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Bicycle and Pedestrian Planning Under the Intermodal Surface Transportation Efficiency Act (ISTEA): A Synthesis of the State of the Practice

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16. Abstract

This report presents an overview of the state of planning for bicycling and walking in the United States in 1995. It includes a discussion of the impact of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 on the development of bicycle and pedestrian plans at the State and Metropolitan Planning Organization (MPO) levels of government.

The report identifies factors that affect the quality and depth of the bicycle and pedestrian plans developed under ISTEA. These factors include the impact of jurisdiction size, geography, and other measureable criteria that might help suggest or determine the kind of plan a State agency or MPO should develop. Seven general categories of plans are described to help agencies determine the spectrum of bicycle and pedestrian planning. Seven factors that affect the quality and depth of the plans also are discussed.

The report also assesses the extent to which the plans may help improve conditions and opportunities for bicycling and walking and describes the actions State and local agencies can take to improve the quality of the plans and increase the likelihood of plan implementation. The report attempts to answer the challenging question of whether or not specific plans are likely to improve conditions for bicycling and walking. In addition, 16 critical elements are described to enable jurisdictions to identify actions they can take to increase the likelihood that their plans will be implemented.

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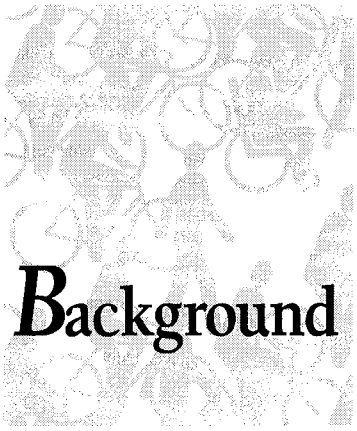

Background

In June 1995, the Bicycle Federation of America (BFA) sent letters to every State Department of Transportation (DOT) and Metropolitan Planning Organization (MPO) in the country requesting copies of the long-range plans (LRPs) mandated by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), transportation improvement programs (TIPs), and specific bicycle and pedestrian planning documents.

By August 9, 1995, 35 States and 150 MPOs had responded. The BFA received 130 LRPs, 145 TIPs, and 67 separate bicycle and pedestrian plans. All but three of the respondents indicated that a bicycle and pedestrian element was incorporated in the LRP or attached a separate document. A statistical summary of the documents received was presented in the Report Memorandum on Data Collection, submitted to the Federal Highway Administration (FHWA) on August 10, 1995.

A second report memorandum, the Report Memorandum on Information Analysis, was submitted to FHWA on December 15, 1995. That report included a review of the LRPs and the separate bicycle and pedestrian plans that were submitted, but did not consider the TIPs. In some cases, the BFA's commentary on the plans does acknowledge the content of the TIPs, although they were not formally reviewed as part of this task.

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In preparation for this third task report, Synthesis of the State of the Practice, reviewers read and analyzed each LRP and

bicycle and pedestrian element. A data collection sheet was developed to quantify how each plan addressed the relevant ISTEA requirements, bicycle and pedestrian issues, and use of state-of-the-practice planning techniques and information. The reviewers also noted factors that help to determine the likelihood that the plans will be implemented. These data are summarized in the second report memorandum.

This report has three objectives. The first is to present an overview of the state of planning for bicycling and walking in 1995. This overview is based on the second report memorandum submitted to FHWA in December 1995. The overview includes a discussion of the impact of the ISTEA mandate on the development of bicycle and pedestrian plans.

The second objective is to identify factors that affect the quality and depth of the plans developed under the ISTEA mandate. These factors include the impact of jurisdiction size, geography, and other measurable criteria that might help suggest or determine the kind of plan a State agency or MPO should develop. Seven general categories of plans are described to help agencies determine their positions in the spectrum of bicycle and pedestrian planning. Seven factors that affect the quality and depth of the plans are also discussed.

The third objective is to assess the extent to which the plans may ultimately improve conditions and opportunities for bicycling and walking and to describe the actions State and local agencies can take to improve the quality of the plans and increase the likelihood of plan implementation. This section of the report attempts to answer the challenging question of whether or not specific plans are likely to actually improve conditions for bicycling and walking. In addition, 16 critical elements are described to enable jurisdictions to identify actions they can take to increase the likelihood that their plans will be implemented.

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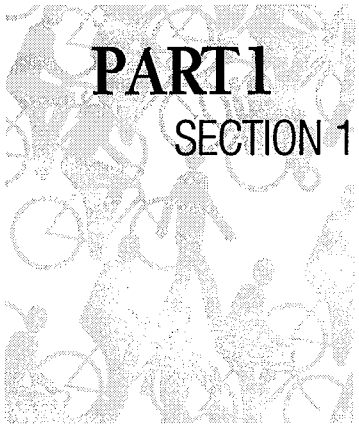

PART 1
SECTION 1

Introduction and Overview of the ISTEA-Mandated LRPs

Based on the evidence of the plans reviewed by the BFA as part of this report, States and MPOs are, by and large, meeting the mandate of ISTEA to include bicycling and walking elements in their LRPs. The majority of these agencies, however, conform only to the letter of the law in "considering" bicycling and walking by mentioning the two modes in their plans. Most still do not propose any specific actions to improve conditions for bicycling and walking.

Few agencies, for example, planned a future transportation system in which bicycling and walking play a significant role. Those that did usually chose to develop separate bicycle and pedestrian plans, although some agencies integrated ambitious bicycle and pedestrian plans into their LRPs. Most of the separate plans followed the outline for bicycle and pedestrian plans recommended by the FHWA's *Interim Guidance on Bicycle and Pedestrian Planning Under ISTEA* for the two modes.

Those agencies that developed separate plans paid significantly more attention to bicycling projects, programs, and policies than to those for walking. This may stem from the fact that information and advice on dealing with pedestrian issues is less readily available and not as well developed as that for bicycle issues. Although the bicycling public had a significant impact on the development and content of State and MPO plans, a similar constituency does not exist to promote walking; this absence is reflected in the results of this round of plans.

The greatest challenge, even for the agencies that have developed strong bicycle and pedestrian plans, will be implementing of these plans over the next few years. Based on the evidence in the documents reviewed as part of this report, implementation of actions to improve conditions for bicycling and walking will likely vary considerably from jurisdiction to jurisdiction. A number of factors will affect implementation, including:

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- A significant number of agencies indicated that they will, as a matter of routine, consider including bicycle and pedestrian facilities in new transportation projects and improvements. Often, however, this statement of intent was tempered by a caveat that improvements must be "feasible," "appropriate," or "considered where possible," which makes the actions optional. Time will tell whether policies and changes to design standards really do begin to make a difference to the bicycling and walking environment.
- Few agencies translated strategies or policy statements into specific action plans.
- A gulf exists between the LRPs and the TIPs, which means that ambitious bicycle facility networks or pedestrian improvements are more likely to stay in the "unfunded" portion of an LRP than become part of the TIP. The project selection process used by most agencies does not allow bicycle and pedestrian projects to compete successfully.

The lack of evidence of significant change in the development and management of the highway environment may simply be a result of the timelag between the development of the TIPs and the LRPs. Many agencies approved their current TIPs before adopting LRPs or bicycle and pedestrian plans; therefore the TIPs may reflect old priorities and programs. For many agencies, bicycle and pedestrian planning is a new activity with which they have yet to become familiar.

The following paragraphs outline several other factors that may obstruct progress in the bicycle and pedestrian planning process.

Inertia

Many of the LRPs reviewed used data collection and analysis techniques that planners and agency staff have been using or developing for years. These techniques included:

- Computer models that predict future traffic growth based on dispersed land use patterns
- Functional classifications of roadways
- Level-of-service and congestion indices
- Air quality analyses
- Census data and trends.

None of these tools addresses bicycling and walking adequately, which effectively excludes these issues from the mainstream transportation planning process.

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Lack of Commitment

Some agencies are simply reluctant to accept responsibility for bicycling and walking issues. Officials don't see the two modes as fulfilling serious transportation functions or they don't believe that transportation agencies are the appropriate organizations for dealing with these issues. Officials don't acknowledge the future of these two modes in the transportation network; other, "more important," issues take precedence in the competition for attention and resources.

Lack of Demand

Bicycle use is low in most communities, according to the journey-to-work data that most agencies use. Walking is much more prevalent—more people walk than use transit in most communities—but walking is rarely afforded the level of investment that is directed toward transit. In addition, there is no organized constituency for walking. The bicycle community continues to do a reasonable job of arguing its case for inclusion and consideration, but in most communities, cyclists have yet to change the way transportation funding decisions are made.

The Nature of TIPs

TIPs are project driven. They show segments of highways to be built or rebuilt according to certain standards or specifications. Individual projects are ranked according to priority, based on the impact each project will have on congestion, pollution, safety, and other factors. With rare exceptions, the project selection process at the MPO level does not easily accommodate program activities, such as spot improvement programs, small-scale projects, and other activities that can benefit bicyclists and pedestrians.

In addition, the information provided in TIP project descriptions is inadequate to determine the outcome of the projects in relation to bicycling and walking. The reporting requirements for transit projects appear to be much more demanding than those for other transportation projects, and the plans must provide significantly more information on what results the approved funding will accomplish.

Regional and Statewide Planning Focus

Bicycling and walking are predominantly local means of travel. State and MPO plans deal with regional, statewide, and national transportation facilities. Even though an MPO or a State may encourage bicycling and walking—as evidenced by their policy and goal statements—officials often believe that a lower level of govern-

ment is better suited to deal with these issues. Consequently, the State and MPO plans frequently encourage cities, counties, townships, and developers to provide adequate facilities for bicyclists and pedestrians without committing resources themselves.

Note, however, that most motor vehicle travel is local as well, and the MPO and statewide plans remain an essential part of the process for obtaining funding, including Federal funding, for transportation improvements. Bicycle and pedestrian projects and programs should be given a similar opportunity to compete for those funds.

SECTION 2

Factors Affecting the State of Bicycle and Pedestrian Planning

The review of the ISTEA-mandated LRPs included consideration of documents developed by some of the smallest MPOs in the Nation (e.g., Ithaca-Tompkins County, NY, population 50,000) and the most populous State (California, population 30 million). As expected, there was tremendous diversity among the documents received, from brief outlines of policy to thick, multivolume plans.

The level of detail in an LRP bore no relationship to the population or size of the State or metropolitan area that provided it. The Ithaca-Tompkins County Bicycle Plan was longer than the California Statewide Transportation Plan. The Milwaukee and Seattle metropolitan areas are comparable in population, yet the difference in the level of detail in their bicycle and pedestrian planning documents was remarkable. The South East Wisconsin Regional Planning Commission developed very detailed separate bicycle and pedestrian plans spanning several volumes. Although these plans were not fully integrated into the LRP for the region, they promised significant facility improvements in the years ahead.

In contrast, the Puget Sound Regional Council's bicycle and pedestrian element was no more than a dozen pages of policy language, a summary of which was included in the LRP. Puget Sound's regional TIP, however, listed more than 100 bicycle and pedestrian projects, and the region expects to spend approximately $1 billion on bicycle and pedestrian facility improvements over the next 20 years.

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Size and population gave no indication of the quality, content, or scope of consideration given to bicycle and pedestrian issues in the LRPs. The size and number of separate (and competing) jurisdictions within a metropolitan area may, however, be a factor in the degree to which bicycle and pedestrian issues are addressed at the regional level. The California MPOs covering the San Francisco Bay

area and Los Angeles deal with many large and populous counties, cities, and transit districts. Their plans rarely addressed such smaller issues as missing pieces of sidewalk, as the plans of smaller and more typical MPOs might.

Walking and bicycling are critical elements of the transportation systems in parts of these larger communities and should not be overlooked completely. The large metropolitan areas of Washington, DC; Philadelphia; and Denver paid significantly more attention to bicycle and pedestrian issues than their Californian counterparts did while dealing with many of the same questions.

Researchers have noted the impact of significant student populations on bicycle use and walking levels. Once again, however, this did not appear to affect the quality or impact of the bicycle and pedestrian plans developed under the ISTEA mandate. Although the Sacramento Area Council of Governments (which includes the city of Davis, CA) prepared a detailed and well-integrated plan, the MPOs responsible for long-range planning in Baton Rouge (the location of Louisiana State), East Lansing (Michigan State), and Ann Arbor (University of Michigan) included very little to suggest that conditions for bicycling and walking would improve.

One general difference between statewide and metropolitan plans was that State plans tended to be much more policy oriented than regional plans. The California plan was nothing more than a short series of general policy statements, some of which referred to bicycling and walking. Specific recommendations were limited to the announcement of new initiatives, rather than particular projects.

The New Jersey Comprehensive Statewide Bicycle and Pedestrian Master Plan also focused on policies rather than specific projects, but added a series of far-reaching recommendations that will affect State and local agencies alike. Indeed, many of the statewide plans promised leadership, support, and encouragement to other State agencies, MPOs, and local governments.

Not all State plans were policy documents, and a number did identify specific facility projects. For example, the Georgia and Kentucky plans both identified lengthy networks of designated and signed bicycle routes on State highways, and the Maine and Washington plans focused on shoulder improvements. All these upgrades will be accomplished through the application of design standards on new roads and improvement projects and through programs to retrofit certain stretches of State highways.

The MPO plans were more likely to specifically identify networks of facilities for bicyclists (and sometimes pedestrians), which, in turn, was more likely to generate specific projects in the TIP. Even at the MPO level, however, the majority of plans was still at the policy or general goal statement level.

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Within this diversity of plans and planning documents, a number of general categories or types of plans could be identified. The following sections outline the broad boundaries of these categories and provide examples of plans that fall into each category. No attempt was made to place each plan into one of the categories.

In each category, there are both large and small agencies, east and west coast communities, and a mix of State and MPO plans. There are still no geographic or jurisdictional factors that determine the outcome of bicycle and pedestrian planning.

General Classification of Plans

1. LACK OF RESPONSE TO THE ISTEA MANDATE

A number of States and MPOs did not address the ISTEA recommendations for adopting new approaches to moving people and goods. Bicycling and walking seem to be viewed as inconvenient or unimportant. When these plans did address bicycle and pedestrian issues they used outdated terminology and approaches and showed little real understanding of the issues.

Examples of agencies that did not really respond to the ISTEA mandate include the Vermont Agency of Transportation, the Richmond Regional Planning District Commission (Richmond, VA), the Southwestern Pennsylvania Regional Planning Commission (Pittsburgh, PA), the North Jersey Transportation Planning Authority (Newark, NJ), and the Siouxland Interstate MPO (Sioux City, IA). In each of these jurisdictions, the plans failed to address bicycling and walking. In Dougherty County (Albany, GA), the MPO plan noted that 6 pedestrians had been killed in the community in the past 4 years but did not identify any kind of project or program to address the situation.

2. ACKNOWLEDGMENT OF THE ISTEA MANDATE

Perhaps the largest category encompasses States and MPO plans that did consider bicycle and pedestrian issues, but lacked any evidence of commitment to change. Typically, these plans included general goal statements about the need to promote and encourage bicycling and walking, but failed to identify any specific actions, policies, programs, or projects that would help achieve the goals. The gap between intent and action may be a result of a lack of knowledge, experience, or interest in the task. This contrasted markedly with the treatment of highway, transit, and other transportation modes.

Examples of agencies that acknowledged the ISTEA mandate but lacked specific plans for carrying it out include the Maryland DOT, the Springfield Department of Planning and Development (Springfield, MO), and the Memphis and Shelby County Planning and Development Commission (Memphis, TN).

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3. PLANS LIMITED TO TRAILS

In approximately 20 percent of the plans reviewed, consideration of bicycle and pedestrian issues was confined to the scope of the Transportation Enhancements Program of ISTEA. Many of the agencies also considered separate trails to be the only way to accommodate bicyclists and pedestrians. The plans did not recommend any on-street improvements or acknowledge that the highway system is an appropriate place to ride or walk. Many plans also did not acknowledge the range of funding opportunities available under the ISTEA for bicycle and pedestrian improvements.(e.g., Congestion Mitigation and Air Quality [CMAQ] and the Surface Transportation Program [STP] funds.)

Examples of agencies focused exclusively on trails include the South Dakota DOT, Linn County Regional Planning Commission (Cedar Rapids, IA), Des Moines Area MPO, and Berkshire County Regional Planning Commission (Pittsfield, MA).

4. COMPETENT LRPS

Most States and MPOs did not prepare separate bicycle and pedestrian plans. Instead, they included bicycle and pedestrian sections (often called "nonmotorized" sections) in their LRPs. Some of these plans dealt with bicycle and pedestrian issues quite competently, identifying and addressing issues of concern to bicyclists and pedestrians, laying out facility plans and improvements, and including action items and other indications that projects will be implemented over time.

Examples of agencies that developed competent bicycle and pedestrian elements within their LRPs include the Hampton Roads Planning Commission (Norfolk and Newport News, VA), the Rockingham Planning Commission (Salem, NH), and the St. Paul-Minneapolis Metropolitan Council.

5. PLANS IN THE MAKING

A number of agencies tackled the challenge of improving conditions for bicycling and walking by changing the policies and standards that determine the nature of the transportation system. Numerous statewide plans relied on the adoption of innovations within their agencies and other State and regional government entities, and encouraged those agencies to adopt new policies and procedures. Because the first round of plans has only just been completed, it is too early to tell what impact these plans, and this approach, will have on conditions for bicycling and walking—although current TIPs do provide some insight.

Examples of agencies that have plans in the making include the California DOT, New Jersey DOT, the Denver Regional Council of

Governments, and the Ohio-Kentucky-Indiana Council of Governments (Cincinnati, OH).

6. GOOD BUT SEPARATE BICYCLE AND PEDESTRIAN PLANS

Most of the separate bicycle and pedestrian plans reviewed by the BFA were quite well documented and encouraging, but they were not well integrated into the State LRPs or TIPs. The likelihood of successful implementation for this category of plans is lower than for the complete and integrated plans described below.

Examples of unintegrated bicycle and pedestrian plans include those developed by the South East Wisconsin Regional Planning Commission (Milwaukee, WI), the Spokane Regional Planning Commission, the East-West Gateway Council (St. Louis, MO), and the Kentuckiana Regional Planning and Development Commission (Louisville, KY).

7. COMPLETE PLANS

A number of bicycle and pedestrian plans were thoroughly researched, focused on results, geared toward implementation, and well integrated into the overall transportation planning process. These plans tended to be ambitious yet practical and showed a strong likelihood of successful implementation.

Examples of complete plans include those developed by the Maine DOT, Metro (Portland, OR), the Sacramento Area Council of Governments and Santa Barbara Association of Governments, and the Bonneville Area MPO (Idaho Falls, ID).

The communities with the most developed and comprehensive bicycle and pedestrian plans—those in the last three or four categories—tended to be those in which agencies have a history of providing for the needs of bicyclists and pedestrians. In these communities, a certain level of familiarity with bicycle and pedestrian issues has been reached, and the transportation officials have some expertise in the field.

For example, the MPOs covering the cities of Seattle, Portland, Denver, Tucson, and Phoenix—5 of the 10 best cities for cycling identified by Bicycling magazine in 1995—have extensive and ambitious bicycle and pedestrian plans or plans that are likely to result in significant improvements for bicycling and walking. MPOs for Madison, WI, and Eugene, OR, did not submit plans for review. The remaining 3 of the top 10 cities are in Canada, thus are not part of the current research project.

Categories 1, 2 and 3 are represented by communities in which bicycle and pedestrian planning is not yet part of the mainstream

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process. The agencies involved are unlikely to have any staff dedicated to bicycle and pedestrian issues, and the documents reviewed may be their first attempts at bicycle and pedestrian plans. They may not have the assistance of a local bicycling group or club and have little or no information on bicycle use or pedestrian travel in their communities or States.

This categorization is not intended to grade or judge the plans of different communities. Rather, the different classifications most likely reflect the level of attention that has historically been paid to bicycle and pedestrian issues in each community. A community that is dealing with bicycle and pedestrian issues for the first time cannot be expected to develop a regional plan to match that of the Denver Regional Council of Governments or Metro in Portland, OR, both areas that have extensive experience with these travel modes.

Factors Affecting Quality and Level of Bicycle and Pedestrian Planning

The reviewers were asked to consider the impact of a number of factors on the bicycle and pedestrian plans developed under the ISTEA mandate to determine if these improved the quality and level of bicycle and pedestrian planning. These factors include: 1) the ISTEA planning mandate, 2) State and local regulations, 3) separate versus integrated plans, 4) public involvement, 5) land use, 6) management systems, and 7) level of effort.

1. THE ISTEA PLANNING MANDATE

It seems likely that many of the agencies that developed and submitted bicycle and pedestrian plans would not have addressed these issues at all without the requirement in ISTEA for them to do so. Many of the plans stated quite explicitly that this was a new issue for the region and that the primary motivation for including these elements was the ISTEA mandate. These plans fell predominantly into categories 1 and 3, and will have little immediate impact on conditions for bicycling and walking, but the agencies have made a start on the issues and may be encouraged to take more ambitious steps in the future.

For agencies that have more familiarity with bicycle and pedestrian planning and programs, the ISTEA mandate appeared to provide the inspiration to do a more thorough job of planning for the future of bicycling and walking. The New Jersey DOT, for example, has more than 15 years of experience in accommodating bicyclists on roadways in the State, but had done little in the way of long-range planning for bicycle or pedestrian issues. New Jersey officials used the ISTEA planning mandate as an opportunity to better define their agency's role in providing bicycle and pedestrian facilities, to establish a vision and specific targets for bicycling and walking in the State, and to develop technical information and training for engineers and planners that will significantly increase

the likelihood of improving conditions for the nonmotorized modes in the years ahead.

At the State level, the ISTEA planning mandate worked in tandem with the ISTEA mandate for States to hire bicycle and pedestrian coordinators to produce a higher standard of plan than might otherwise have been expected or predicted. Good examples of this can be found in New Hampshire and Idaho.

New Hampshire has not been considered one of the leaders in promoting bicycling and walking in the United States, and no New Hampshire community is renowned for being particularly congenial for bicycling or walking. In response to the ISTEA mandates, however, the State DOT and the three MPOs that submitted plans for review completed some of the most encouraging and practical bicycle and pedestrian plans in the Nation. The State bicycle and pedestrian program coordinator not only developed a statewide bicycle and pedestrian plan of high quality, but also helped the MPOs in Rockingham, Nashua, and Dover (Seacoast) achieve the same quality in their work. They all followed the structure and guidance offered by the FHWA and developed straightforward and informative plans that stand a good chance of being implemented.

The Idaho plan offers a similar example. The State coordinator helped develop a strong statewide plan and provided information and support to MPOs to enable them to produce ambitious, high-quality plans for their regions.

Other Federal regulations or guidance was not as effective as it might have been because of the timelag between the enactment of ISTEA, the initiation of many plans, and the publication and dissemination of guidance and information. For example, the interim bicycle and pedestrian planning guidance developed by FHWA was not issued until mid-1994, just a few months before the deadline for submission of the ISTEA-mandated plans. The regulations issued by FHWA for the planning process as a whole were similarly too late to influence a significant number of the plans that had already been started or adopted.

A number of agencies, however, did find the FHWA information and advice useful in developing their plans. The Bryan/College Station MPO in Texas, for example, followed the structure of the FHWA's *Interim Guidance on Bicycle and Pedestrian Planning Under ISTEA* quite closely. Nine States submitted separate long-range bicycle and pedestrian plans, and all of them contained vision statements, goals and policy statements, and action plans to meet the visions and goals—three of the critical plan elements identified by FHWA.

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Information and guidance from the Federal Government appears to be quite valuable when it is made available in a timely manner. The *National Bicycling and Walking Study* is a good case in point,

because the final report was published long after a series of 24 informative case studies on different aspects of bicycling and walking. The case studies were used extensively in the development of State and MPO bicycle and pedestrian plans, because most of them were available soon after the passage of ISTEA. The final report, however, which contained the national goals of doubling bicycle and walking levels and reducing crashes by 10 percent, was not available until the spring of 1994—2½ years after ISTEA was signed. As a consequence, only 5 percent of plans used the national goals as the basis for their own activities.

The Federal regulations on public involvement clearly influenced the majority of LRPs and TIPs. Although it is difficult to assess the actual impact of public involvement on the planning process and outcome (see factor four), agencies did demonstrate that they had published notices for public meetings and held public meetings throughout the planning process. Comments from the public, and the responses of the agencies, were frequently included as appendices to the LRPs. Many agencies described the public involvement activities in the body of their plan documents and stressed the value of these activities in the planning process.

2. STATE AND LOCAL LAWS, REGULATIONS AND PROCEDURES

The impact of State and local procedures on bicycle and pedestrian planning was, in some cases, just as pronounced as the ISTEA mandates and other Federal guidance and information. The Oregon LRP, for example, was heavily influenced by State transportation and land use regulations established completely independently of ISTEA and the Federal Government. MPO plans in Oregon were geared toward vehicle use targets established by the State and were among the few plans that had reliable and predictable sources of revenue for bicycle and pedestrian projects. This revenue comes from a 1971 "bicycle bill," setting aside 1 percent of transportation funds for nonmotorized travel.

The State and MPO bicycle and pedestrian plans in Maine were of a consistently high standard and suggested a strong likelihood of eventual implementation. Before 1991, however, Maine transportation agencies had little involvement in bicycle and pedestrian planning. In addition to the national ISTEA mandates, these agencies are now responding to the Sensible Transportation Act, passed by the State legislature after ISTEA. The State law had a significant impact on the content and scope of the Maine DOT and MPO plans, particularly in relation to bicycle and pedestrian planning.

In addition to State land use and transportation laws, State policies and procedures also influenced the scope and content of MPO transportation plans. State DOTs have traditionally been

dominant partners in their relationships with MPOs; this situation persists, even after ISTEA attempted to create a more cooperative and balanced process for funding and decision making. This unequal relationship is evidenced by numerous factors, including the use of design manuals and models.

Design Manuals

Improvements for bicycling and walking are heavily dependent on the design manuals and standards used by State agencies. Not only are these standards applied to State roads within an MPO's jurisdiction, but MPOs and local agencies are also quite likely to adopt the State standards as their own.

Almost every MPO TIP that was reviewed listed highways to be built or rebuilt to standards that did not include provisions for bicyclists and pedestrians. Typically, two- or four-lane roads are being upgraded to five-lane highways without including shoulders, bike lanes, or wider outside lanes to accommodate bicyclists or sidewalks and crosswalks to accommodate pedestrians.

This trend has significant repercussions for bicyclists and pedestrians. Even in communities that have ambitious plans for bicycling and walking, changes to the rest of the transportation system are worsening conditions and opportunities for nonmotorized travel.

Interagency Coordination: Models, Policies and Processes

Almost without exception, the models MPOs used to project future transportation demand did not include bicycling and walking. In Virginia, numerous MPOs relied on the State DOT to run and manage their local models, because they did not have the information, expertise, or staff to do it themselves. These State models are not sensitive to the current or latent demand for bicycling and walking at the local level. Yet they are a driving force behind the development of local plans.

The Virginia DOT plan was primarily a policy document and said little specifically about bicycling and walking. The agency does "review highway plans to determine if the project coincides with recommendations contained in local bike plans." However, the Virginia DOT will not implement a bicycle facility unless it appears on a local planning document, such as an MPO LRP or a local transportation plan. The MPO plans, driven by models that are not sensitive to the nonmotorized modes, fall short of accommodation of bicyclists and pedestrians.

Coordination also is required at the MPO level. MPOs may establish certain requirements for their constituent jurisdictions before funding can be considered for bicycle and pedestrian projects. The Santa Barbara Council of Governments, for example, requires each

local jurisdiction to have an adopted or approved bicycle and pedestrian plan of its own before it becomes eligible for Transportation Development Act and other funding sources.

The Metropolitan Transportation Commission plan for the San Francisco Bay area said relatively little about bicycling and walking and was primarily a policy document; however, it required each of the nine counties in the region to have a Bicycle Advisory Committee to be eligible for funding for bicycle projects.

Models and policies developed by agencies at different levels of government may not reflect the same planning characteristics. They also are developed within different political frameworks, which affect their development. Agencies with little experience or ability to plan for the local needs of bicyclists and pedestrians can develop models, policies and processes that undermine their constituent agencies and jurisdictions ability to plan for and accommodate the nonmotorized modes.

3. SEPARATE VERSUS INTEGRATED PLANS

One of the issues of interest to the reviewers was the extent to which bicycle and pedestrian planning was integrated into the overall planning process. Some bicycle and pedestrian professionals argue that real progress toward making communities more bicycle-friendly and walkable will only come when the issues are seamlessly integrated into the routine operations of government. To develop separate bicycle and pedestrian elements risks marginalizing the issues and leaving them out of sight and out of mind. Others argue that the two modes have been overlooked for so long that they need special attention and can only be adequately addressed when dealt with separately. Transportation agencies are so unused to dealing with bicycling and walking that special expertise is required to bring the two modes to the forefront.

The review of LRPs considered three sets of questions to determine the impact of separation versus integration.

Identifiable Elements

All plans were reviewed to determine whether they had identifiable bicycle and pedestrian elements, i.e., a section to which readers could refer for information about bicycling and walking. Two-thirds of the plans (65 percent) had identifiable bicycle elements and 60 percent had identifiable pedestrian elements. In other words, the plans had at least headings or subheadings that related exclusively to bicycle and pedestrian issues. Most of the remaining plans made passing references to bicycle and pedestrian issues; enough, perhaps, to satisfy the requirement that the two modes be "considered." A handful of plans failed to mention the issues at all.

Separate Chapters

All plans were reviewed to determine if they had devoted separate chapters to either of the nonmotorized modes, or if bicycle and pedestrian issues had been integrated throughout the LRP. More than half the LRPs (57 percent) had separate chapters on the issues and approximately one-quarter (26 percent) of the plans integrated bicycle and pedestrian issues throughout. Of the 45 agencies that integrated the issues throughout their LRPs, 23 also had separate chapters dealing with bicycling and walking.

Plan Integration

All plans were reviewed to determine how many agencies had developed separate bicycle and pedestrian plans and if those separate documents had been integrated back into the LRPs. Thirty-six percent of the agencies developed separate planning documents to address bicycling and walking issues and 24 percent integrated those separate plans into their LRPs.

The overall impression is that bicycle and pedestrian issues have progressed to the point at which most transportation agencies acknowledge them and are willing to consider planning for the future of the two modes. The nonmotorized modes are not yet, however, sufficiently integrated into the planning process to be considered normal elements of the highway system or highway projects. Most LRPs dealt with highway issues without mentioning bicycling and walking. Nor were these issues included as part of the discussions of environmental issues found in most plans; these sections were reserved for clean fuels, clean cars, inspection and maintenance programs, and other more technical issues.

The majority of plans included bicycle and pedestrian issues as integral parts of their LRPs and contained brief discussions of the two modes in each chapter of the plans. To this extent, nonmotorized issues are now considered part of a comprehensive transportation picture. Many plans noted that the agencies were addressing these issues for the first time. The Missouri statewide plan, as a way of introducing readers to the subject, had a lengthy discussion of the value and potential role of bicycling and walking as transportation modes. Acknowledging bicyclists and pedestrians as important parts of the transportation mix is an important step in developing more bicycle-friendly and walkable communities.

In cases in which separate bicycle and pedestrian plans were developed, the reviewers identified the extent to which the separate documents were referenced or integrated in the LRP. Of the 61 agencies that developed separate bicycle and pedestrian plans, 44 linked the two documents together. This is important, because

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otherwise the bicycle and pedestrian plans could be ignored or overlooked. Typically, the LRPs summarized the main findings of the more detailed separate plans and included any relevant network maps and key recommendations for action.

For the remaining 18 agencies, there was often a timelag between development of the LRPs and the separate bicycle and pedestrian plans. For example, the Denver Regional Council of Governments' LRP made only passing references to bicycle and pedestrian issues, usually in relation to the separate plan that was "under development." That separate plan is one of the more complete bicycle and pedestrian documents, but does not appear to be integrated into the overall plan, because it wasn't finished before the LRP was prepared.

The high level of linkage between the separate plans and the LRPs did not, however, necessarily mean that projects identified in the separate plans were included in the TIPs and implemented. Only 16 of the 61 separate bicycle and pedestrian plans identified a mechanism or process for getting projects from the plans to the TIPs or State TIPs. This percentage is better than the record for plans that did not have separate elements. In those plans, only 10 of the remaining 111 agencies specified the ways in which bicycle and pedestrian projects could be included in the TIPs.

This analysis may suggest that separate plans are more likely to result in implementation (measured by number of projects). In both Louisville, KY, and Hampton Roads, VA, for example, the MPOs developed detailed, separate bicycle plans that are referenced in the LRPs. The TIPs in both communities set aside funding for implementation of the plans without specifying particular projects. In Louisville, the 3-year TIP had separate amounts from Indiana and Kentucky DOT funding sources totaling several million dollars. The Hampton Roads 20-year TIP had a $50 million lump sum allocated for the task of implementing the regional bicycle plan.

The reviewers also noted that for agencies that have a long history of bicycle and pedestrian planning and facility development, the planning documents reviewed as part of this project did not adequately reflect the scale of improvements that are being made. For example, the Florida DOT's LRP had broad statements of policy and little mention of bicycling and walking, yet the State has adopted design standards that guarantee the development of bicycle and pedestrian facilities in every new and improved highway. In the Puget Sound region, the LRP contained vague language relating to bicycling and walking improvements; however, the TIP revealed one of the most extensive lists of approved bicycle and pedestrian projects of all MPOs.

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Reviewers have drawn from this discussion the conclusion that development of a separate planning document versus an integrated one is not necessarily a factor in determining the quality or strength of a bicycle and pedestrian plan or its likely implementa-

tion. Rather, the type of plan reflects the stage of development of an agency in relation to bicycle and pedestrian issues (see the summary of stages on the following page). Agencies that have developed complete but unintegrated plans are likely to have some history and familiarity with bicycle and pedestrian planning issues, but it seems unlikely that bicycle and pedestrian issues are so well internalized that a policy document alone will herald major changes.

4. PUBLIC INVOLVEMENT

A general impression left by the review of State and MPO plans and TIPs is that public involvement remains something of a burden—as opposed to an opportunity—for many agencies. This may have resulted in involvement processes that were designed to meet the procedural requirement, rather than goal of including constituents in the decision-making process. Where level of public involvement was low, it appeared to have little real impact on the direction and scope of the plans, particularly the TIPs. Many of these plans listed public meeting participants and published all the comments received. However, there was little evidence of efforts to promote public participation and comment. Meetings that had more than five members of the public that were not also agency staff members were the exception to the rule. One Texas MPO held nine public meetings where no one attended.

In relation to specific bicycle and pedestrian planning, and especially separate bicycle and pedestrian planning documents, the level of public involvement was more encouraging. At all stages of the planning process, the participation of bicyclists and pedestrians was a significant factor in the development of bicycle and pedestrian plans. In communities with an organized bicycle and/or pedestrian constituency, the effect was even more evident. Bicyclists and pedestrians helped improve the scope, content, and adoption or implementation of State and MPO plans.

The following paragraphs illustrate how public involvement can have a positive impact on the planning process.

Initiating a Detailed Plan

The city of Lubbock, TX, does not have a long history of planning for and accommodating bicyclists. Without the active involvement and persistence of the local bicycle community, the MPO would probably not have addressed bicycling adequately in the LRP. The MPO was persuaded, however, to initiate a much more detailed planning effort, in which the bicycle community fully participated. This participation helped elevate the significance of the plan and speed its eventual adoption.

The Evolution of Separate Versus Integrated Bicycle and Pedestrian Plans

1. Agencies New to Bicycle/Pedestrian Planning — Brief Section or Mention in LRP, Project-Specific Focus

May have one or two small projects, probably trails, identified on a rough map. Discussion is primarily of off-road facilities. No connection between the bicycle and pedestrian section and the rest of the plan. Corresponds to category 1 in "General Classification of Plans."

2. Agencies Building on Trails — Separate Section in LRP, Project-Specific Focus

One or two trails are in place. Thought is being given to linking them together and adding bicycle routes or other facilities to link schools and recreational facilities. A more extensive map with "potential" routes is identified without any specific plans for implementation. Corresponds to category 3.

3. Agencies With Growing Interest — Separate Chapter in LRP, Project and Program Focus

Much more interest in bicycle and pedestrian facilities is expressed by the public or local politicians. Staff worked with the local bicycle community to develop a more complete map of potential routes and to identify some funding and other implementation strategies. Corresponds to categories 4 and 5.

4. Agencies With a Mission — Separate Planning Document, Program With Project Focus

The agency may have hired a planning firm to conduct a 6- to 12-month study to determine a prioritized network, suitability rating, and range of recommendations for projects, policies, and programs. Plans establish funding and program staff. Corresponds to categories 6 and 7.

5. Agencies Committed to Change — Plans Integrated Into LRP Policy, Policy and Program Focus

Bicycling and walking have become part of the mainstream activities of the agency and are included in most transportation projects and agency publications. Most changes are achieved through policy statements and design standards. Corresponds to category 7.

A similar situation was evident in Boise, ID, where the 2010 Regional Transportation Plan noted, "As a result of strong public input, a major pathways plan is currently under development."

Working With the Agency To Develop the Plan

One MPO plan that was reviewed generated only two comments from the entire community, but one of those community members was also a member of the local bicycle club. Her comments represented a significant portion of the bicycle element of the plan that was eventually adopted.

In Ithaca, NY, the MPO handed over the development of the bicycle and pedestrian plans to the public almost in its entirety. Citizen committees developed detailed planning documents, helped set goals and objectives for the plans, and identified routes, projects, and programs for implementation.

Securing Plan Adoption and Implementation

The Delaware Valley Regional Planning Commission developed a detailed and thorough bicycle and pedestrian plan for the region with the active involvement of the local bicycling and walking public. After their regional plan was adopted, local bicyclists worked with the City of Philadelphia to secure funding for their portion of the plan.

As a rule, more comprehensive bicycle and pedestrian plans resulted from higher levels of public involvement. There were some complete and detailed bicycle and pedestrian plans that were developed with little public involvement, but these were the exception in this category of plans. By contrast, the first three categories of plans rarely showed any significant level of public involvement in the overall development of the LRPs or the bicycle and pedestrian elements.

5. LAND USE PLANNING

Land use planning did not emerge as a significant factor affecting the quality or nature of bicycle and pedestrian plans, despite the fact that more than a decade ago FHWA confirmed that land use patterns were the most significant determinant of bicycle and pedestrian travel.

Almost every plan made reference to land use and development patterns and issues, but few offered specific plans to support more pedestrian-friendly or transit-oriented development. Bicycle and pedestrian plans frequently referred to the need for more sensitive land use and development policies, but did not provide convincing evidence that existing trends will change in favor of such policies.

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The San Luis Obispo Council of Governments devoted a chapter to land use and pedestrian strategies focused on "land use strategies

that can help lower dependence on the automobile and enhance intermodal and multimodal connectivity." The plan urged member jurisdictions to adopt the recommended strategies; otherwise, the "true intermodal alternatives sought through ISTEA will not be realized." Recommendations included developing mixed-use sites, designing more compact communities, striking a balance between jobs and housing, and adopting local development and design standards that reduce the need for car travel.

In contrast, the Indianapolis regional plan noted a continuing strong economy with a bright future for employment, population, and housing growth: "This ample supply of land and the existing transportation network are likely to result in a continuation of a dispersed development pattern. This dispersed trend is firmly entrenched in the region and there are no foreseeable impediments that are likely to force a significant change." A 69 percent increase in vehicle miles traveled was forecast for the region by the year 2020.

6. MANAGEMENT SYSTEMS

ISTEA mandated that States and MPOs develop management system reports in six critical areas: transit, bridges, safety, intermodalism, congestion, and pavement. A very small number of States and MPOs submitted these documents for review, and they made almost no mention of bicycling and walking.

The development and implementation of the management system reports represent significant investments in data collection and analysis in areas that materially affect the quality of the walking and bicycling environment. Unfortunately, the reports appeared to have had almost no impact on the quality, content, or eventual implementation of bicycle and pedestrian plans.

7. LEVEL OF EFFORT

As mentioned earlier, the plans submitted by State agencies and MPOs ranged from detailed "lines on the map" to broad policy documents. The majority of agencies (53 percent) dealt with bicycling and walking on a policy level. Typically the statements of policy supported increasing bicycle use and bicycle and pedestrian safety. Examples of plans with sound policy statements include the Alaska and New Jersey statewide bicycle and pedestrian plans and MPO plans in Portland, OR; La Crosse, WI; Philadelphia, PA; and Denver, CO.

A smaller percentage of agencies (45 percent) had plans that were oriented to specific projects and the development of a bicycle and pedestrian network. Half of the project-oriented plans were also identified as having strong policy orientations. Sound project-based plans were developed by the MPOs in Nashua, NH; Rochester, NY; and Miami-Dade County, FL.

Less than one-third (31 percent) of the plans was oriented toward establishing bicycle and pedestrian programs to address such issues as bicycle education, pedestrian safety, and spot improvements to the highway system. Eight percent of agencies included policy, project, and program elements in their LRPs. Among the best program plans were the bicycle and pedestrian documents developed by the Idaho Transportation Department; the Ada County Planning Association in Boise, ID; Pinellas County, FL; and the Cincinnati area MPO.

All but 2 of the more than 20 statewide plans were policy-oriented documents. These plans, such as the New Jersey Comprehensive Bicycle and Pedestrian Plan, offered encouragement, advice, and support to other State and regional agencies and recommended numerous policies to be adopted to improve conditions for bicycling and walking.

Conclusions

The factors that affect bicycle and pedestrian planning include the following:

- The greatest factor affecting the scope, quality, and content of the long-range bicycle and pedestrian plans was the commitment of the agency to improve conditions for bicycling and walking.
- The ISTEA planning requirement itself helped to initiate or strengthen the commitment of agencies to address bicycling and walking issues and stimulated more bicycle and pedestrian plans of higher quality than would otherwise have been expected.
- Other factors that increased the commitment of an agency to improve conditions for bicycling and walking included public involvement and favorable State and local laws, regulations, and ordinances.
- Geography, population, size, and other similar factors did not appear to determine the scope, quality, or content of bicycle and pedestrian plans.

SECTION 3

Assessing the Extent of Improvements and the Likelihood of Plan Implementation

The preceding discussion focused on factors that affected the scope, quality, or content of the bicycle and pedestrian plans developed under the ISTEA mandate. Although this information helps to describe the general state of planning in a community, it doesn't really give an indication of the eventual outcome or impact of the plan and the planning process. The researchers were asked to assess the extent to which the plans were likely to be implemented and, thus, actually affect conditions for bicycling and walking.

This assessment is the most important, yet it is also difficult to make, particularly because many of the plans had only just been completed or adopted before their submission to the BFA. A great many bicycle plans were also developed in the aftermath of the 1973 oil crisis, and most of them remain on the shelf and unimplemented. The potential exists for the same fate to befall the new generation of plans created 20 years later.

The discussion that follows analyzes the elements of the State and MPO plans that the researchers identified as being the most likely indicators of successful implementation based on the evidence in the plans, TIPs, and other related documents and their experience and knowledge of the field in general. To illustrate the elements that contribute to successful implementation, the researchers outlined a scheme of steps that might describe a typical progression for an agency addressing each of the elements in its transportation planning.

Analysis Goals

The goals of this analysis are to:

- Identify elements of bicycle and pedestrian plans that are most likely to improve the chances for eventual implementation.
- Identify different levels of progress toward improving conditions for bicycling and walking.

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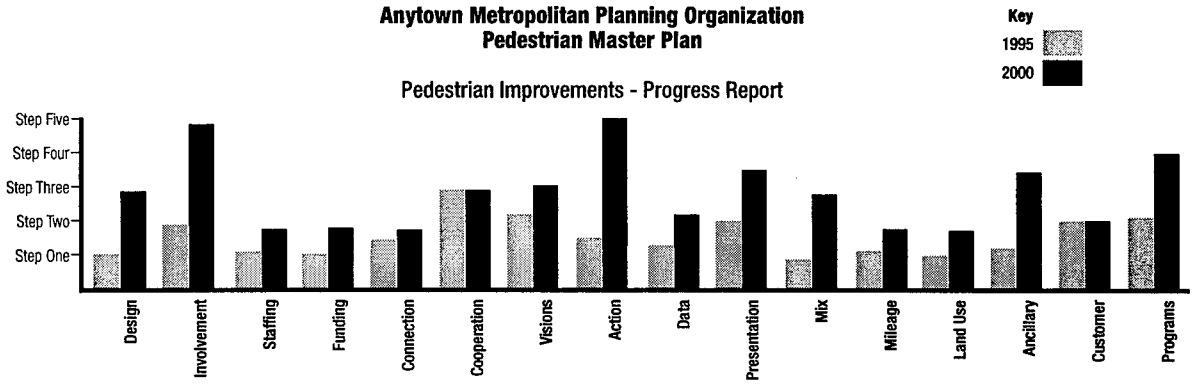
- Present this information in a way that helps State DOTs and MPOs identify the steps they may need to take to successfully implement their plans and improve conditions for bicycling and walking.

The analysis identified 16 elements of bicycle and pedestrian plans that have a significant impact on the likelihood of eventual plan implementation, which in turn, can be expected to improve conditions for bicycling and walking. For each of the 16 elements, the report describes a series of steps that relate to the likely impact of each action on the overall goal of improving conditions for bicycling and walking.

The baseline in each of the 16 elements is the "worst-case scenario," in which nothing has been done in a plan to address bicycling and walking issues. Subsequent steps increase the likelihood that the agency plan will be implemented and improve conditions for bicycling and walking.

As an example, one of the critical elements affecting the eventual implementation of a bicycle and pedestrian plan is the integration of bicycle-compatible roadway designs into the work of traffic engineers and highway designers. As a first step after the baseline, an agency might adopt the guidelines in the American Association of State Highway and Transportation Officials' (AASHTO) *Guide for the Development of Bicycle Facilities.* The next step for that agency would then be to develop its own bicycle facility design manual or guidelines that build on the AASHTO *Guide.*

The elements can be represented as a series of bar charts with step one on the bottom axis and steps four or five at the top. Officials can review their agency plans to determine where they are on the bar chart for each element and decide what the next logical



Sample bar chart shows progress of improvements in each area over a period of years.

steps would be to improve the chances of success. If the bar charts were then combined into one summary chart, an agency would be able to gauge its overall progress towards improving conditions for bicycling and walking.

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The Task 4 report, included as Part 2 of this document, provides specific examples of agencies that are taking each of these steps, as shown in the planning documents submitted to the BFA for review.

Critical Elements

1. FACILITY DESIGN STANDARDS AND PROCEDURES

Step 1. No information about bicycle or pedestrian facility design is available in the plan itself, and there is no reference to relevant State, local, or National guidelines. None of the approved or potential highway projects in the plan includes bicycle and pedestrian accommodation.

Step 2. The agency responsible for the plan adopts, or recommends adoption of, the AASHTO *Guide for the Development of Bicycle Facilities* and/or the nearest pedestrian equivalent of this document, so that when bicycle and pedestrian facilities are constructed, they conform to a nationally recognized standard.

Adoption of the AASHTO standards has little or no effect on highway projects that are not identified as part of a bicycle and pedestrian plan. Most traffic engineers in the agency will remain unaware of the AASHTO *Guide* and will continue to use the AASHTO *Green Book* or their State highway design manuals to design roads.

Step 3. The agency supplements the AASHTO *Guide* and pedestrian equivalent with its own set of design standards and guidelines. Such manuals begin to address the standard cross-sections and designs used by the agency and to incorporate bicycle and pedestrian accommodations into these designs.

This process is likely to involve more agency staff members, but may still result in a document that is separate from the manuals used routinely by professionals in the agency. Consequently, staff members will only use the information when they are specifically asked or required to accommodate bicyclists and pedestrians.

Step 4. Bicycle and pedestrian design sections are integrated into the State/MPO highway design manual. This integration ensures that appropriate information on bicycle and pedestrian facility design and accommodations is always in front of the highway designers, not just for specific bicycle and pedestrian projects, but whenever a highway is being designed.

Step 5. Standard highway designs, or typical sections, always include bicycle and pedestrian facilities; all new and improved highways automatically include space for bicyclists and pedestrians.

2. LEVEL OF PUBLIC INVOLVEMENT

Step 1. The public is not involved in the development of the transportation plan or the bicycle and pedestrian element of the document.

Step 2. An individual, perhaps representing a bike club or running or walking association, comments on the plan and makes a few suggestions for bicycle and pedestrian improvements.

Step 3. A local advocacy group exists in the community and provides helpful input into the planning process. Members attend the public meetings and submit written comments at the appropriate stages.

Step 4. A strong local constituency for bicycling and walking exists. Not only do the advocates attend the meetings and submit comments, but they also serve on the technical advisory committee, help persuade the agency to make a serious commitment to the planning process (perhaps by hiring outside consultants) and policy changes, and help with data collection, route identification, and other elements of the plan.

Step 5. In addition to providing substantive input to the transportation plan, the constituency for bicycling and walking secures funding for bicycle and pedestrian improvements.

3. STAFFING DEDICATED TO BICYCLE AND PEDESTRIAN ISSUES

Step 1. No one within the agency is responsible for bicycle and pedestrian issues.

Step 2. A staff person is given responsibility for bicycling and walking issues in addition to his or her existing workload.

Step 3. The agency establishes a part-time position for a bicycle and pedestrian coordinator, who is responsible for handling inquiries and writing the bicycle and pedestrian plan.

Step 4. The agency hires a full-time bicycle and pedestrian coordinator to take a proactive role in promoting bicycling and walking within the agency and in response to public requests for action. The coordinator is responsible for developing and implementing the plan.

Step 5. The bicycle and pedestrian functions are separated from the agency, and an office of bicycle and pedestrian transportation is established.

4. AVAILABILITY OF FUNDING

Step 1. No funding is available for bicycle and pedestrian projects.

Step 2. The Transportation Enhancements Program is identified as the source of funds for possible bicycle and pedestrian projects. Implementation of projects in the plans depends on an enhancement award.

Step 3. The agency recognizes other ISTEA funding sources as appropriate and available for bicycle and pedestrian projects and has programmed Congestion Mitigation and Air Quality (CMAQ) and Surface Transportation Program (STP) funds for bicycle and pedestrian improvements.

Step 4. The agency has a line item budget to fund a minimum level

of bicycle and pedestrian program activity and improvements. The range of sources includes Federal, State, and local money. Additional project funding is also available for improvements of a larger scale.

Step 5. Bicycle- and pedestrian-specific projects continue to be funded, but the greatest improvements come from incidental projects for which there are no bicycle and pedestrian line items. The costs of bicycle and pedestrian improvements are included in the overall costs of highway reconstruction projects, which include shoulders or bike lanes and sidewalks.

5. CONNECTION BETWEEN THE LRP AND TIP

Step 1. Although the LRP may identify potential bicycle and pedestrian improvements, none is included in the TIP.

Step 2. One or two bicycle and pedestrian projects identified in the LRP are approved for inclusion in the TIP on a case-by-case basis.

Step 3. Bicycle and pedestrian projects are ranked among themselves for priority, and there is a reasonable expectation that the best bicycle and pedestrian projects will be included in the TIP.

Step 4. The project selection criteria developed for moving projects from the LRP to the TIP favor bicycle and pedestrian projects.

6. COOPERATION AND INTEGRATION WITH TRANSIT SERVICES

Step 1. The bicycle and pedestrian plan elements and transit element are mutually exclusive, and there is no recognition that the two are or could be linked.

Step 2. The plan recommends that bicycle parking be provided at transit stops and stations. The plan recommends that access to transit by foot be improved or prioritized by providing sidewalks, crosswalks, and amenities at stations and stops.

Step 3. The plan recommends that bicycle access to bus and train services be allowed with restrictions on routes, times, and permits. The recommendations might include providing racks on buses and access to rail cars.

Step 4. The plan recommends universal access to transit services for bicyclists (perhaps maintaining peak-hour restrictions) and significant improvements to pedestrian access.

7. ADOPTION OF VISION, GOALS, OBJECTIVES AND PERFORMANCE MEASURES

Step 1. The plan has no vision, goals, or performance measures for improving bicycle and pedestrian conditions.

Step 2. The plan outlines a general desire to "do something" to make bicycling and walking safer and more comfortable, but does not include specific goals or objectives.

Step 3. The plan describes a clear vision for improving conditions

for bicycling and walking and establishes clear goals and objectives. The plan may include target levels of use and reductions in injuries and fatalities, perhaps based on those of the *National Bicycling and Walking Study.*

Step 4. The plan adopts specific and measurable performance objectives in addition to the vision and goals in step 3.

Step 5. The plan establishes an evaluation mechanism to review progress toward the goals, objectives, and targets set in the planning process.

8. ACTION PLAN AND IMPLEMENTATION

Step 1. The plan recommends no specific actions related to bicycle and pedestrian improvements.

Step 2. The plan approves one or two specific projects — perhaps a trail and bike route — for implementation.

Step 3. The plan approves a series of program changes, including education, engineering, and other activities that encourage increased safe use.

Step 4. The plan adopts a series of policy changes that will have far-reaching implications for the agency, including funding and design issues.

Step 5. The steps to implement the action plan include training and other outreach programs to inform all agency staff.

9. ASSESSING CURRENT CONDITIONS

Step 1. No real data are used to develop the bicycle and pedestrian plan.

Step 2. The plan uses census data and police crash records to assess existing levels of use and safety.

Step 3. The plan uses data generated by the agency's own surveys, perhaps including the management system data also being collected by the agency.

Step 4. The plan uses one of the emerging bicycle and pedestrian modeling and forecasting techniques (e.g., Roadway Condition Index, Interaction Hazard Index, Latent Demand Model) to develop a prioritized list of improvements.

Step 5. Bicycle and pedestrian planning and forecasting are built into the regular transportation model used by the agency in the development of its LRP.

10. PRESENTATION

Step 1. No substantive information about bicycle and pedestrian planning is included in the LRP.

Step 2. Bicycle and pedestrian issues are mentioned, but the information is not highlighted or treated with importance.

Step 3. The bicycle and pedestrian plan has its own section in the

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overall plan and has some interesting maps showing existing and potential facilities.

Step 4. The bicycle and pedestrian plan is a separate document that contains graphics, an interesting design, and an informative format.

Step 5. The executive summary and plan video introduce the plan to the public and refer to the other planning documents for further information.

11. MIX OF FACILITIES AND IMPROVEMENTS

Step 1. The plan has no bicycle and pedestrian facilities. Sidewalks might be included and are described as suitable for both bicycle and pedestrian use.

Step 2. The plan identifies one or two potential trail projects as the bicycle and pedestrian element. The trails are not connected to the street system and are not funded.

Step 3. Isolated bicycle and pedestrian facilities are recommended, including occasional bike routes or striped bike lanes and, perhaps, a sidewalk project or sidewalk upgrade. The facilities are not part of a system or network.

Step 4. A network of facilities is begun, including trails, bike lanes, designated and signed bike routes, and shoulders for bicyclists and crosswalks, sidewalks, and traffic control measures, such as traffic calming, for walking.

Step 5. All streets are planned to become bicycle- and pedestrian-friendly by virtue of the design standards used in their development. An appropriate facility type is selected, depending on a range of factors identified in the plan or guidelines that accompany the plan.

12. BIKEWAY AND WALKWAY MILEAGE

Step 1. No information is available about the number of miles of bicycle or pedestrian facilities in the region or State. There may be none.

Step 2. The mileage of a few isolated facilities is known.

Step 3. The plan establishes a target number of miles of bicycle and pedestrian facilities to be developed.

Step 4. The target number of miles of designated bikeway and pedestrian facility improvements is expressed in relation to the percentage of roadway miles.

13. LEADERSHIP

Step 1. The plan focuses exclusively on the actions of the agency developing the plan, without accounting for other agencies and their actions.

Step 2. The plan is developed with the involvement of member jurisdictions and agencies at a lower level of government (e.g., an

MPO working with members or a State working with MPOs and districts).

Step 3. The plan sets standards and guidelines for agencies.

Step 4. The plan provides technical resources and information to other government agencies.

Step 5. The agency acts in accordance with the goals and objectives of the plan and provides training and incentives to other agencies to adopt the goals and objectives.

14. LAND USE

Step 1. The plan makes no mention of the impact of land use and development patterns on bicycle use and walking.

Step 2. The plan acknowledges the link between land use and transportation (and bicycling and walking in particular), but does nothing to improve conditions for either.

Step 3. The plan encourages bicycle- and pedestrian-friendly land use and development and provides model ordinances and other technical information. There is no requirement for agencies or developers to use this information or adopt the proposed ordinances.

Step 4. The plan adopts new land use and development codes that are geared toward reducing motor vehicle travel, shortening trip distances, and encouraging bicycle and pedestrian travel.

Step 5. The plan requires developers and all levels of government to adhere to new land use and development codes that are geared toward reducing motor vehicle travel, shortening trip distances, and encouraging bicycle and pedestrian travel.

15. ANCILLARY FACILITIES AND PROGRAMS

Step 1. No bicycle parking is provided or planned.

Step 2. Providing parking for bicycles is encouraged, but no racks or lockers are installed.

Step 3. Locations for bicycle parking are chosen (or a process for doing so is established) and funding for racks and lockers is approved.

Step 4. A policy of providing bicycle parking is adopted and guidelines are established for determining the choice and location of racks.

Step 5. The agency's parking codes are revised to include a bicycle parking chapter or section.

16. CUSTOMER RECOGNITION

Step 1. The plan does not mention bicyclists or pedestrians or refer to them as customers.

Step 2. The plan responds to the recreational or club bicyclist or pedestrian, who has a single, narrow set of expectations and desires.

Step 3. The plan addresses the range of abilities and needs of bicyclists and pedestrians of all ages and for all trip purposes.

Step 4. The plan reaches out to, involves, and accommodates bicyclists and pedestrians, who have traditionally been underserved by both transportation planning in general and specific planning for bicycling and walking.

Step 5. Bicycling and walking improvements are recognized as serving the general public; a universal approach to improving conditions for bicycling and walking is adopted.

PART 2

Synthesis of Bicycle and Pedestrian Planning Under ISTEA

The following sections present 14 factors or practices that indicate the level of development of State and MPO long-range and bicycle and pedestrian plans that have been reviewed. For each factor, four stages or levels of development are presented and examples of best practices are provided. This method of review will allow States and MPOs to gauge the stages of development of their plans for each factor and provides information and examples of what steps should be taken to reach a higher level of development for each factor.

SECTION 1

Facility Design Standards and Procedures

Introduction

Standards and guidelines for the design of bicycle and pedestrian facilities, especially bicycle facilities, have come a long way since the 1970's, when no standards existed or inappropriate standards were used. In 1981, the AASHTO published the *Guide to the Development of Bicycle Facilities* and in 1991, issued an update. This document established minimum guidelines for the design of various types of bicycle facilities. A similar set of design standards does not exist for pedestrian facilities. In 1993, FHWA published *Selecting Roadway Design Treatments to Accommodate Bicycles* (SRDTAB) as a guide to providing on-street bicycle facilities. Additionally, the *Manual on Uniform Traffic Control Devices* (MUTCD) includes standards and specifications for bicycle and pedestrian signs, signals and markings.

Past Practice

Although some of the plans reviewed made no reference to design standards, many plans referenced the AASHTO guidelines or adopted them as State or regional design guidelines. Missoula County, MT, and the Mississippi DOT are examples of areas that have such plans. Because few colleges or universities offer courses in design for bicycle and pedestrian facilities, adoption of design guidelines or standards is important if bicycling and walking are to be integrated into State, regional, and local transportation planning processes.

Beyond Traditional Practice

Some States and MPOs went a step further by referencing SRDTAB and the MUTCD or adopting their own design standards to supplement the AASHTO guidelines. These standards go beyond AASHTO in providing more detailed design information about when and where various types of bicycle and pedestrian facilities

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should be provided. These standards also often include discussion of items not included in AASHTO, such as parking facilities and maintenance. State or MPO design manuals are included in the bicycle and pedestrian plans or published as separate documents. The Portland, ME, and Metro Dade County, FL, plans provide good examples of incorporated design standards, while New Jersey offers a good example of a State bicycle and pedestrian facility design manual. Some plans also included specific standards for pedestrian facilities. Brown County, WI, and Hampton Roads, VA, included pedestrian design guidelines in their plans.

One Step Further

To more fully incorporate bicycle and pedestrian facilities into the design process, a few States included sections on these facilities in the State highway design manuals. Including bicycle and pedestrian facilities in highway design manuals, as opposed to publishing separate manuals, raises the awareness of planners and designers about these facilities and should lead to better integration of bicycle and pedestrian facilities in street and highway design projects. Both Oklahoma and Washington incorporated bicycle design standards into their highway design manuals.

Best Practice

Fully integrated planning and design of bicycle and pedestrian facilities is exemplified by States and localities that have developed typical cross-sections that always include these facilities. Planning and design projects include consideration of pedestrians and bicyclists as a matter of course, and planning for these modes has become part of the institutional culture for these States and regions. Florida and Oregon have developed cross-sections that fully integrate bicyclists and pedestrians. Exhibits 1 and 2 show standard cross- sections that accommodate bicyclists and pedestrians in the design of new roadway projects.

Exhibit 1: 1995 Oregon Bicycle and Pedestrian Plan, Oregon DOT, 1995

Exhibit 2: Florida DOT Bicycle Lane/Bicycle Shoulder and Intersection Pavement Markings, October 1994

II.4. WALKWAYS

A. TYPES OF WALKWAYS

Pedestrian Facilities include walkways, traffic signals, crosswalks and other amenities such as illumination and benches.

A Walkway is a transportation facility built for use by pedestrians and persons in wheelchairs. Walkways include:

SIDEWALKS, which are located along roadways, separated with a curb and/or planting strip, and have a hard, smooth surface. Sidewalks in residential areas are sometimes used by bicyclists, but cities may ban bicycle riding on sidewalks.

PATHS, which are typically used by pedestrians, cyclists, skaters and joggers (Multi-Use Paths). It is not realistic to plan and design a path for the exclusive use by pedestrians, as other users will be attracted to the facility. Paths may be unpaved, constructed with packed gravel or asphalt grindings, if they are smooth and firm enough to meet ADA requirements.

SHOULDERS, which can serve pedestrians in many rural areas. The shoulder widths recommended by AASHTO are usually adequate to accommodate pedestrians. In rural areas with a residential character, but with low population densities, shoulders should be wide enough to accommodate both pedestrian and bicycle traffic.

Wide planter strip increases pedestrian comfort

B. STANDARDS

B.1. SIDEWALKS

B.1.a. Width

The standard sidewalk width is 1.8 m (6 ft), exclusive of curb and obstructions. This width allows two pedestrians (including wheelchair users) to walk side by side, or to pass each other comfortably. It also allows two pedestrians to pass a third pedestrian without leaving the sidewalk. Where it can be justified and deemed appropriate, the minimum width may be 1.5 m (5 ft); on local streets, circumstances may include a combination of width constraints or low potential usage.

The minimum width for sidewalks directly adjacent to a motor vehicle lane is 1.8 m (6 ft). Greater sidewalk widths are needed in high pedestrian use areas, such as central business districts.

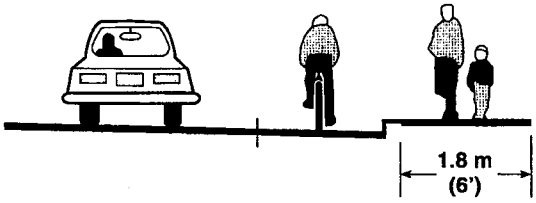
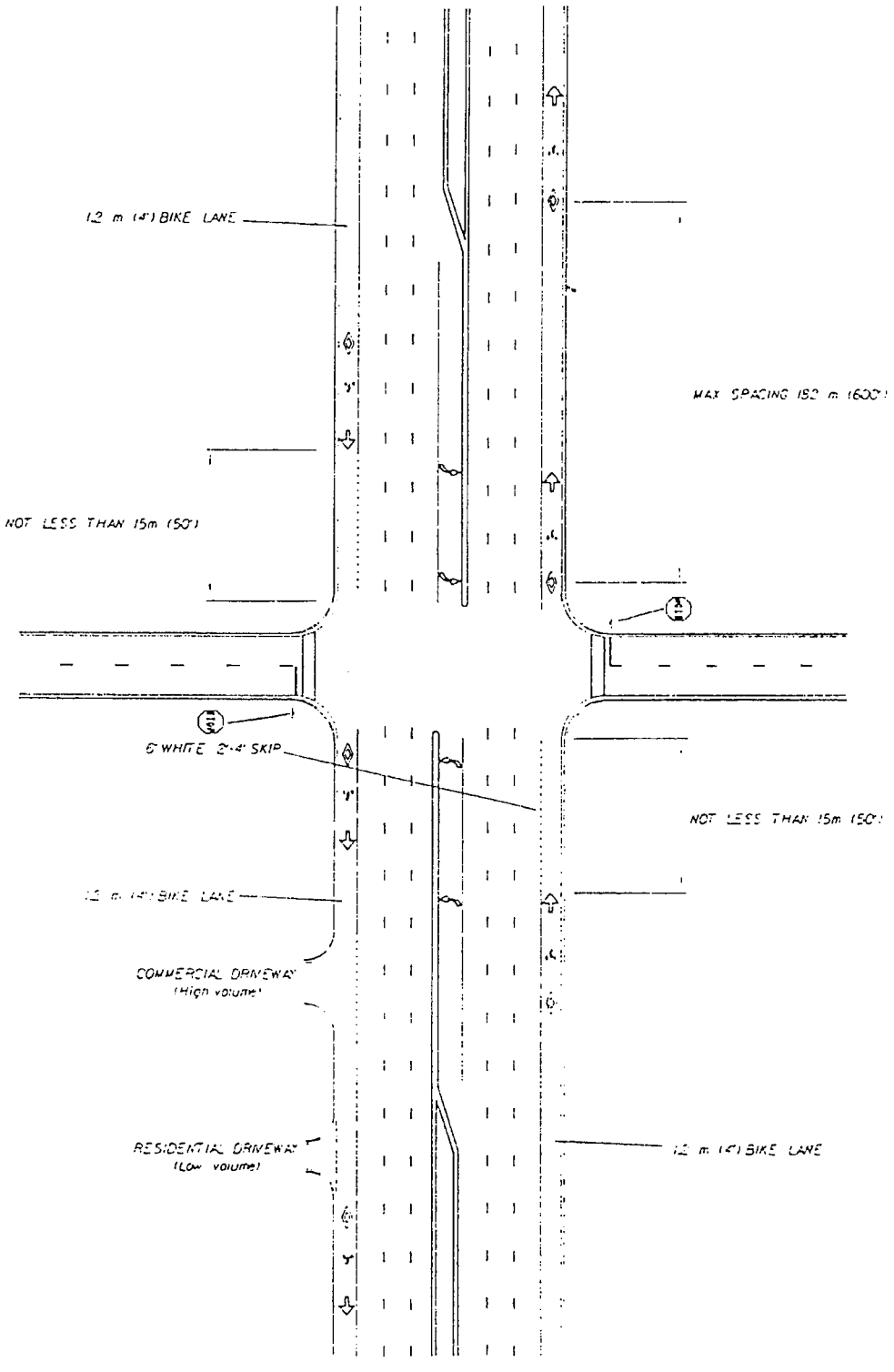


Figure 43: Standard sidewalk width

B.1.b. Obstructions

The standard sidewalk width is clear of obstructions such as sign posts, utility and signal poles, mailboxes, parking meters, fire hydrants, trees and other street furniture. Obstructions should be placed between the sidewalk and the roadway, to create a "buffer" for increased pedestrian comfort. Movable obstructions such as sign boards, tables and chairs must allow for a 1.8 m (6 ft) clear passage. Obstructions should not be placed in such a manner that they impair visibility by motorists.

CASE 2A - MAJOR WITH LOCAL STREET
INTERSECTION, NO RIGHT TURN LANE
URBAN TYPICAL SECTION (CURB & GUTTER)



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Revised 10/26/94

SECTION 2

Public Involvement

Introduction

A primary goal of ISTEA is to increase the level of public input and participation in the development of LRPs. To this end, ISTEA required States and MPOs to develop policies and programs to gain greater public participation in the planning process. To achieve this input, the ISTEA planning regulations include the following requirement: "Public involvement processes shall be proactive and provide complete information, timely public notice, full public access to key decisions, and opportunities for early and continued involvement" (23 CFR 450.212(a)).

The plans reviewed contained a broad range of programs and policies for gaining public input, from plans with little or no mention of pubic input, to plans that offered detailed strategies and objectives for gaining meaningful public input. The most successful of these processes resulted in plans that reflected community goals and generated support for securing funding for bicycle and pedestrian projects.

The language of ISTEA focuses on public participation during development of transportation plans and programs. Gaining the level of public involvement envisioned byISTEA was new to many State DOTs and MPOs and provided opportunities and challenges for them. Developing processes at the State level can be quite challenging. At the MPO level, especially for smaller MPOs, it is somewhat easier to develop a public input process that includes of most of the stakeholders in the transportation planning process.

Past Practice

A small percentage of the State and MPO plans reviewed reported that traditional public hearings were held on the plans. Some of these plans included summaries of comments made at public hearings, and a few addressed the issues raised by the public. A few of these plans also indicated that some attempts were made to better advertise the public hearings.

Synthesis of Bicycle and Pedestrian Planning Under ISTEA

Beyond Traditional Practice

Most States and MPOs attempted to move beyond traditional public hearings by developing a process to allow the public to raise issues at the beginning of the planning process. This initiative enabled a broad range of issues to be considered in the plans and gave the public greater influence on the direction of the plan. Public meetings announcing the beginning of the planning process or mailings requesting input are examples of how States and MPOs sought initial public input. Bicycle and pedestrian advocate groups were usually included on these mailing lists or were invited to participate in kickoff meetings.

One Step Further

Some organizations, such as the Ithaca-Tompkins County Transportation Council, went a step further and combined the public input processes with the formation of an advisory committee or committees to help develop the LRPs and bicycle and pedestrian plans. Formation of an advisory committee or use of an existing committee was found more often for the development of separate bicycle and pedestrian plans. Plans using an advisory committee tended to be more thorough and inclusive. If a committee was used to prepare the LRP and the committee included bicycle and pedestrian advocates and interest groups, these issues were usually better integrated into the LRP.

Best Practice

The most comprehensive public participation programs involved scheduling public meetings and workshops at various points in the plan development process. Often, community transportation vision was outlined as part of the planning process. MPOs that used these processes tended to gain the most effective public input into plans and were often able to secure funding for bicycle and pedestrian improvements, as a result of the involvement of bicycle and pedestrian advocates. The Atlanta Regional Commission and Metroplan Little Rock, AR, MPOs, both developed extensive public involvement processes that included kickoff meeting and charrettes, various surveys, advisory committees, and newsletters to gain input and keep the public informed about progress on the plans. The Pennsylvania Bicycle and Pedestrian master planning process included an extensive public outreach effort that provided numerous opportunities for public input. Thirteen public meetings were held around the State and other means of obtaining input, such as a toll-free telephone number and questionnaires, were used.

Exhibit 3: MetroPlan 2020, Little Rock, AR, LRP, June 1995

Exhibit 4: PennDOT Statewide Bicycle & Pedestrian Master Plan, May 1996

Chapter 3. PUBLIC PARTICIPATION

Plans fail when there is no counsel, but they succeed when counsels are many. Proverbs 16:22

ISTEA, and the subsequent Metropolitan Planning Regulations issued by the U.S. Department of Transportation, emphasized "early and meaningful" public involvement in the metropolitan planning process. Not only was a real effort to be made to inform and involve the general public, but organizations with an interest in transportation were to be invited into the planning process from the beginning.

The effort at full involvement began with the reorganization of the Metroplan Board. The Transportation Advisory Council, as mentioned earlier, is broadly representative of interested parties and affected jurisdictions. Any jurisdiction within the planning area that is a signatory to the CARTS Agreement of Understanding can appoint representatives to the TAC and the TCC. Only dues paying members, however, have a vote on the Metroplan Board.

Letting the Public Know

At the beginning of this process, Metroplan made a concerned effort to let the public know about the planning process. A short video tape was commissioned describing ISTEA and seeking the public's involvement. That video was presented at civic club and neighborhood organization meetings and provided to the member jurisdictions for their use. It was shown extensively on local public access cable television.

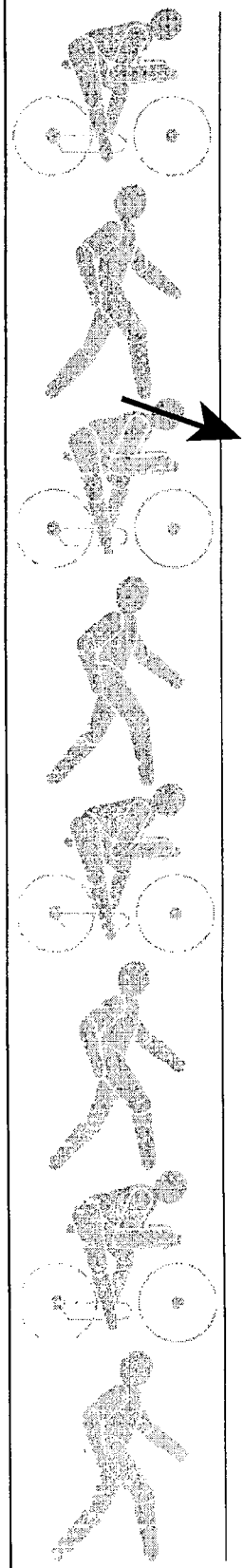
Nearly 20 civic club presentations were made on the planning process. In addition, a number of radio and television public service spots were made seeking public participation in the Visual Preference Surveys.

Jacksonville Patriot Staff Photo

Seeking the Public's Opinion

The Visual Preference Survey

The intent of the Visual Preference Survey was to invite every citizen in the region from various income levels and racial backgrounds to participate in shaping their future. From November 1993 through January 1994, 35 public meetings were held to administer the Visual Preference Survey. Nearly 900 people participated.



tation Efficiency Act (1991), the Pennsylvania Department of Transportation has developed the Statewide Bicycle and Pedestrian Master Plan. It represents the bicycle and pedestrian element for the state's overall long range transportation plan and is based on a new vision for bicycling and walking in Pennsylvania.

As a first step in developing this plan, existing resources, literature and state-of-the-art practices were reviewed. One of the key existing resources was the 1976 Bicycling in Pennsylvania Plan. It set forth 52 "policy goals" to enhance bicycling in the Commonwealth. The plan was progressive for its time and many of the issues and policies are still appropriate. The 1976 Plan serves as the foundation upon which the current planning philosophy, policies and implementation strategies are based. It has been updated through this document to reflect current legislative mandates, pedestrian issues and state-of-the-art practices.

As part of the development of the Statewide Bicycle and Pedestrian Master Plan, a range of tasks were undertaken to involve the public in identifying issues, problems and solutions relating to the bicycling and walking environment in the state. These efforts included workshops, a toll-free telephone number, a brochure and user survey which was distributed throughout the state, establishment of a post office mail box, circulation of questionnaires to state agencies and participation of special advisory panels. Seven daytime and six evening workshops were held in eight locations around the state of Pennsylvania. Each session afforded participants the opportunity to work in small groups to identify problems, needs and solutions that would make communities in Pennsylvania more bicycle and pedestrian-friendly. They attracted a wide range of participants. Input was contributed by representatives from state agencies, municipal and county officials and all types of transportation system users. These included: cyclists, recreational walkers, hikers, fitness riders, handicapped and sight-impaired users, bicycle commuters, mountain bikers, senior citizens and bicycle touring clubs. Almost 300 people attended the sessions.

Meetings were held in:

Hershey	**Altoona**
Pittsburgh	**Scranton**
Lock Haven	**Erie**
Philadelphia	**Norristown**

These locations are representative of the varied community types and development patterns found throughout the Commonwealth. They reflect large cities and metropolitan areas, small cities and towns, suburban areas, rural areas and college and university towns.

The broad-based solicitation of public and agency opinions was designed to identify current problems and solutions related to bicycling and walking in the state, and also to define the vision for bicycling and walking in communities 20 years from now.

SECTION 3

Staffing Dedicated to Bicycle and Pedestrian Issues

Introduction

Having a staff person or department dealing with bicycle and pedestrian issues is a good indication of the level of commitment a State or region has made toward bicycle and pedestrian planning and program development. Although ISTEA required all States to designate a bicycle and pedestrian coordinator, the duties and responsibilities of this coordinator vary from State to State. ISTEA did not contain a similar requirement for MPOs to designate a coordinator. The plans reviewed had a range of recommendations regarding bicycle and pedestrian staffing, from committing no staff at all to establishing or continuing to staff a bicycle and pedestrian department.

Past Practice

At a minimum, many plans identified a contact person for bicycle and pedestrian issues. The duties of this person were generally to respond to questions about bicycle and pedestrian issues, but these duties were carried out on an ad hoc basis and generally appeared to be a very low priority.

Beyond Traditional Practice

Some plans either noted that a part-time coordinator position existed or recommended creating such a position. This part-time coordinator would dedicate some portion of time to bicycle and pedestrian issues and planning, in addition to other duties. The amount of time spent on bicycle and pedestrian issues varied, but was usually about half-time. Lacrosse, WI, is an example of an MPO that employs a part-time staff person. By having a staff person with some percentage of time dedicated to bicycle and pedestrian issues, States and MPOs indicate that these issues will receive more

Synthesis of Bicycle and Pedestrian Planning Under ISTEA

than just passing attention. It is often difficult, however, for a part-time staff person to deal with implementing all the recommendations included in the plans reviewed. The result is a focus on one or two elements of the plans.

One Step Further

At the next level are States and MPOs that have full-time positions dedicated to bicycle and pedestrian issues. A full-time staff person obviously will have more time to dedicate to bicycle and pedestrian issues, which indicates the importance of these issues to the States or MPOs. A full-time coordinator has more time to deal with the broad range of programs and issues involved with bicycle and pedestrian planning and should be able to more fully implement the recommendations included in the plans. The Metropolitan Washington (DC) Council of Governments currently has a full-time regional bicycle-pedestrian coordinator. The New Hampshire State Bicycle and Pedestrian Plan recognized the need to create a full-time position for a bicycle and pedestrian transportation coordinator within the DOT and spelled out the general responsibilities of the position.

Best Practice

A few States and MPOs have created departments or offices for bicycle and pedestrian planning and programs. Creating an office or department dealing with bicycle and pedestrian issues shows a high level of commitment to these modes. These offices allow staff members to develop expertise in specific areas related to bicycling and walking and should lead to implementation of the full range of policies and programs included in the plans. Florida, North Carolina, and Oregon all have departments dedicated to bicycle and pedestrian issues. These States have long histories of providing staff dedicated to bicycle and pedestrian issues and go a step further by providing training and technical support to other professionals and citizens. Florida has a bicycle/pedestrian coordinator located in each of the DOT districts in the State and has developed a description of duties for these positions.

Exhibit 5: Florida DOT Pedestrian and Bicycle Program Quality Assurance Review July 1995

Exhibit 6: North Carolina DOT Office of Bicycle and Pedestrian Transportation, December 1994

District Pedestrian/Bicycle Coordinator Responsibilities for the Nineties

Serve as a leader within the district, helping to make bicycling and walking safe and successful, and contributing to a sustainable, effecient and effective multi-modal transportation system.

DUTIES AND RESOURCES

Planning/Visioning: Assist all MPO's and other communities in achieving a multi-modal, sustainable transportation and land use vision. Oversee the development of pedestrian/bicycle elements to all comprehensive plans. Serve as a technical advisor to the district, communities and MPO's as they build and/or localize inter-modal, safety, congestion management and other transportation plans.

Transportation Safety: Take a pro-active role in the development of Ped/Bike elements of CTSP's in each community. Help each community achieve it's ped/bike safety goals. Address both performance and environment improvements. Assure full development of traffic-ed and school crossing guard safety throughout the district.

Production/Design: Assure that pedestrian/bicyclist needs are fully met in all metropolitan and rural areas; especially on all new construction and 3R projects. Provide continuity and management. Assure that needs are built into the early review of all plans. Provide technical assistance to designers, operations and maintenance staff. Assure that systems needs (can I get from here to there?) are addressed.

Communication/Network: Serve as the district link with communities on all issues and needs related to the pedestrian and bicyclist. Serve as the friendly, helpful, and dependable contact, or *cheerleader* with communities as they seek to build more friendly walking and bicycling environments. Troubleshoot any emerging or ongoing problems. Help communities achieve high levels of citizen participation. Convey any local/regional concerns with state level program officials. Participate in all state level conference calls. Intitiate and facilititate local coordination meetings of area ped/bike coordinators.

Training: Take an active role in all training courses for community/district coordinators, and maintain appropriate knowledge and involvement in emerging local, regional, state and national issues. Provide guidance and support for statewide training. Assist with the professional training of all district staff, and help schedule, coordinate, promote and evaluate the success of district and local training courses.

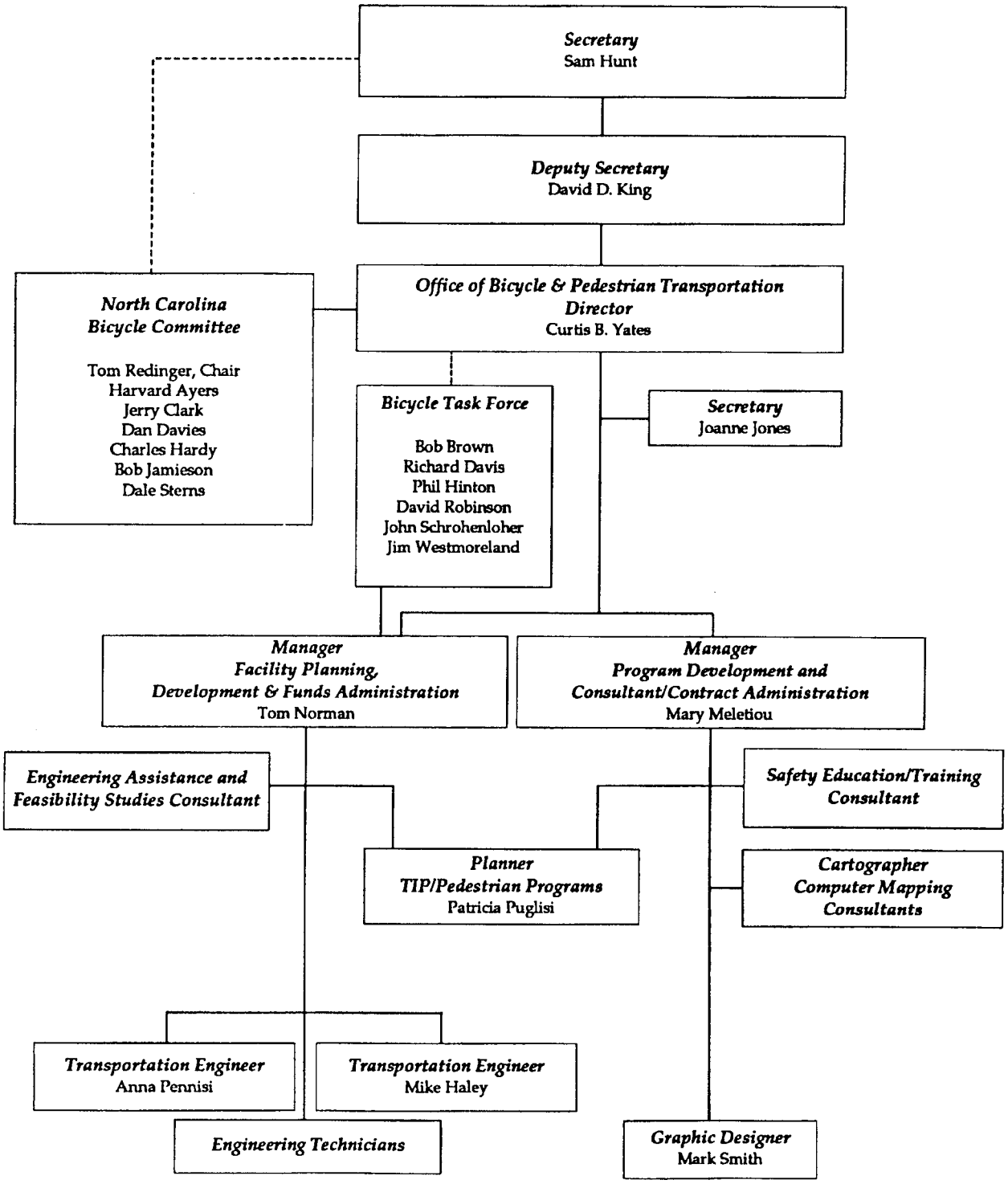
Quality Assurance: Oversee the quality and comprehensiveness of district production to ensure a timely, cost-effective pedestrian and bicycle system.

Transit Link: Assure that bicyclists and pedestrians are fully considered in all district funded transit planning and operations. This includes both inter-urban and intra-urban corridor and system development.

Community System Development: Serve as an advocate to city/county governments urging the fullest possible support for off-system pedestrian and bicycle facilities devleopment. This includes the full consideration of comprehensive walking and bicycling facilities, ample bicycle parking, convenient and friendly transit links, and key-employer commuter assistance programs.

Interagency and Intra-agency Development: Coordinate and energize district staff, regional and community agencies in the full development of the walking and bicycling modes. Use an aggressive, imaginative and creative course of action. Involve citizens fully in this process, and serve effectively as a pro-active proponent for walking and bicycling as cornerstones to a successful community. Offer suggestions for and participate in research that leads to improvements in walking and bicycling.

OFFICE OF BICYCLE & PEDESTRIAN TRANSPORTATION
Organizational Chart



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SECTION 4

Available Funding

Introduction

The planning guidelines for LRPs required by ISTEA include a financial constraint provision. This provision requires LRPs to include only projects for which funding is projected to be available during the 20-year time frame of the plans. This requirement has had a definite effect on bicycle and pedestrian projects. Some plans included no funding for bicycle and pedestrian projects, while others had line items for these projects and included design standards that integrated bicycle and pedestrian facilities into all highway projects.

Past Practice

Many plans discussed the possibility of constructing bikeways or sidewalks using funding from the Transportation Enhancements Activities category of the STP. If specific projects were included in the plans, it was usually with the proviso that Transportation Enhancement funding would be secured.

Beyond Traditional Practice

At the next stage of development are plans that discuss the possibility of using various ISTEA programs, including STP and CMAQ, to fund bicycle and pedestrian projects. Although the plans identified these other funding sources, they did not recommend specific projects to be funded from these sources. In addition, the plans did not link specific projects to the TIPs. Roanoke, VA, and Grand Forks, ND, are good examples of plans at this stage.

One Step Further

Synthesis of Bicycle and Pedestrian Planning Under ISTEA

Some plans included line items in the budgets or TIPs to fund minimum levels of bicycle and pedestrian programs and projects. Sources of funding for bicycle and pedestrian projects were identified in the plans, including Federal, State and local money. In some

cases, specific projects were identified in the plans. The Santa Fe MPO LRP included a summary of available funding and indicated the percentage of funding to be allocated to each mode.

Best Practice

The most developed plans included line items for bicycle and pedestrian projects and routinely associated improvements for these modes with highway projects through design standards and guidelines. Policies for including bicycle and pedestrian projects in the TIPs were clearly established and, in some cases, criteria for allocating STP funding favored bicycle and pedestrian projects. Accommodation of bicyclists and walkers is inherent in the planning and design processes of the agencies, and the cost of providing the facilities is included in the overall cost of highway reconstruction or new construction projects. The Puget Sound Regional Council plan addresses funding from various sources, allocates an additional 10 percent of STP funds for enhancement activities, and favors multimodal projects in the selection process for STP funding. The State of Oregon requires cities and counties to spend a minimum of 1 percent of their gas tax revenues on bicycle and pedestrian projects.

Exhibit 7. Puget Sound Regional Council Call for Regional ISTEA Projects, Seattle, WA, February 1995

Exhibit 8. Long-Range Transportation Plan (1995-2015), Sante Fe, NM, MPO, November 1994

later than 1:00 p.m., Thursday, June 22, 1995, to the attention of Dick Callahan.

Air Quality Review. Upon completion of the processes for identifying regional and countywide projects proposing to use regionally managed STP and CMAQ funds, the successful proposals will be included with all other projects to be examined for their effect on regional air quality and then the draft 1996-98 regional Transportation Improvement Program (TIP) will be released for formal public review and comment in August, 1995. The overall schedule for preparing the 1996-98 regional TIP is provided (*Appendix C*).

Pre-Application for Regional Projects

A copy of the pre-application for regional projects is provided (See *Appendix D*). As noted in the "Policy Framework," in the interest of focusing primarily on projects addressing key regional emphasis areas, there is a limit to the amount of funds that may be requested from within each countywide area for regional projects. The total amount available is identified as the "regional allocation" shown in *Appendix E*, which ranges from a low of about $33 million to a high of around $40 million.

Except as noted below, all pre-applications for regional projects are sent through countywide organizations for their endorsement prior to coming to the Regional Council. Each county may submit applications equalling no more than 100% of the regional allocation, with the exception that King County, with a substantially larger population base, may submit up to 200%. Requests from agencies in each county are to be coordinated through and endorsed by its countywide organization to assure compliance with these limits.

Exceptions to project submittals through Countywide Organizations. Sponsors who either may not have direct involvement in a countywide organization or who may be submitting broad regional projects of a multicounty nature (facilities and/or services proposed in more than one county) may submit their pre-applications directly to the Regional Council. Countywide endorsement is also encouraged as it clearly strengthens the chances for such project applications. Potential sponsors which may fit this exception include, but are not limited to, the ports, Tribal Nations, WSDOT (regional offices or ferry system) and the Regional Council itself.

Workshops. Workshops have been scheduled to assist project sponsors in understanding the new process and in completing a pre-application. Attending one of the workshops will be useful for agency staff or individuals that are just beginning project development and are considering possible federal ISTEA funding. Several steps in the development of a project must be completed or well underway at the time of submitting any application for ISTEA funds, including public involvement and policy support from affected local or state agencies. These steps will be reviewed at the workshops.

Transportation Plan Capital Projects (1995-2015)

Plan Element

Transit

System Buses	$28 million
MaintenanceFacility	$ 7 million
Park and Ride Buses	$3.5 million
Percent of Available Funding	*37%*

Intermodal

Purchase Depot	$4 million
Park/Ride Facility	$9 million
TDM Program	$1 million
Commuter Rail	$2.5 million
Percent of Available Funding	*16%*

Roads *Cost estimates include Rufina St., S. Meadows/Jaquar Rd./Gov. Miles and an additional 10.5 million for future roads*

Project Cost Estimates	$31 million
Percent of Available Funding	*30%*

Bikeways *Cost estimates include the Bikeways Masterplan plus trails into the County*

Project Cost Estimates	$15 million
Percent of Available Funding	*14%*

Pedestrian *Sidewalk Construction and Renovation*

Project Cost Estimates	$3 million
Percent of Available Funding	*3%*

Total Available Funding $104 million

SECTION 5

Cooperation and Integration With Transit Agencies and Services

Introduction

Integration of transit facilities with bicycle and pedestrian facilities is critical if public transit is to increase its share of both commuting and other trips. Unless safe, secure, and relatively convenient access is provided to transit facilities, people who have other options will continue to use their current modes. A wide array of programs and policies was included in the plans to improve the link between transit and bicycling and walking. Almost all transit trips involve walking at some point and, for a majority of transit users, walking is the sole means of access to transit.

Past Practice

Some plans did not recognize any relationship between transit and bicycle and pedestrian modes, but many mentioned the need to provide bicycle parking facilities at transit stations and, perhaps, park-and-ride lots. Plans at this stage did not include specific recommendations to improve the integration between transit and bicycling and walking.

Beyond Traditional Practice

Plans at the next stage not only discussed the relationship between the various modes, they also made policy recommendations to better integrate transit with bicycling and walking. These recommendations included providing bike parking at transit stations, improving pedestrian access to transit stations and bus stops, and initiating bike-on-bus programs. The South East Wisconsin MPO Bicycle and Pedestrian Plan included inventories of bicycle parking and bicycle and pedestrian access to transit stations and recommended improvements.

Synthesis of Bicycle and Pedestrian Planning Under ISTEA

One Step Further

Plans at the next stage recommended policies for bicycle and pedestrian facilities at transit stops and included discussion of the relationship between land use and transportation. In addition, these plans addressed the question of how compact, integrated development could encourage the use of public transit. This type of development, known as transit-oriented development, brings people, residences, employment, services, and transit closer together to give people options for making various trips. The Genesee Transportation Council LRP itemized measures to enhance intermodalism and provide diverse transportation options for citizens. Specific action items in the plan included installing bicycle lockers at park-and-ride lots; installing bicycle racks on buses; improving accessibility to transit centers with paved, visible, and well-lit walkways or paths; meeting the requirements of the Americans With Disabilities Act; and developing a transit design planning document.

Best Practice

A few plans recognized the benefits of full integration between transit and walkers and bicyclists and included policies and programs to maximize integration. Plans at this stage included programs that provide bicycle parking at transit stations, allow for pedestrian access to all transit stations and bus stops, and allow bicycles on buses and trains. These plans also recommended ordinance revisions from the AASHTO *Guide* to require or encourage transit-oriented development. The plans of the Puget Sound Regional Council and the Delaware Valley Regional Planning Commission are at this stage. Both plans included recommendations for changes in land use codes of their member agencies to reduce dependence on single-occupant vehicles. Both also either recommended or had in place programs and policies to enhance access to transit facilities for bicyclists and pedestrians.

Exhibit 9. Moving People and Goods, Transportation Element of the DVRPC Year 2020 Plan, Delaware Valley Regional Planning Commission, Philadelphia, PA, May 1995

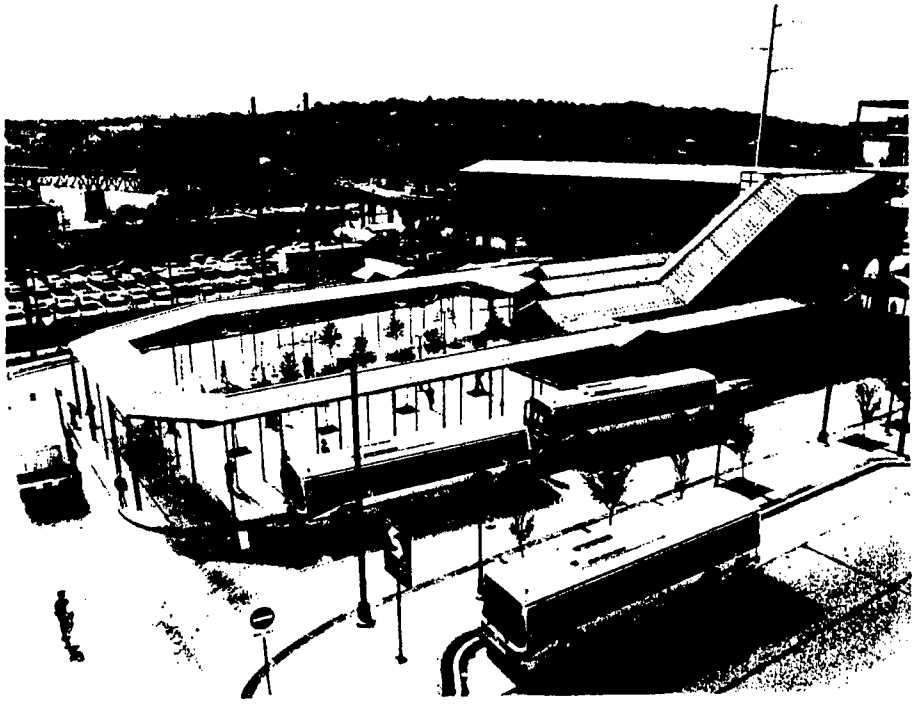
Exhibit 10. Long Range Transportation Plan for the Greater Rochester Area, 1995-2015, Genesee Transportation Council, Rochester, NY, March 1995

facilities where a number of different transit lines, including rail and/or buses, come together and are linked directly and conveniently to adjoining land uses. Park and ride lots are facilities where drivers or bicyclists can park and transfer to carpools, vanpools or transit vehicles. Both facilities serve to reduce single occupant vehicles and congestion. In order to increase the number of multi-modal transportation centers and park and ride facilities:

- **Municipalities should enact appropriate zoning and land use controls** to encourage an appropriate land use mix and density in the area of transit centers. The centers should blend appropriate land uses and densities, as well as circulation, parking, bicycle and pedestrian improvements needed to link transit with nearby activities.

Encourage pedestrian, bicycle and transit-oriented land use and mixed-use development—The Delaware Valley region has a well-established network of existing transit service, including commuter rail, light rail and bus systems. However, for the transit system to maintain its ridership or expand service to other areas, it is essential to improve the links between land uses and surrounding development. To encourage transit-oriented land use and mixed-use development:

Municipalities responsible for local area



Norristown Transportation Center

e. Exclusive Park & Ride lots should be well-landscaped and all Park & Ride lots should be attractive, inviting, and well-maintained. Shelters with benches and route and schedule information should be provided at all Park & Ride lots. (Cost - approximately $125,000)

9. In order to attract the growing market of bicyclists and pay attention to the diverse needs of pedestrians, it is important that the following activities dealing with bicycle and pedestrian access to transit be carried out:

a. Install 15 bicycle lockers (5 per lot) at the Route 31F, Bushnell's Basin, and Perinton Park & Ride lots by 1996 to replace the existing racks. Install up to 60 additional bicycle lockers at all major new Park & Ride lots and transit centers between 1997 and 2000, beginning at other existing Park & Ride locations where the potential use is considered greatest. (Cost -$9,000 for initial 15 and $36,000 for additional 60)

b. Install up to 50 bicycle carriers on buses, on an experimental basis, on a number of routes as determined by RTS and through surveys of local bicycling organizations and clubs. Expand this to all buses and routes if the trial test is successful. ($25,000 for initial 50 and approximately $85,000 to equip the rest of the RTS 40-ft. buses)

c. Make all existing and new Park & Ride lots and transit centers accessible for pedestrians and bicyclists to and from nearby roads and residential and commercial developments, with paved, clearly visible, and well-lit walkways or paths.

d. Convert all existing transit facilities to meet ADA accessibility requirements by 2000.

e. Develop a transit design planning document for developers and local planning and zoning boards to use to insure that all development is "people-friendly" with easy access for transit vehicles and passengers as well as pedestrians and bicyclists. Work with local officials in putting it to use.

10. In order to improve the image of the transit system and make the transit experience as pleasant as possible for its users, the following improvements to the system's stops and shelters should be made:

a. Install new bus shelters in at least 150 new locations by the year 2000. Additional shelters should be placed at major boarding locations around the downtown area that do not currently have a bus shelter; at other major boarding locations along RTS routes including most apartment complexes, senior citizen facilities, and major activity/employment

SECTION 6

Adopted Vision, Goals, Objectives, and Performance Measures

Introduction

Traditionally, plans include goals, which are general statements of what the plan hopes to achieve; objectives or strategies, which include specific items describing how to reach the goals; and, sometimes, performance measures, to help assess how well the goals and objectives are being met. Developing a vision statement at the beginning of the planning process has become more common, and a few of the plans reviewed included some type of vision statement. Some LRPs made passing references to bicycling and walking in the goals and objectives, while others integrated these modes into their vision statements, goals, and objectives. Most of the separate bicycle and pedestrian plans contained more specific goals and objectives for bicyclists and pedestrians than did LRPs.

Past Practice

Although some plans made only brief references to bicyclists or pedestrians in their goals and objectives, many other plans contained general goals or statements indicating a desire to improve conditions for these modes of travel. Plans in this category did not, however, go on to establish objectives or recommend actions to improve conditions for bicycling and walking.

Beyond Traditional Practice

At the next step are plans with clear goals and objectives for improving bicycling and walking, including targets for the levels of use of these modes, a reduction in crashes, or a recommended total mileage of bicycle and pedestrian facilities. Many plans based these targets on the recommendations of the *National Bicycling and Walking Study* which calls for a doubling of the number of bicycleand pedestrian trips and a 10-percent reduction in the

Synthesis of Bicycle and Pedestrian Planning Under ISTEA

number of accidents involving pedestrians and bicyclists. The Quad Cities MPO (IA, IL) and the Texas DOT plans are good examples of plans at this stage.

One Step Further

A few plans began with a vision statement that described the desired future for bicycling and walking in the State or region. To achieve this vision, goals, objectives, and strategies were developed. East Central, WI, and Idaho Falls, ID, both have MPO plans at this stage. These plans stated the vision for the 20-year time frames of the plans and then established specific goals, objectives, and strategies to achieve the visions.

Best Practice

The most developed plans established clear goals and objectives and included performance measures to establish how well the plans are being implemented. Effective performance measures must first establish a baseline against which future improvements are measured. For these plans, the baseline included determining the current number of bicycling and walking trips, determining mileage of existing bicycle facilities, and identifying funding levels for providing facilities and programs. A time frame for establishing specific programs was also included in some plans. Both the Delaware Valley Regional Planning Commission and the New Jersey DOT have plans at this stage. Clear visions and goals are included in the plans, agencies responsible for implementing objectives are identified, and baseline levels of use, miles of facilities, and accident rates are established.

Exhibit 11. Bicycle and Pedestrian Plan, Bonneville MPO, Idaho Falls, ID, March 1995

Exhibit 12. Statewide Bicycle and Pedestrian Plan, New Jersey DOT, June 1995

SECTION 1
VISION AND GOALS

This section provides the vision statement as well as goals and objectives needed to support the statement.

THE VISION

Create transportation choices for all citizens that emphasize the use of bicycling and walking and to integrate these forms of transportation into the physical and social fabric of communities within the BMPA. Provide a network of bicycle and pedestrian facilities extending from residential communities to key destinations such as workplaces, schools and commercial centers. Increase awareness by motorists and nonmotorists of the needs of cooperative travel throughout the BMPA.

GOALS AND OBJECTIVES

Goal 1. **Increase the number of people using bicycling and walking as forms of transportation within the BMPA from 3% to 15% by 2015.**

OBJECTIVES: Make all communities "bicycle and pedestrian friendly" by providing the necessary facilities to support safe and pleasant bicycling and walking; promoting appropriate land use and zoning regulations that encourage bicycling and walking (e.g. mixed-use and compact development); and, increasing awareness of nonmotorized travel through education and encouragement programs.

Gather data on current levels of nonmotorized use including mode of transport; trip purpose; trip lengths and other information by monitoring changes and increases in nonmotorized travel over time.

An increase of 3% in nonmotorized travel should be expected every five years (i.e., 6% by 2000, 9% by 2005, 12% by 2010, 15% by 2015).

MEASURES: Monitor use of nonmotorized travel modes every three years via personal surveys, random sampling, etc., to ensure increased percentage of users.

Goal 2. **Ensure maximum consideration of relevant bicycle and pedestrian elements in all transportation related projects.**

OBJECTIVES: Require each urban street and rural highway project to include consideration of bicyclists and pedestrians by assessing the necessary needs such as sidewalks; adequate street width for bicycles; and, surface requirements for bicycles (i.e., smooth and maintained shoulders, ghost lines to separate motorized from nonmotorized modes).

MEASURES: Evaluate new development and reconstruction projects to determine if they are accommodating bicyclists and pedestrians. Ensure that all newly elected, hired or transferred officials within all government entities are made aware of this Plan and its goals and policies. Provide periodic news media reports on the progress of Plan implementation.

Goal 3. **Develop 160 miles of designated bikeways within the BMPA by the year 2015.**

OBJECTIVES: Follow recommendations set forth in this Plan based on policy statements and the list of identified projects for bicycle facilities.

Performance Measures

How Do You Measure Success

Introduction

A means of measuring the success of the achievement of a goal is necessary to establish program priorities and allocate resources. Performance can be measured in terms of quantity, quality, timeliness and cost.

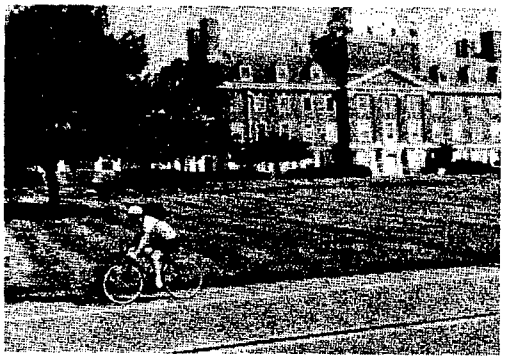
The following is an outline of recommended performance measures for government entities preparing comprehensive bicycle and pedestrian plans. Performance measures will vary depending on the size of the government entities' resources and the entities' involvement in an overall statewide plan. Performance levels should be developed based on program priorities and available resources.

Critical success factors represent elements of a comprehensive plan that should be in place so that performance success can be achieved.

The performance measures are listed in conjunction with the appropriate goal.

Goal #1

Create a bicycle and pedestrian friendly transportation infrastructure by planning, designing, constructing and managing transportation and recreation facilities which will accommodate and encourage use by bicyclists and pedestrians and be responsive to their needs.



Performance Measures:

A. Percent of transportation improvement projects that have been reviewed for consideration of bicycle and pedestrian facilities.

B. Percent of highways that are bicycle and pedestrian compatible.

C. Percent of or total amounts of capital and/or resources devoted to managing the accommodation of bicycling and walking.

D. Percent of built projects which have incorporated appropriate pedestrian and bicycle accommodations.

Critical Success Factors:

- Presence of a supportive policy and a procedure for the consideration of bicycling and walking in all transportation improvement projects.
- Presence of staff or assignment of accountability to manage review procedure.
- Presence of standard guidelines for bicycle and pedestrian facilities.
- Presence of a plan to encourage bicycling and walking.

SECTION 7

Implementation: Action Plan and Leadership

Introduction

If a plan is to be successful, it must include recommendations or action plans for implementing goals, objectives, and strategies and identify which agencies are responsible for carrying out the recommended actions. Many of the bicycle and pedestrian plans of the past did not include implementation recommendations or action plans.

Past Practice

Most plans did include some recommendations for implementing bicycle and pedestrian programs and facilities. These recommendations most often involved developing isolated trails or bicycle routes, but did not include any discussion of efforts to link the recommended facilities or integrate other organizations into the programs.

Beyond Traditional Practice

At the next level were facility-focused plans containing maps and recommendations for implementation of a system of bikeways, including on- and off-street facilities. These plans identified specific roadways and corridors within the system and often assigned some priority to the recommended facilities. The agencies responsible for the development of various facilities were frequently identified.

One Step Further

Plans at the next stage included recommendations for bikeway networks and addressed policy and program recommendations to better integrate bicycle and pedestrian issues into planning and programming processes. Policies stating that all future road projects will provide bicycle and pedestrian facilities, recommendations for staff positions, and recommendations for spot improvement,

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education, and encouragement programs were among the issues addressed by plans at this stage. The agencies responsible for implementing the facilities and programs included in the plans were also identified. The Delaware Valley Regional Planning Commission and the Oregon Bicycle and Pedestrian Plan are examples of plans at this level.

Best Practice

In addition to containing action plans and policy recommendations, the most developed plans also provided training and outreach to agency staff and other organizations to create a planning environment in which bicycling and walking were completely integrated into all projects. The New Jersey Statewide Bicycle and Pedestrian Master Plan included an implementation plan that identified both actions and groups responsible for implementation. As part of the master plan process, New Jersey also developed a training course to be presented around the State for professionals involved in bicycle and pedestrian planning and design.

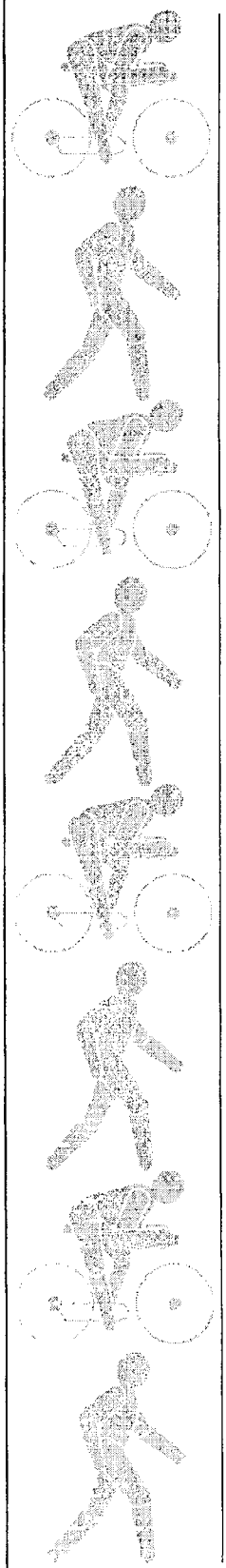
Exhibit 13. Statewide Bicycle and Pedestrian Plan, New Jersey DOT, June 1995

Exhibit 14. PennDOT Statewide Bicycle & Pedestrian Master Plan, Community Design Systems, April 1996

NEW JERSEY STATEWIDE BICYCLE AND PEDESTRIAN PLAN

RECOMMENDED ROLES AND RESPONSIBILITIES FOR IMPLEMENTATION OF BICYCLE/PEDESTRIAN PROGRAMS AND FACILITIES

	Operations and Maintenance	Construction	Planning	Funding	Regulatory/ Legislative	Land Use/ Policy	Design/ Engineering	Leadership	Advisory	Enforcement/ Safety	Education/ Training	Promotion/ Advocacy	Management
PRINCIPAL PARTICIPANTS													
NJ DEPT. OF TRANSPORTATION	●	●	●	●	●	●	●	●	●	●	●	●	●
NJ TRANSIT	●	●	●	●			●		●			●	●
MPOs			●	●		●		●	●			●	
COUNTIES	●	●	●	●	●	●	●	●	●	●	●	●	●
AUTHORITIES AND COMMISSIONS	●	●	●	●	●	●	●	●	●		●	●	●
MUNICIPALITIES	●	●	●	●	●	●	●	●	●	●	●	●	●
SUPPORTING ENTITIES													
GOVERNOR AND LEGISLATURE				●	●	●		●	●				
NJ DEPT. LAW AND PUBLIC SAFETY				●	●			●	●	●	●	●	●
NJ DEPT. COMMUNITY AFFAIRS				●	●	●	●	●	●		●	●	
NJ DEPT. COMMERCE AND ECONOMIC DEVELOPMENT			●	●		●		●	●				
NJ DEPT. TREASURY			●			●		●	●				
NJ DEPT. ENVIRON. PROTECTION	●	●	●	●		●	●	●	●	●		●	●
NJ DEPT. EDUCATION			●	●	●		●	●	●	●	●	●	
PROFESSIONAL ORGANIZATIONS			●				●	●	●		●		
TRANSPORTATION ORGANIZATIONS	●	●	●	●				●	●		●	●	●
SPECIAL INTEREST GROUPS									●			●	
EMPLOYERS	●	●		●							●	●	●
BUILDERS/DEVELOPERS	●	●	●	●			●		●				●
COMMERCIAL PROVIDERS	●	●	●	●									●
INDIVIDUALS			●					●	●			●	



INTRODUCTION

In response to a nationwide effort to search for more efficient means of transportation, the Pennsylvania Department of Transportation has developed a Statewide Bicycle and Pedestrian Master Plan. It represents the bicycle and pedestrian element for the state's overall long range transportation policy plan and is based on a new vision for bicycling and walking in Pennsylvania. Communities throughout Pennsylvania are encouraging bicycling and walking to help reduce congestion, pollution and the ever-increasing cost of accommodating single occupant automobile travel. However, due to Pennsylvania's diverse geography, it is necessary to identify issues, problems and solutions which are specific to the different design systems throughout the state. For this reason, this document has been developed to address the integration of bicycling and walking into the existing transportation and recreation system at the community level.

The five community design systems discussed in this report include Large Cities/Metropolitan Areas, Small Cities and Towns, Suburban Areas, Rural Areas, and College and University Towns. Each of these have a unique set of problems which influence the overall transportation system and at the same time have a different set of solutions for improving the overall system. For example, the most important issue in a rural community may be shoulder paving, while neighborhood design may be most important to suburban areas. Therefore, the solutions presented are very much influenced by the characteristics of each design system or community type.

The report uses Census data on journeys to work, as well as responses obtained through public workshops held in different geographic areas, to analyze the five systems. Where possible, specific examples are given of communities located in Pennsylvania.

PURPOSE

In order to integrate bicycling and walking into the existing transportation and recreation systems, it is necessary to plan and provide the appropriate facilities for the various geographical areas of the State. The demands and needs of bicycling and walking in Pennsylvania vary based on area characteristics such as land use, population and transportation patterns. Issues, problems and solutions can be very different depending on the characteristics of a specific design system. Identifying the differences in the bicycle and pedestrian design system types for each of the geographical areas cannot be completely accomplished in the Statewide Bicycle and Pedestrian Design Guidelines. Therefore, an additional document is needed which provides information directed towards the specific types of communities.

This document is intended for use by individual communities in Pennsylvania to assist in the integration of bicycling and walking into existing systems. The document identifies issues, problems, and solutions facing the design systems for Large Cities, Small Cities or Towns, Suburban Areas, Rural Areas and College or University Towns. While the Statewide Bicycle and Pedestrian Master Plan policy and planning guidelines documents address issues relevant to the entire state, this document will assist community and transportation officials for the various geographic areas of Pennsylvania.

SECTION 8

Available Data

Introduction

Data available to assess the current levels and conditions for bicycling and walking in States and regions varied widely in the plans reviewed. Information about the current levels of bicycling and walking in a State or region is essential for a State or MPO to effectively plan to meet goals to increase the use of these modes. A review of bicycle and pedestrian accident data can also help to target areas or intersections that need improvement. The plans reviewed used a range of data sources to establish existing usage levels and conditions. The plans ranged from using no data at all to working with models to give a relative rating to existing facilities.

Traditional Practice

Although a few plans made no reference to data used to determine existing levels of walking and bicycling, references to census data were the most common statistics cited to establish current levels of use of these modes. A few plans also mentioned the National Personal Transportation Survey, which provides transportation data on a national scale.

Beyond Traditional Practice

Some plans also attempted to establish current levels of bicycle and pedestrian crashes or accidents. Police records of bicycle/motor vehicle and pedestrian/motor vehicle accidents were the most common statistics used to determine current levels of accidents. Many plans acknowledged the fact that the majority of bicycle accidents do not involve motor vehicles and are not reported to police. Accidents involving two bicycles, a bicycle and a pedestrian, or a single bicycle are generally not reported. Police crash records are, however, usually the best source of information about other types of accidents.

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One Step Further

A few plans used data generated by the agencies' own surveys, perhaps using the management system data also being collected by the agency. The Savannah, GA, MPO LRP, for example, documented the use of a survey containing questions on demographics, current bicycle travel, bicycle travel desires, and bicycling issues. Some MPOs also conducted bicycle counts. The Fargo-Moorhead, MN, MPO performed bicycle counts at over 38 locations during summer months throughout the metropolitan area. "The counts were conducted to determine patterns and levels of use along selected bike paths. Information from the counts was intended to aid local officials in identifying areas where bicycle improvements would most likely satisfy an existing need."

Best Practice

The most comprehensive plans used one of the emerging bicycle and pedestrian modeling and forecasting techniques to develop a prioritized list of improvements. A good example of this type of plan is in the Metro-Dade Bicycle Facilities Plan (Miami, FL), which used a roadway condition index and computer applications to determine levels of service for bicyclists. Each segment or roadway link was assessed based on its compatible or noncompatible characteristics. This ambitious plan also classified user types, referring to A, B, and C bicyclist types, and identified improvements and road segments that could meet the differing needs of the different types of bicyclists.

Exhibit 15. Metro-Dade Bicycle Facilities Plan, Miami, FL, MPO, Draft, June 1995

Exhibit 16. Metropolitan Bikeway Plan, Fargo-Moorhead MPO, Fargo, ND, February 1995

METHODOLOGY OF THE ROADWAY CONDITION INDEX (RCI)

In the Summer of 1993, the Dade County MPO undertook an ambitious application of the Roadway Condition Index in establishing a multimodal evaluation of the County's transportation network. A primary goal of this study was to incorporate a quantitative measure of the suitability of a road to carry bicycles. This element could then reflect the real or perceived hazard of bicycle/motor vehicle interaction within a shared corridor right-of-way. Thus, a roadway segment with good transit service and high suitability for cycling could be defined as providing adequate transportation capacity, even if the vehicular level of service was below existing standards. Three critical variables effect the Level-of-Service a roadway provides to cyclists: per lane traffic volume, traffic speed, and lane width. These are the core factors of the RCI used in this study.

REQUIRED INPUT DATA

For this study, data for over 2400 roadway links in Dade County were collected and analyzed. The data was entered into a spreadsheet on a link by link basis, and read by a Geographic Information System for plotting. The plots identified the level of service provided by the current road network, and marked areas where improvements to the roadway could alleviate dangerous barriers or links on roadways.

The Federal Functional Classification System (major/minor arterials and collectors in Dade County) was used to form the basis of the bicycle network. The following data was collected by the Bicycle/Pedestrian Program for this and future studies:

- Average Daily Traffic in 1990
- Number of existing travel lanes
- Posted speed limit
- Width of outside lane
- Pavement surface quality (judged on a 3-point scale)
- Sight distance (judged on a 3-point scale)
- On-street parking areas
- Existing paved shoulder or curb and gutter areas
- Type of land-use (industrial, commercial, residential, agricultural or open land)

CALCULATION OF THE RCI

Adaptations of the RCI function have been used in previous bicycle planning studies in Florida to establish existing bicycle suitability conditions and to anticipate future facility needs. The quantitative measure of facilities used in this study adopted a modified version of the Davis RCI function[7]

The roadway information gathered by the MPO's Bicycle/Pedestrian Program was intended to support the version of the RCI function found in Appendix C. However, a simplified RCI function was used to determine roadway/cyclist compatibility for this study. It is of the following format:

$$RCI = AADT/(L*3100) + S/30 + [(S/30)*((14-W)/2))]*1.09$$

where;

AADT	=	Average Annual Daily Traffic
L	=	Number of Travel Lanes
S	=	Speed limit (mph)
W	=	Width of outside lane (feet)

The 1.09 multiplier factor represents the average LF and PF contribution to the RCI from two prior studies done elsewhere in South Florida[7]. For the purposes of this study, the surrogate equation is considered adequate.

There are numbers of Bicycle Impediments in the F-M area. Finding locations where these impediments can be traversed will be crucial in providing convenient linkages to the existing metropolitan bikeway system. The following represent the principal Bicycle Impediments in the Fargo-Moorhead area:

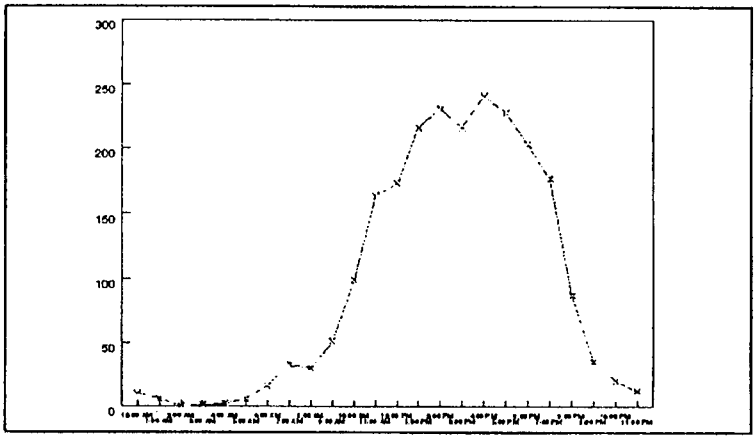
1. Interstate 94 interchange at 8th Street South in Moorhead.
2. Interstate 94 interchange at 20th Street South in Moorhead.
3. Interstate 94 interchange at Cass County Highway 17 south of West Fargo.
4. Interstate 29 interchange at 52nd Avenue South in Fargo.
5. Interstate 29 interchange at 32nd Avenue South in Fargo.
6. Interstate 29 interchange at Main Avenue in Fargo.
7. Interstate 29 interchange at 12th Avenue North in Fargo.
8. Interstate 29 interchange at 19th Avenue North in Fargo.
9. Interstate 29 interchange at Cass County Highway 20 North of Fargo.
10. Portions of 8th Street South in Moorhead.
11. Portions of University Drive South in Fargo.
12. Portions of US 10 traversing the entire metropolitan area.
13. Portions of 13th Avenue South in Fargo and West Fargo.
14. Portions of 10th Street in Fargo
15. Portions of 25th Street in Fargo
16. Portions of 12th Avenue North in Fargo
17. Portions of Highway 75 in Moorhead
18. Portions of Highway 10 in Moorhead

E. BICYCLE COUNTS

During the summer months of 1993 and 1994, F-M COG performed bicycle counts at over 38 locations throughout the metropolitan area. The counts were conducted to determine patterns and levels of use along selected bike paths. Information from the counts was intended to aid local officials in identifying areas where bicycle improvements would most likely satisfy an existing need.

To accomplish this task, mechanical counts were conducted around-the-clock for a seven day period at each location. Figure 6 on page 17 is a table reporting the aggregate totals of the raw data, including the hourly and daily averages, recorded at each site. The data illustrates there is considerable variation in the level of bike use in the areas that were surveyed.

FIGURE 7
Peak Use for Bicycling



Source: F-M COG 1993/1994 Bicycle Trip Count Data

Figure 7 is a graphic depicting the time period indicating peak use at 13 locations where counts were maintained. According to the graph, peak use at these locations is roughly from 12:00 noon through 7:00 p.m. During this period, an estimated 200 bicyclists used these facilities. A cursory analysis of these statistics would suggest that very few commuter bicyclists are using the bike paths for work trips, suggesting that most of the travel on these facilities is for recreational purposes. Generally speaking, bicycle path usage is not limited to any one group.

SECTION 9

Presentation

Introduction

What a plan says is ultimately more important than how it looks, but the form in which a plan is presented has a definite impact on whether it is read, understood, and accepted. A plan with no graphics on the cover, a glut of technical information, and no executive summary is not likely to be widely read. A plan with some graphics, including summary charts highlighting significant findings and recommendations and perhaps some photographs, is more likely to be read. Some of the plans reviewed for this report had accompanying videos to introduce their concepts.

A challenge facing the transportation planning profession is making the LRPs interesting to people who do not believe the issues have a direct impact on their day-to-day lives. The format and presentation of transportation plans often contribute to this perception by emphasizing technical analysis over information and recommendations that the public can understand.

Past Practice

Most of the plans reviewed did attempt to address bicycle and pedestrian issues and even included a chapter or section on these issues. Often, however, these chapters or sections were buried in the LRP, an uninspiring section of an uninteresting report. No graphics, charts, or maps were included to aid in the understanding of the recommendations included in the plans.

Beyond Traditional Practice

At the next level were plans that included summary charts, tables, and graphics that added interest to the format. Balancing the need to include technical information while presenting this information in a form that is accessible to the public is difficult. A summary or some other method of highlighting the plan's major findings and recommendations can be an effective means of accomplishing this balance. Examples of these plans include the

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Santa Fe LRP and the New Hampshire State Bicycle and Pedestrian Plan.

One Step Further

Some States went a step further and developed plans that were printed in an interesting format that made the documents more inviting to the public. Most often these documents were separate plans that increased the focus on bicycle and pedestrian issues. The Idaho DOT plan is a good example of a statewide plan at this stage. The plan used an interesting format that included pictures and graphs, as well as a brief executive summary highlighting major findings and recommendations. The LRP for the Little Rock, AR, MPO included these same elements. The Little Rock plan also used a technique to manipulate photographs of existing streets to show how areas would look if the recommendations for pedestrian and transit facilities included in the plan were implemented.

Best Practice

At the highest level of planning were States and MPOs that prepared summary documents and videos in an attempt to make their plans more accessible to the public. The Delaware Valley Regional Planning Commission prepared an executive summary of its LRP in a tabloid format. The summary showed tables and charts illustrating interesting regional transportation trends and included numerous references to the roles of bicycling andwalking in the region's transportation future. The New Jersey Bicycle and Pedestrian Master Plan included a video introducing the plan, which discussed the plan's vision, provided recommendations, and offered information regarding key points of contact.

Exhibit 17. Executive Summary of the Direction 2020 Long-Range Plan, Delaware Valley Regional Planning Commission, Philadelphia, PA, December 1994

Exhibit 18. Idaho Bicycle and Pedestrian Transportation Plan, Idaho Transportation Department, January 1995

Direction 2020

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

The Executive Summary of the Draft DIRECTION 2020 LONG-RANGE PLAN

HIGHLIGHTS OF THE DIRECTION 2020 PLAN

- Maintains and modernizes existing transportation systems using new technologies
- Establishes a Regional Growth Boundary to focus road, transit, water and sewer and other infrastructure improvements within the existing developed areas and new growth centers
- Includes major highway projects only within the regional growth boundary
- Identifies 96 Development Centers as hubs for future growth
- Balances and streamlines regional travel by addressing all types of transportaion needs simultaneously
- Links future transportation improvements to recommended land uses
- Considers freight and bicycle/pedestrian needs both regionally and locally
- Protects natural resource areas to provide habitat, clean water and open space
- Increases travel capacity by more effectively managing the transportation system
- Provides for future recreational needs
- Minimizes future improvement costs by preserving rights-of-way
- Maintains agriculture's strong role in the region

Skyline view of Philadelphia, the largest city in the metropolitan region.

Chapter III

Comprehensive Approach to Bicycle and Pedestrian Transportation Planning

Transportation planning is a process for making decisions about the development of transportation facilities. This includes providing accurate information about the effects proposed transportation projects will have on the community and projected users. Bicycle and pedestrian planning is no exception. However, because much of the information necessary to reach sound decisions about providing for safe, efficient use is already available as a by-product of the normal operation of the road system, the bicycle/pedestrian planning process is a specific application of the overall transportation-planning process.

Local officials meet with bicycle advocates to discuss facility improvements.

This is also true of efforts to produce or update a transportation element of a local comprehensive land-use plan. The planning process used to develop or improve roadways for motorists as part of local planning efforts is equally valid for the non-motorized modes.

There are, however, some important design features to be taken into account to best accommodate bicyclists, and for this reason planners and engineers should refer to the AASHTO Guide (see Additional Reference Publications, page 30) and the State Design Manual (bicycle element is included in this plan as Appendix B) during the planning process for streets and highways. Eventually, bicycle "drivers" should be anticipated and provided for on all roadways where bicycles are not excluded by statute or regulation, regardless of functional classification.

Many model planning processes could be used to select routes and design facility treatments to accommodate bicyclists and pedestrians. The following process is only one example. It consists of six steps:

SECTION 10

Facility Mix

Introduction

The plans reviewed contained a wide array of facility mixes. Some plans included no bicycle or pedestrian facilities, while others included recommendations for a full range of facilities from on- and off-street bikeways to sidewalks and bicycle parking facilities. The mix of facilities included in a plan is good indication of the level of commitment to and understanding of bicycle and pedestrian planning issues on the part of the agency preparing the plan.

Past Practice

Some plans made no mention of bicycle or pedestrian facilities beyond a reference to sidewalks being required adjacent to some roadways. Sidewalks were treated as being appropriate for both pedestrians and bicyclists.

Beyond Traditional Practice

Plans identifying the start of a system of bicycle and pedestrian facilities were at the next level. These plans tended to focus on separate facilities for bicycles and usually addressed bicyclists' needs more competently than pedestrians'. Connections between the separated facilities and the street system were often not well defined.

One Step Further

The next level of plans had an integrated system of bicycle and pedestrian facilities. These plans identified a network of both on- and off-road facilities providing access to desired origins and destinations. These plans focused on developing a network of bicycle facilities and corridors, as opposed to identifying specific treatments for facilities to be provided in the corridors. The Charlottesville, VA, MPO Bicycle Plan is a good example of a plan at this stage.

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Best Practice

Plans identifying a well-defined and integrated network of facilities for both bicycling and walking were at the next stage of development. These plans offered a variety of facilities, including trails, bike lanes, signed routes, and shoulders for bicycles and crosswalks, sidewalks, and traffic calming for walking. The Puget Sound Regional Council included recommendations for all these elements combined in a true network of facilities. The Puget Sound plan had graphics illustrating the network and associated facilities at the regional, local, and transit station levels. The Oregon State Bicycle and Pedestrian Plan included recommendations and standards for a wide array of bike and pedestrian facilities and discussed implementation of these facilities at the local level.

Exhibit 19. 1995 Metropolitan Transportation Plan, Puget Sound Regional Council, Seattle, WA, May 1995

Exhibit 20. 1995 Oregon Bicycle and Pedestrian Plan, Oregon DOT, June 1995

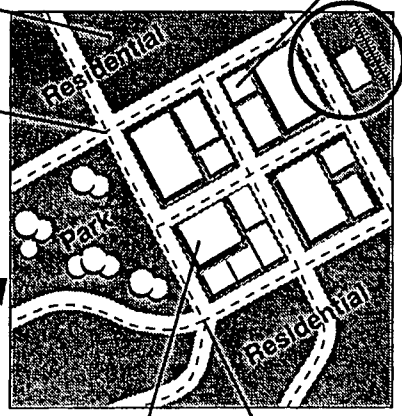
Proposed Regional Nonmotorized Transportation (NMT) System

AT THE LOCAL LEVEL -
Opportunities for NMT Within Communities

Buildings that front sidewalks, not parking lots, ease pedestrian, bike and transit use.

Neighborhoods with sidewalks, pathways and a network of on-street bikeways.

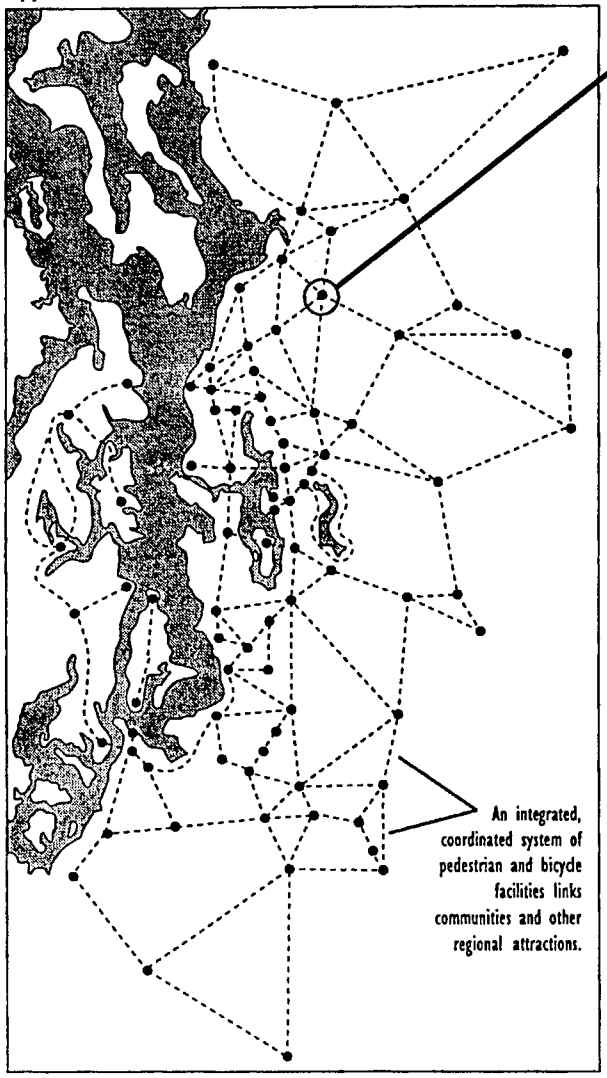
Bike lanes and pathways link homes to work, shopping and parks.



Office buildings with bike racks, storage lockers and showers.

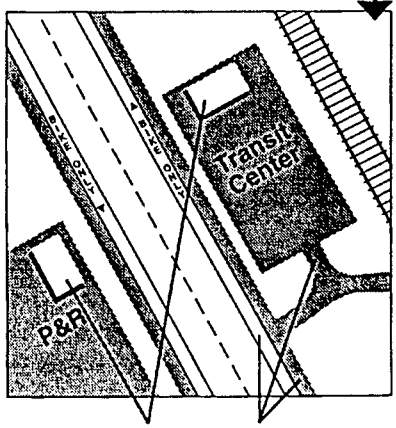
Safety crossings at intersections in critical areas, and access to and across principal arterials.

AT THE REGIONAL LEVEL -
Opportunities to Connect Communities



An integrated, coordinated system of pedestrian and bicycle facilities links communities and other regional attractions.

IN THE VICINITY OF TRANSIT, FERRY AND RAIL STOPS/STATIONS -
Opportunities for Regional Intermodal Connections



Improved storage at park-and-rides and transit centers helps cyclists reduce air pollution.

Trails, sidewalks and bike lanes improve access to transit.

Urban Highways require a more complex implementation strategy:

- As part of modernization projects (bike lanes and sidewalks will be included);
- As part of preservation projects, where minor upgrades can be made;
- By restriping roads with bike lanes;
- With minor betterment projects, such as completing short missing segments of sidewalks;
- As bikeway or walkway modernization projects;
- By developers as part of permit conditions, where warranted.

Cost to Implement the Plan: The overall cost to retrofit the existing urban highway system with appropriate facilities is estimated at $150 to $200 million. This would require expending $7.5 to $10 million per year to accomplish the goal in 20 years; this doubles the current ODOT expenditures on pedestrian and bicycle facilities.

SECTION 2: DESIGN, MAINTENANCE AND SAFETY

This section establishes standards for safe and attractive bikeways and walkways; maintenance practices are recommended; safety considerations are explained to assist educators and law enforcement personnel in their duties.

High standards are established so facilities do more than just accommodate current walkers and bicyclists: the purpose is also to attract new users. Other considerations, such as traffic calming, bicycle boulevards, roundabouts, etc. are presented.

Planning Walkway and Bikeway Networks: The general principles of on-street networks are presented: the importance of arterials and the relationship with other planning considerations such as land use, public transit and access management. Appropriate types of facilities are explained, as well as techniques to overcome barriers to walking and biking (busy streets, freeway crossings, etc.).

Bikeway Design: The various types of bikeways (shared roadway, shoulder bikeway and bike lanes) are discussed, as well as special considerations such as railroad crossings.

Bicycle Parking: General recommendations for cities to use in their local ordinances.

Bike Lane Restriping Guidelines: An effective and inexpensive treatment for improving conditions for bicyclists on existing roads.

Walkway Design: The basic urban walkway is a sidewalk; standards are established to meet ADA requirements; other considerations such as bus stops and planting strips are presented.

Street Crossings: The greatest challenge to pedestrian mobility is crossing the street; improvements such as islands and curb extensions are presented.

Multi-Use Paths: Previously called "bike paths," these serve pedestrians and other users. The opportunities and challenges associated with separated paths are presented.

Intersections and Interchanges: These present challenges to users and designers, since conflicts occur where paths cross; designs to improve bicycle and pedestrian safety are presented.

Signing: Standardized signs and markings are proposed for state and local systems.

Maintenance: Recommendations are presented that will enable ODOT, cities and counties to keep facilities in a usable condition.

Safety Considerations: The major causes of pedestrian and bicycle crashes are explored. Engineering, education and enforcement solutions are presented. The information contained in this section will be refined and used to develop safety programs.

Bicycle Maps: Standards are presented so that bicycle maps have uniform legends statewide.

SECTION 11

Land Use

Introduction

Improving the link between land use and transportation planning is a key ingredient to increasing the use of walking and bicycling as modes of transportation. Providing people with realistic options to use these modes, through mixed land uses and convenient access to shopping, work, recreation, and other destinations creates an environment that encourages walking and bicycling. The plans reviewed addressed the link between land use and transportation at different levels. Some indicated that the current practice of increasing road capacity as development increased was working in their regions. Others had separate sections or reports dealing with land use and transportation, including recommendations for ordinance and code amendments to better integrate land use with transportation.

Traditional Practice

A few plans failed to mention any connection between land use and its impact on bicycle and pedestrian transportation. Most of the plans reviewed discussed the link between land use and transportation and referred to some of the benefits of improving the link, such as more transportation options for people and a reduced dependence on single-occupant vehicles. Plans at this level generally did not contain recommendations for policy changes and often indicated that traffic conditions in the State or region had not deteriorated to a point at which significant congestion existed.

Beyond Traditional Practice

Synthesis of Bicycle and Pedestrian Planning Under ISTEA

Plans at the next level began to recognize the relationship between land use and transportation and included policy recommendations to improve the link. These plans discussed how post-World War II development patterns had led to dependence on automobiles and included recommendations for policies to encourage development patterns that provide people with choices of transportation modes. Policies recommending cluster-style development and mixed land uses, as well as transit-oriented development, were

included in these plans. Examples of plans at this level include the Binghamton, NY, and Rapid City, SD, MPO plans.

One Step Further

Plans at this stage built on the relationship between land use and transportation and included specific goals and objectives promoting intermodalism and changes in land use policies and ordinances. The San Luis Obispo MPO LRP included a recommendation to provide regional discretionary funding for each jurisdiction. This funding would be used to review, amend, update, and develop land use policies and design guidelines and standards that incorporate auto-independent policies and emphasize pedestrian, bicycle, and transit transportation. The Denver MPO LRP itemized development patterns that are not conducive to bicycling and walking and provided examples of bicycle- and pedestrian-friendly development patterns in other municipalities.

Best Practice

A few plans truly recognized the link between land use and transportation planning and included policies and recommendations for code and ordinance amendments to change the way land use and transportation plans are developed. The connection between land development patterns and the transportation system was emphasized throughout the plans, and methods to better integrate the two were frequently described. The Delaware Valley Regional Planning Commission LRP included a specific land use and transportation plan supplement. This report, entitled Land Use Transportation Plan: The Policy Agenda, emphasized the importance of reducing the use of single-occupant vehicles to comply with the requirements of both ISTEA and the Clean Air Act Amendments. The theme of improving the mobility of residents while reducing air pollution and congestion dominated the plan and was highlighted by a graph illustrating automobile dependency.

Exhibit 21. Executive Summary of the Direction 2020 Long-Range Plan, Delaware Valley Regional Planning Commission, Philadelphia, PA, December 1994

Exhibit 22. 1994 Regional Transportation Plan, San Luis Obispo, CA, COG, February 1995

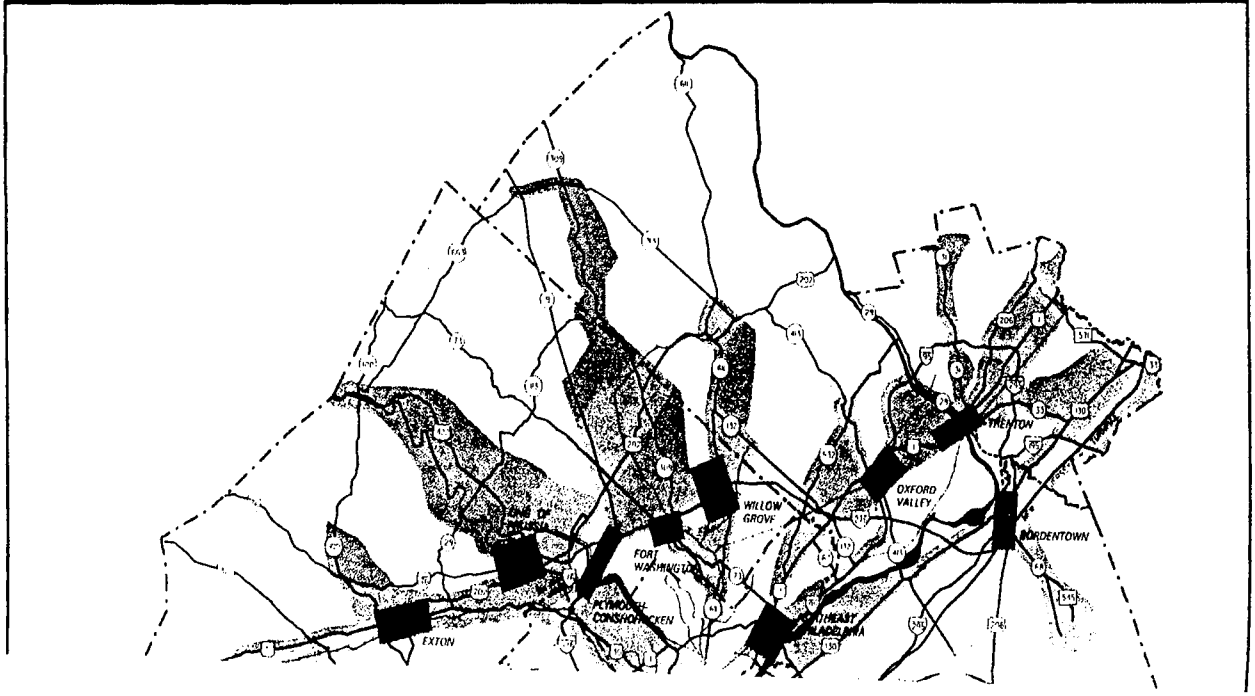
LINKING LAND USE AND TRANSPORTATION

An important concept of the PLAN was to view the problems of growth and transportation as a single, interrelated condition. Therefore, project teams of transportation and land use planners worked together to prepare the PLAN's various elements.

The teams focused on distinct travel and land-use corridors and centers within the region, developing a planning process in which the best transportaiton and land-use solutions would be recommended in the context of surrounding development and regional travel patterns. The corridors usually include several parallel highway and transit routes while centers often represent locations where transportation facilities converge.

The *Centers and Corridors* study (DIRECTION 2020 Report 22) assembled a plan for each corridor and center, showing conditions, trends and problems, and land use and transportation recommendations. Maps showing existing land use and transportation facilities were prepared for each center and corridor.

DIRECTION 2020 PLANNING CORRIDORS



Chapter 9

LAND USE STRATEGIES

INTERMODAL CONNECTION

The performance of the transportation system is dependent upon adjacent and surrounding land uses at the local and regional level. This discussion is separated from the rest of the text to emphasize the relationship between land use and transportation and focus on the intermodal connections between residential areas and places of commercial, employment, and recreational activity. The basis for this discussion is the concept of designing communities, or when practical, retrofitting existing communities to be less automobile dependent. This chapter focuses on land use strategies that can help lower dependence on the automobile and enhance intermodal and multimodal connectivity. Improved modal access through better design and land use decision making provides more transportation choices. The air quality benefits of land use strategies are also discussed. SLOCOG recommends that member jurisdictions adopt these land use strategies as a means to reduce future transportation problems.

It has become evident over the past decade that funding, physical limitations and environmental constraints will not allow the region to build transportation facilities sufficient to maintain mobility at the levels the region has historically enjoyed. A re-evaluation of the transportation-land use planning process has given rise to a call for better coordination between and more creative approaches to many aspects of land use and transportation planning and programming.

GOALS, OBJECTIVES, AND POLICIES

The following are the SLOCOG goal, objective and policy statements for guiding land use within the San Luis Obispo Region. It should be noted that the success of the following statements depends on their acceptance and application by all member jurisdictions. If only a few embrace these recommendations, then the true modal alternatives sought through ISTEA will not be realized.

GOAL - Promote the enhancement of regional and community livability, through the integration of land use, mobility, and design strategies enhancing the economic vitality, environmental sustainability, one's sense of community, and accessibility to basic human services within and between communities of the region.

OBJ1: LAND USE DISTRIBUTION ASSESSMENT- Develop a strategy and forum, consistent with the Congestion Management Plan's Land Use Analysis Program, that identifies planning and design activities local jurisdictions can implement to offer an array of travel choices, improved access, and flexible travel alternatives within and between the communities in the region.

1a - Conduct a land use distribution assessment that evaluates access standards (maximum travel times and distances) and measures travel convenience in the region, addressing design, intensity and distribution of urban communities, and the relationship of the region's communities to the planned transportation system.

SECTION 12

Ancillary Facilities

Introduction

Planning for bicycling and walking involves more than just constructing bikeways and sidewalks. Providing ancillary facilities, such as bicycle parking, showers, lockers, and benches encourages people to use existing and proposed facilities. Some of the plans reviewed made no mention of ancillary facilities, while others proposed code amendments to require bicycle parking with new construction.

Past Practice

Many plans included brief discussions of some facilities, usually bicycle parking, and how providing ancillary facilities would encourage people to walk or bicycle. Some of these plans also discussed providing bicycle parking at transit stops.

Beyond Traditional Practice

Plans at the next stage began to address a broader range of ancillary facilities for both bicyclists and pedestrians. Bicycle parking and shower facilities for bicyclists were discussed, as well as providing benches, lighting, and a pleasant environment for pedestrians. Although plans at this stage discussed these facilities, recommendations for installation of the facilities were not mentioned.

One Step Further

In the next stage of development were plans that outlined a process for locating bicycle parking and identified a funding source for bicycle racks and lockers. In most cases, these plans offered guidelines for providing racks within public areas and included providing recommendations for location and type of racks. These plans usually contained recommendations for ordinance amendments to require installation of these facilities. The Rhode Island

Synthesis of Bicycle and Pedestrian Planning Under ISTEA

Bicycle and Pedestrian Plan referred to a State program to provide bicycle parking at transit and park-and-ride lots.

Best Practice

The most developed plans included discussions of bicycle parking and other facilities, as well as examples of ordinance amendments requiring the facilities and design standards that incorporated amenities for pedestrians into the design process. The Oregon Bicycle and Pedestrian Plan, addressed various ancillary facilities for bicyclists and pedestrians and included a table of recommendations for the number of bicycle parking spaces to be provided for various land uses. The Comprehensive Transportation Study, Bicycle and Pedestrian Plan for Lewiston and Auburn, ME, included a review of land development ordinances for the cities. Recommendations for ordinance revisions to require bicycle parking and other ancillary facilities, including recommendations on rack types and locations, were also discussed.

Exhibit 23. 1995 Oregon Bicycle and Pedestrian Plan, Oregon DOT, June 1995

Exhibit 24. Lewiston-Auburn Comprehensive Transportation Study, Bicycle and Pedestrian Plan, Auburn, ME, May 1995

G. ADDITIONAL PEDESTRIAN FACILITIES

Since pedestrians are exposed to the weather and use their own energy to move, several low-cost improvements can be made to provide a better environment.

G.1. BENCHES

People walking want to sit down and rest occasionally. In an urban setting, wide sidewalks and curb extensions provide opportunities for placing benches outside of the pedestrian traffic stream.

G.2. SHELTERS

At bus stops, transfer stations and other locations where pedestrians must wait, a shelter makes the wait more comfortable. People are more likely to ride a bus if they don't have to wait in the rain.

G.3. AWNINGS

Where buildings are close to the sidewalk, awnings protect pedestrians from the weather and can be a visual enhancement to the shopping district.

G.4. LANDSCAPING

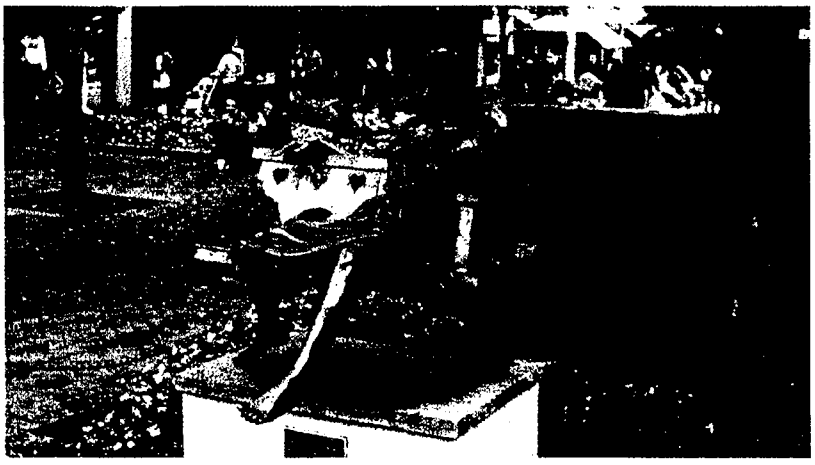
The outer edge of a roadway is often neglected and unpleasant; yet this is where pedestrians are expected to travel. Landscaping can greatly enhance the aesthetic experience, making the walk less stressful or tiring. Landscaping can increase the effectiveness of a planting strip as a buffer between travel lanes and sidewalks, as well as mask features such as soundwalls.

Choosing appropriate plants and ground preparation is important. The following guidelines should be considered:

- Plants should be adapted to the local climate and fit the character of the surrounding area - they should survive without protection or intensive irrigation, and should require minimal maintenance, to reduce long-term costs.
- Plants must have growth patterns that do not obscure pedestrians from motor vehicles, especially at crossing locations, nor must they obscure signs.
- Plants should not have roots that could buckle and break sidewalks (root barriers should be placed to prevent such buckling).
- Planting strips should be wide enough to accommodate plants grown to mature size.
- The soil should be loosened and treated (with mulching materials) deep enough so plants can spread their roots downward, rather than sideways into the walk area.

G.5. WATER FOUNTAINS & PUBLIC REST ROOMS

Strategically placed water fountains make it easier for pedestrians to be outdoors for a long time and to walk long distances.



Statues add interest to the streetscape

Well-placed public rest rooms make it easier for pedestrians to stay outdoors without worrying about where to find a business that will accommodate their needs.

G.6. MAPS

Local walking maps make it easier for pedestrians to find their way to points of interest in a new urban environment. They are especially useful when combined with transit maps. So far, no standards have been developed.

PROPOSAL FOR CODE REVISIONS AND AMENDMENTS

As stated in the introduction, the proposals contained in this chapter are samples that have been selected from volumes of regulations. They must be further massaged to fit each city's particular set of regulations. Each city should consider these proposals and further tailor them to meet that city's needs. These proposals allow the cities to share the foundation for providing bicycle and pedestrian accommodations and adopt consistent, compatible standards shared. This will facilitate the regional movement of bicyclists and pedestrians without complex, contradicting rules, regulations and standards.

A. VEHICULAR AND BICYCLE PARKING STANDARDS

Bicycle parking is an important element to any comprehensive approach to bicycling improvement, since its absence will deter many people from bicycling at all.

Facility Advantages:
There are many advantages to good bicycle parking. Suitable parking facilities help protect bicycles from theft, vandalism and damage. By providing parking facilities at the trip origin and destination points, a community will become more attractive for bicycle use and increased ridership will likely result.

When parking facilities are absent, other options such as signposts, handrails and trees are often used. These alternatives may interfere with pedestrian traffic, damage the objects to which the bikes are locked or hinder the use of the facility by people with disabilities. If long term bicycle parking needs are provided for , bicycle use will be more frequent. Long term parking is identified as spaces for those who expect to leave bikes for more than two hours. These need to be more secure since they will be unattended for a longer period of time. Theft is a major deterrent of bicycle commuters. By providing or encouraging the development of parking, a community will be responding to the needs of bicyclists and non-bicyclists alike. Bicycle parking is a critical transportation element that should not be omitted from any planning and design stages.

Parking Considerations:
There are two specific types of bicycle parking users. These are convenience/short term users and commuter/long term users. Parking facilities must be geared for these two users. Bicyclists traveling to locations such as shopping centers, libraries, and post offices are likely to have only short term parking requirements. Those traveling to transit stations, office buildings and park-n-ride lots, and those living in multi-family apartments, are likely to have long term parking requirements.

Bicycle parking must not interfere with building access and pedestrian or vehicular flow. It should be located as close to the destination entrance as possible. This provides convenience and visibility and safety. Building awnings and overhangs can provide

SECTION 13

Customer Recognition

Introduction

ISTEA envisioned a transportation future for America in which needs and desires of various users of the transportation system are considered and accommodated to the maximum extent possible. Consideration of users of the transportation system as customers is also encouraged. There is a wide range of bicycling and walking customers and within that group are a wide range of abilities and expectations.

Past Practice

Although some plans hardly mentioned bicyclists and pedestrians or acknowledged them as customers, many focused on the needs and desires of just one or two user groups. Plans at this stage tended to have a narrow focus, depending on the group whose interests were included in the plan. A plan focused on the needs of commuting cyclists, for example, is quite different from a plan influenced by recreational cyclists and walkers.

Beyond Traditional Practice

At the next stage were plans that recognized a range of abilities and needs for bicyclists and pedestrians and discussed ways to meet these needs. Plans at this stage most often refererred to three different types of bicyclists and discussed the needs and desires of each group. Some plans also addressed the needs of pedestrians, beyond the simple provision of sidewalks. The Iowa City MPO Bicycle Plan is an example of a plan at this stage.

One Step Further

A few plans identified various users and their needs and attempted to involve all users or customers in the planning process. Plans that encompassed extensive outreach and public involvement efforts are included in this group. In some cases, populations of

Synthesis of Bicycle and Pedestrian Planning Under ISTEA

bicyclists and walkers who were underserved or alienated by previous planning efforts were brought into the process.

Best Practice

Plans at the highest level of development recognized that bicycling and walking improvements served the public as a whole, and adopted a universal approach to improving conditions for these modes. Planning and design processes routinely included provisions for pedestrians and bicyclists and provided ample opportunities for input from customers of the proposed facilities. The Pennsylvania Transportation Policy Plan included a reference to customers in the first guiding principle of the plan and referred to customers and partners throughout the document. The Maine LRP addressed transportation system users as customers at the beginning of the plan under the heading "MDOT Values" and also stated that the vision of Maine State government is to "serve the people because they are our customers."

Exhibit 25. Pennsylvania Transportation Policy Plan, PennDOT, September 1995

Exhibit 26. 20-Year Statewide Transportation Plan, Maine DOT, 1995

PENNSYLVANIA
TRANSPORTATION POLICY PLAN

Policy Plan Guiding Principles

- *A sustained emphasis on customer needs, anticipation of problems, opportunities and alternatives, and redefinition of roles and responsibilities is essential to the success of an excellent transportation system.*
- *Pennsylvania will be a leader in both multimodal and intermodal transportation - through improved choices, connections, communication, coordination and cooperation.*
- *"Business as usual" will not work in today's transportation world. Leadership in facilitating needed change over the short and long term is necessary.*
- *Pennsylvania is a diverse state, requiring a wide range of transportation solutions, modes and strategies, supported by reinvigorated and better-coordinated statewide, regional and local transportation and land-use planning processes.*
- *Efficient management of transportation systems through the development and use of new, innovative technologies will be energetically advanced.*
- *Accessibility to transportation facilities and services for all segments of the population is both necessary and achievable.*
- *The Pennsylvania Transportation Policy Plan seeks to advance these principles within PennDOT and in partnership with other federal and state agencies, Metropolitan Planning Organizations, Local Development Districts, the remaining counties, the private sector and the general public, through an open, participatory process.*

MDOT VALUES

Leadership for innovation, creativity and technology in the continuing development of a balanced transportation system.

Quality products and professional service for our customers.

Openness, honesty, integrity and credibility in communications with internal and external customers.

Mutual respect and recognition of the contributions that diversity brings to job performance and creativity.

This 20 Year Statewide Transportation Plan shall be adopted in such a way as to coordinate with the Maine State Government vision and values.

MAINE STATE GOVERNMENT VISION

We believe that Maine should be the best place to live, work and pursue individual, family and community aspirations.

Our vision is of a Maine State Government that provides the leadership and service necessary to make Maine an even better State for future generations, where we in public service:

Recognize that State Government exists to serve the people because they are our customers;

Respond to the needs of the people and provide services of the highest quality;

Strive to increase opportunities for all Maine people;

Merit public confidence and respect;

Work together to ensure a more secure work environment of mutual respect, support and trust; and

Promote leadership, teamwork, innovation, partnership and initiative.

MAINE STATE GOVERNMENT VALUES

We in State government value:

Pride in our work: We take pride in providing the highest possible level of customer service and satisfaction.

Quality in our service: We hold our work to the highest standards of quality.

Personal responsibility: We take responsibility for personal integrity, individual contribution and the highest level of performance in our service.

SECTION 14

Program Activities

Introduction

Bicycle planners and safety experts have long identified the need for a comprehensive approach to planning and programming for bicycling and walking that encompasses the "four E's:" engineering (facilities), education, encouragement, and enforcement. Encouraging people to walk and bicycle will have little impact if there is no place to walk and ride. Similarly, providing facilities is not enough if people don't know how to ride safely, where to walk, or what their rights and responsibilities as road users are.

The planning guidance issued by FHWA for preparing the bicycle and pedestrian elements of LRPs states that program items, including education, encouragement, and enforcement can be considered to meet the vision and goals of the plans.

Past Practice

Some plans made little or no mention of bicyclists and walkers, including only brief discussions of off-road facilities. Many other plans focused almost exclusively on the engineering or facility aspects of bicycle and pedestrian planning. Any references to program items were usually confined to brief mentions of educational programs.

Beyond Traditional Practice

Plans at the next stage discussed programs involving education, encouragement, and/or enforcement, but did not include recommendations or strategies to implement any programs. Again, plans at this stage usually focused on educational programs.

One Step Further

Plans that included recommendations for specific programs were at the next stage of development. These plans included recommendations for educational programs targeted at specific groups; encouragement program suggestions and examples, such as bike-

Synthesis of Bicycle and Pedestrian Planning Under ISTEA

to-work days; spot improvement programs; and enforcement recommendations, including the use of police on bicycles. The Portland, ME, plan is at this stage. The plan included action recommendations for education, encouragement, and enforcement programs, including assistance from the MPO to review local ordinances and laws pertaining to bicyclists and pedestrians. The Nashua, NH, Bicycle and Pedestrian Plan reviewed education, encouragement, and enforcement programs for all the municipalities in the region and made recommendations for implementing or improving these programs.

Best Practice

The most developed plans not only recommended programs, but also provided references and resources to implement the programs. Education and training related to the programs were included as plan implementation strategies. New Jersey, Florida, and Pennsylvania have plans at this stage. Both New Jersey and Florida developed training courses to provide education for professionals in the fields of bicycling and walking. The Oregon Statewide Bicycle and Pedestrian Plan included discussions and recommendations regarding numerous programs.

Exhibit 27. PACTS Regional Bicycle and Interim Pedestrian Plan, Portland Area Comprehensive Transportation Committee, Greater Portland, ME, COG, March 1995

Exhibit 28. Statewide Bicycle and Pedestrian Plan, New Jersey DOT, June 1995

Education

Pedestrian Education Programs

Traffic safety education programs should be part of every elementary school curriculum. Children need to learn traffic skills at an early age to be prepared for navigating through traffic on both urban and rural streets. Some of these skills include gap and vehicle searching, gap assessment, route planning and crossing techniques.

The following recommendations should become a part of a community traffic education plan for children.

1. Implement a Traffic Safety Education Program in every community for 5-9 year olds in public schools.

2. Conduct a media campaign through household-oriented companies such as the American Automobile Association (AAA), and food and toy stores to promote safe walking skills.

3. Train crossing guards, bus drivers and school liaison officers to reinforce the classroom pedestrian safety lessons. This could be done through county sheriffs' and municipal police chiefs' associations. AAA has materials for adult crossing guard training. Other expanded materials need to be developed and piloted. A video could be developed to be used with statewide training.

4. Upgrade AAA School Patrol materials to include pedestrian skills such as stopping at the edge, searching "left-right-left" and "keep looking".

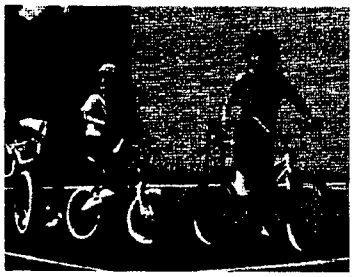
5. Use signs and educational campaigns to explain "Walk/Don't Walk" signals.

6. Educate teachers and administrators to understand and support the program.

7. Educate parents through reinforcement and material distribution at PTA/PTO meetings and school-based materials sent home in report cards.

Goal #4

Develop education and enforcement programs that will result in reduction of accidents and a greater sense of security and confidence for bicyclists and pedestrians.



Performance Measures:

A. Percent of population that has received bicycle skill training or education.

B. Safety program expenditures devoted to bicycle and pedestrian safety education and awareness.

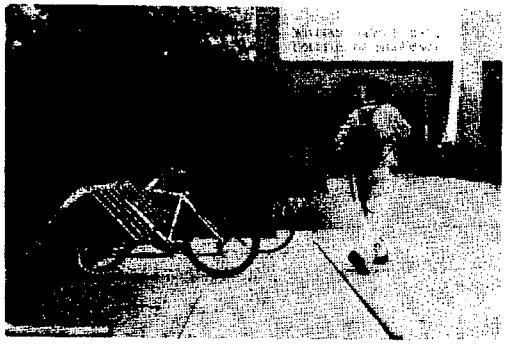
C. Percent of law enforcement officials that have received training in bicycle and pedestrian safety education and enforcement training.

Critical Success Factors:

- Access to bicycle and pedestrian education programs.
- Presence of training programs for law enforcement officials and safety program managers.
- Staff assigned for implementing safety education and training activities.

Goal #5

Increase bicycling and walking by fostering a pro-bicycling and pro-walking ethic in individuals, private sector organizations, and all levels of government.



Performance Measures:

A. Total number of bicycle and pedestrian programs that advocate bicycling and walking.

B. Total number of projects that are designed specifically to promote bicycling and walking.

C. Percent of Employee Commute Options plans that contain elements that encourage bicycling and walking.

D. Level of funding spent on media or advertising which promotes bicycling and walking.

Critical Success Factors:

- Presence of a supportive policy for bicycling and walking in the community.
- Presence of an active advocacy organization.
- Level of funding spent on media or advertising which promotes bicycling and walking.

*U.S. Government Printing Office: 1997 - 428-710/70542