in road widening and interchange reconstruction through PennDOT, special assessment districts, and major developer. Special assessment district formed under Pennsylvania Transportation Partnership Act includes 2,000 acres under multiple ownership, with 9,000 employees, and projected 75% increases in assessed value by year 2015.
	Troy, Michigan	Funding of $11 million in road improvements by a 400-acre special assessment district, plus 2.7 million in city funds. District has 1.5 million square feet of office/research space existing or under construction with 5.7 million square feet total planned. Assessment based on acreage.
	Arapahoe County, Colorado	Several Metropolitan districts have formed an association to fund $20 million in improvements along I-25 corridor southeast of Denver.

Table 2. Continued

Funding Mechanism	Location	Comments
	Colorado Springs, Colorado	METEX Metropolitan district, established in 1985, assesses 7,500 acres of undeveloped land to upgrade two-lane arterial to six-lane expressway. A 9,100-acre development is using a Building Authority to assess property and fund $65 million in road improvements.
	Travis County, Texas	County Road Districts have been used throughout Travis County and in other parts of Texas to finance road infrastructure for large new developments. These districts are formed by the County but rely exclusively on revenue bond financing for new roads and improvements.
Traffic Impact Fee	Raleigh, NC	Adopted in 1987, authorized by 1985 enabling legislation (local bill). Fees set conservatively: $292/single family unit, $318-$517/KSF office, $905-$1,188/KSF retail. Fees cannot be used for more than 50% of any project, cannot be used for bond payments.
Traffic Impact Fee	Palm Beach County FL	Adopted in 1979, revised in 1985. Contested by homebuilders association, upheld by Court of Appeal in 1983. Fees are $800-$1,050/single-family unit, $490/KSF office, $1,000-$2,700/KSF retail. Performance standards significantly outweigh fees for large projects.
	Orange County, CA	Corridor fees similar to traffic impact fees, need to fund one-half the cost of 60 miles of freeway in Southern Orange County. Fees are based on traffic and benefit from freeways, range from $920-$1,305/single-family unit, $1,300-$1,800/KSF non-residential.
	San Bernardino Co., CA	Adopted in 1987, including countywide enabling ordinance and specific ordinance for the Yucaipa area. Fees are $1,500/acre for commercial, $950/single family unit, $750/multi-family unit, and $425/mobile home.
	Broward County, FL	Fees set based on computer model which includes marginal cost of increasing capacity on each road facility impacted by development.
	Upper Merion Township, PA	Adopted in 1985. Fees are based on peak-hour trip generation $930/single family unit, $2,000-$2,600/KSF office, $2,300-$13,400/KSF retail.
	Orange County, Florida	Adopted in 1985, based on $300 fee per trip generated (approximately $3,000/single family unit, $4,500/KSF office, $15,000/KSF retail).
	San Diego, California	Adopted in 1981, upheld in court in 1984. Fees vary by area of City, range from $125 to $9,000 per single family unit, averaging $1,200 to $3,000. (Total fees include non-transportation items.)
	Loveland, Colorado	Adopted in 1983 for transportation and other infrastructure improvements. Detailed methodology was used to set fees, which range up to $6,600 per dwelling unit.
	Hudson, New Hampshire	Adopted in 1985, fees apply to one corridor in which development has created congestion, based on PM peak hour trips. System includes joint funding plan.
Development Agreements and Contingent Zoning	Fairfax County, Virginia	Proffer zoning, a type of conditional zoning, has been authorized since 1975 for specific cities and counties in Virginia. Transportation proffers, while "voluntary" on the part of developer, undergo considerable analysis at both local and state levels, as well as lengthy negotiations.
	Florida (Statewide)	Florida law requires a detailed review of all "developments of regional impact" (DRIs). The review process was established in 1981 and modified in 1985. The transportation element is normally the most complex and controversial aspect, and results in negotiated development agreements between the developer and local government.
	Palm Beach County, Florida	Traffic performance standards were adopted in 1981 and are the basis for developer contributions related to rezoning approval. Such contributions are credited against impact fees.
	Newport Beach, California	The 1979 traffic phasing ordinant uses traffic impact anlysis to determine the intersection improvements required for development approval, before issuance of a building or grading permit.

Table 3. Desirable conditions in case studies.

	CASE STUDY				
	Orange County Corridor Fees	Palm Beach County Fair Share Fees	Chester County Transportation Development District	San Antonio Westside Expressway	Travis County Road Districts
Environmental Conditions					
Existing Congestion	Yes	Yes	Yes	Yes (in area)	Somewhat
Rapid Growth	Yes	Yes	Yes	Yes	Yes
Strong Economy	Yes	Yes	Yes	Yes	Yes (at time of implementation)
Citizen Groups	Yes	Yes	Yes	Yes	Yes
Business Community	Support, after Meetings	Support	Support	Support	Support
Experience	Yes	Yes	No	Yes	Yes
Project Specific					
Size of Project	Large land-holdings	N/A	Large (new development)	Very large	Mostly large
Type of Project	Mostly Residential some mixed-use	All Types	Office, Industrial	Office, mixed-use	Residential and Commercial
Traffic Impact	N/A	N/A	Major Impact	Major Impact	Some Impact
Access Needs	Project needed for	N/A	Improve Access	Improve Access	Improve Access

Table 4. Costs and benefits to public and private sectors.

Public Sector	Private Sector
Benefits	
Right-of-way donation	Increased property value
Construction and design by private Sector	Increased accessibility
Increased tax base	Reduced construction time
Increased mobility	Design firms benefit
Accelerated construction	Tax deductions
	Reduced cost
	Reduced taxes (marginal)
	Reduced negotiated agreements (with impact fees or special assessment district)
	Bond financing (special assessment district)
Costs	
Direct cost	Direct cost
Review and inspection	
Access/design standards	
Change in priorities	
Maintenance cost	
Service new development	
(include other traffic impact)	

A second appendix, published in *Report 307*, discusses legislation and provides the recommended language for model statutes and ordinances relating to special assessments, impact fees, and development agreements. The third appendix in *Report 307* is an annotated list of relevant literature.

The most recent vehicle for conveying the findings of this project is a notebook, not published but available from NCHRP, containing material for a one-day workshop. Tested in late 1989 and early 1990, this program of instruction and supporting material has been compiled to facilitate the further dissemination of the project findings. It begins with a history of the evolution of private funding for public facilities, and then successivelly covers development agreements, traffic impact fees, and special assessment districts. Attention is focused on background, legal aspects, economic and financial issues, administration, and public acceptance. Implementation guidelines and procedures comprise a nine-page outline in the workshop program. These workshop materials are being used by the Federal Highway Administration in the preparation of two training courses, as indicated under "Applications".

APPLICATIONS

There has recently been a proliferation of literature describing mechanisms for partnerships between public agencies and private interests. The various materials described in this Digest are important contributions to the literature, containing as they do practical information and ready-to-use guidelines. The project materials will interest highway administrators, financial managers, elected officials, and private developers who are concerned with funding necessary highway improvements. A summary of the various published and unpublished documents resulting from this project, costs and ordering information are as follows:

<u>Published Reports</u>
NCHRP Research Results Digest 161, a review of legal issues, $5.00
NCHRP Report 307, $11.00

<u>Unpublished Reports</u>
Case Studies, Orange County, CA; Palm Beach County, FL; Chester County, PA; San Antonio, TX; Travis County, TX, $10.00
Workshop Materials, $20.00

Available from:
Transportation Research Board
Business Office
2101 Constitution Avenue, N.W.
Washington, DC 20418

Upon completion of this project, all the deliverables described in this Digest were provided to the Federal Highway Administration (FHWA) for use in further dissemination activities. Specific activities being undertaken by FHWA are as follows:

1. Publication of a brochure, *Innovative Highway Financing*.

2. Development of two training courses, to be made available through FHWA's National Highway Institute (NHI):

- Course No. 15247, *Innovative Highway Financing -- Overview*, 1-day, and
- Course No. 15256, *Innovative Highway Financing -- Technical Methodologies*, 2-days.

3. Initiation of a study, "Experiences in Overcoming Federal, State and Local Legislative/Administrative Barriers to Implementing Private/Public Highway Projects." The study will:

- Identify a number of actual highway improvement projects which were conducted as public/private financing partnerships and which experienced legislative/administrative barriers.
- Investigate some of the attempts that were made to overcome the barriers.
- Document those highway improvement projects in which such barriers were overcome, for use by planners and policy makers in making decisions concerning future public/private financing initiatives.

The study will utilize an FHWA database which contains information on over 400 innovative highway financing projects and programs, including at least 100 which are classified as public/private financing agreements.

Requests for information concerning FHWA activities should be directed to:

Federal Highway Administration
Planning Programs Division (HEP-10)
400 7th Street S.W.
Washington, DC 20590

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