

During the early 1970's, CRAG was designated by DEQ as the region's Areawide Water Quality Planning Agency (1974), an effort that culminated in the Metro Council's adoption of the Regional Wastewater Management Plan (1980) and the Regional Stormwater Plan (1982).

The Metro Water Resources Policy Advisory Committee (WRPAC) was formed in the early 1980's to provide technical advice to the Metro Council on the development of Metro's functional plans for areawide wastewater and stormwater management. WRPAC, whose membership consisted of technical staff representing water providers and wastewater managers from around the region, extended the scope of its purview and membership to include matters related to "multi-objective watershed management" and policies and plans related to growth management planning.

Early Plans: Defining Roles and Responsibilities

In 1989, Metro began to evaluate regional water resource needs and to clarify its role, as described in a Water Quality Issues Report (July 1989). The following year, the Metro Council Planning Committee approved the Water Resources Work Plan (1990), which emphasized stormwater management, water quality modeling and participation in other regional water initiatives.

In late 1989 and early 1990, the region's water providers formally organized a Regional Providers Advisory Group and started to discuss future water supply issues. It was agreed that the region was facing future supply shortfalls based on current supplies, use patterns, and growth projections.

Over the next two years, including one summer of record drought (1992), the Portland Water Bureau, in coordination with other providers, sponsored a series of Phase I studies concerning future regional water demands, potential water source options and water conservation opportunities (Water Source Options Study, 1992; Water System Demand Study, 1992; and City of Portland Conservation Study, 1992).

An evaluation of Phase I results concluded that six regionally significant source options to meet population growth forecasts over a 50 year-horizon were worthy of further analysis. A Phase II scope of work was developed that focused on the development of an integrated water supply plan for the region. Twenty-six of the region's water providers signed an intergovernmental agreement in April 1993, to fund and manage the Regional Water Supply Planning Study. In 1994, Metro became the 27th project participant.

More Recent Regional Policies

In assessing how the region's growth should be managed, the Metro Council adopted the Regional Growth Goals and Objectives (RUGGOs). These goals identify both water quality and water quantity issues of regional significance in Metro's growth management planning. The RUGGOs also instruct Metro to work with all relevant jurisdictions to comply with state and federal requirements for drinking water, to sustain beneficial water uses and to accommodate growth.

Another source of regional policy, the 1992 Metro Charter, was approved by the region's voters in November, 1992. The Charter recognized the important linkage between planning for the region's growth and planning for water supply needs, and directed Metro, in its Regional Framework Plan, to address "... water sources and storage.."

In response to requirements of the Metro Charter, the Future Vision document was adopted by the Metro Council in 1995. It states that there should be: "...intelligent integration of urban and rural development which seeks to: improve air and water quality..."

The Greenspaces Master Plan called for the protection and enhancement of open space and natural areas, and directly linked their "survival" with water resources planning and management (see also Chapter 4). The Master Plan identified the need to protect and enhance waterways and floodplains as a strategy to protect and manage parks and open spaces. The plan recognized the value of watershed planning and, further, used watersheds as the basis for ecological planning and protection of resources.

The Region 2040 Growth Concept, adopted by the Metro Council as an ordinance in 1995, addressed land use, transportation, open space and livability for the region. The growth concept relied on a number of key elements, including population projections and projected land use densities and employment assumptions. It also analyzed the different water supply infrastructure needs and implications associated with three growth concepts. (Concepts for Growth, 1994). Metro worked closely with the region's water providers to rank each growth concept and compare the concepts based on various factors related to water supply. This work is summarized in Metro's Water Descriptive Indicators Report (1994) which also identified the relative cost differences between the three growth concepts.

The intent was to ensure that the eventual growth concept adopted by the Metro Council took into full consideration the implications of providing drinking water to future populations. The Region 2040 project and the Regional Water Supply Planning Study clearly identified how growth affects water supply and the need for coordinated planning to meet future water supply demands.

The Metro FY 1994-99 Water Resources Work Plan builds on the successes of the 1990 Water Resources Work Plan and on the water resources policies contained in the RUGGOs, Metro Charter, Metropolitan Greenspaces Master Plan, and Metro's Regional Wastewater and Stormwater Management Plans. These policies identified the water quality and water supply issues of regional concern that Metro should address in its planning functions.

The five-year work plan proposes work elements in the subject areas of water supply and water quality. The work plan sets out to accomplish the following:

- ensure sufficient quantity of surface water and groundwater is available to the region;
- protect and enhance water quality through coordinated growth management planning, emphasizing integrated watershed management, technical assistance and public education;
- adopt water resource elements in the Regional Framework Plan;

- develop a watershed program, including water conservation program and public education and technical materials for the region's water providers;
- recertify the annual wastewater management plan.

Other Region-wide Work

As previously discussed, the scope for the Regional Water Supply Plan came about as a result of the Phase I studies: Water Source Options Study; Water System Demand Study, and City of Portland Conservation Study, all completed in 1992. The Phase I study results pointed to the value of examining issues in a regional context, integrating available technical information and growth projections, and identifying strategies to develop water options for the future. The Regional Water Supply Planning Study was initiated in 1993; Metro formally joined the study in 1994. The final draft of the Regional Water Supply Plan was endorsed by the Metro Council on November 21, 1996. The resolution endorsing the Regional Water Supply Plan also authorized Metro to join the Regional Water Providers Consortium.

The 27-member Regional Water Providers Consortium, formed at the end of 1996, was created to promote voluntary coordination of individual and collective actions of those parties implementing the Regional Water Supply Plan. In addition, the Consortium's general purposes include the following:

- serve as the central custodian for plan documents, including computer models;
- review and recommend revisions of the Plan, as appropriate;
- provide a forum for the study and discussion of water supply issues of mutual interest which could apply to statewide land use goals, comprehensive plans, regional plans or land use regulations;
- establish an avenue for public participation in water supply issues;
- promote the voluntary coordination of individual and collective actions of Participants implementing the Plan;
- provide a forum for the study and discussion of water supply issues of mutual interest to Participants and to coordinate the responses of Participants to such issues.

The RWSP is intended to provide guidance to each of the individual participants, however, each Participant that endorsed the RWSP and joined the Consortium also remains responsible for determining and adopting appropriate policies as permitted by law. Each regional water provider retains its own decision making powers to plan, construct and operate its own water system.

Metro is not bound by any federal or state regulatory requirements regarding water supply or drinking water quality, because it is not a water provider. Although Metro does not have direct authority over water supply provision or transmission, its land use decisions have significant implications for drinking water quality, quantity and protection of current and future drinking water sources.

The tri-county region has high quality drinking water from numerous surface water and groundwater sources. Future development and expected population increases, however, will place new demands on these resources. The region's water suppliers predict regional mid-range and high-range average annual demand increases of 1.5 percent and 2.1 percent between 1990 and 2050, respectively. Comprehensive regional water supply planning is necessary to meet these future demands. The region's water providers also included low and high range water demand forecasts in their water supply planning process.

Serving future growth will have inherent opportunities and challenges. The more planning is coordinated, the better chance water providers will have to serve future growth.

The 1992 summer drought caused residents to realize that climatic drought cycles are a reality in this region and water conservation must be integrated into how we use water. Potential water shortages due to droughts, increased demands on water consumption due to population increases, and increasing state emphasis on instream water rights all highlight the crucial need for proactive regional planning to meet future demands.

Inappropriate land use activities also have an effect on water supply. Examples of industrial contamination of groundwater used for drinking water are found in the Portland metropolitan region. Land use planning and growth management, therefore, play a significant role in ensuring adequate future water supplies.

From the beginning of the Region 2040 program, it has been recognized that the future location of the Urban Growth Boundary is very important to public agencies and water providers. These agencies and providers plan for water facilities that have useful lifetimes of 50 years or more and they need to know where they will be expected to provide these services.

As a result of this need for coordinated planning, there has been close coordination between the Region 2040 program and the Regional Water Supply Planning Study. The Region 2040 and concepts for growth studies relied on the region's water providers to provide technical expertise and best professional judgment in evaluating the associated implications and costs.

Now that Metro has endorsed the 1996 Regional Water Supply Plan and will be participating in the Regional Water Providers Consortium, there are several tasks on which WRPAC must make recommendations and, ultimately, the Metro Council may consider taking action. These could include:

- identify a strategy for coordination with the water providers and the Regional Water Providers Consortium to foster the implementation of the Regional Water Supply Plan (RWSP) and Metro Regional Framework Plan objectives;
- identify what activities Metro will carry out to implement the Regional Water Supply Plan;
- determine the relationship between the implementation of the Regional Water Supply Plan and achievement of goals in this chapter.

Metro has endorsed the Regional Water Supply Plan and the Metro Council has stated that this plan will be the basis for future Metro water supply planning and coordination throughout the Region. There is no immediate need for Metro to adopt regulations or codes to implement the RWSP. If such regulations and codes are considered in the future they will be adopted according to procedures specified by Section 7 of the Charter. Consistency with the RWSP shall also be considered in the adoption of any such regulations or codes. However, the land use planning aspects of water supply and storage decision making within the region will be bound by the growth management policies of Metro and the adopted Framework Plan, to the extent required by any adopted functional plan.

Accordingly as the regional water providers and the Regional Water Providers Consortium work toward implementation of the RWSP, the following actions will be needed for coordination to ensure that the Framework Plan and the RWSP are compatible:

- identify the future resource needs of the region for municipal and industrial water supply;
- identify the transmission and storage needs and capabilities for water supply to accommodate future growth;
- identify water conservation technologies, practices and incentives for demand management as part of the regional water supply planning activities;
- identify water supply and storage policies based on the results of the RWSP that provide for the development of new sources, efficient transfer and storage of water, including water conservation strategies, which allow for the efficient and economical use of water to meet future growth.

Additionally, Metro should work cooperatively with the water providers to:

- determine how the Regional Water Supply Plan will be updated in relation to the Regional Framework Plan chapter dealing with water supply and storage;
- determine how the activities of the Regional Water Supply Plan will be monitored for compliance with Regional Framework Plan water supply element;
- determine how Metro will monitor the implementation of the 2040 growth concept for implications to water supply issues (e.g., ensure that future land use practices do not contaminate groundwater or degrade run-of- river sources of drinking water).

Part 2 Watershed Management and Water Quality

Overview

Watershed management and clean water are essential as habitat for fish and wildlife. They are also keys to a region's livability and future growth, as well as to ensure the quality of drinking water. The provisions of the 1996 reauthorization of the Federal Safe Drinking Water Act calls for source water protection activities which will be implemented by the Oregon Health Division in concert with DEQ. The interconnected web of rivers and streams, which have played an important role in the region's history and economic success are also important to the commerce, agriculture and economic vitality of the region.

Tremendous advances have been made in the last 25 years to improve regional water quality and protect natural resources and open space. Future growth and development, however, will place increasing demands on the region's natural resources and affect water quality. Metro recognizes this inherent conflict and strives to implement policies which protect natural resources and water quality while the region grows. This conflict, however, will need to be continually monitored and new challenges met.

Watershed management is a planning tool which recognizes the dynamic connectivity between different components of a watershed. It identifies land use and management activities which protect the functions of natural systems while achieving desired land use patterns.

Metro recognizes that citizens are concerned about protecting resources and maintaining open space to enhance the region's livability. It acknowledges the importance of different components of a watershed and recommends that these lands be removed from the inventory of urban land available for development and that some are acquired for purchase as parks and open space. Finally, it recommends development of positive incentives and regulations to protect these critical natural resources.

Policies (Goals and Objectives)

These policies strive to address the inherent conflict between the function of natural systems and the effects of growth and development in the region. In order to meet the challenge of formulating policy in coordination with local jurisdictions and citizens, it is essential to acknowledge the dynamic process whereby such policies will continue to be developed and refined.

4.13 Overall Watershed Management

Planning and management of water resources should be coordinated in order to improve the quality and provide sufficient quantity of surface water and groundwater available to the region.

Metro will develop a long-term regional strategy for comprehensive water resource management, created in partnership with the jurisdictions and agencies charged with planning and managing groundwater resources and aquatic habitats. The regional strategy shall meet state and federal water quality standards and complement, but not duplicate, local integrated watershed plans. It shall:

- manage watersheds to protect, restore and ensure to the maximum extent practicable the integrity of streams, wetlands and floodplains, and their multiple biological, physical and social values;
- comply with state and federal water quality requirements;
- protect designated beneficial water uses;
- promote multi-objective management of the region's watershed to the maximum extent practicable; and
- encourage the use of techniques relying on natural processes to address flood control, stormwater management, abnormally high winter and low summer stream flows and nonpoint pollution reduction. (Note: Even though these techniques are encouraged, emphasis is still placed on maintaining intact naturally functioning systems, i.e., wetlands, riparian and floodplain. These natural systems should not be used as stormwater treatment facilities.)

4.14 Water Quality Goals

Metro should protect and enhance the water quality of the region by:

- establishing vegetative corridors along streams;
- encouraging urban development which minimize soil erosion;
- implementing best management practices (BMPs);
- maintain vegetation buffers along riparian areas.

4.15 Stormwater Management

Management of stormwater as the region grows is crucial to the protection of urban water resources. Stormwater is both a valuable resource and a management problem. As a resource, it is potentially beneficial to critical fish and wildlife habitat, recharges groundwater, and may contribute to cooler water to urban waterways during hotter, low flow summer months. As a management challenge, it can add to flooding, destroy fish and wildlife habitat, and pollute groundwater and surface waters. Metro shall encourage the following regional policies for stormwater management:

- ensure that as development and redevelopment occurs that increases in stormwater runoff is avoided to the maximum extent practicable;
- stormwater should be managed as close as practicable to the site at which development or redevelopment occurs, in a manner which avoids negative quality and quantity impacts on adjacent streams, wetlands, groundwater and other water bodies;
- to the maximum extent practicable, the quality of stormwater leaving a site after development has occurred should be equal to or better than the quality of stormwater leaving a site prior to development;

- to the maximum extent practicable, the quantity of stormwater leaving a site after development has occurred should be equal to or less than the quantity of stormwater leaving a site prior to development. (Note: The flow rate of run-off is important and should also be considered);
- require integration of local and regional transportation projects to ensure issues of quality and quantity are addressed during design of transportation facilities.

4.16 Urban Planning and Natural Systems

Urban planning within the region should:

- promote the incorporation of natural watershed systems into future planning and design processes and balance their contributions to environmental improvement with recreational and other uses, and
- address the interrelatedness of greenspace protection, land use, transportation and water resources management issues.

4.17 Water Quality Protection

The water quality of the region should be protected and restored by:

- implementing watershed wide planning;
- implementing erosion control practices;
- promoting the protection of natural areas along waterways and encourage continuous improvement of water quantity and quality through liaison with agencies that influence changes along streams and rivers in the metropolitan area.

4.18 Fish and Wildlife Habitat Conservation Area

Metro should establish standards to conserve, protect, and enhance fish and wildlife habitat within the fish and wildlife habitat conservation areas to be identified on the fish and wildlife habitat map produced as a result of carrying out Section 5 of Title 3 work by determining performance standards and promoting coordination of regional watershed planning.

Background

Federal Mandates

The Clean Water Act (1972) was established amid a growing tide of environmentalism that swept over the United States concerning the extent of water pollution in our rivers, lakes and oceans and the public's demand that these waters be cleaned up and protected. The goal of the Clean Water Act (CWA) was to ensure clean water for beneficial uses, such as drinking, swimming, fishing and to protect fish and wildlife.

This federally-mandated law created a system regulating direct and indirect discharges of pollutants in the country's waters (the National Pollutant Discharge Elimination System, or NPDES) that

heralded a fundamental shift in approach to dealing with water quality issues. The act introduced two types of regulatory controls: water quality-based and technology-based effluent standards. It also introduced areawide water quality planning and recognized the link between land use and water quality.

Under provisions of the act, the Environmental Protection Agency was formed to administer the federal program. The Department of Environmental Quality (DEQ) took on the role of the state agency responsible for protecting water quality in Oregon.

The basis for DEQ's monitoring of Oregon's water quality program is the preparation of a routine water quality report describing and documenting monitoring and sampling programs at established river and estuary stations. These reports, developed by DEQ, are submitted to the EPA every two years, as required in Section 305(b) of the Clean Water Act. In this fashion, EPA has been able to compile a national summary of water quality conditions for the Congress in order to track progress on the goals of the CWA.

State Requirements

The DEQ, under guidance from the state Environmental Quality Commission, is the agency responsible for administering environmental laws in Oregon. The water quality program managed by DEQ is based on the protection of recognized "beneficial uses," such as water supply, fisheries, aquatic life and wildlife, recreation, and navigation. Water quality criteria, designed to protect these "beneficial uses," provide the basis for DEQ's evaluation of the status of water quality.

The Oregon Legislature declared the following to be beneficial uses for the waters of Oregon: public water supplies, propagation of wildlife, fish and aquatic life, and domestic, agricultural, industrial, municipal, recreational, and other legitimate beneficial uses of such waters.

The Clean Water Act, Section 303(d) requires each state to identify those waters for which existing required pollution controls are not stringent enough to achieve that state's water quality standards. As a result of this requirement, in 1996, DEQ published its 303(d) list of Water Quality Limited Waterbodies which includes many stream segments in the metropolitan region.

Another set of state requirements come from the Oregon Statewide Planning Goals, adopted by the Legislature in 1969 through the passage of Senate Bill 100 in 1974, address water quality and human health and safety in the context of land use planning. Goal 5 addresses open spaces, scenic and historic areas, and natural resources; Goal 6 pertains to air, water and land use resources and Goal 7 to areas subject to natural disasters and hazards.

Goal 5 is intended to protect natural resources to "...promote a healthy environment and natural landscape that contributes to Oregon's livability." Comprehensive plans of cities and counties are to demonstrate consistency with this goal, as are such Metro policies as its regional goals and objectives and this Regional Framework Plan.

Goal 6 objective is “to maintain and improve the quality of the air, water and land resources of the state.” The goal states that local comprehensive land use plans should provide for the maintenance and improvement of air, land and water resources, including the carrying capacity of such resources of the planning area. The goal also states that, with regard to river basins, pollutant discharges should (1) not exceed the carrying capacity of such resources, consider long range needs; (2) degrade such resources; or (3) threaten the availability of such resources.

The objective of Goal 7 is “to protect life and property from natural disasters and hazards.” This goal strives to ensure that development will not be located in areas known to be prone to natural disasters and hazards without appropriate safeguards. Areas that are known to result in death or to endanger development include such things as stream flooding, groundwater contamination, erosion and deposition, landslides, earthquakes and weak foundation soils. Goals 6 and 7 are closely linked through the connection between the carrying capacity of land and water resources, and natural disasters and hazards associated with exceeding the carrying capacity of such resources.

Regarding agricultural water quality, Senate Bill 1010, passed in the 1993 legislative session, provided the Oregon Department of Agriculture (ODA) with the authority to develop, implement and enforce agricultural water quality management programs where required by state or federal law (e.g., TMDL basins, groundwater management areas, coastal zone management area). In 1995, the Legislature passed SB 502, which gave ODA exclusive authority to develop any program or rules that directly regulate farming practices for the purposes of protecting water quality.

With this authority, ODA established the Water Quality Program (SB 1010 Program), which provides a structure through which a local water quality management plan can be developed and implemented to prevent and control water pollution resulting from agricultural activities and soil erosion. SB 1010 directs ODA to work with farmers and ranchers by developing Agricultural Water Quality Management Area Plans for listed watersheds. The plans identify problems in the watershed that need to be addressed and outline ways to correct those problems. The intent of SB 1010 is to provide a role for ODA to assist producers in addressing those agricultural activities in watershed known to have the most problems with water quality, to prevent pollution problems wherever possible, and to alleviate any existing problems.

In addition, with the enabling legislation that created Metro in the late 1970's, the state statutes were amended to include a chapter on metropolitan service districts. These statutes provide the authority for Metro to:

“Define and apply a planning procedure which identifies and designated areas and activities having significant impact upon the orderly and responsible development of the metropolitan area, including, but not limited to, impact on:...water quality...”

Further, it states that Metro may “Prepare and adopt functional plans for those areas designated under subsection (1) of this section to control metropolitan areas impact on air and water quality....”

Regional Policies

Metro's involvement in regional water resource planning dates back to the 1970s when CRAG compiled reports documenting water and sewer infrastructure needs. These efforts culminated in the Metro Council adoption of the Regional Wastewater Management Plan (1980), which provides for regional coordination and staging for construction of wastewater treatment facilities, and the Regional Stormwater Management Plan (1982), which identifies eight major watersheds in the region and policies to reduce soil erosion and protect streams from degradation.

In 1989, Metro published its Water Quality Issues Report, followed by an Areawide Water Quality Report (1992) which identified the following water quality issues of regional concern: stormwater management, water quality- limited streams, wetlands and groundwater. The 1992 report also considered Metro's role in addressing the region's water quality problems, and suggested that Metro take on the following responsibilities: land use planning, watershed planning and technical assistance to local governments in addressing regional water quality issues.

The Regional Growth Goals and Objectives (RUGGOs), adopted by the Metro Council in 1991, and most recently revised in 1995, and the Metro Charter, adopted in 1992, identified the specific components Metro must address. In addition to water source and storage planning, Metro has "planning responsibilities mandated by state law" and "other growth management and land use planning matters which the Council... determines are of metropolitan concern and will benefit from regional planning."

In response to the charter mandate, a Future Vision was completed. This document states, in part:

"Our place sits at the confluence of great rivers – the Columbia...Willamette and its tributaries..." To achieve this vision:
...Manage watersheds to protect, restore and maintain the integrity of streams, wetlands and floodplains, and their multiple biological, physical and social values."

In addition, as part of implementation of the Growth Concept, Metro is developing plans in relation to floodplains, stream corridors, wetlands and steep slopes (see Appendices) in an effort to protect the function and values of these resources, protect human health and safety, and maintain or enhance the quality of life in the region.

Analysis

Water Quality

Water quality has declined throughout the Portland metropolitan region as development has occurred. Over 213 miles of streams and rivers within the Metro boundary have been cited by the State as not meeting current water quality standards. Pollutants include dioxin, sediment, or fecal coliform and such conditions as lack of dissolved oxygen or high temperatures which greatly reduce its ability to support fish and wildlife. The State has indicated that more miles of streams and rivers

within the Metro boundary also may not meet State standards, but insufficient monitoring equipment is available to confirm this.

Degraded water quality has reduced the beneficial uses of the region's streams, rivers and wetlands. Uses that depend on clean surface waters include domestic, fish life, industrial, irrigation, mining, municipal, pollution abatement, recreation, stockwater and wildlife uses. Clean water is essential to the quality of life in the region and the protection and enhancement of this resource is essential to achieving Metro's regional goals. As noted in a recent paper, "As long as the region is able to provide a quality of life that many people find attractive, it should continue to prosper". (Economic Well-Being and Environmental Protection in the Pacific Northwest, 1995, T.M. Power)

Riparian and Wetland Areas

The natural areas along rivers and streams as well as wetlands and the actual bodies of water provide fish and wildlife habitat. That is, space for spawning, nesting and rearing; feeding; migrating and other life cycle needs of the region's fauna is provided by these areas. Protection and management of these resource areas will ensure that habitat is available for current and future fish and wildlife populations which may depend on these areas for some or all stages in their life cycles. For humankind, these areas provide a place for active recreation and scenic views and vistas which can help maintain a region's quality of life even as the region grows.

These areas can be protected by avoiding, limiting and managing development which adversely impact fish and wildlife habitat. These actions need not reduce the development potential of a property, although, in some circumstances, public acquisition or transfer of development rights may be the only equitable solution to properties wholly within such areas. A project alternatives analysis would be an effective tool under specific circumstances. In addition, establishing performance standards and promoting coordination by Metro of regional urban watersheds would help to address the issue.

Impacts of Urbanization on Watersheds and Biodiversity

Urban runoff, or "stormwater," has garnered concern focused on flooding and its potential threat to property and human life in rapidly developing areas of the region. More recently, however, concern about stormwater has focused on affects to the water quality of receiving streams. Based on national water quality studies in urban areas, it is clear that past efforts to improve water quality problems have not achieved set goals. Nonpoint sources of pollution are the principal problem behind the failure of rivers and other water bodies to support their designated uses. Consequently, control of nonpoint pollution is a new national focus as it becomes increasingly clear that water quality will not improve if nonpoint sources remain uncontrolled. For example, analysis of the literature (King County Surface Water Report, Johnson, 1992) shows that the wider the riparian buffer, the more impacts that can be addressed. The narrowest buffer widths can control nutrients, water temperature and stormwater runoff, while much wider buffers are needed to control for fecal coliform (primarily

from nonperforming septic tanks in urban areas or livestock in rural areas) and sediment control (from soil erosion). The widest buffers are needed if wildlife habitat is to be maintained. In addition, urban development design can greatly impact the amount, if not quality of stormwater. In an analysis of potential strategies in the Olympia, Washington area, reduction of commercial parking was the most effective strategy assessed followed by reduction of commercial, industrial and multifamily roof areas, followed by reductions in public street widths.

Within this region, discharges from combined sewer overflows (CSOs) and storm sewers are also a major public health concern. As do numerous cities across the country, the City of Portland violates standards due to CSO discharges into rivers at times of high stormwater runoff. Extensive reconstruction of the system is now under way. In addition, many storm sewers receive illicit discharges. These range from individuals dumping used motor oil into storm drains, to spills from transportation accidents, to improper commercial disposal of large amounts of unwanted liquid materials. Control of these discharges will greatly reduce stormwater pollution and improve water quality. Public education, source reduction and monitoring are essential to successful abatement or prevention of pollution.

Watershed-based Management and Planning

Biodiversity is also impacted by urbanization. Habitat is lost or becomes so fragmented that species survival and mobility is threatened. Wildlife movement corridors have been designed as a result of the Metropolitan Greenspaces Master Plan throughout the region to facilitate movement of animals and to connect isolated parks.

The impacts of urbanization on watersheds and biodiversity has been researched and documented within the metropolitan region. Our local streams, tributaries of the Willamette, Columbia, Clackamas, Sandy and Tualatin rivers, have suffered from the region's dramatic growth. The Columbia Slough and the Tualatin River have been designated water-quality limited by DEQ. Increasing urbanization and poor land use practices threaten the water quality of surface and groundwater in the metropolitan area. Water quality has diminished, groundwater has become contaminated, water supplies are threatened, water recreation is restricted in certain areas during rain events, and fish and wildlife habitat has been degraded.

Watershed analyses are being carried out in selected locations in the Portland metropolitan region. Though these analyses are primarily used by water resource managers, the goal is that they would also guide land use and transportation planning to foster a more comprehensive and integrated approach to land use planning.

Clearly, a regional comprehensive, integrated and multi-disciplinary watershed-based approach is needed to address these complex and far-reaching impacts. This will require a "big picture" perspective at the landscape scale where protection, restoration, enhancement, planning and implementation of urban projects must take natural resources and biodiversity into consideration.

The Growth Concept places strong emphasis on the protection and management of natural resources within the Urban Growth Boundary and surrounding the metropolitan region. It acknowledges public concern and appreciation for environmental quality, open space and the scenic beauty provided by the region's natural resources. The Growth Concept identifies key natural features within the landscape for protection as greenspaces. These areas may be used as parks, open spaces, protected areas (such as wetlands and floodplains), or low-density residential development. Many of these areas have been set aside as park areas or may be acquired by Metro or local jurisdictions through implementation of the Metropolitan Greenspaces Master Plan. The Growth Concept identifies three strategies for their protection: 1) remove these lands from the inventory of urban land available for development; 2) these natural areas will receive high priority for purchase as parks and open space; and finally, 3) regulations could be developed to protect these critical natural areas that would not conflict with housing and economic goals. Transfer of development rights is one strategy or "tool" available to local governments to achieve this goal. Other areas will be protected through local zoning changes as a result of implementation of the Growth Concept (see Appendices).

The Metro Council has adopted regional stream protection and floodplain management performance standards. (see Appendices). This includes a model ordinance and maps of the protection areas within the region. Policies for implementation and regulation of regional watershed planning and regional Goal 5 planning has yet to be developed (see Appendices).

In addition, Metro must develop, test and monitor innovative ways to manage land use and protect receiving streams within the context of the Growth Concept. There must be encouragement to implement and monitor projects that use best management practices, innovate urban site design and landscaping to eliminate, reduce and manage nonpoint source pollution, manage stormwater, and prevent stream and floodplain degradation within the context of the Growth Concept land use densities. There is a need for documentation and dissemination of information about best management practices and nonpoint source pollution control.

Water quality protection and management can be achieved by managing how and where development and land use activities occur within the region. There are several ways in which this can be achieved. First, riparian areas along the region's rivers and streams can be protected from development by establishing riparian protection zones. Development and land use activities can be prohibited, limited or managed within these zones to protect riparian functions and values. Second, soil disturbing activities and soil erosion can be eliminated, managed or minimized in order to reduce sediment entering receiving streams. This can be achieved through the identification, use and enforcement of specific best management practices when development occurs. Third, vegetation within this zone can be maintained and protected and where removal is unavoidable, vegetation can be re-established in a timely manner to maintain the functions and values of the riparian corridor in order to protect water quality.

Finally, partnerships can be encouraged between jurisdictions, developers and "friends" groups to test innovative water pollution control techniques.

Federal and State implications

There are several federal and state initiatives that will influence how Metro and local jurisdictions plan and manage water resources and watersheds within our region. At the federal level there is the potential listing of fish and wildlife species through the Endangered Species Act which will potentially affect activities on selected rivers and streams within the Metro region. For example, the steelhead trout is currently nominated for listing on the Clackamas and Sandy rivers within our region. A decision on any potential federal action is expected in mid-1997. At the state level, the Oregon Plan describes the voluntary efforts that numerous stakeholders and local jurisdictions will carry out to restore coastal salmon and steelhead populations and fisheries to productive and sustainable levels.

Additional federal implications for our region include revisions and reauthorization of the Clean Water Act and any expansion of the National Pollutant Discharge Elimination System (NPDES) program to include smaller cities in the region. Changes to federally-mandated programs will have a ripple effect on state water quality standards and regional water resources policies and planning. Any revisions to or expansion of such programs will require coordination by regional partners to respond accordingly.

Other Outstanding Issues

There are other issues that will need to be addressed in the future, including:

- impervious surface standards to minimize the impact of stormwater run-off in watersheds;
- regional watershed management with particular emphasis on the linkage between riparian areas and upland areas;
- a plan to create a regional fish and wildlife conservation area management and implementation strategy.

Critical technical work that remains includes:

- identification of the future resource needs for designated beneficial uses of water resources that recognizes the multiple values of rural and urban watersheds;
- monitoring of regional water quality and quantity trends vis-à-vis beneficial use standards adopted by federal, state, regional and local governments for specific water resources important to the region, and using the results to change water planning activities to accomplish the watershed management and regional water quality objectives;
- assessment of integration methods for urban and rural watershed management in coordination with local water quality agencies;

evaluation of the cost-effectiveness of alternative water resource management practices, including conservation.

Natural Hazards

Chapter 5 Regional Natural Hazards

Overview

Natural hazards provide a “reality check” to growth in any region, a yardstick against which we can ask, “Has the region’s future been built on solid ground?”

In the past few years, natural disasters have impacted many local communities. Two examples include the Scott Mills earthquake in 1993, and the 1996 floods. For the three-county area, the cost of flooding and landslides from the February, 1996 event has been estimated at almost \$60 million – some 200 households were within the area of inundation. Figure 5.1 depicts the frequency of flooding in the region. Reminders of the power that natural hazards can unleash on communities include distant more powerful events, such as the Loma Prieta (1989) and Northridge (1994) earthquakes in California; and the widespread Midwest floods in 1993. We know that major disaster can strike this region.

Flood Date	Flood Inundation Level¹⁸ Willamette at Portland	Flood Inundation Level Columbia at Vancouver
February 1996	30.2 ft.	28.8 ft.
December 1977	17.6 ft.	Not available
January 1974	25.7 ft.	25.0 ft.
December 1964	29.8 ft.	29.5 ft.
June 1956	26.4 ft.	26.8 ft.
May 1951	Not available	21.5 ft.
June 1950	Not available	25.1 ft.
June 1948	31.6 ft.	32.8 ft.
January 1943	21.8 ft.	Not available
June 1894	35.1 ft.	36.0 ft.

Figure 5.1 Columbia and Willamette River Flooding¹⁹

Hazard mitigation planning, part of a new comprehensive approach to emergency management, can be instrumental in reducing the region’s vulnerability to disasters. Hazard mitigation requires a partnership between emergency managers who are experts in emergency response needs, and experts in other professions such as land use planning, engineering and economics.

Growth expected to occur as estimated in Metro population growth forecasts will require Metro, local governments and private partners to balance many policy considerations. Failure to address natural hazard

¹⁸ River heights are measured by National Geodetic Vertical Datum.

¹⁹ Table information from the City of Portland Hazard Mitigation Plan for the February 1996 flood.

management issues in the community planning and development stages can lead to amplification of future losses.

This chapter of the Regional Framework Plan outlines the background, analysis and policies concerning regional natural hazard mitigation planning. It addresses known regional natural hazards, and offers policy guidance for a comprehensive planning process that will help minimize the risks associated with such hazards to communities.

Policies (Goals and Objectives)

Policies concerning hazard mitigation, emergency preparedness, disaster response and recovery should be adopted and implemented. Policies addressing natural hazards mitigation and response are as follows:

5.1 Earthquake Hazard Mitigation Measures

The risk of loss or damage from an earthquake depends on: 1) the presence of seismically-hazardous land (land subject to failure or strong effects from an earthquake); and, 2) land use (structures by type and occupancy or use characteristics).

5.1.1 Metro will use the relative earthquake hazard maps for a variety of planning purposes, including:

- Urban Growth Boundary selection;
- public facility plans;
- transportation planning;
- solid waste management plans;
- natural hazard mitigation programs;
- parks and greenspaces planning.

5.1.2 Metro will encourage local governments to utilize the relative earthquake hazard maps in developed and undeveloped areas as they undertake planning actions, including:

- comprehensive land use plans updates;
- redevelopment plans updates;
- subdivision reviews;
- zoning;
- infrastructure plans updates;
- siting of new public facilities;
- siting of new public and private utility facilities;
- public and private facility emergency plan updates;
- developing retrofit and other mitigation programs;
- emergency response planning.

In planning for seismic hazards, land use classifications were identified as shown in Figure 5.2, grouping land uses according to a common tolerance for risk. Representatives of the public and private sectors participated through the Metro Advisory Committee for Mitigating Earthquake Damages (MACMED) in reviewing and approving the land use groups in this figure. Each land use classification is comprised of uses recommended as having roughly equivalent ability to withstand earthquake damage. Metro encourages local governments to consider these land use classifications for seismic hazard mitigation planning and actions. Many land uses could be placed into more than one category. The table begins with land uses that should be most protected from earthquake damage and ending with land uses that need minimal protection.

<p>Land Uses with Potentially Catastrophic Consequences if Damaged</p> <ul style="list-style-type: none"> • Large dams • Nuclear facilities • Facilities using/ storing large quantities of hazardous materials (defined by Oregon State law) <p>High-Occupancy Land Uses with Involuntary or Dependent Occupants</p> <ul style="list-style-type: none"> • Day care centers < 250 children • Day care centers > 250 children • Schools K-12 <300 students • Schools K-12 > 300 students • Convalescent homes < 50 persons • Convalescent homes > 50 persons • Jails and retention facilities <p>Land Uses Essential for Emergency Response</p> <ul style="list-style-type: none"> • Fire and police stations • Garages for emergency vehicles • Water tanks • Structures housing fire suppressants • Government communications centers • Emergency response centers • Hospitals • Medical buildings with surgical services <p>Land Uses Critical to the Functioning of the Metro Region</p> <ul style="list-style-type: none"> • Large power plants • Power intertie • Sewage treatment plants • Water storage/treatment facilities • Regional highways, bridges & tunnels • Regional rail lines • Port facilities • Major communications facilities • Telephone exchanges • Radio and TV stations 	<p>Land Uses with High-Occupancy</p> <ul style="list-style-type: none"> • Buildings > 10 stories • Public & private colleges < 500 occupants • Public & private colleges > 500 occupants • Public assembly places w/ > 300 capacity • Hotels & motels > 50 rooms >60,000 sq. ft. > 10 stories • Major industries & employers • Apartments > 25 units • Buildings w/ > 150 employees <p>Land Uses with Important Local Impacts if Damaged</p> <ul style="list-style-type: none"> • Facilities using/storing small quantities of hazardous materials • Small dams that could cause flooding • Gas stations • Highways, streets & bridges • Utility lines, substations, & gas mains • Water & sewer mains • Industries & businesses important to economy • Health care clinics • Co-generation plants <p>Land Uses with Moderate-Occupancy</p> <ul style="list-style-type: none"> • Buildings w/4 to 10 stories • Apartments 9 to 25 units • Buildings w/ 50 to 150 employees • Buildings w/ 50 to 150 employees >60,000 sq. ft. >10 stories • Public assembly places: 50 to 300 capacity • Hotels & motels <50 rooms <60,000 sq. ft. <10 stories <p>Land Uses with Low-Occupancy</p> <ul style="list-style-type: none"> • Apartments w/ 2 to 8 units • Buildings w/ < 50 employees • Buildings w/ 1 to 3 stories • Public assembly places w/ < 50 capacity • Single-family houses in a subdivision • Single-family houses • Mobile homes in a subdivision • Mobile homes
--	---

Figure 5.2 Land Uses Grouped By Seismic Risk

Adoption or use of earthquake hazard maps and land use mitigation goals and policies will not, however, provide any "bright line" for determining risks, given the current level of scientific knowledge. MACMED suggested one method of determining which land uses should require site-specific studies and which land uses should not require such studies. The MACMED table is attached in the Appendices.

- 5.1.3 Metro will encourage local governments to use the table in the Appendices to set requirements for where site-specific seismic hazard evaluation is needed .

5.2 Flood Hazard Mitigation Measures

The surest and safest flood hazard mitigation measure is to build outside areas that can be flooded. However, the FEMA designated floodplains have been shown to be insufficient in protecting property from much less than catastrophic events. Many areas that were outside the FEMA 100 year floodplain flooded in 1996. Acquisition of vulnerable property and relocation of structures can convert a flood hazard area into a community asset. Title 3 of the Urban Growth Management Functional Plan (see Appendices) will restrict development in many of these flood hazard areas.

- 5.2.1 Metro will collaborate with federal agencies and local governments in using the February 1996 flood elevations and other relevant data to update the existing 100-year floodplain map.

- 5.2.2 Metro will encourage local governments to implement approaches for mitigating flood hazards such as the following:

- acquisition, relocation or flood proofing of vulnerable facilities;
- changing local development ordinances related to height requirement above base flood elevation;
- allowing cluster or planned unit development that keep buildings out of floodplains;
- overlay zoning that sets public health, safety or welfare requirements;
- subdivision development requirements for locating public utilities and facilities (such as sewer and water systems) to minimize flood damage;
- construction of levees and flood walls to mitigate flood hazards, particularly in densely developed urban areas, but should only be utilized when potential upstream and downstream damage is expected to be minimal;
- plans to leverage federal, state and local disaster assistance and hazard mitigation funds that may become available following a flood event;
- long-term capital improvement plans should be prepared and include provisions to elevate above the floodplain essential buildings for public health, safety and welfare services;
- flood threat recognition and/or warning systems should be investigated for cost-effectiveness.

- 5.2.3 Avoidance of floodplain development and other non-structure flood mitigation measures shall be favored over levee and dike construction and other structural flood mitigation techniques. The use of dikes and levees should only be used for protection of developed urban areas, and should not be used to reclaim vacant floodplain lands for development.

5.3 Landslide Hazard Mitigation Measures

Exposure to landslide hazard is a function of site geology , type of construction, surrounding development and events that trigger landslides. The effect of landslides on public safety, welfare and recovery cost can

be minimized by measures that focus on mitigation. Land use policies and regulations are often the most effective measures for mitigating or minimizing exposure of lives and property to landslides.

5.3.1 Metro will encourage local governments to adopt landslide mitigation measures including:

- Logging regulations on steep slopes
- Landscape requirements
- Drainage controls
- Pre-development geotechnical studies

5.3.2 Metro will encourage local governments to limit development in the areas of greatest landslide hazard, except where development contributes to mitigation of the hazard. Such development should include appropriate safeguards and facilitate disaster response in the event it becomes necessary.

5.3.3 Metro will encourage local governments to investigate and take part in Federal Emergency Management Agency “mudslide” and “mudflow” insurance programs through the National Flood Insurance Program.

5.4 Volcanic Hazard Mitigation Measures

Mitigation of volcanic eruptive events is particularly relevant to development of the Clackamas River valley and Sandy River valley. Those areas are subject to periodic mudflows and pyroclastic flows from Mount Hood. Mudflow and flooding events are secondary to volcanism and should be addressed under the mudflow/mudslide and flooding policies.

5.4.1 Metro will collaborate with federal, state and local agencies to evaluate the regional risks of pyroclastic events, and encourage local governments to adopt appropriate hazard mitigation measures.

5.5 Wildland-Urban Interface Fire Mitigation Measures

The wildland-urban interface is defined as the area where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuel. In certain weather conditions, small fires in the interface areas can grow quickly to create extremely dangerous firestorms that are virtually impossible to control.

5.5.1 Metro will collaborate with federal, state and local agencies to evaluate the regional risks of wildland-urban interface fires, and encourage state and local governments to adopt appropriate hazard mitigation measures which may include:

- Collecting data related to fuel load and mapping vulnerable areas;
- Identifying areas of steep slopes with limited year-around water availability;
- Regulation of highly flammable material on structures, for example wooden roof shingles;

- Adequate roadway requirements to assure response by fire protection agencies;
- Adequate placement of fire suppression water hydrants;
- Landscaping regulation to improve fire resistance.

5.6 Severe Weather Hazard Mitigation Measures

Severe weather events may include windstorm, winter weather (snow, ice, prolonged cold), thunderstorms, tornadoes, drought, prolonged extreme heat and other weather events that disrupt vital regional systems.

5.6.1 Metro will collaborate with federal, state and local agencies to evaluate the regional risks of severe weather events, and encourage local governments and private organizations to adopt appropriate hazard mitigation measures which may include:

- Encouraging replanting with wind-resistant trees near power lines and other sensitive facilities.
- Incentives to retain larger stands of trees in newly developed areas, rather than preserve widely separated trees which are more vulnerable to wind fall.
- Incentives for drought-resistant landscaping.
- Improving public understanding of severe weather warnings and improving implementation of protective actions by governments, businesses and individuals.
- Encouraging vegetation management programs by utilities and local jurisdictions to reduce potential damages from the effects of severe weather events.

5.7 Biological Hazard Mitigation Measures

As development occurs around wetlands, greenbelts and open spaces, and as natural areas are set aside for environmental protection in previously developed areas, contact between humans and wildlife and insect populations is likely to increase. Death or injury to humans and loss of habitat for species can result from this contact.

5.7.1 Metro will collaborate with federal, state and local agencies to evaluate the regional risks of biological hazards, and encourage local governments to adopt appropriate hazard mitigation measures which may include:

- Support for existing insect and vector control programs to reduce the population of mosquitoes, flies, rats, etc., for disease prevention.
- Regulatory structure to create or preserve habitat for appropriate urban wildlife, while discouraging inappropriate urban wildlife such as large predators.

5.8 Other Hazard Mitigation Measures

Metro will collaborate with federal, state and local agencies to evaluate the regional risks of other natural hazards, and encourage local governments to adopt appropriate hazard mitigation measures.

5.9 Natural Disaster Response Coordination

Natural disasters such as a major earthquake will cause significant loss of life, injury and property damage. While vulnerability to hazards cannot be eliminated, implementation of the hazard mitigation policies described in this chapter will reduce human misery and property loss following a natural disaster. Metro has played an important role in assisting local emergency management agencies with disaster planning related to regional functions, such as disaster debris management and emergency transportation route designation.

- 5.9.1 Metro will provide leadership and support to the Regional Emergency Management Group (REMG) and encourage local governments to participate in the existing intergovernmental agreement and to provide the resources required to develop a regional disaster response plan.
- 5.9.2 Metro will collaborate with federal, state and local agencies, businesses and individuals to utilize the resources of Metro's Regional Land Information System and Natural Hazards Program data in developing a region-wide emergency management information system to improve disaster response coordination.

Relationship to Future Vision

In response to Section 5(1) of the Metro Charter, a Future Vision statement was created and adopted by the Metro Council in 1995. This document states the importance of safety and that:

“...personal safety within communities and throughout the region is commonly expected as well as a shared responsibility involving citizens and all government agencies. Our definition of personal safety extends from the elimination of prejudice to the physical protection of life and property from criminal harm, *to mitigation and preparation for and response to natural disasters.*” (Emphasis added.)

Metro's Growth Management Services department has played a pivotal role in initiating coordination of regional growth management and natural disaster planning responsibilities among local emergency management agencies in the region. This Chapter continues the department's efforts in mitigation and preparation for response to natural disasters by development of the Regional Hazard Mitigation Plan and policies 5.1 to 5.9 above.

Background

In the past decade, local, state and federal agencies have launched initiatives to improve our knowledge of natural hazards. Understanding natural hazards and the risks they create is the starting point for the long and costly process of improving the safety of communities in relation to natural disasters. Only recently has the concept of hazard mitigation become the cornerstone for developing strategies to reduce the billions of dollars spent on response and recovery operations following natural disasters. The general natural hazard information outlined in this plan will be described in greater detail in the Metro Regional Natural Hazards Mitigation Plan currently being developed in coordination with local governments in the region, the State of Oregon and private sector organizations. That plan will describe hazard-specific risk reduction

strategies. It is not intended to include functional plan requirements for changes in city and county comprehensive plans.

National Mitigation Planning

The Federal Emergency Management Agency (FEMA) coordinates all federal resources in support of state and local government activities in all phases of the emergency management process: emergency preparedness, mitigation, response and recovery. Congress stated its intention in the Robert T. Stafford Disaster Relief and Emergency Assistance Act to "...provide an orderly and continuing means of assistance...to local governments in carrying out their responsibilities by...encouraging hazard mitigation measures to reduce losses from disasters, including development of land use and construction regulations."

FEMA has recently adopted a national strategy to carry out the intent of Congress to reduce the cost of natural hazards through hazard mitigation programs. FEMA administers a post-disaster hazard mitigation grant program that is currently the only source of funds for encouraging state and local adoption of hazard mitigation measures. Pending federal legislation is intended to provide FEMA additional funding to encourage states to create pre-disaster mitigation programs.

State Mitigation Planning

Several state agencies are responsible for a variety of natural hazard management programs which address mitigation planning and response and recovery strategies. For example, the Oregon Department of Geology and Mineral Industries is responsible for assessing and characterizing geologic hazard and identifying earthquake mitigation measures in the state. The Office of Emergency Management, a division of the Oregon State Police, is responsible for the state's emergency management program, including the all-hazard mitigation planning process. Other state agencies also share hazard mitigation responsibility for various functions including, but not limited to, the state Department of Environmental Quality, the Oregon Department of Transportation, the state Fire Marshal, the state Health Division of the Human Resources Department and the state Department of Water Resources.

State land use planning goals were adopted in 1969 by the Oregon Legislature requiring counties and cities to prepare comprehensive land use plans. In 1973, Senate Bill 100 established the Land Conservation and Development Commission to monitor compliance of local plans with state goals which, through passage of the bill, were rewritten to link concerns about urban sprawl with environmental protection measures. Goal 7, Areas Subject to Natural Disaster and Hazards, establishes the goal that developments shall not be planned or located in areas of natural disasters and hazards without appropriate safeguards. Goal 7 defines "Areas of Natural Disaster and Hazards" as "areas that are subject to natural events that are known to result in death or endanger the works of man..."

This Regional Framework Plan, as well as local plans, must comply with applicable state land use planning goals. This chapter and Title 3 of the Urban Growth Management Functional Plan (See Appendices) address aspects of statewide Goal 7.

Regional Mitigation Planning

The 1992 Metro Charter was adopted by a popular vote of the citizens of the region. It authorizes Metro to focus on guiding the region in how and where it will grow. The Charter, Section 6(3), also authorizes Metro to exercise authority related to the “Metropolitan aspects of natural disaster planning and response coordination” function. The Charter did not include natural disaster planning as one of the required components of the Regional Framework Plan. However, the Metro Council directed in Resolution No. 96-2378 that natural disaster planning should become a part of the plan as recommended by the Metro Policy Advisory Committee.

The Metro Data Resource Center (DRC) has collected and maintained demographic and geographic information, including databases for emergency 9-1-1 purposes and flood hazard data that can assist in the mitigation process. The information is an essential component of the urban growth process. Through its centralized database server, the Regional Land Information System (RLIS) can spatially depict land use records, zoning, urban development patterns and natural resource information. RLIS has become a tool for planning programs, including natural hazards mitigation.

Since 1992, the Oregon Department of Geology and Mineral Industries (DOGAMI) and Metro have produced earthquake hazard maps showing areas of the region where geologic conditions are more likely to contribute to damage in an earthquake. As part of the project, the City of Portland, Portland State University and Metro have evaluated buildings for seismic risk, and identified vital systems and key facilities. With hazards and risks identified, Metro’s geographic information system can be used to assess the region’s vulnerability to earthquake hazards. As the seismic hazard maps produced by DOGAMI and Metro became available, a gathering of emergency management professionals from throughout the region began informal review sessions. More recently, the membership of the once “informal” gathering (including Metro), signed an intergovernmental agreement to form the Regional Emergency Management Group to develop a work plan for emergency management planning activities related to regional disaster issues.

As Metro worked to develop plans for how the region will grow, it became obvious that the region’s ability to mitigate and respond to natural hazards needed to be considered. In response to this need, Metro’s natural hazards mitigation program was created. The program provides regional coordination, outreach, data management services and technical assistance in developing regional strategies for mitigating natural hazards and preparing communities and residents for disasters.

Metro’s Natural Hazards Program has collaborated with Metro’s Regional Environmental Management Department and local and state emergency management agencies to develop a Regional Disaster Debris Management Plan. Metro’s Natural Hazards Program has also collaborated with local and state transportation and emergency management agencies to produce a Regional Emergency Transportation Route Report.

Currently, a Regional Natural Hazards Mitigation Plan is being developed. The Natural Hazards Technical Advisory Committee created by the Metro Council will play an oversight role in the development of the plan.

Local Mitigation Planning

Local governments are required, in city and county comprehensive plans, to respond to state land use planning goals and, specifically, to develop and inventory known hazards.

Metro also conducted a survey of local governments in an attempt to identify policies, ordinances and administrative rules or codes for mitigating natural hazards. The results of the survey shed light on the status of the region's mitigation efforts. In addition, the Metro Council approved the formation of a Natural Hazards Technical Advisory Committee to consider measures that local governments, businesses and residents can take to reduce damage from natural disasters.

As a result of the February 1996 flood many local governments in the region have initiated or completed flood and landslide hazard mitigation plans. State and local government agencies and private organizations have also undertaken a range of hazard mitigation planning initiatives related to improving the seismic performance of infrastructure and buildings.

The 1996 flood demonstrated that natural disasters do not respect jurisdictional boundaries. The regional impact of a major disaster argues for the coordination of hazard mitigation, disaster response and recovery planning with Clark County, Washington, as well as the Portland metropolitan counties in Oregon. Regional planning issues in relation to Clark County are addressed in chapter six of this plan.

Analysis

Natural hazard issues create implications for the regional planning process and the regional urban form in the 2040 Growth Concept and the form of the regional and town centers. Over time, implementing natural hazards planning measures can reduce the disaster vulnerability of the people of the region and the structures they build.

There are generally two categories of natural hazard mitigation measures related to land use planning: (1) hazard mitigation measures that may be applied to *undeveloped* areas; and (2) hazard mitigation measures that may be applied to *developed areas*.

Local governments, businesses and individuals must also plan to respond appropriately to the damage created by natural hazard events because no hazard mitigation program can totally eliminate societal vulnerability to natural disaster.

Following are categories of metropolitan features that could be affected by natural disasters.

Housing

Regional objectives for housing related to specific goals for low-income and median-income housing can be thwarted by a disaster if the desired housing is located on less expensive land that may include hazardous ground, or if the housing is not sufficiently engineered to survive an event. Natural hazard considerations can encourage the location of different housing types on different hazard zones.

For example, concentrations of lower income housing at greater risk from natural hazards can create significant housing shortages after a natural disaster. A regional policy of more evenly distributing low and median-income housing throughout the region may improve the performance of the housing stock in a natural hazard event by distributing the population across a variety of soil and slope conditions.

Public Services and Facilities

Natural hazards considerations will play a key role in the development and redevelopment of public services and facilities. Public safety structures, schools and other key facilities must be built to standards that provide some assurance that they will survive a natural hazard event and be available to provide service when most needed. Natural hazard events can cause expensive and prolonged disruption of a community's vital systems (e.g., water, sewer, telecommunications and other utility services). Identification of system segments that cross hazardous ground can offer opportunities to engineer system components to respond better in an event, or relocate an especially fragile component to safer ground.

Transportation

Transportation infrastructure can be severely disrupted by natural events, hampering response and delaying recovery. Priority routes for response and recovery resource movement can be identified. Intermodal transfer points can be especially important after a natural hazards event. Engineering strategies to improve transportation infrastructure performance can be developed. Alternative routes can be designated to improve resource movement in the event of failure to a priority route. Natural hazards considerations can be incorporated in the public involvement process to establish transportation funding priorities.

Economic Opportunity

Natural hazard events can severely disrupt the local, regional and state economy. For example, hard hit areas may lose many stores, requiring neighborhood residents to travel to distant stores, thereby placing additional burdens on transportation systems in the disaster recovery phase.

To the extent that long-term economic development plans describe the types of industrial and commercial development appropriate to designated areas, consideration of the relationship of development to the location of natural hazards should be incorporated.

Urban/Rural Transition

Natural hazards can play a role in defining the most effective Urban Growth Boundary (UGB) to provide a clear transition between urban and rural land. Located along natural and built features (e.g., roads, rivers, floodplains or other major topographic features), the UGB may help define the types of natural hazards to be mitigated in the land use and emergency planning process.

Developed Urban Land

One key objective of growth management is to encourage the development and redevelopment of existing urban land. Development in areas known or newly discovered to be susceptible to natural hazards is especially appropriate for carefully planned redevelopment which reduces the vulnerability of the people who live in the area. In coordination with land use, economic development, redevelopment and financing agencies, a combination of regulations and incentives may be employed to encourage people to continue to live, work and shop in already developed areas that are susceptible to natural hazards.

For example, unreinforced masonry buildings (URMs) can pose significant earthquake risks to inhabitants and passersby. Neighborhoods that contain many URMs may become candidates for targeted regulation and assistance, perhaps requiring life safety retrofit of URMs by a specified date, and developing the bonding authority to provide low-interest loans to building owners for that work.

Urban Design

Natural hazard considerations can assist in the design of settlement patterns, structures and landscapes to improve the feeling of personal safety in an urban setting.

Other Implications

The natural hazards management planning process also has close ties to watershed management and water quality and supply measures. Natural hazards considerations may also create multi-objective watershed management opportunities and encourage reliance on natural processes to address flood control, storm water management and abnormally high winter and low summer stream flows.

Hazard factors can influence which natural areas may be identified for preservation. For example, land susceptible to flooding may be appropriate for fish and wildlife habitat, development into parks for periodically intensive or moderate human use, parking areas, or appropriate constructed environments. However, land that is susceptible to flooding which is also susceptible to strong seismic damage may be more appropriate for fish and wildlife habitat and human use open space, including parking areas, and less appropriate for constructed environments. Such multiple hazard factors should be taken into account when determining open space designations or any other designation based upon an evaluation of economic, social and environmental factors.

Although the potential for water quality degradation resulting from flood has been addressed in the Watershed Management and Regional Water Quality chapter of this plan, other growth management planning measures remain to be discussed in relation to:

Life protection;

Personal and public property loss reduction;

Business recovery policies.

Consideration of natural hazards as a major factor or constraint in all aspects of the regional planning process will produce realistic information that can be used in developing procedures and standards for achieving Metro's 2040 Growth Concept. This has direct implications on the development of comprehensive land-use plans by cities and counties, and in the development of comprehensive emergency management plans to address issues related to hazard mitigation, emergency preparedness, disaster response and recovery.

CO535

Clark County

Chapter 6: Clark County

Overview

Clark County is located in southwest Washington, just across the Columbia River from the Metro area. The County is approximately 660 square miles and has seven incorporated cities: Vancouver, Camas, Washougal, Ridgefield, Battle Ground, LaCenter, and the Town of Yacolt. It is the fastest growing county in the State of Washington. Vancouver is the fourth largest city in the State of Washington.

Coordination between the Metro region and Clark County is important as there are issues of common concern to be addressed. Metropolitan-wide aspects of transportation, air quality, land use and economic development issues have been raised from time to time and bi-state coordination can aid resolution of such issues.

The Metro Charter, adopted by the voters within the Metro boundary (Clackamas, Multnomah and Washington counties only) includes the requirement that the Regional Framework Plan shall address:

"...(8) coordination, to the extent feasible, of Metro growth management and land use planning policies with those of Clark County, Washington..."

Such coordination, if it is to be achieved, should not take the form of unilateral actions by Metro. Rather, it can only come about with the consent of the jurisdictions on both sides of the River. The Future Vision Commission recognized that decisions made in the Metro area could have a much wider impact. The Future Vision Commission concluded that:

"The bi-state metropolitan area has effects on, and is affected by, a much bigger region than the land inside Metro's boundaries. Our ecologic and economic region stretches from the Cascades to the Coastal Range, from Longview to Salem."

The Future Vision Commission, required by the Metro Charter to complete a broad vision statement about the region, also included the Chair of the Clark County Commissioners, John Magnano. He stated:

"Future Vision recognizes that we are irreversibly linked. It will help bring our communities together to create something greater than the sum of our individual parts."

This chapter documents existing policies and coordination efforts, to date. To address bi-state issues and answers, it is important to extend and enhance dialogue between Metro and Clark County. This chapter is not meant as an endpoint. It describes the background and challenges to the Metro region and Clark County communities. Only after review and discussion with representatives from Clark County can new actions, if any, be considered. This Regional Framework Plan shares Metro's existing and contemplated

policies for the Metro area with Clark County. It also provides for consideration of new policies that might be beneficial to the communities on each side of the Columbia River. Additions or revisions to this chapter may occur after these discussions with representatives from the jurisdictions of Southwest Washington.

Policies (Goals and Objectives)

- 6.1 Metro shall coordinate with land use and transportation planners in Clark County to ensure the closest coordination possible regarding growth management issues.
 - 6.1.1 Metro, Clark County and its cities shall communicate on a regular basis to ensure coordination regarding growth management issues.
 - 6.1.2 Metro shall work with Clark County governments and agencies to involve citizen groups and promote public outreach and education with respect to regional growth management.
 - 6.1.3 Metro Regional Parks and Greenspaces Program staff shall include Clark County and its cities parks departments and citizen groups in an ongoing parks forum to develop a regional bi-state natural areas system.
 - 6.1.4 Metro and Clark County governments and agencies shall continue and strengthen their coordination and cooperation in regional transportation planning.
 - 6.1.5 Metro should encourage cooperative efforts to promote business location throughout the region, including Clark County, in order to improve the job/housing balance in the metropolitan area.
 - 6.1.6 Metro should include Clark County and its cities in all emergency preparedness planning and coordination strategies for the region.
 - 6.1.7 Metro shall involve citizen groups and promote public outreach and education in Clark County with respect to growth management.
 - 6.1.8 Metro Regional Parks and Greenspaces shall develop an ongoing regional parks forum which includes park providers and citizen groups from Clark County to continue the development of a bi-state, regional natural areas system.

Background

The State of Washington passed the Growth Management Act (GMA) in 1990. Under the Act, Clark County adopted the Community Framework Plan on May 26, 1993, which served as the basis for development of a comprehensive growth management plan. Clark County adopted a Comprehensive Growth Management Plan in December, 1994. The county's cities also adopted their Comprehensive Plans during the timeframe. An extensive effort was made to do partnership planning. These plans established Urban Growth Areas (UGA's) and policies to guide the county's and cities growth through the year 2012. Cooperative efforts were made with 9 school districts, fire, utility and Port districts to ensure coordination of plans.

Though there are separate aspects to Clark County and Metro's plans, there are common ones as well. Many of the goals and policies, most notably those related to the environment, housing, economic development and transportation, address issues of joint interest and concern to the metropolitan area.

Job/Housing Imbalance

Clark County has an estimated 1996 population of 303,500 people. When compared with growth in Clackamas, Multnomah and Washington counties during the period 1980 - 1996, Clark County had the fastest growth rate.

Table 6.1 Population Change by County 1980-1996

<i>County</i>	<i>1980</i>	<i>1996</i>	<i>Percent Change</i>	<i>Added Population</i>
Clackamas	241,900	313,200	23%	71,300
Clark	192,000	303,500	37%	111,500
Multnomah	562,600	636,000	12%	73,400
Washington	245,800	376,500	35%	130,700
Total	1,242,300	1,629,200	31%	386,900

A little more than half (52 percent) of the county's population is located within unincorporated areas of the county, but the county also includes the cities of Camas, Battleground, La Center, Ridgefield, Vancouver, Washougal, Yacolt and a portion of Woodland, Washington. The fastest population growth has been observed within unincorporated urban growth areas. However, the city of Battle Ground has experienced a 20 percent increase over the time period above. Vancouver, which recently completed a large annexation, has a population of 128,453 and is now is the fourth most populous city in the State of Washington.

The majority of Clark County's residents both live and work in the County. However, a significant number commute to Oregon for employment, about 34 percent of the Clark County workforce. Clark County is attracting a growing number of Oregonians who retain their employment in Oregon but reside in the county.

Clark County has captured more residential than employment growth in the metropolitan region as shown in Table 6.2. There is no expectation that jobs and housing will ever perfectly balance in any particular locale. However, a greater effort at business recruitment and incentives such as those included in Clark County's Comprehensive Plan, can aid in achieving a closer balance over time.

Table 6.2 Clark County's Capture of Population and Housing Growth

Year	Housing Permits			Nonfarm Employment				
	Total	Clark Co	Clark %	Total		Clark Co		Clark %
1984	5,368	1,120	21%	548,750	(growth)	57,700	(growth)	
1985	9,409	2,358	25%	562,030	13,280	59,380	1,680	13%
1986	8,290	1,775	21%	580,380	18,350	62,240	2,860	16%
1987	9,871	2,389	24%	603,080	22,700	66,500	4,260	19%
1988	10,739	3,238	30%	634,220	31,140	71,600	5,100	16%
1989	16,348	2,917	18%	667,230	33,010	76,300	4,700	14%
1990	14,473	3,029	21%	695,010	27,780	80,700	4,400	16%
1991	9,573	2,685	28%	697,010	2,000	80,700	-	0%
1992	11,227	3,910	35%	709,920	12,910	83,800	3,100	24%
1993	12,874	4,287	33%	735,200	25,280	89,100	5,300	21%
1994	15,790	5,217	33%	769,460	34,260	95,200	6,100	18%
1995	15,004	3,621	24%	805,560	36,100	100,200	5,000	14%
1996				843,230	37,670	104,300	4,100	11%

Source: Washington Employment Security Department raw data dated August 25, 1997

Housing Stock

There are approximately 113,665 housing units within Clark County as of April 1, 1995. The current ratio of single family units to multi family units is 3.3:1 (87,289 units to 26,376 units) for the entire county, though it is 2.3:1 within the designated Urban Growth Area. In contrast, according to Metro DRC's data, there are approximately 538,304 housing units within the three Oregon counties of the Metro region in 1995. The ratio of single family units to multi family units is 2.4:1 (381,713 units to 156,591 units).

Housing prices in the county have historically been less expensive than in the Metro region. Due to rapid growth of about 4 percent a year for the past 5 years, the majority of the housing stock consists of new construction. Therefore, housing prices are rising, bringing them closer into line with those in the Metro region.

Economic Development

While separated by the Columbia River, Clark County and its cities are a vital part of the economy of the greater metropolitan area. According to 1990 Census data, 36,700 Clark County workers, or about 34 percent of the Clark County workforce, worked in the Metro area. This could also be described as about 7 percent of the Metro area workforce lives in Clark County. In contrast only 9,700 jobs, or about 12 percent of Clark County's employment were filled by commuters from Oregon. The data reveal that Clark County is an important workforce exporter to the Metro area. These workers provide the Metro area with many different skills and contribute to Oregon State revenues through the non-resident income taxes they pay. Residents of Clark County are able to utilize many of the amenities of the Metro area, including Portland International Airport, cultural and recreational opportunities, as well as tax free retail shopping opportunities. Conversely, Oregon residents can enjoy tax-exempt shopping in Washington as well as many cultural and outdoor recreational opportunities. Information about development trends in Clark County since 1990 suggest that the percent of the Clark County workforce that commutes to the Metro area will remain at least at 1990 levels, if not higher, if conditions remain intact.

Business recruitment efforts of the Columbia River Economic Development Council have brought in some rather large employers to Clark County in recent years, including high tech industries such as Wafer Tech and Sharp Electronics. A recent Washington State law which allows tax exempt purchase of capital equipment for Southwest Washington businesses gives an additional incentive for businesses to move to or stay in Clark County. That law, as well as other incentives, are slowly working to increase economic development activity in the county. The potential for bi-state coordination is great, especially if regional marketing is promoted.

Land Availability for Industrial Development

The total vacant industrial acreage by UGA and unincorporated areas has been calculated by Clark County. In the county, approximately 12,226 acres of lands are designated for industrial use and supporting development. Of this total, about 5,839 acres are covered with existing industrial, warehousing, distribution and similar uses. Some 6,387 acres of land can be classified as vacant and developable, with 830 acres of this vacant property classified as "prime", and additional 938 acres that move to "prime" in the planning horizon. There are 2,661 acres classified as "secondary" and 1,959 acres as "tertiary." Both secondary and tertiary lands may have impediments to development, with tertiary having the most. Potential impediments in developing the identified industrial lands may include: environmental constraints, infrastructure; including timing of water and sewer services and transportation. Also at work are market forces which may influence all of the above.

Transportation

Clark County is connected with the Metro region by three bridges: two highway bridges, Interstate-5 (I-5) and Interstate -205 (I-205) and a railroad bridge. If current trends continue, the auto bridges will suffer more congestion in future as shown in Table 6.3.

CQ535

Table 6.3 PM 2 peak hours north bound congestion (Source: RTP)

	I-5 Bridge	I-205 Bridge
1994	V/C: >0.9 (13,500 cars)	V/C:<0.8 (12,200 cars)
2015 Forecast*	V/C: >1.0 (17,600 cars)	V/C:>1.0 (19,400 cars)

Note: * = Committed scenario that assumes traffic improvement is limited to those already financially committed.

Coordinating with the Metro region’s policies, the county encourages alternative modes through enhanced public transit and other transportation demand management programs. This is facilitated by the Washington State Commute Trip Reduction law which is the policy that actually encourages the shift from Single Occupancy Vehicles (SOV’s). It was passed by the Washington State legislature in 1991 and mandates goals to achieve in the reduction of SOV use by their employees for businesses with 100+ employees.

Public transit is provided by C-TRAN, a publicly funded transportation system, which serves the county and offers connections to the Metro area. This service is currently being provided by buses. A light rail connection to Vancouver is planned as part of the phased construction of the South/North Light Rail Project. Prior to establishment of light rail, other alternatives such as enhancing bus service and adding HOV lanes and commuter rail service should also be considered. Portland and Vancouver are part of the Cascadia Corridor of intercity service between Vancouver, BC and Eugene, OR. As for air travel, Clark County uses PDX Portland International Airport.

Clark County is home to several small regional general aviation airports, including Pearson Airpark and Evergreen Airport in Vancouver. About 80 percent of the planes stored in hangars at Pearson are those of Portland area residents or businesses. Similarly, many of the planes at Evergreen also belong to Portlanders. Bi-state coordination of planning for aviation facilities will be necessary.

Parks, Natural Areas and Open Spaces

Clark County 20 Year Comprehensive Growth Management Plan includes a series of policies dealing with rural and natural resources and parks, recreation and open spaces. These policies are similar to those in the Framework Plan.

As of 1996, there has been a joint City of Vancouver/Clark County Parks Department to coordinate parks planning and acquisition. There has also been a recent enactment of the Real Estate Excise Tax (REET) for funding of park development. Progress is being made toward enhanced cooperative efforts both within and outside the county.

Clark County is part of the Metro region’s greenspace planning and participates in park and open space programs. However, additional bi-state coordination could further enhance programs on both sides of the river and ensure better parks, natural areas and open spaces for people of the larger region.

Existing Coordination Framework

Most planning coordination between the states has been through formal and informal efforts. There are established frameworks for planning coordination between Clark County jurisdictions and the Metro region. For example, representatives from the County and Vancouver, Washington are members of several Metro policy advisory committees, including MPAC and JPACT, as well as two technical committees (TPAC and MTAC). The Future Vision Commission, required by the Metro Charter to complete a broad vision statement about the region, also included the past Chair of the Clark County Commissioners. In addition, representatives from Metro and ODOT are full voting members on the Southwest Washington Regional Transportation Council (RTC) and Regional Transportation Advisory Committee (RTAC).

Other examples of ongoing bi-state coordination include population forecasts, transportation modeling, Metro's greenspace planning and land use plan mapping. Population forecasts for the Metro area prepared by Metro are coordinated with those prepared by the State of Washington, Office of Financial Management for Clark County. The transportation model that Metro maintains includes Clark County and reflects the southwest Washington comprehensive land use plans and policies. In addition, as the Metro 2040 Growth Concept was being developed, staff from both sides of the River worked to ensure that the Metro 2040 Growth Concept map accurately reflected the Vancouver and Clark County Comprehensive plans.

While bi-state coordination to date has strongly focused on transportation issues as described hereafter, there are needs for more comprehensive coordination that integrates land use, transportation, parks and open spaces, economic development and other planning concerns. The Framework Plan shall serve as a starting point of discussion with Clark County to seek such coordination.

Coordinated Transportation Planning

Coordinated transportation between the two states dates back at least to the early 1900's, when a bridge across the Columbia was built. The Interstate Bridge, still in use today, was built in 1917. It included lanes for auto and truck traffic as well as for a trolley car. At that time, it was possible to take a street car from Oregon City to Vancouver and the Orchards area of Clark County.

In the intervening years, the privately owned street car system, which by 1925 included over 700 miles of urban and interurban lines, was gradually eliminated on both sides of the river and public road, highway and freeway investments were made. Public transit systems (buses) were also established as a substitute for the rail-based transit systems. The most notable roadway improvements included adding a second span to the Interstate Bridge (I-5), conversion of Highway 99 to I-5 and the construction of the Interstate 205 Freeway (I-205) bypass, including the Glenn Jackson Bridge over the Columbia River.

More recently, the Metro jurisdictions and the jurisdictions within southwest Washington have worked on reestablishing possible light rail connections. Initial joint transportation system analysis concluded that all high capacity transit (HCT) modes, including light rail transit (LRT), should be further evaluated in the I-5 corridor and that only HCT bus options should be further evaluated in the I-205 corridor. Analysis of the

two bi-state corridors resulted in the selection of the I-5 corridor as the first priority for HCT in Clark County.

Subsequent studies resulted in the selection of LRT as the preferred mode and I-5 as the preferred alignment in Clark County with a terminus in the vicinity of 88th Street. A local financing proposal was developed to provide local funding for an LRT project from Clark County to Clackamas County, Oregon.

While the voters of the Metro region approved a \$475 million bond measure providing the local match for the South/North project, Clark County voters rejected the financing proposal for the Clark County portion of the South/North LRT project in February 1995. The defeat of the LRT vote in Clark County led to an extensive discussion of the next steps for addressing bi-state transportation needs. Policy makers agreed that it was imperative to engage the community in a full debate on a wide range of transportation issues and the transportation needs facing Clark County.

The Regional Transportation Plan explores a variety of transportation options. In addition to the road, freight, transit, bike and pedestrian improvements included in the current Regional Transportation Plan, Metro is also analyzing other methods of addressing transportation needs, such as congestion pricing.

In 1995, the Clark County Board of Commissioners and the Vancouver City Council appointed a group of citizens to serve on a Focus Group to recommend a grassroots-based approach for examining southwest Washington's future transportation needs. Coordinated by the Southwest Washington Regional Transportation Council, the results of the two Focus Group meetings in May 1995, became the foundation for the issues subsequently examined by the Transportation Futures Committee.

The Transportation Futures Committee developed a set of findings that are being used to guide further transportation study and planning in Clark County. Among other findings, bi-state issues included were:

- Reducing demand for new transportation facilities and improvements in the long run by encouraging economic development that supports family wage jobs in Clark County and reduces the need to commute to Oregon;
- Promoting the use of alternative modes of transportation to driving alone;
- Increasing capacity to accommodate long-term population growth and continued need for bi-state transportation facilities, with first priority on the I-5 corridor;
- Making more effective use of existing facilities is a high priority in the following order of preference:
 1. Improved and/or expanded bus service;
 2. High Occupancy Vehicle lanes (using existing facilities wherever possible);
 3. Commuter rail;
 4. Light rail;
 5. Reversible lanes;
 6. Widening I-5 (highway and bridge) for general purpose traffic;
 7. Ferry system.

The Committee found that a third auto bridge and highway corridor was not an acceptable solution to bi-state congestion.

Opportunities and Policy Implications

The opportunities for bi-state coordination are many. Shared environmental, transportation, economic development and land use issues bring with them an opening for dialogue, policy development and actions.

Bi-state policy development is facilitated by the fact that both Oregon jurisdictions and Clark County and its cities have adopted comprehensive land use plan maps and documents. By review and incorporation of goals and policies with regional applicability, it will be a matter of negotiation and agreement to consolidate those into a comprehensive regional policy document.

Transportation

Transportation choices impact a wide range of other issues. Most notably, air quality, costs and adequacy of infrastructure, natural resources and land use. Given the variety and strength of connections between the Metro area and southwest Washington and the growth that is likely to occur on both sides of the Columbia River, it is probable that transportation will remain as a critical element of bi-state discussion and decision making.

Residents of southwest Washington and the Metro area will remain concerned with access to the bi-state Metro area for jobs, airport facilities, shopping, recreational and cultural opportunities. Concern will remain high regarding the capacity of the existing and an enhanced road system to carry auto and freight at reasonable levels of service.

The limited capacity of the I-5 and I-205 bridges and the lack of policy direction or plans to increase capacity presents a fundamental challenge for the bi-state area. A third highway bridge is not consistent with Metro Council's policy and not favored by the Clark County Transportation Futures Committee.

Based upon the successful traffic management during the I-5 bridge repair closure in September, 1997, one potential approach is to encourage the modal shift of bi-state traffic, including the provision of public transit. It would require citizens to change their transportation habits on a long term basis. However, it could reduce negative environmental impacts and improve air quality in the region. Metro plans to take a closer look at these issues, and integrate coordination with Clark County through JPACT, RTC and other opportunities.

Economic and Industrial Development

Metro and Clark County could consider economic and industrial development policies to guide appropriate sharing of the regional industrial and commercial growth to Clark County. Such policies need take into

account commuter traffic management, housing demand and supply, available land for industrial and commercial development and the Metro region's economic health. For example, in a precedent case, the Port of Vancouver and the Port of Portland have been working together to coordinate regional port development.

Possible solutions for job/housing balance could include ways to ensure that the Clark County ratio of jobs created to new housing built is greater than current rates. For such a strategy to be effective, the jobs created would have to match and enhance the wage and skill profile of Clark County residents. Encouraging job creation may prove difficult as the infrastructure and sheer number of jobs in the Metro area are much more numerous than in Clark County. However, job growth is proceeding in Clark County with the help of the Columbia River Economic Development Council's recruiting efforts.

For at least the past twelve years, the Oregon state tax structure is lower than that of the State of Washington's, although the difference between the two states has narrowed substantially. There are now only marginal differences. The State of Washington instituted tax exempt capital equipment purchase legislation in 1994, which levels the playing field between companies in Oregon and southwest Washington.

Local business taxes in Clark County have been reduced since 1993 by 10% each year and will continue to decrease until they are eliminated.

Land Use and Housing

Metro and Clark County share similar land use policies such as encouraging infill and redevelopment, guiding new development along transit corridors, and preserving rural lands and open spaces using urban growth boundaries. These similarities could provide opportunities for coordination of land use planning, particularly when to expand urban growth boundaries. Land use planning of this kind needs to address broad issues that transcend man-made borders, such as preservation of rural lands, protection of greenspaces and wildlife habitat, travel demand management, and regional economic development.

Housing could be the most important area for potential coordination to improve Clark County's job/housing balance. While Metro should make efforts to make housing in the region more affordable, Clark County has adopted policies to reduce single family residential development outside the urban growth areas. Implementing these policies require close coordination across the jurisdictional boundaries. In addition, developing joint housing policies could be effective to deal with issues of affordability and fair share housing. Both the Metro region and Clark County are taking a fair share approach in providing affordable housing within their own jurisdictions, but currently there is no coordination. Coordinated planning could offer more flexible and effective allocation of limited financing to improve housing affordability.

Parks, Natural Areas and Open Space

As the regional ecological system transcends the Columbia River, there is an opportunity for further coordination in open space and natural resource planning. Metro and Clark County/Vancouver Parks should coordinate efforts to create more of a regional system of natural areas, open space, trails and greenways for wildlife and the people of the region.

Emergency Preparedness and Services

The location of Clark County and the northern portion of the Metro region along the Columbia River, as well as the geologic hazards present in the Pacific Northwest, present an opportunity for bi-state disaster preparedness and for coordination of emergency services. The flooding and earthquake potential of the area pose a challenge for emergency planners. As we have seen many times, natural disasters know no boundaries, and neither should coordinated assistance in the bi-state metropolitan area. Metro and Clark County can plan for coordinated response to emergency, recovery from disaster, preparedness for disaster and mitigation of hazard and risk.

Management

Chapter 7 Management

Overview

Any plan put into effect is only a set of policies or actions based on what is known at the time. Actual conditions can and do change. Accordingly, any plan which is intended to be useful over a period of time, must include ways of addressing new sets of circumstances. To this end, this chapter includes descriptions of policies and processes that will be used to keep the Regional Framework Plan abreast of current conditions and a forward thinking document.

In addition, this plan includes disparate subjects, ones that, while interconnected, at times suggest conflicting policy actions. This chapter describes the ways in which such conflicts can be resolved.

Policies (Goals and Objectives)

7.1 Citizen Participation

Metro shall develop and implement an ongoing program for citizen participation in all aspects of the regional planning effort. Such a program shall be coordinated with local programs to support citizen involvement in planning processes and shall not duplicate those programs.

Metro Committee for Citizen Involvement (Metro CCI). Metro shall establish a Metro Committee for Citizen Involvement to assist with the development, implementation and evaluation of its citizen involvement program and to advise MPAC regarding ways to best involve citizens in regional planning activities.

Notification. Metro shall develop programs for public notification, especially for (but not limited to) proposed legislative actions, that ensure a high level of awareness of potential consequences as well as opportunities for involvement on the part of affected citizens, both inside and outside of its district boundaries.

7.2 Metro Policy Advisory Committee

The 1992 Metro Charter has established MPAC to:

assist with the development and review of Metro's regional planning activities pertaining to land use and growth management, including review and implementation of these goals and objectives, development and implementation of the Regional Framework Plan, present and prospective functional planning, and management and review of the region's UGB;

serve as a forum for identifying and discussing areas and activities of metropolitan or subregional concern; and

provide an avenue for involving all cities and counties and other interests in the development and implementation of growth management strategies.

MPAC Composition: The initial MPAC shall be chosen according to the Metro Charter and, thereafter, according to any changes approved by majorities of MPAC and the Metro Council. The composition of the Committee shall reflect the partnership that must exist among implementing jurisdictions in order to effectively address areas and activities of metropolitan concern. The voting membership shall include elected and appointed officials and citizens of Metro, cities, counties, school districts and states consistent with section 27 of the 1992 Metro Charter.

Advisory Committees. The Metro Council, or MPAC, consistent with the MPAC by-laws, shall appoint technical advisory committees as the Council or MPAC determine a need for such bodies.

Joint Policy Advisory Committee on Transportation (JPACT). JPACT, with the Metro Council, shall continue to perform the functions of the designated Metropolitan Planning Organization as required by federal transportation planning regulations. JPACT and MPAC shall develop a coordinated process, to be approved by the Metro Council, to assure that regional land use and transportation planning remains consistent with these goals and objectives and with each other.

7.3 Applicability of Regional Framework Plan Policies

The policies included in Regional Framework Plan Policies in Chapters 1-6 of this Plan are regional goals and objectives consistent with ORS 268.380(1). Many of these policies were previously adopted and acknowledged as the Regional Urban Growth Goals and Objectives. The specific policies included in this Framework Plan are neither a comprehensive plan under ORS 197.015(5), nor a functional plan under ORS 268.390(2). All functional plans adopted by the Metro Council shall be consistent with these goals and objectives. Metro's management of the UGB shall be guided by standards and procedures which must be consistent with these goals and objectives. These goals and objectives shall not apply directly to site-specific land use actions, including amendments of the UGB.

Regional Framework Plan Policies in Chapters 1-6 of this Plan shall apply to adopted and acknowledged comprehensive land use plans as follows:

- components of the Regional Framework Plan that are adopted as functional plans, or other functional plans, shall be consistent with these Policies,
- the management and periodic review of Metro's acknowledged UGB Plan, shall be consistent with these Policies, and
- Metro may after consultation with MPAC identify and propose issues of regional concern, related to or derived from these Policies as recommendations but not requirements, for consideration by cities and counties at the time of periodic review of their adopted and acknowledged comprehensive plans.

Regional Framework Plan Policies shall apply to Metro land use, transportation and greenspace activities as follows:

- the Urban Growth Boundary plans, functional plans, and other land use activities shall be consistent with these Policies;

- to the extent that a proposed policy or action may be compatible with some Policies and incompatible with others, consistency with this Plan may involve a balancing of applicable goals, subgoals and objectives by the Metro Council that considers the relative impacts of a particular action on applicable Policies.

Periodic Updates of Regional Framework Plan Policies. MPAC shall consider the regular updates of these Policies and recommend based on a periodic update process adopted by the Metro Council.

7.4 Urban Growth Boundary Management Plan

The UGB Management Plan has two components:

- the acknowledged UGB line; and
- acknowledged procedures and standards for amending the UGB line. Metro's UGB Management Plan is not a regional comprehensive plan but a provision of the comprehensive plans of the local governments within its boundaries. The UGB Management Plan shall be in compliance with applicable statewide planning goals and laws and consistent with these goals and objectives. Amendments to the UGB Management Plan shall demonstrate consistency only with the acknowledged procedures and standards. Changes of Metro's acknowledged UGB Management Plan may require changes in adopted and acknowledged comprehensive plans.

7.5 Functional Plans

Functional plans are limited purpose plans, consistent with this Framework Plan, which address designated areas and activities of metropolitan concern. Functional plans are established in state law as a way Metro may recommend or require changes in local plans. This Framework Plan uses functional plans as the identified vehicle for requiring changes in local plans in order to achieve consistence and compliance with this Framework Plan.

Those functional plans or functional plan provisions containing recommendations for comprehensive planning by cities and counties may not be final land use decisions. If a provision in a functional plan, or an action implementing a functional plan require changes in an adopted and acknowledged comprehensive plan, then the adoption of a provision or action will be a final land use decision. If a provision in a functional plan, or Metro action implementing a functional plan require changes in an adopted and acknowledged comprehensive plan, then that provision or action will be adopted by Metro as a final land use action required to be consistent with statewide planning goals. In addition, Regional Framework Plan components will be adopted as functional plans if they contain recommendations or requirements for changes in comprehensive plans. These functional plans, which are adopted as part of the Regional Framework Plan, will be submitted along with other parts of the Regional Framework Plan to LCDC for acknowledgment of their compliance with the statewide planning goals. Because functional plans are the way Metro recommends or requires local plan changes, most Regional Framework Plan components will probably be functional plans. Until Regional Framework Plan components are adopted, existing or new functional plans will continue to recommend or require changes in comprehensive plans.

- Existing Functional Plans. Metro shall continue to develop, amend and implement, with the assistance of cities, counties, special districts and the state, statutory-required functional plans for air, water and

transportation, as directed by ORS 268.390(1) and for land use planning aspects of solid waste management as mandated by ORS Ch. 459.

- New Functional Plans. New functional plans shall be proposed from one of two sources:
 - MPAC may recommend that the Metro Council designate an area or activity of metropolitan concern for which a functional plan should be prepared; or
 - the Metro Council may propose the preparation of a functional plan to designate an area or activity of metropolitan concern and refer that proposal to MPAC.

The matters required by the Charter to be addressed in the Regional Framework Plan shall constitute sufficient factual reasons for the development of a functional plan under ORS 268.390. However, the actual adoption of a functional plan will be subject to the procedures specified above.

Upon the Metro Council adopting factual reasons for the development of a new functional plan, MPAC shall participate in the preparation of the plan, consistent with these goals and objectives and the reasons cited by the Metro Council. After preparation of the plan and seeking broad public and local government consensus, using existing citizen involvement processes established by cities, counties and Metro, MPAC shall review the plan and make a recommendation to the Metro Council. The Metro Council may act to resolve conflicts or problems impeding the development of a new functional plan and may complete the plan if MPAC is unable to complete its review in a timely manner.

The Metro Council shall hold a public hearing on the proposed plan and afterwards shall:

- adopt the proposed functional plan; or
- refer the proposed functional plan to MPAC in order to consider amendments to the proposed plan prior to adoption; or
- amend and adopt the proposed functional plan; or
- reject the proposed functional plan.

The proposed functional plan shall be adopted by ordinance and shall include findings of consistency with these goals and objectives.

- Functional Plan Implementation and Conflict Resolution. Adopted functional plans shall be regionally coordinated policies, facilities and/or approaches to addressing a designated area or activity of metropolitan concern, to be considered by cities and counties for incorporation in their comprehensive land use plans. If a city or county determines that a functional plan requirement should not or cannot be incorporated into its comprehensive plan, then Metro shall review any apparent inconsistencies by the following process:
 - Metro and affected local governments shall notify each other of apparent or potential comprehensive plan inconsistencies.
 - After Metro staff review, MPAC shall consult the affected jurisdictions and attempt to resolve any apparent or potential inconsistencies.
 - MPAC shall conduct a public hearing and make a report to the Metro Council regarding instances and reasons why a city or county has not adopted changes consistent with requirements in a regional functional plan.
 - The Metro Council shall review the MPAC report and hold a public hearing on any unresolved issues. The Council may decide to:

- amend the adopted regional functional plan; or
- initiate proceedings to require a comprehensive plan change; or
- find there is no inconsistency between the comprehensive plan(s) and the functional plan.

7.6 Periodic Review of Comprehensive Land Use Plans

At the time of LCDC initiated periodic review for comprehensive land use plans in the region, MPAC:

- shall assist Metro with the identification of Regional Framework Plan elements, functional plan provisions or changes in functional plans adopted since the last periodic review for inclusion in periodic review notices as changes in law; and
- may provide comments during the periodic review of adopted and acknowledged comprehensive plans on issues of regional concern.

7.7 Implementation Roles

Regional planning and the implementation of this Framework Plan shall recognize the inter-relationships between cities, counties, special districts, Metro, regional agencies and the State, and their unique capabilities and roles.

Role of Cities

- adopt and amend comprehensive plans to conform to functional plans adopted by Metro;
- identify potential areas and activities of metropolitan concern through a broad-based local discussion;
- cooperatively develop strategies for responding to designated areas and activities of metropolitan concern ;
- participate in the review and refinement of these goals and objectives.

Role of Counties

- adopt and amend comprehensive plans to conform to functional plans adopted by Metro;
- identify potential areas and activities of metropolitan concern through a broad-based local discussion;
- cooperatively develop strategies for responding to designated areas and activities of metropolitan concern;
- participate in the review and refinement of these goals and objectives.

Role of Special Service Districts

- assist Metro, through a broad-based local discussion, with the identification of areas and activities of metropolitan concern and the development of strategies to address them, and participate in the review and refinement of these goals and objectives. Special Service Districts will conduct their operations in conformance with acknowledged Comprehensive Plans affecting their service territories

Role of School Districts

- advise Metro regarding the identification of areas and activities of school district concern;
- cooperatively develop strategies for responding to designated areas and activities of school district concern;

- participate in the review and refinement of these goals and objectives.

Role of the State of Oregon

- advise Metro regarding the identification of areas and activities of metropolitan concern;
- cooperatively develop strategies for responding to designated areas and activities of metropolitan concern;
- review state plans, regulations, activities and related funding to consider changes in order to enhance implementation of the Regional Framework Plan and functional plans adopted by Metro, and employ state agencies and programs and regulatory bodies to promote and implement these goals and objectives and the Regional Framework Plan;
- participate in the review and refinement of these goals and objectives.

Role of Metro

- identify and designate areas and activities of metropolitan concern;
- provide staff and technical resources to support the activities of MPAC within the constraints established by Metro Council;
- serve as a technical resource for cities, counties, school districts and other jurisdictions and agencies;
- facilitate a broad-based regional discussion to identify appropriate strategies for responding to those issues of metropolitan concern;
- adopt functional plans necessary and appropriate for the implementation of the Regional Framework Plan;
- coordinate the efforts of cities, counties, special districts and the state to implement adopted strategies; and
- adopt and review consistent with the Metro Charter and amend a Future Vision for the region, consistent with Objective 9.

7.8 Performance Measures

Metro Council, in consultation with MPAC and the public, will develop performance measures designed for considering the Regional Framework Plan policies. The term "performance measure" means a measurement aimed at determining whether a planning activity or 'best practice' is meeting the objective or intent associated with the 'best practice.' This concept is also consistent with the Future Vision call for a "... state of the region report on our progress toward achieving the objectives..."

Performance measures for this chapter will use state benchmarks to the extent possible or be developed by Metro Council in consultation with MPAC and the Metro Committee for Citizen Involvement.

Performance measures for Chapters 2-6 are measured by several different geographies, including by region, jurisdiction, 2040 design type and market area.

Performance Measures for Chapters 2-6 include the following:

1. Vacant land conversion;
2. Housing development, density, rate and price;
3. Job creation;

4. Infill and redevelopment;
5. Environmentally sensitive lands;
6. Price of land;
7. Residential vacancy rates;
8. Access to open space;
9. Transportation measures.

After concluding which measures are most useful in assessing progress in implementing Metro policies, the Metro Council has directed these measures to be completed every two years. Corrective actions may be taken by the Metro Council if they find that anticipated progress is lacking or if Metro goals or policies need adjustment. By assessing progress or lack of it on a relatively short time frame, it is hoped that if need arises for adjustments these can be made soon after any problem arises and so that relatively stable conditions can be maintained.

7.9 Monitoring and Updating

The Regional Framework Plan and all Metro functional plans shall be reviewed every seven years, or at other times as determined by the Metro Council after consultation with or upon the advice of MPAC. Any review and amendment process shall involve a broad cross-section of citizen and jurisdictional interests, and shall involve MPAC consistent with Goal 1: Regional Planning Process. Proposals for amendments shall receive broad public and local government review prior to final Metro Council action.

- **Impact of Amendments.** At the time of adoption of amendments to these goals and objectives, the Metro Council shall determine whether amendments to adopted Regional Framework Plan, functional plans or the acknowledged regional UGB are necessary. If amendments to the above are necessary, the Metro Council shall act on amendments to applicable functional plans. The Council shall request recommendations from MPAC before taking action. All amendment proposals will include the date and method through which they may become effective, should they be adopted. Amendments to the acknowledged regional UGB will be considered under acknowledged UGB amendment procedures incorporated in the Metro Code.

If changes to the Regional Framework Plan or functional plans are adopted, affected cities and counties shall be informed in writing of those changes which are advisory in nature, those which recommend changes in comprehensive land use plans and those which require changes in comprehensive plans. This notice shall specify the effective date of particular amendment provisions.

7.10 Environmental Education

Metro is committed to providing education to the community on the principles and foundation of the Regional Framework Plan. In order to maintain the Regional Framework Plan as a living document, it is necessary for the citizenry of the region to understand the decision making mechanisms, the principles that guide sound planning and the effect of decisions and changes on the livability of the community.

Environmental education should provide an unbiased information source that does not advocate for one viewpoint. Environmental education should invite and involve diverse viewpoints and give everyone

opportunities to participate in all aspects of the learning process. This will ensure that education for the Regional Framework Plan is enriched by and relevant to all points of view.

Metro shall develop and implement an ongoing partnership with cultural, environmental and educational organizations to keep abreast of current conditions and maintain the Regional Framework Plan as a forward-looking document. Such a partnership shall coordinate with local programs for supporting education that involves citizens in the analysis of critical environmental issues related to regional growth and environmental quality. The goal of education is to help citizens gain awareness, knowledge and skills to make connections between the issues of regional growth and the creation of livable communities.

The key objectives of education are to provide citizens with the information needed and the opportunity to:

- analyze critical environmental issues related to regional growth;
- understand the effects of their choices on the urban and natural systems used to manage growth, natural areas and transportation, process waste and provide water and energy;
- engage in decisions which affect the livability of their communities;
- take actions which reflect the region's plan.
- cooperatively develop strategies with citizens to provide regional environmental education;
- identify cultural, environmental and educational organizations which currently provide education about issues related to livable communities;
- identify sites and facilities that currently and potentially provide education about issues related to livable communities;
- function as a clearinghouse for educational organizations and facilitate educational partnerships in the community.

If the goals and policies of the Regional Framework Plan are to be achieved, individuals and communities must be enabled to challenge and discuss the rural and urban systems and policies responsible for creating livable communities.

Background

Goal I of the Regional Urban Growth Goals and Objectives, originally adopted in 1991 and now wholly incorporated in this document, provides the process for determining regional policies which includes key participants, roles and procedures to be used.

Citizen involvement in the discussion of issues must be paramount in any public decision, and regional issues are no different. Although having detailed discussions with each and every of the 1.2 million residents of the region on any one issue is not practicable, responsibility for determining the general public's values and interests as well as responding to individual citizen's concerns is one which Metro must take seriously and continue to find ways to improve. An advisory committee, the Metro Committee for Citizen Involvement, is the primary resource for determining how best to hear citizen concerns. There are myriad tools to determine the general public's opinions and values, including newsletters that describe the choices

related to upcoming public decisions, open houses, presentations to neighborhood and citizen participation organizations, Metro's web page, random surveys and related public opinion measuring instruments.

Methods for hearing individual concerns are the Metro hotline, e-mail, written mailed correspondence to the Metro Council and its members and testimony at public hearings. When the Metro Council is making a decision, materials are provided to the Metro Council and any interested parties and included in the public hearing record. (For example, oral comments recorded on the hotline are transcribed and forwarded to the Metro Council, as are any written correspondence.)

Implementation of region-wide policies is dependent on actions by the cities, counties and special districts of the region. In order to ensure that local jurisdictions have an opportunity to discuss, debate and recommend regional policies, two advisory committees have been created, comprised primarily of elected officials of the region. These two committees are the Metro Policy Advisory Committee (MPAC) and the Joint Policy Advisory Committee (JPACT). MPAC deals primarily with land use issues of regional significance, while JPACT addresses regional-scale transportation concerns. Prior to making regional land use or transportation decisions, the Metro Council seeks recommendations from one, or in some cases both, of these committees. In addition, MPAC and JPACT have technical committees (MTAC and TPAC) which serve the policy committees, providing technical analysis and recommendations as requested. These technical committees are comprised of the chief planning and transportation staffs from throughout the region, as well as citizen members and members from various interest groups.

Analysis

There are two major issues with regard to management of the Regional Framework Plan. These are: 1) coordination of the elements of the Regional Framework Plan and, 2) maintaining the Regional Framework Plan as a document which continues to address the demands of a changing future.

Coordination and integration of the various elements is an important, yet difficult task. This Regional Framework Plan addresses many disparate elements. Coordination is pursued by several means. First, by listing all of the objectives and policies in one document, everyone can see the various elements. Second, the Growth Concept map illustrates how the various elements - land use, transportation, open space, etc. are expected to develop or be conserved on the landscape.

However, implementation of the Growth Concept will inevitably result in some conflicts. Economic theory suggests that it is not possible to maximize for all values simultaneously. If all of the goals and objectives could be expressed in dollars or some other common measurement, then total merit to the region of a plan could be calculated. However, such a common measure is not available and at least each element, if not portions of each element are attempts to articulate very different, particular values, such as mobility or protection of the natural habitat, etc.

What is available is a much more common sense approach. Each element expresses policies and values to which the region aspires. As implementation of the plan is accomplished by the cities, counties and special

districts of the region, conflicts between these will inevitably arise. In most cases, these conflicts will be resolved at the local level, although recurring conflicts or conflicts with region-wide significance may be addressed by Metro. In either case, the process for such resolution will be a public one. That is, the conflict will be described, technical information provided, the public will have the opportunity to make their concerns known and then the public's duly elected officials (city or county if at the local level or, after consultation with local jurisdictions, the Metro Council if at the regional level) will make a decision. While any one party may find fault with any one decision, and may appeal a decision to the courts, it is important to remember that in most cases it is impossible to maximize for all values, and the decisions before elected officials are ones in which conflicting values are expressed. By making these decisions in a public forum by a public body serving the public, a democratic, though not always quick, decision is made. It is also the way in which conflicting values can be sorted out.

Another management issue is understanding how the policies are affecting the region and understanding when changes in conditions in the region may call for changes in the Regional Framework Plan. Sometimes these "points of divergence" are subtle and only years later is it clear that conditions have changed. In other cases, major changes in public attitudes, economic conditions or other factors may be clearly evident. One way to help understand what is happening is to institute a system of measurements to gauge the success, or lack thereof, of regional policies. Performance measures can be used to periodically measure factors relating to growth capacity, housing affordability, open space conservation and other conditions which are of public concern and for which, in some cases, small changes may signal greater future problems. These measurements can also help the region assess its value choices and may be a basis for emphasizing or reducing the priority of any one value compared with another.

Following are the management policies that should be pursued as Metro develops, implements and monitors compliance with the policies contained in the previous chapters.

Implementation

Chapter 8: Implementation

CA535

The following tables list each Regional Framework Plan policy, and identify the related implementation recommendation or requirement. Each Regional Framework Plan policy which is identified as implemented by the acknowledged UGB procedures in Metro Code Chapter 3.01 or by an Urban Growth Management Functional Plan provision is applicable to city and county plans to the extent described in each of those Appendices of this Plan. Appendix A: Urban Growth Management Functional Plan (Metro Code Chapter 3.07) and Appendix B: Urban Growth Boundary and Urban Reserve Procedures (Metro Code 3.01) are hereby incorporated by reference into this Regional Framework Plan.

Section 5(2)(e) of the 1992 Metro Charter directs Metro to adopt implementing ordinances in order to require city and county comprehensive plans and implementing regulations to comply with the Regional Framework Plan. The implementing ordinances shall be consistent with the provisions of the Charter and Oregon Law and shall address rules and procedures for enforcing those provisions of this Regional Framework Plan identified as requirements that are applied directly to cities and counties. Those requirements are identified as functional plans in this Regional Framework Plan.

Implementation procedures for enforcing those provisions of this Regional Framework Plan which are identified as functional plans shall be addressed as follows:

1. The effective date section of the ordinance adopting this Plan requires city and county comprehensive plans and land use regulations to comply with this Plan within two years after adoption and compliance acknowledgment of this Plan.
2. The Metro Council shall develop provisions in an ordinance for Metro Council adjudication of and determination of consistency of local comprehensive plans with this Plan.
3. The effective date section of the ordinance adopting this Plan requires each city and county within the jurisdiction of Metro to begin making its land use decisions consistent with this Plan one year after compliance acknowledgment of this Plan by the Land Conservation and Development Commission until its comprehensive plan has been determined to be consistent with this Plan.
4. The Metro Council shall develop provisions in an ordinance allowing the Council to require changes in local land use standards and procedures if the Council determines changes are necessary to remedy a pattern or practice of decision-making inconsistent with this Plan.

The provisions of the Urban Growth Management Functional Plan (Metro Code Chapter 3.07) adopted as a component of this Regional Framework Plan shall be subject to Metro's adopted implementing ordinances

as provided in Section 5.(2)(e) of the Metro Charter. However, the requirements of the Functional Plan shall continue to have force and effect independently of this Framework Plan, and the requirements of the functional plan shall be effective on the dates specified therein, based on Metro's statutory authority in ORS 268.390. After acknowledgment of this Regional Framework Plan, requirements for changes in comprehensive plans and land use regulations initiated under Metro's statutory and charter authorities shall be required to be approved as amendments to this Plan in order to become effective.

Policies in this Plan which require development of additional functional plan provisions and other planning activities using Metro's limited planning resources shall be subject to the allocation of available funds in Metro's normal budget process.

Regional Funding and Fiscal Policy

Purpose

The purpose of this policy is to ensure that regional funding and fiscal factors support and facilitate rather than undermine and countervail the implementation of the policies of the Regional Framework Plan, especially the policies of the Metro 2040 Growth Concept as set out in Chapter 1 and as detailed in Chapters 2 through 7 as well as related functional plans adopted by the Metro Council.

Successful implementation of the Regional Framework Plan and related functional plans will require significant and targeted expenditure of public dollars to directly address the procedural and substantive elements of the Plan and related functional plans. Successful implementation also will require careful attention to how public dollars are procured and allocated within the region. Various federal, state, regional, and local funding and fiscal decisions not expressly intended to affect the form of development in the region nonetheless can have substantial effects -- sometimes in the short-run, more often in the long-run. To address these critical aspects of implementation of the Plan and related functional plans, Regional Funding and Fiscal Policies should be developed and incorporated into Chapter 8 of the Plan.

Policy

The Metro Council, with the consultation and advice of the Metro Policy Advisory Committee ("MPAC"), should adopt on or before November 1, 1998, a Regional Funding and Fiscal section to be included in Chapter 8 (Implementation) of the Regional Framework Plan. In formulating and adopting the Regional Funding and Fiscal Policies, the following should be considered:

1. General regional funding and fiscal policies which support implementation of the Regional Framework Plan and related functional plans including but not limited to a policy requiring Metro, in approving or commenting on the expenditure of regional, state, and federal monies in the metropolitan area, to give priority to programs, projects, and expenditures that support implementation of the Regional Framework Plan and related functional plans unless there are compelling reasons to do otherwise;
2. development of a regional systems capital investment plan for the regional systems needed to implement the Regional Framework Plan and related functional plans;
3. regular periodic reports comparing the overall rates of property taxes, and business and development fees and charges assessed in each city and county in the region, the extent of fiscal disparities in the

region, and the likely effects of these factors on implementation of the Regional Framework Plan and related functional plans;

4. review of pricing of infrastructure and its likely effect on implementation of the Regional Framework Plan and related functional plans; and
5. regular periodic reports identifying state and federal funding and fiscal statutes, regulations, policies, programs, and decisions that significantly support or significantly undermine implementation of the Regional Framework Plan and related functional plans; and
6. other policies, plans, and actions relating to funding and fiscal factors which the Metro Council, with the consultation and advice of the MPAC, determines are of metropolitan concern and will support implementation of the Regional Framework Plan and related functional plans.

Implementation Method for the
Regional Framework Plan

Regional Framework Policy	Implementation Recommendation(s) or Requirements
Land Use	
1.1 Urban Form	Metro Code Chapter 3.01 3.01.005 UGB Amendment Procedures 3.01.020 Legislative Amendment Criteria Metro Code Chapter 3.06 3.06.010 Policy & Purpose: Designating Functional Planning Areas
1.2 Built Environment	Urban Growth Management Functional Plan Title 1 Requirements for Housing and Employment: Section 1 to 7 Title 2 Regional Parking Policy: Section 1 to 2 Title 3 Water Quality & Flood Management Conservation: Section 1 to 7 Title 4 Retail in Employment and Industrial Areas: Section 1 to 3 Title 5 Neighbor Cities and Rural Reserves: Section 1 to 4 Title 6 Regional Accessibility: Section 1 to 4 Title 7 Affordable Housing: Section 1 to 3 Title 8 Compliance Procedures: Section 1 to 7
1.3 Housing	Metro Code Chapter 3.03 3.03.010 Authority and Purpose Urban Growth Management Functional Plan Title 1 Requirements for Housing and Employment: Section 1 to 7 Title 7 Affordable Housing: Section 1 to 3 New requirements with fair share targets for each jurisdiction as well as fair share plan to be prepared by each jurisdiction. Metro to monitor supply of affordable housing and land supply Metro to modify UGB code for preferential UGB expansions for affordable housing projects.

Implementation Method for the
Regional Framework Plan

Framework Policy	Implementation Recommendation(s) or Requirements
Land Use (cont.)	
<p>1.4 Schools (issues to be considered in the development of the functional plan)</p>	<p><u>Metro Facilitation of Coordination</u> - Metro shall create a standing Advisory Committee on School Facility Planning Coordination to advise Metro on implementation of Framework Plan School Facilities policies. The Committee shall prepare and implement an action plan for:</p> <p>1. Establishing Local School Facilities Site Planning Committees for school districts in the Region serving 5,000 or more students. Committees shall include local school board, local government and local business representatives. The Committees shall advise their local governments on whether local comprehensive plans provide for adequate school facilities.</p> <p>Outside the Metro Urban Growth Boundary: Metro Code Chapter 3.01.012 (11) & 3.01.015(d) Urban Reserve Plan and coordination with school districts</p> <p>Inside the Metro Urban Growth Boundary: <u>Population and Growth Projections</u> - Upon adoption of the Regional Framework Plan, Metro shall provide to local governments a forecast of population by subarea. Local governments and school districts shall utilize these population forecasts, or mutually agreed upon amended population projections, as a basis for their facilities planning.</p> <p><u>Schools and Parks</u> - Park providers and school districts, in preparing capital improvement plans and land acquisitions, shall, to the maximum extent feasible, coordinate their site selections and facility plans with one another. Wherever feasible, contiguous park/school sites shall be obtained by means of shared purchase or options, land exchange or other means.</p> <p><u>Regional School Site Acquisition Fund</u> - In order to assure that school sites exist within our communities that encourage walking or biking for elementary and middle school students and connect to public transit whenever possible for high school and middle school students, Metro shall establish a region-wide school site acquisition fund using a variety of funding sources. The funds will be distributed to actual need and utilize specific criteria.</p> <p><u>Schools and Urban Design</u> - In allocating regional and local funds to acquire school and/or school/park sites, Metro and local governments shall, in part, base any allocation to sites which reflect regional and local policies for urban design. School sites that meet more of the following desired criteria may receive greater funding:</p> <p>1. Require less land area than standard practice due to multi-story construction, mixed uses in building and shared use of playing fields with local park providers;</p>

Framework Policy	Implementation Recommendation(s) or Requirements
Land Use (cont.)	

<p>1.4 Schools (cont.)</p>	<ol style="list-style-type: none"> 2. Located sufficiently close to concentrations of population in the school's attendance area so as to minimize the need for school bus transportation or private auto transportation; 3. Well connected by the local street system and by established or planned pedestrian and bicycle ways 4 High school sites that are well served by established or planned transit routes (need to include a Tri-Met coordination requirement). 5. Multi-school district collaborative projects. <p style="text-align: center;"><u>Local Government Connection</u></p> <ol style="list-style-type: none"> 1. Large-scale development or redevelopment in local jurisdictions shall include discussions with the local school district to ensure that sufficient schools are provided for the children generated by such development or redevelopment. 2. Whenever possible, local jurisdictions shall prioritize development applications and streamline processes for public agencies, including schools, to assure that public needs are met without jeopardizing opportunities for citizen input or oversight for health and safety or environmental protection. 3. Whenever possible, local jurisdictions shall partner (including funding) with school districts to jointly use school sites for the public good (such as combined libraries, parks, connections with local services such as police, neighborhood centers, senior centers, etc.) 4. In order to help assure transportation connections with public buildings, local governments shall prioritize their transportation spending to assure bicycle and pedestrian connections are provided and the local road and land use plans encourage Tri-Met service (Metro shall recognize these efforts as it allocates federal transportation dollars.) 5. As a part of compliance with the Urban Growth Management Functional Planning effort, local jurisdictions shall engage local school districts and inform them of any density increases which may affect school populations. 6. Local governments and school districts shall review codes related to the construction of schools. <p><u>Performance Measures</u> - Metro, after consultation with the school districts, shall establish performance measures related to these school policies which shall help determine whether or not we are meeting state goals. Such measures may include number of elementary and middle school children who walk or bike to school, number of high school students who take public transit and amount of land used for new schools.</p>
----------------------------	---

Regional Framework Policy	Implementation Recommendation(s) or Requirements
Land Use (cont.)	
1.5 Economic Opportunity	Urban Growth Management Functional Plan Title 1 Requirements for Housing and Employment: Section 5 to 7 Title 4 Retail in Employment and Industrial Areas: Section 1 to 3
1.6 Urban Vitality	Urban Growth Management Functional Plan Title 1 Requirements for Housing and Employment: Section 1 to 7
1.7 Growth Management	Metro Code Chapter 3.01 3.01.005 UGB Amendment Procedures 3.01.020 Legislative Amendment Criteria Metro Code Chapter 3.06 3.06.010 Policy & Purpose: Designating Functional Planning Areas Urban Growth Management Functional Plan Title 1 to 7

Regional Framework Policy	Implementation Recommendation(s) or Requirements
Land Use (cont.)	
1.8 Urban/Rural Transition	Metro Code Chapter 3.01 3.01.005 UGB Amendment Procedures 3.01.020 Legislative Amendment Criteria Metro Code Chapter 3.06 3.06.010 Policy & Purpose: Designating Functional Planning Areas Urban Growth Management Functional Plan Title 5 Neighbor Cities and Rural Reserves: Section 1 to 4
1.9 Developed Urban Land	Metro Code Chapter 3.01 3.01.005 UGB Amendment Procedures 3.01.020 Legislative Amendment Criteria Metro Code Chapter 3.06 3.06.010 Policy & Purpose: Designating Functional Planning Areas Urban Growth Management Functional Plan Title 1 to 7
1.10 Urban Growth Boundary	Metro Code Chapter 3.01 3.01.005 UGB Amendment Procedures 3.01.020 Legislative Amendment Criteria
1.11 Urban Design	Urban Growth Management Functional Plan Title 1 Requirements for Housing and Employment: Section 1 to 3 Title 6 Regional Accessibility: Section 1 to 3

Regional Framework Policy	Implementation Recommendation(s) or Requirements
Land Use (cont.)	
1.12 Neighbor Cities	Title 5 Neighbor Cities and Rural Reserves: Section 1 to 4 and Signed Intergovernmental Agreements
1.13 Protection of Agriculture and Forest Resource Lands	Metro Code Chapter 3.01 3.01.005 UGB Amendment Procedures 3.01.020 Legislative Amendment Criteria
1.14 Growth Concept	Urban Growth Management Functional Plan Title 1 Requirements for Housing and Employment: Section 1 to 7 Title 2 Regional Parking Policy: Section 1 to 2 Title 3 Water Quality and Flood Management Section 1 to 7 Title 4 Retail in Employment and Industrial Areas: Section 1 to 3 Title 5 Neighbor Cities and Rural Reserves: Section 1 to 4 Title 6 Regional Accessibility: Section 1 to 4 Title 7 Affordable Housing: Section 1 to 3

Regional Framework Policy	Implementation Recommendation(s) or Requirements
Transportation	
2.1 Intergovernmental Coordination	<p>New - To be developed as part of 1998 Regional Transportation Plan</p> <p>Urban Growth Management Functional Plan Title 5 Neighbor Cities and Rural Reserves: Section 3</p>
2.2 Consistency between Land Use and Transportation Planning	<p>New - To be developed as part of 1998 Regional Transportation Plan</p> <p>Urban Growth Management Functional Plan Title 6 Regional Accessibility: Section 1 to 4</p>
2.3 Public Involvement	<p>New - To be developed as part of update to Transportation Planning Public Involvement Policy</p> <p>Metro Code Chapter 2.12 2.12.010 Office of Citizen Involvement: Creation and Purpose</p>
2.4 System Objectives	<p>New - To be developed as part of 1998 Regional Transportation Plan</p>
2.5 Transportation Finance	<p>New - To be developed as part of 1998 Regional Transportation Plan</p>
2.6 Urban Form	<p>New - To be developed as part of 1998 Regional Transportation Plan</p> <p>Urban Growth Management Functional Plan Title 6 Regional Accessibility: Section 1 to 4</p>
Regional Framework Policy	Implementation Recommendation(s) or Requirements

Transportation (cont.)	
2.7 Jobs/Housing Balance	New - To be developed as part of 1998 Regional Transportation Plan
2.8 Transportation Education	New - To be developed as part of 1998 Regional Transportation Plan
2.9 Barrier-Free Transportation	New - To be developed as part of 1998 Regional Transportation Plan
2.10 Transportation Balance	New - To be developed as part of 1998 Regional Transportation Plan
2.11 Street Design	New - To be developed as part of 1998 Regional Transportation Plan Urban Growth Management Functional Plan Title 6 Regional Accessibility: Section 1 to 3
2.12 Motor Vehicle Transportation	New - To be developed as part of 1998 Regional Transportation Plan
2.13 Public Transportation	New - To be developed as part of 1998 Regional Transportation Plan
2.14 Pedestrian Transportation	New - To be developed as part of 1998 Regional Transportation Plan
Regional Framework Policy	Implementation Recommendation(s) or Requirements
Transportation (cont.)	

2.15 Bicycle Transportation	New - To be developed as part of 1998 Regional Transportation Plan
2.16 Freight Movement	New - To be developed as part of 1998 Regional Transportation Plan
2.17 Parking Management	New - To be developed as part of 1998 Regional Transportation Plan Urban Growth Management Functional Plan Title 2 Regional Parking Policy: Section 1 to 2
2.18 Transportation Demand Management	New - To be developed as part of 1998 Regional Transportation Plan Urban Growth Management Functional Plan Title 6 Regional Accessibility: Section 4.A.
2.19 Transportation System Management	New - To be developed as part of 1998 Regional Transportation Plan
2.20 Right-of-Way Opportunities	New - To be developed as part of 1998 Regional Transportation Plan
2.21 Adequacy of Transportation Facilities	New - To be developed as part of 1998 Regional Transportation Plan
Regional Framework Policy	Implementation Recommendation(s) or Requirements
Transportation (cont.)	

2.22 Urban to Urban Travel on Rural Routes	New - To be developed as part of 1998 Regional Transportation Plan
2.23 Recreational Travel and Tourism	New - To be developed as part of 1998 Regional Transportation Plan
2.24 Natural Environment	New - To be developed as part of 1998 Regional Transportation Plan
2.25 Water Quality	<p>New - To be developed as part of 1998 Regional Transportation Plan</p> <p>Urban Growth Management Functional Plan Title 3 Water Quality and Flood Management Section 1 to 4</p>
2.26 Clean Air	New - To be developed as part of 1998 Regional Transportation Plan
2.27 Energy Efficiency	New - To be developed as part of 1998 Regional Transportation Plan
2.28 Motor Vehicle Level of Service	<p>New - To be developed as part of 1998 Regional Transportation Plan</p> <p>Urban Growth Management Functional Plan Title 6 Regional Accessibility: Section 4.B.</p>
Regional Framework Policy	Implementation Recommendation(s) or Requirements
Transportation (cont.)	

2.29 Transit Level of Service	New - To be developed as part of 1998 Regional Transportation Plan
2.30 Local Street Connectivity	New - To be developed as part of 1998 Regional Transportation Plan Urban Growth Management Functional Plan Title 6 Regional Accessibility: Section 3

Regional Framework Policy	Implementation Recommendation(s) or Requirements
Parks and Open Spaces	
3.1 Inventory of Park Facilities and Inventory of Regionally Significant Parks, Natural Areas, Open Spaces, Trails and Greenways	<i>(to be developed; refer to Appendix H)</i> Draft of Implementation Measures to be Revised through Discussions with Greenspaces Technical Advisory Committee.
3.2 Protection of Regionally Significant Parks, Natural Areas, Open Spaces, Trails and Greenways	<i>(to be developed; refer to Appendix H)</i>
3.3 Management of the Publicly - Owned Portion of the Regional System of Parks, Natural Areas, Open Spaces, Trails and Greenways	<i>(to be developed; refer to Appendix H)</i>
3.4 Protection, Establishment and Management of a Regional Trails System	<i>(to be developed; refer to Appendix H)</i>
3.5 Provision of Community and Neighborhood Parks, Open Spaces, Natural Areas, Trails and Recreation Programs	<i>(to be developed; refer to Appendix H)</i>
3.6 Participation of Citizens in Environmental Education, Planning, Stewardship Activities and Recreational Services	<i>(to be developed; refer to Appendix H)</i>

Regional Framework Policy	Implementation Recommendation(s) or Requirements
Water Management	<i>All implementation methods to be developed; see Appendix I.</i>
4.1 General Policy Direction	Urban Growth Management Functional Plan Title 3 Water Quality & Flood Management Conservation: Section 1 to 4 Regional Water Supply Plan Chapter XII Recommended Final Plan Concept and Implementation Actions
	<i>(to be developed)</i>
4.2 Process	Regional Water Supply Plan Chapter XII Recommended Final Plan Concept and Implementation Actions
	<i>(to be developed)</i>
4.3 Efficient Use of Water	Regional Water Supply Plan Chapter XII Table XII - 1 p. 256
	<i>(to be developed)</i>
4.4 Water Supply Shortages	Urban Growth Management Functional Plan Title 3 Water Quality & Flood Management Conservation: Section 1 to 4 Regional Water Supply Plan Chapter XII Table XII - 1 p. 256
	<i>(to be developed)</i>
4.5 Impacts of Catastrophic Events	Regional Water Supply Plan Chapter XII Table XII - 1 p. 256
	<i>(to be developed)</i>
4.6 Water Quality	Urban Growth Management Functional Plan Title 3 Water Quality & Flood Management Conservation: Section 1 to 4 Regional Water Supply Plan Chapter XII Table XII - 1 p. 257, 269-271, and 275
	<i>(to be developed)</i>
4.7 Economic Costs and Cost Equity	Regional Water Supply Plan Chapter XII Table XII - 1 p. 256
	<i>(to be developed)</i>
4.8 Environmental Stewardship	Regional Water Supply Plan Chapter XII Table XII - 1 p. 257

CQ535

Regional Framework Policy	Implementation Recommendation(s) or Requirements
Water Management (cont.)	<i>All implementation methods to be developed; see Appendix I.</i>
4.9 Growth and Land Use Planning	Urban Growth Management Functional Plan Title 3 Water Quality & Flood Management Conservation: Section 1 to 4 Regional Water Supply Plan
	<i>(to be developed)</i>
4.10 Flexibility to Deal with Future Uncertainty	Urban Growth Management Functional Plan Title 3 Water Quality & Flood Management Conservation: Section 1 to 4 Regional Water Supply Plan
	<i>(to be developed)</i>
4.11 Ease of Implementation	Regional Water Supply Plan
	<i>(to be developed)</i>
4.12 Operation Flexibility	Regional Water Supply Plan
	<i>(to be developed)</i>
4.13 Overall Watershed Management	Regional Water Supply Plan
	<i>(to be developed)</i>
4.14 Water Quality Goals	Urban Growth Management Functional Plan Title 3 Water Quality & Flood Management Conservation: Section 1 to 4 Regional Water Supply Plan Chapter XII Table XII - 1 p. 257
	<i>(to be developed)</i>
4.15 Stormwater Management	to be developed (identified as a next step)
	<i>(to be developed)</i>
4.16 Urban Planning and Natural Systems	Urban Growth Management Functional Plan Title 3 Water Quality & Flood Management Conservation: Section 1 to 4
	<i>(to be developed)</i>

Regional Framework Policy	Implementation Recommendation(s) or Requirements
<i>All implementation methods to be developed; see Appendix I.</i>	
4.17 Water Quality Protection	Urban Growth Management Functional Plan Title 3 Water Quality & Flood Management Conservation: Section 1 to 4 Regional Water Supply Plan
<i>(to be developed)</i>	
4.18 Fish and Wildlife Habitat Conservation Area	Urban Growth Management Functional Plan Title 3 Water Quality & Flood Management Conservation: Section 5

Regional Framework Policy	Implementation Recommendation (s) or Requirements
Natural Hazards	
5.1 Earthquake Hazard Mitigation Measures	To be developed. Refer to Appendix J.
5.2 Flood Hazard Mitigation Measures	To be developed. Refer to Appendix J.
5.3 Landslide Hazard Mitigation Measures	To be developed. Refer to Appendix J.
5.4 Volcanic Hazard Mitigation Measures	To be developed. Refer to Appendix J.
5.5 Wildland-Urban Interface Fire Mitigation Measures	To be developed. Refer to Appendix J.
5.6 Severe Weather Hazard Mitigation Measures	To be developed. Refer to Appendix J.
5.7 Biological Hazard Mitigation Measures	To be developed. Refer to Appendix J.
5.8 Other Hazard Mitigation Measures	To be developed. Refer to Appendix J.
5.9 Natural Disaster Response Coordination	To be developed. Refer to Appendix J.

Regional Framework Policy	Implementation Recommendation(s) or Requirements
Clark County	
Pending	(to be developed)

CQ535

Regional Framework Policy	Implementation Recommendation(s) or Requirements
Environmental Education	
<i>Pending</i>	<i>(to be developed)</i>

CQ535

Regional Framework Policy	Implementation Recommendation(s) or Requirements
Funding & Fiscal Strategy	
<i>Pending</i>	<i>(to be developed)</i>

Regional Framework Policy	Implementation Recommendation(s) or Requirements
Management	
7.1 Citizen Participation	Metro Code Chapter 2.12 2.12.010 Office of Citizen Involvement: Creation and Purpose
7.2 Metro Policy Advisory Committee	see Metro Charter
7.3 Applicability of Regional Framework Plan Policies	pursuant to Oregon Revised Statute 268.380(1)
7.4 Urban Growth Boundary Plan	Metro Code Chapter 3.01 3.01.005 UGB Amendment Procedures 3.01.020 Legislative Amendment Criteria
7.5 Functional Plans	Metro Code Chapter 3.06 3.06.010 Policy & Purpose: Designating Functional Planning Areas see Metro Charter
7.6 Periodic Review of Comprehensive Land Use Patterns	Metro Code Chapter 3.01 3.01.005 UGB Amendment Procedures 3.01.020 Legislative Amendment Criteria
7.7 Implementation Roles	as stated in the Regional Framework Plan
7.8 Performance Measures	Urban Growth Management Functional Plan Title 9 Performance Measures: Section 1 to 2
7.9 Monitoring and Updating	as stated in the Regional Framework Plan

CQ535

Appendices

PORTLAND METRO 2040 GROWTH CONCEPT

The residents of this region have consistently said that the natural beauty here and the comfortable feel of our communities are important to them. One of the most effective ways to protect these assets is by planning for the future. That's exactly the focus of the 2040 Growth Concept, our region's strategy for managing growth. What does 2040 mean? It comes from the idea of planning 50 years ahead - starting from the year 1990.

Policies in the 2040 Growth Concept encourage

- efficient use of land
- protection of farmland and natural areas
- a balanced transportation system
- a healthy economy
- diverse housing options.

Summary

The 2040 Growth Concept is a plan for the future. It includes land-use and transportation policies that will allow the Portland metropolitan area cities and counties to manage growth, protect natural resources and make improvements to facilities and infrastructure while maintaining the region's quality of life.

Adopted by Metro in 1995 with the unanimous endorsement of local government partners, the Growth Concept is designed to accommodate approximately 720,000 additional residents and 350,000 additional jobs in this region. The total population served within this concept is approximately 1.8 million residents within the Metro boundary.

State law requires every city and county in Oregon to have a long-range growth plan that includes using urban land wisely, setting urban growth boundaries, and protecting natural resources. An urban growth boundary (UGB) marks the separation between rural and urban land and defines land that can support urban services such as roads, sewers, and water lines. Keeping development inside the boundary protects farm and forest lands from sprawl.

Mixed-Use Centers

Mixed-use urban centers inside the urban growth boundary are one key to the 2040 Growth Concept. These are higher density centers of employment and housing that are well served by transit to form compact areas of retail, cultural and recreational activities in a pedestrian-friendly environment. Mixed-use centers provide efficient access to goods and services, enhance multi-modal transportation and create vital, attractive neighborhoods and communities.

The Growth Concept uses interrelated types of centers:

- The central city is the largest market area, the region's employment and cultural hub.

- Regional centers serve large market areas outside the central city, connected to it by high capacity transit and highways.
- Smaller town centers with local shopping and employment opportunities within a local market area connect to each regional center by road and transit.

Planning for all of these centers will seek a balance between jobs, housing and unique blends of urban amenities so that more transportation trips are likely to remain local and become more multi-modal.

Open Spaces

Recognition and protection of open spaces, both inside and outside the urban growth boundary, are reflected in the Growth Concept. Open spaces, including important natural features and parks, are important to the capacity of the UGB and the ability of the region to accommodate housing and employment. Green areas on the Growth Concept Map may be designated as regional open space. That would remove these lands from the inventory of urban land available for development. Rural reserves, already designated for farms, forestry, natural areas or rural-residential use, would remain and be further protected from development pressures.

The Concept Map shows some transportation facilities to illustrate new concepts, such as green corridors, and how land-use areas, such as centers, may be served. Neither the current regional system nor final alignment choices for future facilities are intended to be represented on the map.

Implementation

The 2040 Growth Concept sets the direction for implementing policies in Metro's functional plans and the regional framework plan required by Metro's charter. The direction will be refined, as well as implemented, in subsequent functional plan amendments and framework plan components.

The basic principles of the Growth Concept directly apply Metro's Growth Management Goals and Objectives. Separation of urbanizable land from rural land shall be accomplished by the urban growth boundary for the region's 20-year projected need for urban land. Rural reserves are intended to assure that Metro and neighboring cities remain separate. The result is intended to be a compact urban form for the region coordinated with nearby cities to retain the region's sense of place.

Flexibility

The percentages and density targets used in the Growth Concept to describe the relationship between centers and areas are estimates based on modeling analysis of one possible configuration of the Growth Concept. Implementation actions that vary from these estimates may indicate a need to balance other parts of the Growth Concept to retain the compact urban

CQ535

allow jurisdictions the flexibility to adopt a mix of characteristics consistent with each locality and the overall Growth Concept.

For more information, call Land-use Planning at (503) 797-1839, fax (503) 797-1911 or send e-mail to 2040@metro-region.org.

The Portland Regional Framework Plan contains the policies that will direct our region's future growth.

The result of years of work with citizens and governments of this region, the plan provides specific guidelines that city and county governments will use to create and preserve livable communities.

Creating a livable future

If you've lived in the metropolitan area for very long, you know it's a special place. While other urban areas have sprawled, our region has managed urban development so that communities near our central city have not suffered from abandonment and decline. In the last decade, we have funded an ambitious program to maintain, restore and acquire public open spaces, and we are witnessing healthy economies in communities all over the region.

Redevelopment of existing buildings and new development of underutilized land account for about one-third of new development, and mass transit use is increasing at a faster rate than auto use. Things look different here because of our commitment to statewide and regional planning since the late 1960s. The 2040 Regional Framework Plan is intended to extend that legacy into the next century in constructive and inventive ways.

As additional people move into the urban area, the challenge is clear: we must continue our cooperative and participatory approach to growth management if we are to preserve our quality of life. We must approach the issues accompanying growth – traffic congestion, vanishing open space, speculative pressure on rural farm lands, rising housing costs, diminishing environmental quality, demands on infrastructure such as schools, water and sewer treatment plants and vulnerability to natural hazards – within a common framework. Making the connections between these issues will enhance our ability to manage urban growth successfully and ensure a livable future.

A mandate for integrated regional planning

The Metro Charter, approved by two-thirds of the voters in November 1992, establishes growth management as Metro's primary task and requires that a Regional Framework Plan be adopted by Dec. 31, 1997. The charter mandates that the plan address the following:

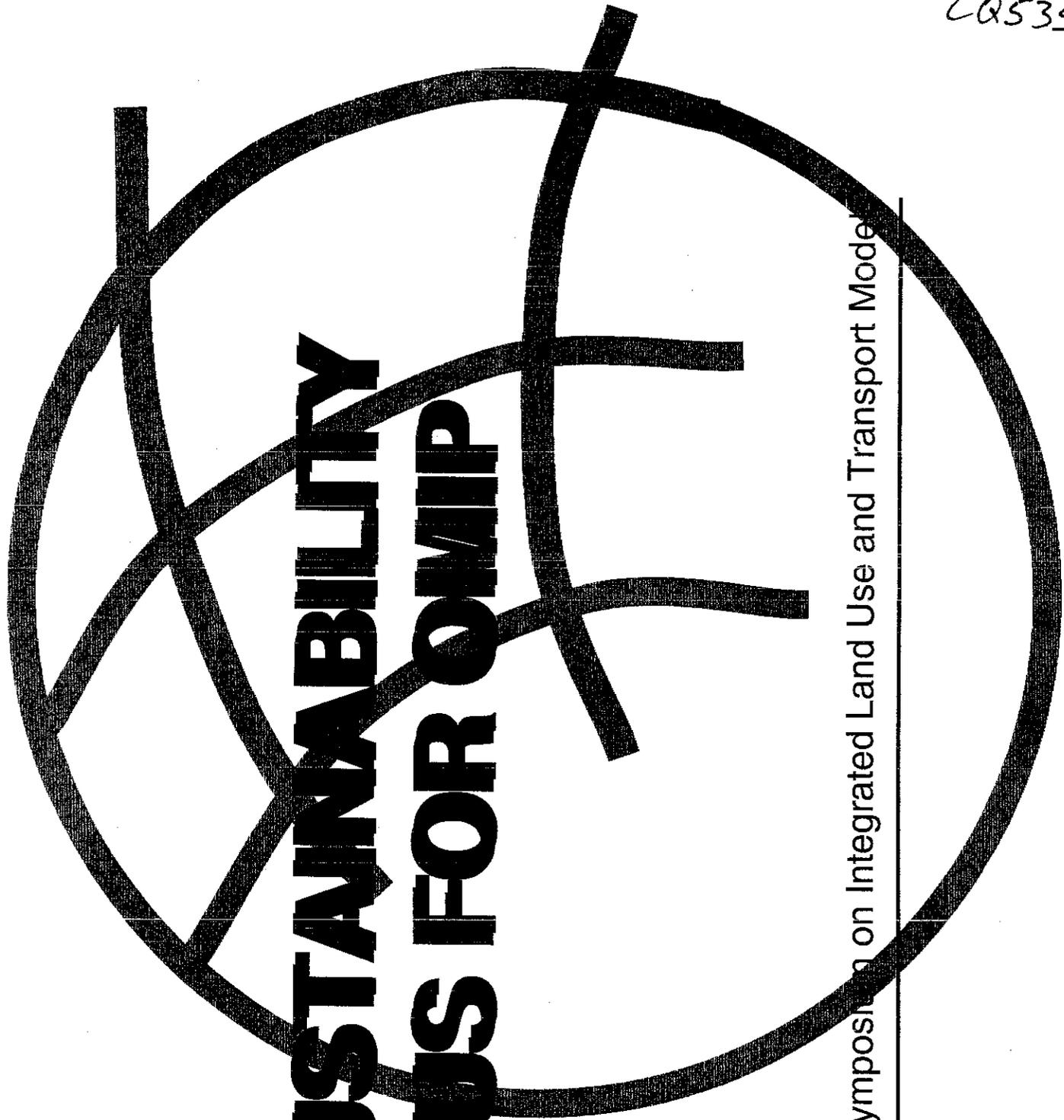
- management and amendment of the urban growth boundary
- protection of lands outside the urban growth boundary for natural resource use and conservation, future urban expansion or other uses
- urban design and settlement patterns
- housing densities
- transportation and mass transit systems
- parks, open spaces and recreational facilities
- water sources and storage
- coordination with Clark County, Washington

- planning responsibilities mandated by state law
- other issues of metropolitan concern.

Adopted on December 11, 1997, the Regional Framework Plan brings together these elements and the contents of previous regional policies to create an integrated framework and to ensure a coordinated, consistent approach. While technically a new document, the Regional Framework Plan incorporates goals, objectives and policies established in existing documents, including the Regional Urban Growth Goals and Objectives, the Greenspaces Master Plan, the 2040 Growth Concept and the Regional Transportation Plan.

For more information, call Land-use Planning at (503) 797-1839, fax (503) 797-1911 or send e-mail to 2040@metro-region.org.

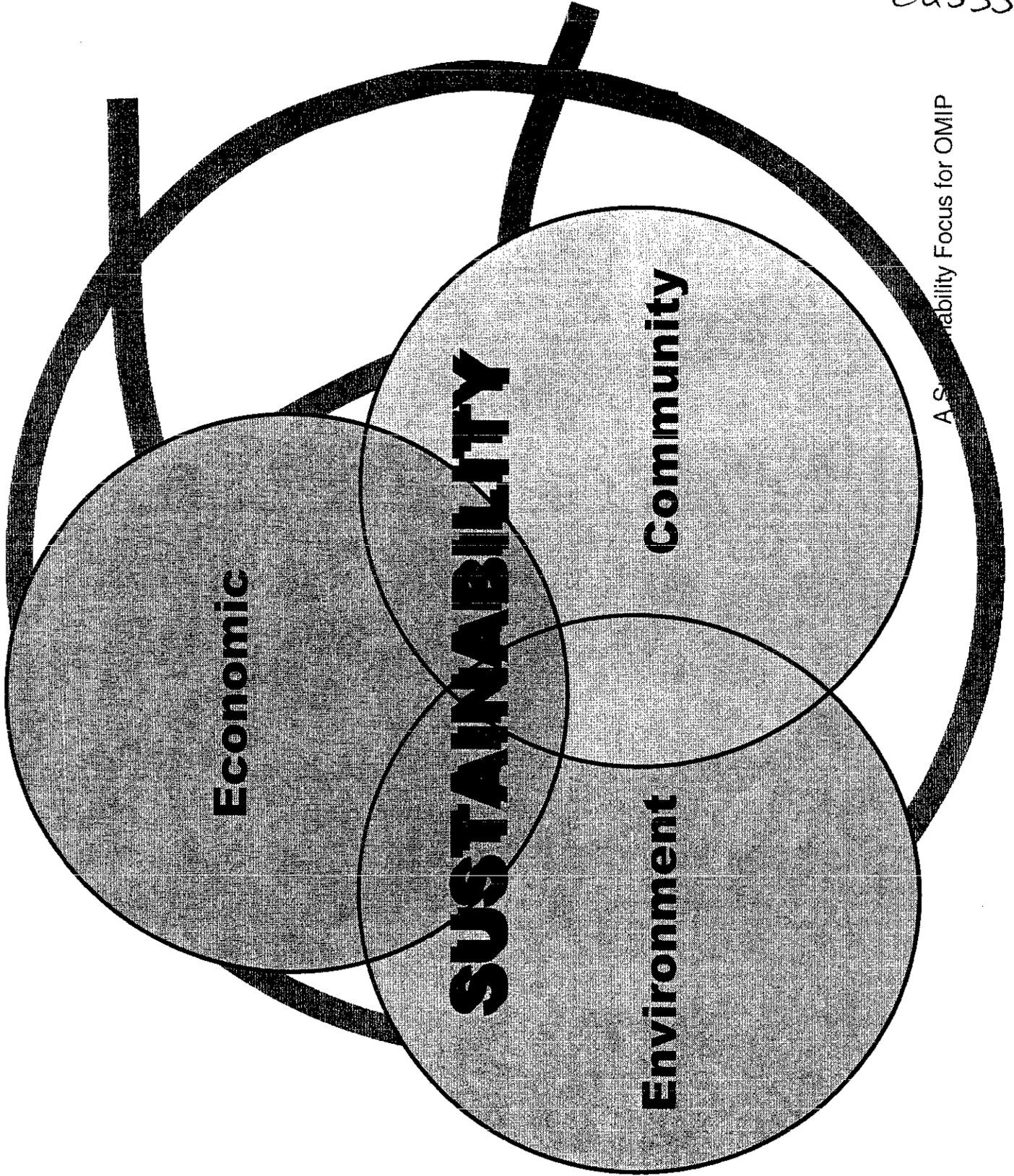
LQ535



A SUSTAINABILITY FOCUS FOR OMP

Third Oregon Symposium on Integrated Land Use and Transport Models

July 24, 2002



Sustainability is really about quality of life - a combination of elements that together produce the richness of place and experience that we associate with Oregon. In order to achieve sustainability, actions need to occur at the community level, in addition to the policy level.

-Governor's Workgroup on Sustainability

A Sustainability Focus for OMIP

CA535

Sustainability means using, developing and protecting resources at a rate and in a manner that ensures people to meet their current needs and also provides that future generations can meet their own needs. Sustainability requires simultaneously meeting environmental, economic and community needs.

- Definition of 'Sustainability'
Executive Order No. EC 00-07

OREGON SUSTAINABILITY

GOALS

- Increase economic viability of communities and citizens
- Increase efficiency
- Reduce releases of harmful substances
- Reduce adverse impacts on natural systems

CQ535

GUIDELINES

- Engage citizens in solutions
- Build private/public efforts
- Integrate new and existing efforts
- Collaborate and cooperate
- Emphasize continuous learning and adaptive management
- Develop systems to supplement traditional regulatory approaches
- Understand the full costs & benefits of actions
- Measure resource use and environmental health
- Establish clear, measurable goals and targets

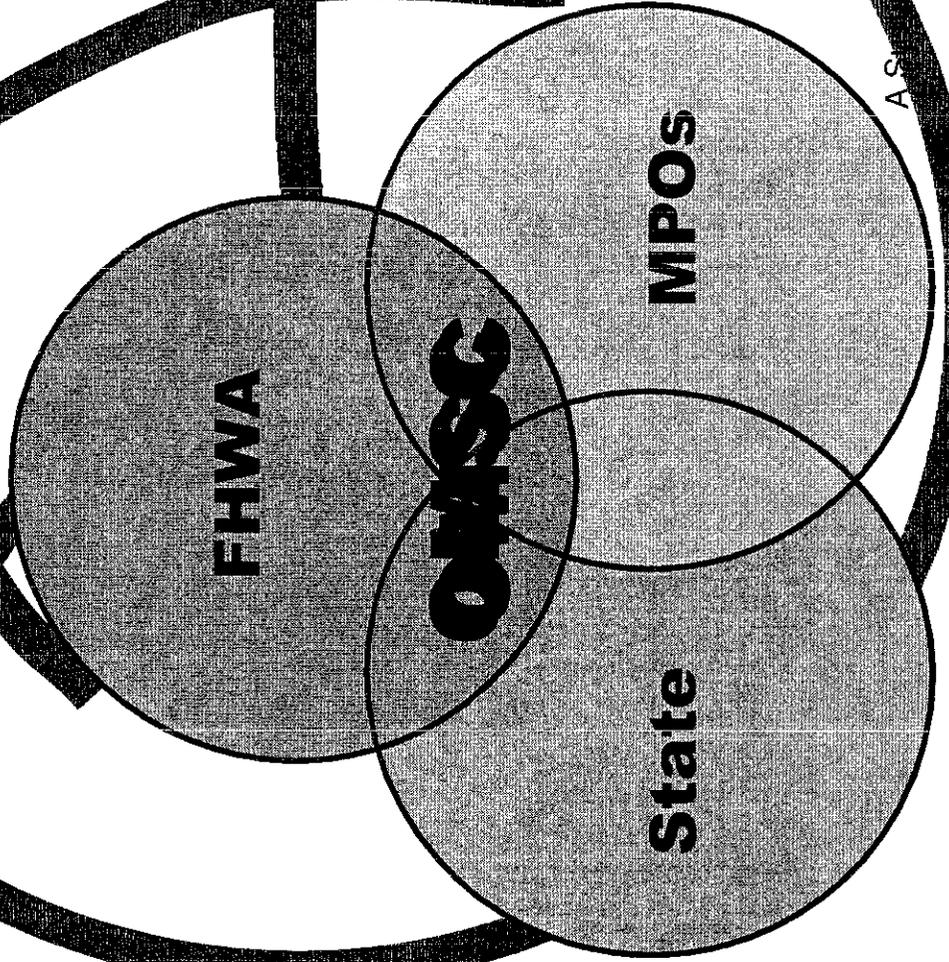
TRADITIONAL AND COST APPROACHES TO COMMUNITY DEVELOPMENT

Traditional Approach	
ODOT	Solutions (Projects/Programs) → Outcomes
BLCB	Solutions (Projects/Programs) → Outcomes
OECD	Solutions (Projects/Programs) → Outcomes
OHCS	Solutions (Projects/Programs) → Outcomes
DEQ	Solutions (Projects/Programs) → Outcomes
Sum of Solutions	
Total Net Outcomes	

Community Solutions Team Approach	
ODOT	GST Process Solutions (Projects/Programs) → GST Outcomes
BLCB	
OECD	
OHCS	
DEQ	
Sum of Solutions	
Total Net Outcomes	

OREGON MODELING STEERING COMMITTEE

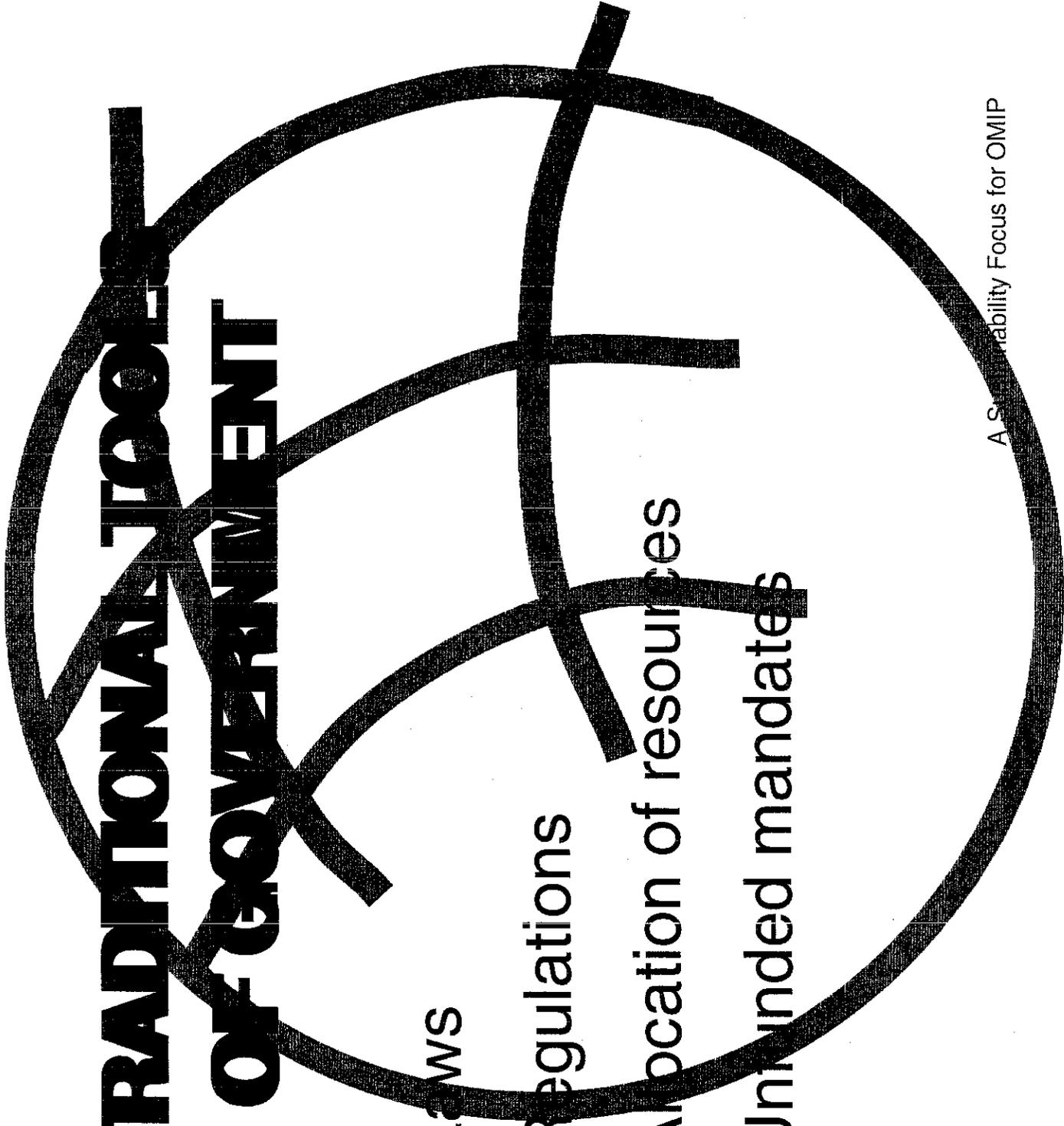
Partnership among federal, state and local agencies and jurisdictions



- CDO
- ODOT
- DEQ
- OECD
- OCHD
- DLCD

- Metro
- MWVCOG
- LCOG
- RVCOG
- Bend
- Cornallis

A Sustainability Focus for OMIP



TRADITIONAL TOOLS OF GOVERNMENT

- **Laws**
- **Regulations**
- **Allocation of resources**
- **Unfunded mandates**

NEW APPROACHES

- Bring people together to solve problems:
 - Especially when the problems are complex
 - Especially when solutions require the participation of many people
- Collaboratively connect agency missions and resolve conflicting roles

INTEGRATED APPROACH

To be meaningful, sustainability requires:

- Recognition of the interdependence of our economic, environmental and community needs
- A way to bring people together to balance these values in practical solutions to problems that are relevant to people at the community level
- Ability to see and evaluate complex interactions and relationships

LIVABILITY AND SUSTAINABILITY ISSUES

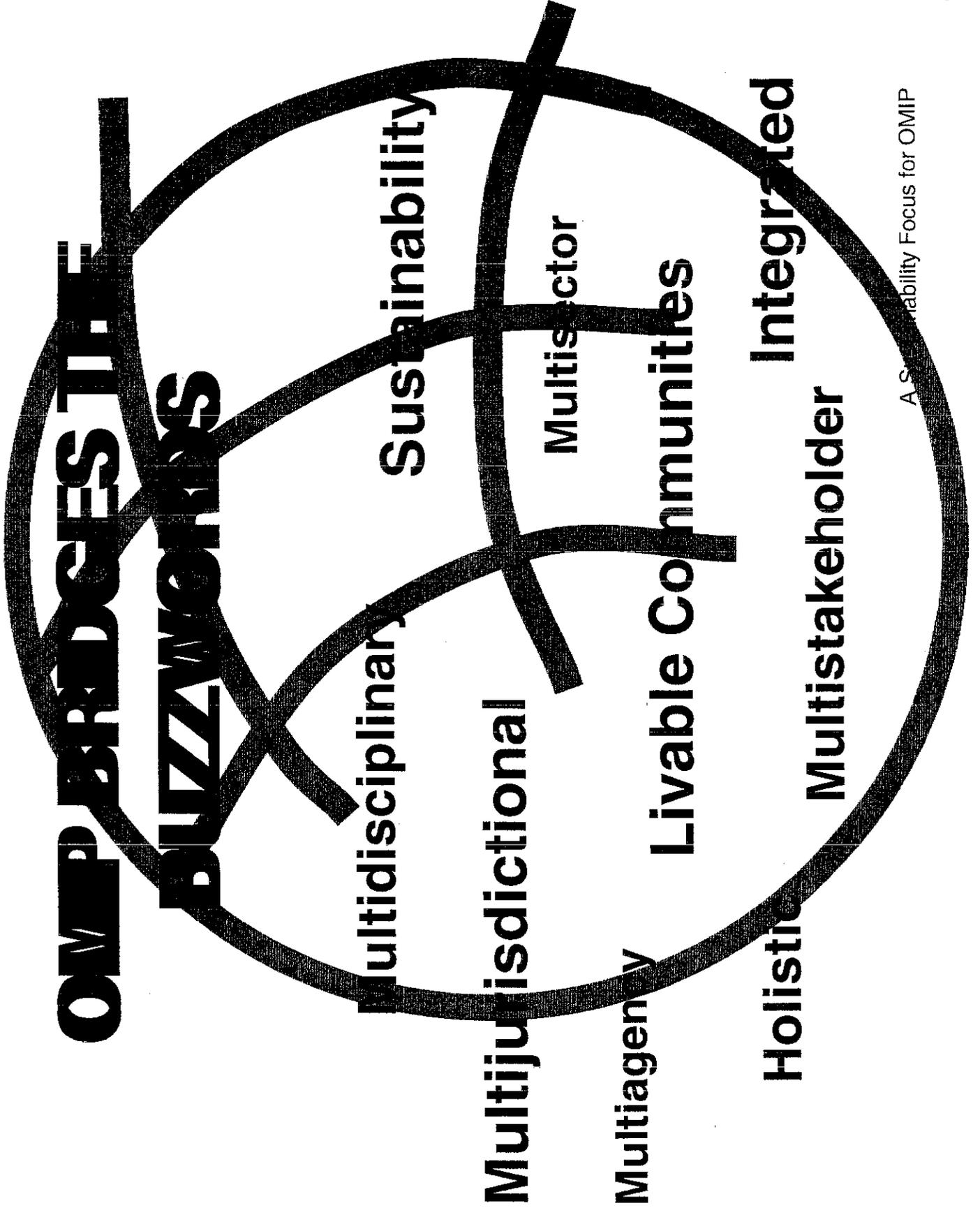
- Benchmark and measure
 - Modeling lets us look at what we want to accomplish and can look at issues interactively
- Support informed decision-making
 - Modeling helps confirm or deny beliefs based on objective data and analysis

LIVABILITY AND SUSTAINABILITY ISSUES

- Addresses conflict between policies
 - Modeling helps us identify tradeoffs
- Policy intent vs. actual outcome
 - Modeling can help quantify probable results of policy actions

OMP INTEGRATES SUSTAINABILITY ELEMENTS

- New ways to think about problems and solutions
- Collaborative planning and work programs - OMSC, CS
- Integrated technical tools - TLUMIP, TRANSIMS, urban/rural models
- Education/Training



OMIP BRIDGES THE

BUZZWORDS

Multidisciplinary

Sustainability

Multisector

Integrated

Multistakeholder

Livable Communities

Multijurisdictional

Multiagency

Holistic

Attachment 4:**Induced Demand and Regional Transportation Models:
Summary of Recent Studies and
Application to Evaluate a Regional Transportation Planning Model**

**Norm Marshall, Smart Mobility, Inc.
Prepared for Environmental Defense
1875 Connecticut Ave NW
Washington, DC**

July 2002

Transportation investments and policies have many impacts and these are often examined using regional transportation planning models. Among the key impacts is induced traffic, which can have a profound impact on air pollution, congestion, and transportation system performance. This paper summarizes recent studies of induced traffic and shows how induced traffic can be measured in a regional travel models to evaluate their adequacy to evaluate the likely future performance of regional transportation systems under different investment and policy scenarios.

DeCorla-Souza and Cohen define "induced demand" as an: "increase in daily vehicle miles of travel (VMT), with reference to a specific geographic context, resulting from expansion of highway capacity."¹ This definition includes both short-term effects and long-term effects. The short-term effects include more trips, longer trips, more auto trips, and auto trips with lower occupancies. The long-term effects follow land use changes caused by expanded roadway capacity.

Over the past several years, a series of national studies have been published quantifying the induced travel effect. The measure used in most studies is *elasticity*, a basic concept of economics. When the supply of a good or service increases, its price drops. When the price drops, consumption of the product increases. For the majority of Americans, the incremental cost of operating cars is low enough that the perceived cost is primarily travel time. An increase in lane miles of road capacity (supply) causes a near-term decrease in travel time (price), which in turn leads to an increase in vehicle miles traveled (consumption).

Elasticity is calculated as the ratio of the change in consumption divided by the change in supply. For example, if a 10 percent increase in vehicle miles traveled is caused by a 10 percent increase in lane miles, the elasticity is:

¹ DeCorla-Souza, P. and H. Cohen. Accounting for Induced Travel in Evaluation of Metropolitan Highway Expansion. TRB 77th Annual Meeting Preprint CD-ROM, TRB, National Research Council, Washington D.C., January 1998.

10 percent / 10 percent = 1.0.

Alternatively, if a 5 percent increase in vehicle miles traveled is caused by a 10 percent increase in lane miles, the elasticity is:

5 percent / 10 percent = 0.5.

Research findings from five studies presented at recent Transportation Research Board Annual Meetings are directly comparable and are summarized in Table 7.

Table 7: Long-Term Regional Elasticity of Vehicle Miles Traveled to Lane Miles

Study	Long-term regional elasticity
Hansen ^{2 3}	0.9
Noland ⁴	0.7 - 1.0
Fulton et. al. ⁵	0.5 - 0.8
Noland and Cowart ⁶	0.904
Marshall ⁷	0.76 arterials, 0.85 highways
Average of five studies (highways)	0.83

Analysis of Regional Travel Model Sensitivity to Induced Traffic. To illustrate how regional travel model performance in measuring induced traffic can be evaluated, we examine the model used in 2001 by the Baltimore Metropolitan Council and compare it to a similar regional sketch model developed in early 2002 for the Vision 2030 initiative in Baltimore.

To determine the sensitivity of the BMC model to induced travel demand effects, two separate model runs were performed using the BMC regional travel demand model. First, the model was run using the BMC 2025 land use scenario and the 1996 highway network. The model was then run again using the BMC 2025 land use scenario with the 2025 highway network. By using the same land use inputs, we can

² Hansen, M. The Traffic Inducement Effect: Its Meaning and Measurement. In Transportation Research Circular Number 481 (Summary of Panel Session at 1997 Annual Meeting of the Transportation Research Board: *Highway Capacity Expansion and Induced Travel – Evidence and Implications*. TRB, National Research Council, Washington D.C., February 1998, pp. 7-15.

³ Hansen, M. and Y. Huang. Road Supply in California. *Transportation Research A*, Vol. 31, No. 3, 1997, pp. 205-218.

⁴ Noland, R. Relationships Between Highway Capacity and Induced Vehicle Travel. TRB 78th Annual Meeting Preprint CD-ROM, TRB, National Research Council, Washington D.C., January 1999.

⁵ Fulton, Lewis M., Daniel J. Meszler, Robert B. Noland, and John V. Thomas. Statistical Analysis of Induced Travel Effects in the U.S. Mid-Atlantic Region. TRB 79th Annual Meeting Preprint CD-ROM, TRB, National Research Council, Washington D.C., January 2000.

⁶ Noland, Robert B. William A. Cowart. Analysis of Metropolitan Highway Capacity and the Growth in Vehicle Miles of Travel. RB 79th Annual Meeting Preprint CD-ROM, TRB, National Research Council, Washington D.C., January 2000.

⁷ Marshall, Norman L. Evidence of Induced Demand in the Texas Transportation Institute's Urban Roadway Congestion Study Data Set. TRB 79th Annual Meeting Preprint CD-ROM, TRB, National Research Council, Washington D.C., January 2000.

determine the effect of the transportation capacity improvements in the 2025 highway network. Table 8 contains the results of the two BMC model runs.

To determine the sensitivity of the sketch model to induced demand effects, two separate model runs were again performed this time using the sketch travel demand model. First, the model was run using the 2030 land use inputs developed for the Vision 2030 Highway scenario and the 1996 highway network. The model was then run again using the 2030 Highway land use scenario with the 2025 highway network. Table 9 contains the results of the two sketch model runs.

Table 8: Induced Demand Sensitivity of the BMC Model

	Vehicle Miles of Travel (VMT)	Lane Miles (LM)
2025 BMC land use with 1996 network	19,323,453	8,514
2025 BMC land use with 2025 network	19,469,459	9,283
% Change	0.76%	9.03%

% Change VMT / % Change LM	0.08
-------------------------------	------

Table 9: Induced Demand Sensitivity of the Sketch Model

	Vehicle Miles of Travel (VMT)	Lane Miles (LM)
2030 Highway Scenario land use with 1996 network	18,757,041	8,514
2030 Highway Scenario land use with 2025 network	19,306,043	9,283
% Change	2.93%	9.03%

% Change VMT / % Change LM	0.32
-------------------------------	------

The elasticity of vehicle miles of travel with respect to lane miles for the BMC model is only 0.08. The elasticity of vehicle miles of travel with respect to lane miles for the improved sketch model is 0.32. Although the sketch model does not capture induced demand to the same degree as the published research, the sketch model gives a much more realistic induced travel demand response than does the BMC travel demand model.

CQ535

This is important that induced demand is properly accounted within the Vision 2030 process, so that the benefits of new roadways are not overestimated. This is also critical in roadway planning, and in estimating air emissions.

For further information, see, Smart Mobility, Inc., *Baltimore Vision 2030: Sketch Travel Demand Model Adapted from the Baltimore Metropolitan Council Regional Travel Model*, Baltimore Regional Partnership, Baltimore, Maryland, April 2002.

CQ535

Envision Utah

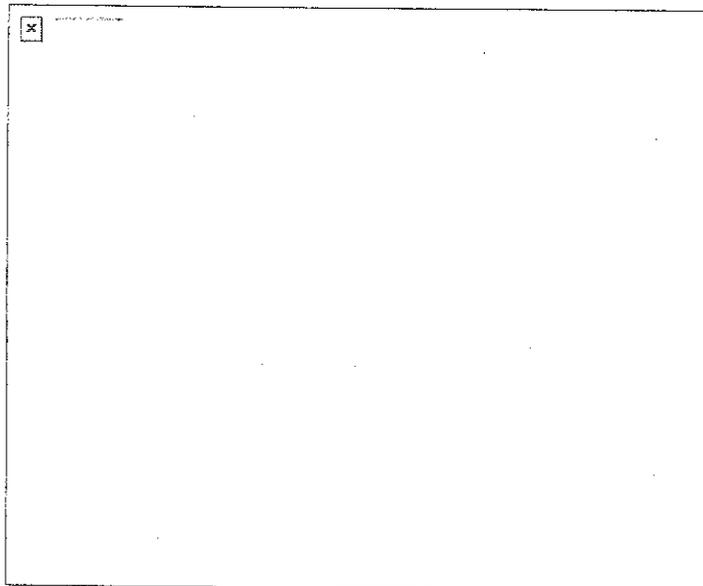
Salt Lake City Region, Utah

Download the project book here:

PCs: [14 MB zipped .pdf file](#)

Macs: [email us for a pdf file](#)

Both require [Acrobat Reader](#)



click on image to enlarge (1 MB)

A Strategy for Efficient and Sustainable Growth. *The Envision Utah process culminated in the development of a Quality Growth Strategy (QGS) for the region that included a toolbox of strategies and policies as well as a preferred development scenario. The composite QGS (at left) was modeled for its impacts on land use, air quality, transportation infrastructure and other factors. The composite QGS represents a compilation of separate "advocacy layers" (below) which together form a complete Quality Growth Strategy.*

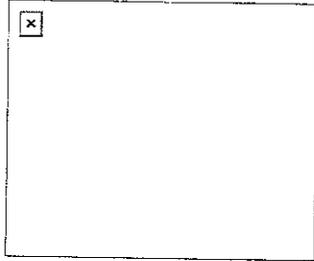
The Greater Wasatch Area in Utah is a region known for its scenic beauty, family-oriented residents, and strong sense of community. Residents cherish their high quality of life and hope that future generations can succeed in the region as they have. However, recent focus on projected growth for the region has highlighted the challenges of maintaining the region's assets in the wake of increasing population and development pressure. Projections show the region growing from 1.6 million residents to more than 2.2 million by 2020 and more than 5 million by 2050. Use of highway infrastructure is expected to increase at an even faster pace, and emissions of harmful pollutants are expected to exceed federal air quality standards.

The Envision Utah project arose out of an effort to educate the public about the issues and consequences associated with this growth and to begin thinking about ways to accommodate growth and maintain the quality of life that today's residents value and enjoy. Guided by a comprehensive study of the values of local residents, the project utilized an extensive public workshop process to develop regional growth strategies and a series of alternative development and infrastructure scenarios for the Salt Lake region.

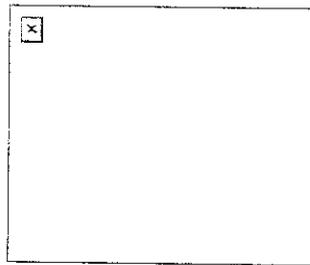
C Q535

Some of the Advocacy Layers that make up the Quality Growth Strategy:

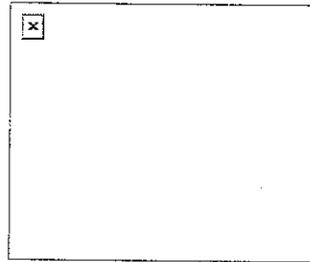
(click to enlarge each image)



Open Space



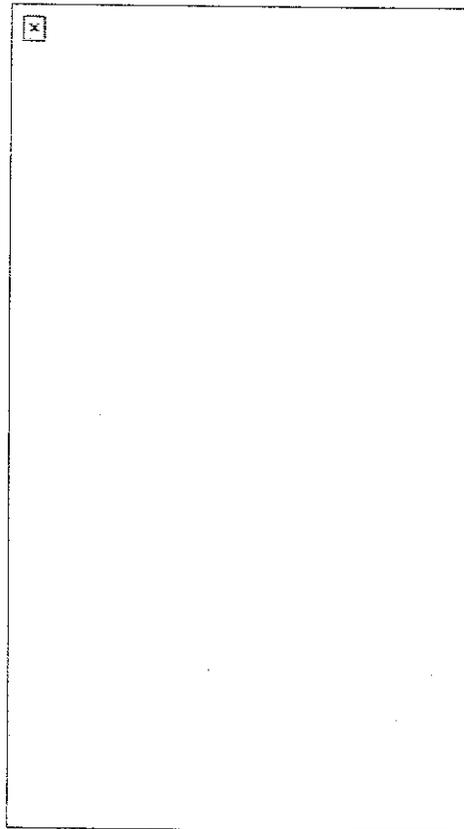
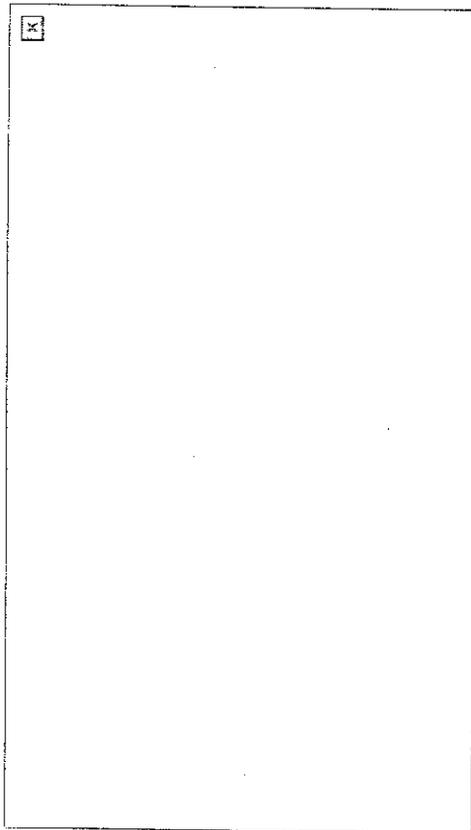
Centers & Corridors



New Growth & Redevelopment

Scenario A: Auto-Oriented

Scenario D: Transit-Oriented



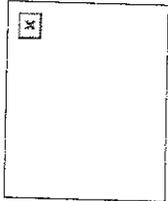
Incorporating input and information gained from more than 75 regional and local workshops, the first phase of the two-year Envision Utah process ended in the release of four regional growth scenarios. The alternative scenarios were created to illustrate the spectrum of ways by which the region could develop, and the varying consequences of different growth and development practices.

The scenarios range from a low-density alternative consisting of predominantly auto-oriented development types (left) to a transit-oriented, higher-density alternative with more compact growth and higher levels of infill and redevelopment (right). A baseline scenario,

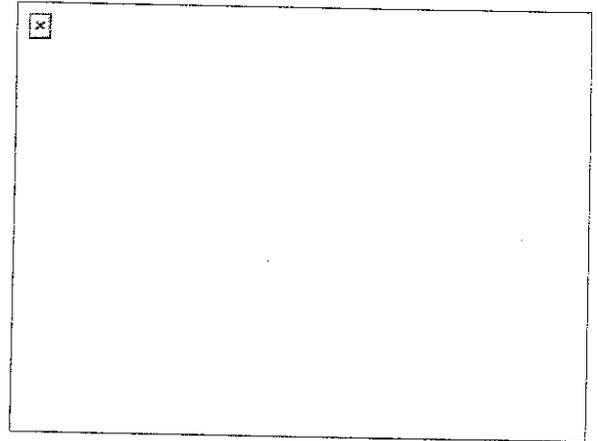
CQ535

representing how the region would develop given current growth patterns, was included as a comparison.

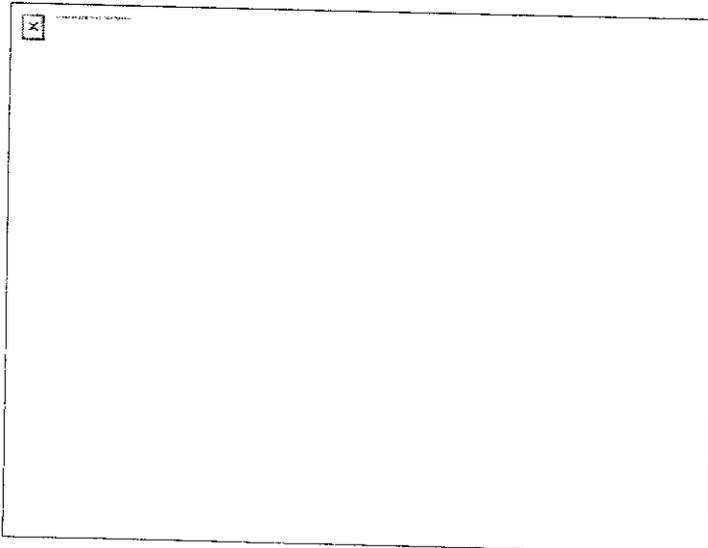
Gray represents already urbanized areas; purple represents new development.



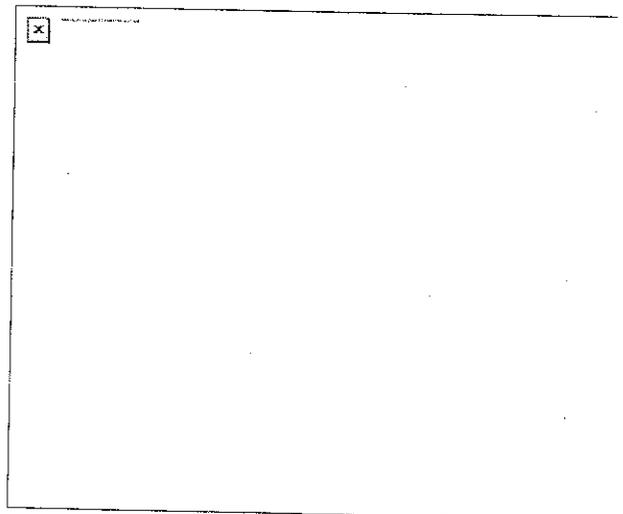
Workshop groups worked on maps to distribute population across the region using a combination of development types, ranging from walkable and transit-friendly downtown, village, and town types, to more traditional residential and large-lot subdivisions, industrial/office parks, and suburban activity centers. Each icon, while occupying the same amount of space on the maps, consisted of varying levels of population and employment. Each group put together their own combination of walkable and non-walkable icons to meet the population requirements for the region.



Infrastructure Costs by Development Scenario



Land Consumption by Development Sc



CQ535

A sophisticated land-use transportation model analyzed the scenarios for their consequences on a variety of factors, including land consumption, housing cost, air quality, and impacts on t and other infrastructure.

CENTER FOR DEMOCRATIC RENEWAL * DEKALB ECONOMIC OPPORTUNITY
AUTHORITY * ENVIRONMENTAL DEFENSE * FULTON/ATLANTA COMMUNITY
ACTION AUTHORITY * GEORGIA COALITION FOR THE PEOPLE'S AGENDA *
RAINBOW/PUSH COALITION * REP. JOHN LEWIS * SAVE ATLANTA'S
FRAGILE ENVIRONMENT * SOUTHERN ORGANIZING COMMITTEE FOR
ECONOMIC AND SOCIAL JUSTICE * SOUTHWEST ATLANTA COMMUNITY
ROUNDTABLE

April 25, 2002

Ms. Gloria Shepherd
Director, Office of Human Environment
Federal Highway Administration
HEPH-1, 400 7th Street SW
Washington DC 20590

RE: Comments on *Transportation Benefits and Burdens in the Atlanta Region*,
March 2002 Draft Report

Dear Ms. Shepherd:

The undersigned members of the Review Panel for the Atlanta Transportation Benefits and Burdens Study have reviewed the study's March 2002 draft report, distributed to us the week of April 8th. We join in recommending the following changes to the draft report, as well as more detailed comments that are contained as Attachment A:

Discuss Legal Requirements to Consider Benefits and Burdens. This report was developed in response to issues raised with the U.S. DOT Secretary about compliance of the Atlanta region with Title VI of the Civil Rights Act. To provide a context for the report and its recommendations, the document should include a discussion of Title VI, environmental justice executive orders, and recent US DOT planning guidance as they pertain to metropolitan transportation planning. A key purpose of this study is to identify gaps in data and analysis systems and steps that can be taken to close these gaps to assure effective implementation of these laws in Atlanta. The study should present this information in ways that might aid consideration of these issues in other metropolitan areas and the formation of national policies supporting progress on these matters.

Offer Substantive Findings and Specific Recommendations for Action by Agencies. The draft report offers some useful substantive findings about the need for better data collection and analysis. These should be strengthened and used to support recommendations for actions by Atlanta agencies to assure better Title VI compliance. U.S. DOT should monitor progress in improving analysis and in reducing disparate impacts through the planning certification process and in considering state and regional transportation plan and program approvals. Areas of concern include adequacy of MPO data collection, data analysis, data integration, transportation network and analysis zone

coding, peak and off-peak transit service representation in transportation models, land activity and zoning data, non-work travel behavior, and consideration of pedestrian environment factors. Improvements to these are needed to assure timely evaluation of accessibility of protected populations to jobs and public facilities, including education and health services, grocery stores, places of worship, and other opportunities. Improved analysis of these factors should be required in the next Atlanta regional transportation plan and program, along with initiatives that assure timely progress to provide equal access for all to jobs and public facilities, without undue time and cost burdens, including for those without cars.

Include Existing Documentation of Transportation Benefits and Burdens for Access to Jobs and Pedestrian Accidents. The report should include the recent ARC analysis showing the percentage of regional employment reachable by transit by income group 2000-2025. This shows that the share of jobs accessible to people without cars will decline from year 2000 levels under the adopted regional transportation plan and not get back to 2000 levels until after 2015. This has important implications for why the analysis of benefits and burdens must be further enhanced for the next regional transportation plan and program. It should also include data showing that in Atlanta, Latinos had pedestrian fatality rates six times that of whites (Centers for Disease Control, "Morbidity and Mortality Report." Atlanta, Georgia, July 23, 1999).

Consider Transit Load Factors and MARTA Service Quality Data. Transit load factors lie at the heart of the landmark *Bus Riders Union vs. MTA Los Angeles* Title VI settlement concerning bus overcrowding. The report should draw appropriate inferences from available MARTA Service Quality Surveys and recommend how these surveys might be improved to support Title VI analysis.

Document Data on Proximity of Populations to Mobile Sources. Recent research has shown a significant increase in cancer risk for those living close to high traffic volume freeways compared to others. This suggests there is a disparate burden to be considered, but the discussion in the report dismisses this with vague assertions about "when controlled for geography or distance from the CBD...much of the differences in effect disappear." But the report provides very little data and no description of the analysis or statistics. These and other data sets developed through the study should be made public to us on CD-ROM.

Recommend Action to Improve Analysis of Travel Costs. The report lacks data, descriptions of analysis methods, and information about what approaches have been used elsewhere that could be used in Atlanta to evaluate transportation user costs. The report should include recommendations for specific actions to assure better data collection and analysis of non-work travel and travel costs as a part of demonstrating Title VI compliance. It should promote the use of econometric data and Bureau of Economic Analysis U.S. Commerce Department county-level data to evaluate household travel costs.

Recommend Action to Improve Transportation Investment Data. The transportation investment data discussion lacks content and provides no data. US DOT should recommend new guidance and regulations to require state and local agencies to report exact locations of projects to better track spending and its effects, and analysis of who uses the transportation facilities and services that are provided. These elements were promised but not delivered in this study.

Conclusions. We are disappointed that the study has not more fully addressed the issues it set out to evaluate. Substantial reasonably available data and methods were rejected by the study team for reasons that were seriously questioned by various members of the study technical and review panels. By excluding these data and methods, the study has significantly limited its scope and utility. This compounds the previous decision by U.S. DOT to exclude from the study several important factors that we believe are critical to an examination of the benefits and burdens of the transportation system in metro Atlanta, particularly problems related to storm water from highways and health impacts of human exposure to air pollution from motor vehicles. Despite these concerns, we believe the final study product could still have significant value if it incorporates the significant revisions we have suggested to focus on findings and specific recommendations for action.

We look forward to working with you as this study moves into the final stages of report clean up, summarization, a final round of review by the study panel, communication to various audiences, and securing a follow-up to the report's recommendations.

Sincerely,

Michael Replogle
Environmental Defense

Congressman John Lewis
U.S. House of Representatives

Sherrill Marcus
Southern Organizing Committee for
Economic and Social Justice

Rev. Richard Bright
Georgia Coalition for the People's Agenda

Pam Bowman
Save Atlanta's Fragile Environment

David Oedel
Mercer University School of Law, Counsel
to the Complainants

Joe Beasley
Rainbow/PUSH Coalition

Terry Allen
Southwest Atlanta Community Roundtable

Al Prude
DeKalb Economic Opportunity Authority

Beni Ivey
Center for Democratic Renewal

Joyce Dorsey
Fulton/Atlanta Community Action Authority

Attachments: Attachment A: Detailed Comments on March 2002 *Transportation*

CA535

Benefits and Burdens in the Atlanta Region

Attachment B: Relative Access to Jobs Declines Under Atlanta
Transportation Improvement Program (TIP) Especially for
People Without Cars

Attachment A:**Detailed Comments on
Transportation Benefits and Burdens in the Atlanta Region,
March 2002 Draft Report****General Comments**

The Report Should Discuss Legal Requirements Related to Consideration of Benefits and Burdens. This report was developed in response to issues raised with the U.S. DOT Secretary about compliance of the Atlanta region with regard to Title VI of the Civil Rights Act. To provide a context for the report and its recommendations, the document should include a discussion of Title VI, environmental justice executive orders, and recent US DOT planning guidance as they pertain to metropolitan transportation planning. This study was not undertaken as an academic or political matter, but because the study might help support more effective implementation of federal law. We suggest this discussion might fit well as a new section somewhere near the beginning. It might include the following text, adapted from the recent US DOT guidance on this subject:

US DOT, state transportation agencies, metropolitan planning organizations, and recipients of federal transportation funds must take additional actions to assure that approvals of metropolitan and state transportation plans, programs, and projects fully comply with Title VI of the 1964 Civil Rights Act (42 U.S.C. 2000d-1) and related regulations, the President's Executive Order on Environmental Justice, the U.S. DOT Order, and the FHWA Order.

Title VI states that "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." Title VI bars intentional discrimination as well as disparate impact discrimination (i.e., a neutral policy or practice that has a disparate impact on protected groups).

The Environmental Justice (EJ) Orders further amplify Title VI by providing that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

Increasingly, concerns for compliance with provisions of Title VI and the EJ Orders have been raised by citizens and advocacy groups with regard to broad patterns of transportation investment and impact considered in metropolitan and statewide planning. While Title VI and EJ concerns have most often been raised during project development, it is important to recognize that the law applies equally to the processes and products of planning. The appropriate time

for FTA and FHWA to ensure compliance with Title VI is during the planning certification reviews conducted for Transportation Management Areas (TMAs) and through the statewide planning finding rendered at approval of the Statewide Transportation Improvement Program (STIP).

This Atlanta-focused study was intended to help assess how, in metropolitan Atlanta, the assessment of benefits and burdens can be enhanced to better support implementation of these laws, to identify gaps in data and analysis systems, and steps that can be taken to close these gaps and assure effective implementation of the law. It offers information that may be relevant to the consideration of these issues in other metropolitan areas and to the formation of national policies that support progress on these matters.

The Report Should Strengthen Lessons Learned with Specific Recommendations for Action by Various Responsible Parties. The lessons learned sections of the report need stronger recommendations on data collection, integration, and analysis requirements to meet Title VI mandates. These should include the following recommendations:

- US DOT should consider how more detailed guidance could enhance the metropolitan planning certification review process to better support Title VI compliance. Areas of concern include assuring fuller evaluation of the adequacy of MPO data collection, data analysis, data integration, highway and transit network and transportation analysis zone coding, peak and off-peak transit service representation in transportation models, non-work travel behavior, and pedestrian environment factors. Enhanced guidance might encourage MPO and transportation agency use of GIS and land activity inventories to evaluate accessibility of protected populations to jobs, public facilities, education and health services, and other opportunities. Such recommendations should be offered specifically in the report for metropolitan Atlanta.
- US DOT should consider additional steps to promote timely adoption in metropolitan planning organization (MPO) unified planning work programs (UPWPs) of transportation model improvements to support analysis of benefits and burdens. Improved network coding is needed in many regions to more fully represent transit system characteristics, including coding of off-peak service networks and greater detail in transportation zones, street networks, and transit networks. This would enable more reasonable representation of all transit routes and stops, and better measures of transit accessibility of jobs, public facilities, education and health services, and other opportunities. Such recommendations should be offered specifically in the report for metropolitan Atlanta.
- US DOT should consider additional steps that might promote development of uniform land use and zoning data bases to facilitate the analysis of housing types, employment locations, and occupancy information to support analysis of transportation benefits and burdens.

The Report Should Contain Key Recent Existing Documentation of the Distribution of Transportation Benefits and Burdens. Specifically, on page 14, at the top of the page, include the ARC data and graphs showing the percentage of regional employment reachable by transit by income group 2000-2025. This provides vital information on the distribution of benefits and burdens in Atlanta that has already been developed. It shows that the share of jobs accessible to people without cars will decline from year 2000 levels under the adopted regional transportation plan and not get back to 2000 levels until after 2015. Such information should not be left to be found only in an obscure technical appendix, but should be recognized as a starting place for this study. It has important implications for why this study was undertaken and why the analysis of benefits and burdens must be further enhanced in the next regional transportation plan and program process. *These data are included as an attachment to these comments.*

Map 4 in the report shows road widening projects during the 1990s and the location of the black population. This map should be complemented by another map showing the location of job growth in the 1990s and the area served by the Atlanta regional transit network in 1990 and 2000. A discussion should reference these maps. A large share of new road investment was made in areas where there was no public transportation. This discussion should note the ARC analysis of changes in the share of jobs reachable by transit for those without a car between 2000 and 2025. This discussion should note that a very large share of job growth 1990-2000 has occurred in areas not served by transit and that this trend is forecast to continue for some years. ARC's data shows the share of regional jobs reachable by people without cars in metro Atlanta will not get back to 2000 levels until after 2015 under the adopted regional transportation plan.

The report should include ARC Figure 5.21 "Average Congested Time by Income Group" from page 5-37 of the ARC's May 1999 *Regional Transportation Plan Needs Assessment Report*. This too is important information on the distribution of benefits and burdens in Atlanta that has already been developed. It shows that high income travelers experience substantially less congestion than moderate and low income travelers and that various transportation plans under consideration will exacerbate this inequality in distribution of benefits. Comparable figures from later ARC reports might be considered as well.

The Report Should Press Strongly for Timely Analysis to be Made in Evaluating Access of Those Without Cars to Public Facilities. On page 26, this report seeks to excuse inattention to the many available commercial and non-commercial data sources on the location of schools, medical facilities, churches, and shopping centers that could be of great value in assessing accessibility to opportunities for those without cars. These data need to be integrated with government mobility data sets, like the ARC transportation model. Analysis is needed to characterize the quality of the pedestrian environment around such opportunities and activity centers, since transit access without a safe and attractive pedestrian environment still leads to effective denial of access. The report should not blame community groups in Atlanta for a lack of understanding of "what constitutes an important activity center for specific populations such as a minority or ethnic group or people living in poverty." The community has known this information for decades, but the

planning agencies continue to ignore this information in doing analysis of accessibility. This is a shortcoming in meeting the demands of Title VI of the Civil Rights Act.

The Report Should Recommend Specific Actions to Assure Timely Analysis in Atlanta of Transit Load Factors as an Indicator of Benefits and Burdens. Transit load factors are not just of interest to engineers. They lie at the heart of the *landmark Bus Riders Union vs. MTA Los Angeles* Title VI settlement concerning bus overcrowding.

Yet on page 28, the draft report notes merely that "On-going on-board transit survey may assist in determining current load factors and developing projections of transit use." The report fails to present any information about transit load factors. Has MARTA analyzed load factors in its system? Can this information be displayed against system demographics? What other information is available in the MARTA on-board survey that could inform the analysis of benefits and burdens? Will MARTA and ARC commit to doing an analysis of this data to inform the next TIP update? The report should discuss these matters.

The Report Should Consider What Inferences Can be Reasonably Made from the MARTA Service Quality Surveys. The report on page 29 avoids presenting any information from these surveys, and instead offers non-supported assertions that there are "questions of statistical confidence from a limited number of data points." At a minimum, some cross-tabulated information from these surveys can be presented along with appropriate statistical measures of confidence to allow the reader to draw inferences and to make their own judgements about reliability based on sample size, etc. What should be done to improve the collection or use of these surveys to better support Title VI analysis in Atlanta?

The Report Draft Does Not Provide Critical Information or Data on Proximity of Populations to Mobile Sources. The report says on page 31 that it used several different measures of proximity of people with respect to highway mobile source emissions, but provides no information or data or description of the analysis. The report does not discuss what specific data were evaluated. The study team had earlier agreed to evaluate the characteristics of the population within various distance bands from freeways by various traffic density levels. The analysis appears to be limited to looking at population within ½ mile of major freeways by race. It would appear from this that minorities are much more likely to live within ½ mile of major freeways than whites or the general population. The raw numbers need to be statistically evaluated.

Recent research by the South Coast Air Quality Management District in California, and others, has shown a significant increase in cancer risk for those living within 1 mile of freeways carrying over 200,000 average daily traffic compared to those living farther away or near lower volume roads. This suggests there is a disparate burden to be considered, but the discussion in the text dismisses this with vague assertions about "when controlled for geography or distance from the CBD...much of the differences in effect disappear." But where is the data and statistical analysis?

This is a critical section of the report on which there was much discussion of methodology throughout the study development. Given the paucity of the discussion of the results of this work in the draft, we request the opportunity to review and comment on a revised draft of the report prior to its final production.

The Report Fails to Include Recent Credible Atlanta-Focused Pedestrian Safety Research Relevant to Burdens Analysis. This study neglects a key source of information on pedestrian benefits and burdens: county-level hospital admission data, which usually includes ethnicity of pedestrian accident victims. There is recent relevant, credible, Atlanta-focused research by CDC on this subject that should be summarized and included in this report, along with other relevant studies. *Mean Streets 2000*, published by the Surface Transportation Policy Project (available to download at www.transact.org), notes that:

“Some ethnic groups may also be at higher risk [of pedestrian accidents]. While national statistics are not available, several local studies point to a problem. An STPP study of California pedestrian safety found that a high proportion of pedestrian deaths and injuries in those under 20 years old were young Latinos or African Americans. In 1996, Latino children represented 38.5 percent of the total population of children in California, but they were involved in 47.9 percent of all child pedestrian incidents (fatalities and injuries). In 1996, African American children comprised 7.8 percent of the total population of children in California, but were involved in 14.2 percent of all child-related pedestrian incidents.(6) The Latino Issues Forum attributed the discrepancy to the higher level of walking among Latinos, even though they often live and go to school in areas where walking is difficult and dangerous.(7) **The Centers for Disease Control reported recently that in Atlanta, Latinos had pedestrian fatality rates six times that of whites.(8) [Emphasis added]** Latino groups in Atlanta are pushing for better pedestrian facilities along a major seven-lane road where many pedestrians have died.(9) A survey in suburban Washington, DC also found that Latinos were disproportionately represented in pedestrian deaths.(10)” [Sources: 6. Surface Transportation Policy Project, "Caught in the Crosswalk." San Francisco, Calif., September 1999. 7. Ibid., 8. Centers for Disease Control, "Morbidity and Mortality Report." Atlanta, Georgia, July 23, 1999. 9. Joey Ledford, "Buford Highway Fixes Sought," *The Atlanta Journal Constitution*, 17 May 2000. 10. Sylvia Moreno, "Fatalities Higher for Latino Pedestrians," *The Washington Post*, 27 August 1999.]

Instead, on page 35, par. 4, the draft report says that “The study assumed that people who are walking (other than those in commercial areas likely are near home and, therefore, are representative of people the live nearby to some extent. Without a better understanding of local walk trips this is a heroic assumption.” This assumption is not heroic, it is simply wrong. Many low income people walk in high income neighborhoods where they are employed as housekeepers, nannies, service workers, or office maintenance workers. The description of crash and injury data available on page 36, should be revised to reflect the data that are really available and the government and non-governmental studies that have

already been done of pedestrian safety and revealed significant disparate impacts on minority populations in the Atlanta region.

The Report Should Recommend Actions to Improve Analysis of Travel Costs. The analysis of travel costs starting on page 38 is very deficient, lacking in all data or descriptions of analysis methods. It does not even provide much useful information about what approaches have been used elsewhere that could still be used in Atlanta by ARC or GRTA or others to evaluate transportation user costs. This methodology appraisal should include a discussion of the report, *Efficiency and Fairness on the Road: Strategies for Unsnarling Traffic in Southern California*, 1994, Environmental Defense, which analyzed the equity impacts and transportation spending by different income groups.

This section of the report should include recommendations for specific actions that are needed to assure better data collection and analysis of non-work travel and travel costs as a part of demonstrating Title VI compliance. The study should promote the analysis of Bureau of Economic Analysis U.S. Commerce Department county-level data to evaluate household travel costs, rather than rejecting this as useless. This is especially of value given the sharp differences in county-level ethnic and racial composition in the Atlanta region, which make such comparisons a valid first level of analysis using summary statistics and discussion.

Econometric data that infer a value of time to evaluate travel costs are essential to understanding this subject in a review of benefits and burdens. It is unfortunate that the study has rejected the use of such information here, and this should be noted as an area for future work by ARC and GRTA and others.

The transportation investment data discussion is also disappointing, in that no real data is provided in the report. US DOT should recommend new guidance and regulations to require state and local agencies to report exact locations of projects to better track spending and its effects. The report states without judgement or recommendation for change that, "Fund data includes the name of the County but does not include exact location information, which makes it difficult to assess how well the State uses federal grants to respond to travel needs." Assuring Title VI compliance demands that this be subject to a timely remedy.

Other Specific Editorial Suggestions and Comments

Page 12, par. 2: This section on the "Relationship between History and Current Environment" should note that race played a major role in shaping transportation investment and growth. As now drafted, this section is bloodless, unlike the history section, or the history itself. As those who fail to understand history are destined to repeat it, we urge you to breathe some life into this report discussion!

Page 12, par. 5: Modify language as follows: "Preliminary findings from the study suggest that we ~~do not~~ have not yet developed, collected, or analyzed appropriate data the- ~~tools~~ to answer all of the questions that were asked."

Page 14, par. 5: Revise text to read, “Since ~~no one~~ federal, state, regional, and local transportation agencies had not asked the questions about transportation benefits and burdens before, the data and analytic techniques to answer the questions were never developed.” Citizen groups in Atlanta have been asking the questions for years but their voices have too not been heard or respected.

Page 16, par 3: Add several sentences describing how iterative proportional fitting and sample enumeration techniques have been used to develop synthetic population data for other metropolitan areas, including Los Angeles, San Francisco, San Diego, Sacramento, Seattle, Chicago, Portland, Dallas, and Baltimore, to develop more effective measures of how travel behavior and benefits and burdens vary among different subgroups. Reference the November 1996 study, *Transportation Pricing Strategies for California: An Assessment of Congestion, Emissions, Energy, and Equity Impacts*, by Elizabeth Deakin and Greig Harvey, available from its publisher, the California Air Resources Board, which contains extensive discussion about development and application of such techniques to various cities.

Page 19, par. 3: The report states, “The study attempted to determine who used the projects (transit riders and drivers for the capacity projects).” While this was an important objective of the study, it appears that no such information was developed. The report should at a minimum discuss the methods that were previously agreed upon by the study sponsors in discussions with stakeholders as appropriate for such an assessment. These included an income-stratified trip assignment on the ARC transit and highway networks to evaluate the share of traffic on facilities and transit routes that is low income vs. high income. With such analysis, the attributes of these travelers trips (average delay, average speed, average trip length) could be calculated and compared. Why was this analysis not performed? Will ARC agree to perform this analysis using their existing models and methods as part of the next TIP update?

Page 19, par. 5: The report states that, “As part of TEA-21, Congress included a requirement to track projects that are completed in urban areas. However this study did not have the benefit of this information. The study also identified difficulties in compiling information about completed projects.” Why was this TEA-21 requirement not fulfilled? What steps is US DOT taking to assure that states and MPOs, including authorities in the Atlanta region, produce this information? The report goes on to state, “where the RTP identifies significant projects that benefit specific groups, it would be useful for planners and people responsible for project implementation to create a mechanism to track these projects from planning through construction.” Is there need for additional regulatory action to assure compliance with TEA-21 reporting requirements? Can DOT fill this gap with guidance in the meantime?

Page 19, par. 6-7 and Page 20, par. 1-5: It would appear that regulatory requirements are needed to assure that location information for projects, including digital information for existing facilities, is available for 100% of projects in TIPs and RTPs, including local and

state projects, so that these can be evaluated in considering benefits and burdens. The report states that the study did not use any sources from non-governmental organizations "because the study was not able to assure the accuracy or completeness of the data." Yet we know from the surrounding discussion that state, local, regional, and federal agencies often produce data that is incomplete and inaccurate, and it has been used in this study. The report should make use of all credible available data sources, regardless of whether they are governmental data sources.

Page 21, Table 2A: MARTA Bus Stop Access Demographics: This table needs to be discussed in the context of changing proximity of jobs and public facilities to transit, not just changing proximity of population to transit. It would be of value to show also the number of square miles of land area considered to be within one-quarter mile of MARTA bus stops in 1990 vs. 2000. Is the change in population proximity due to a significant change in transit service area or population shifts? At a minimum, the report might seek to reproduce available regional transit service maps for 1990 and 2000 or nearby years so readers can see how the system grew in that time period.

Page 22, Table 2B: This table is confusing in its labels. What exactly is being shown in each section of the table? The report should put the cell values into declarative sentences that help explain their meaning to the reader at once.

Page 22, par 1, 2 and Page 23 bullet 2: The statements here are substantial understatements of the real social and economic impacts of denying adequate transit services to low income communities. The language used is likely to be a turn-off for readers. We encourage the report to not be quite so bloodless or focused on stating the obvious in these statements.

Page 23, 3rd Set of Bullets: Will Cobb County and ARC or GRTA collaborate to georeference accurate information about the position of bus stops to fill the identified data gap? US DOT should call for this in the report.

Strengthen the language in bullet 3. Hours of transit service should be a focus of attention for consideration of benefits and burdens analysis. Effective analysis of when and where transit goes, and how often and how well, should be part of MPO and transit agency planning to meet Title VI requirements.

Regarding last bullet, include in the report a information from the MARTA Annual Quality of Service Surveys that pertains to access to transit and access to private vehicles. What do we know from that survey? Include a sidebar in report about analysis of true walking distance to transit stops and how it can be analyzed, rather than just referencing website for information.

Page 24, par. 4 and Page 26, par.4: The report should offer recommendations for how the State Department of Community Affairs might modify the format of the data in their Regional Development Information System to better support GIS analysis. What would be

the benefits of this? Is this something GRTA or ARC can address through interagency cooperation? What would be the cost and time to address this need? Will this be put into the next ARC Unified Planning Work Program?

Page 25, Table 3: This table needs to be discussed in the text. What factors lead to such a radical difference between transit use by race (e.g., 2% transit mode share among white 0-car households with incomes over \$20,000 vs. 65% for similar black households)? Can you relate where these households are located vs. the transit network?

Page 27, par. 3: This paragraph in the report states that, "Work data could be used as a surrogate of actual travel patterns," and ends, "Unfortunately, there is no evidence to make these assumptions." The final statement is correct, and thus this paragraph should be rewritten or dropped from the report. It is worth noting that low income people engage in much higher levels of informal work, which is underreported in travel surveys of work trips and that non-work travel bears little resemblance to work travel.

Page 27, par. 4: This paragraph discusses potential use of data from social service agencies to assess travel patterns. The report should recommend better coordination between transportation planners and social service agencies to enhance understanding of the travel needs of low income and minority communities. Was any research done as part of this study to appraise data availability? barriers to data sharing? prior efforts at cooperation? Initiatives related to welfare-to-work programs, reverse commute programs? US DOT and HHS several years ago engaged in efforts to better coordinate social service transportation programs with public transportation initiatives. Does this offer any lessons for Atlanta area agencies and for the analysis of benefits and burdens?

Page 28: The first and 7th paragraphs discuss transit load factors. e.g., "On-going on-board transit survey may assist in determining current load factors and developing projections of transit use." Has MARTA analyzed load factors in its system? Can this information be displayed against system demographics? What information is available in the on-board survey that could inform the analysis of benefits and burdens? Will MARTA and ARC commit to doing an analysis of this data to inform the next TIP update? This is not just a technical analysis, but indeed lies at the heart of the MTA Los Angeles Title VI settlement concerning bus overcrowding.

In paragraphs 3-5 on page 28, it is important to change 'could' into 'should' and 'can' into 'must'. e.g., "~~Having a~~ A better understanding of travel time across modes ~~can~~ must be developed to assist in articulating travel choices to the public and assessing the impacts of planning scenarios on different groups in terms of changes in access to opportunities and public facilities. ~~reducing commute time spent in congestion.~~

Page 30: The discussion of population proximate to bus transit yards is difficult to judge, because there is no data presented to evaluate. Are the three yards comparable in race and income characteristics within a ¼ mile, ½ mile, and 1 mile radius? Where's the data?

Page 30, final paragraph: Modify the sentence, “A number of recent studies have demonstrated that raised issues about how exposure to motor vehicle emissions can contribute or to onset of asthma and exacerbates asthma, which is more prevalent among minority populations.” It would be valuable for this report to summarize these reports – two recent papers in the *Journal of the American Medical Association*, and one in the *Lancet Journal* - in a sidebar. e.g., Rob McConnell, et.al., “Asthma in Exercising Children Exposed to Ozone: A Cohort Study”, *Lancet Journal*, February 2, 2002, vol. 359: 386-91, is available at www.thelancet.com

Page 31, par. 1-2: Omit the part of the first sentence that blames high ozone on topology and climate. It's the cars and Atlanta does not have mountains to trap air. Insert in the sentence: “Other air pollutants linked to human health effects include particulates and ozone precursors, including many hazardous air toxics, like benzene, which are emitted by cars and trucks, both All of which these have been studied in relation to asthma.”

Page 32, final paragraph and page 33 top: The study discusses and rejects consideration of state maps of where noise walls are located because these maps are not geo-coded and checked against project-level engineering drawings or field checked. This is too high a standard to talk in considering whether to evaluate information to consider benefits and burdens. Similarly, the study does not analyze the equity of distribution of where noise walls were built because the locations were selected based on Congressional earmarks. Yet the information is simple and graphical and can be overlaid on maps showing Census block demographic characteristics of adjoining areas. This simple task should be completed with the information already in hand, rather than doing this verbal hand-waiving. What kind of people live close to the noise walls?

Page 33, par 2-7: US DOT should consider additional steps that might promote development of uniform land use and zoning data bases to facilitate the analysis of housing types, employment locations, and occupancy information to support analysis of transportation benefits and burdens. US DOT should consider mandating the collection and uniform reporting of real estate takings information to facilitate timely analysis of the distribution of these impacts on affected communities and should mandate analysis of actual outcomes, not just potential outcomes. What were the demographic characteristics of people affected by takings of residential and business properties? How satisfied were these individuals with their compensation? Were they satisfactorily resettled? How well did the businesses and families survive the experience?

Page 35, par 1: This is very convoluted tortured prose. Can you put this into terms that will be interesting and meaningful to ordinary people?

Page 36, par. 4: The study notes that “we found very few 0-car households in the 1990 CTPP for Atlanta and even fewer 0-car white households.” This highlights a point the study should draw, but does not: that the census undercounting misses a disproportionate number of low income and minority households and individuals, and that this is even more true of the National Personal Transportation Survey, which is telephone based. Without

substantial over-sampling of low income household types, and re-weighting of under-sampled populations when these data are used for model development and many kinds of analysis, these data sets contain a major bias towards higher income travelers and car users, while understating the incidence of transit use, walking, and bicycling. The study should recommend appropriate statistical adjustment of CTPP and NPTS data for Atlanta and elsewhere to address this sampling bias.

Page 40: The discussion of "Next Steps" should summarize preliminary recommendations for actions by the ARC, GRTA, GDOT, and US DOT. It should note actions that will be considered in the next ARC planning certification review process, recommendations for US DOT guidance and regulatory development, and ways to enhance Title VI compliance reviews.

In paragraph 3, "Potential Improvements" should be changed to "Necessary Improvements to meet Title VI standards." The list of better modeling of transit systems in the regional transportation plan elements should be expanded to include more detailed zones, route descriptions and attributes, land use and zoning data. These should be subject to progress monitoring in the next planning certification for ARC and to comments on each annual Unified Planning Work Program (UPWP) update by ARC.

The report should also recommend timely work by ARC and GRTA to develop and apply sample-enumeration based analysis methods for Atlanta as soon as 2000 CTPP data is available. This is vital to better evaluating the distribution of transportation benefits and burdens and to complete more of the work that was originally envisioned to be part of this study.

CR535

Testimony

**Committee on Environment and Public Works
U.S. Senate**

“Project Delivery and Environmental Stewardship”

By

**Charles Hales
Transit Planning Principal,
HDR
Portland, Oregon**

CQ535

**Testimony to
Committee on Environment and Public Works
U.S. Senate**

“Project Delivery and Environmental Stewardship”

September 19, 2002

By

**Charles Hales
Transit Planning Principal,
HDR
Portland, Oregon**

Mr. Chairman, members of the Committee on Environment and Public Works. My name is Charles Hales. I am the Transit Planning Principal with the engineering firm of HDR in Portland, Oregon. HDR is a member of the American Council of Engineering Companies, and supports their efforts to improve project delivery. I am pleased to testify today as a former elected official and as a principal of HDR. In both of those capacities, I have worked collaboratively with a broad coalition of environmental and smart growth organizations. Some of them have endorsed my testimony here today and have supplied supporting materials for the points I will make here; those include: The Surface Transportation Policy Project, Environmental Defense, The Sierra Club, The National Coalition to Defend NEPA, Defenders of Wildlife, the Natural Resources Defense Council and the Southern Organizing Council for Economic and Social Justice.

Thank you for this opportunity to advise you on your work on federal policy affecting transportation project delivery. In both my public service as Portland’s Transportation Commissioner and in my role now in the private sector, building public works - particularly transportation projects – has been and is the focus of my work.

Twelve years ago, I was working in the development and construction industry. In 1991, I made the decision to and run and was elected to the office of Portland City Commissioner. I did so because I believed that Portland was about to experience a major wave of growth and change, and I wanted to help steer our course through the perils and opportunities that growth brings. As it turned out, I was correct in that prediction; Portland boomed in the ‘90’s, and I was involved in the construction of over \$2 billion worth of infrastructure. I’m happy to report that we have grown well. Money Magazine and others share my opinion when they call us America’s Most Livable City.

My experience might prove instructive as you consider issues involved with the reauthorization of the Transportation Equity Act for the 21st Century (TEA-21), and ideas for “streamlining” the planning process required under this law or the National Environmental Policy Act (NEPA). What we have found is a set of principles that have been validated in project after project:

- (1) **Public works projects are “place-makers.”** This is true whether the project is a highway, a transit line, a park, a community center, or a police station. To pretend otherwise is...well, to pretend. When we build a freeway interchange or light rail line, we exert a massive influence on the character and destiny of the land around the project. A lot of unlovely places have been created and a lot of infrastructure money wasted by ignoring this principle. Suburban sprawl results from the compartmentalized, rather than the integrated approach to land use and development planning in one realm, while the provision of public works happens in another. In an era when infrastructure dollars are limited (actually, is there ever a time when this *isn't* true?) and quality of life is the most important driver of local economic development, designing projects which support the “place” is the only prudent investment strategy for public funds. The alternative strategy, and one, which is far too common, is building public works projects, and letting the “place” spontaneously develop around them. Sprawl, congestion and other unintended consequences are the predictable result.
- (2) **Land use planning must lead project engineering.** The “purpose and need” stage of NEPA is applied common sense. Before we build a project, we need to ask what our goals are and how a proposed “improvement” will advance those goals. We need to honestly consider all the alternatives. We need to examine the consequences and side effects of the proposed improvement. If we don't we will not leverage the benefit of the infrastructure investment as we should, and we will likely create problems that will be worse and more expensive to solve than the one that we just “solved.” The classic example of this phenomenon is the much-repeated fallacy of the past fifty years: expanding highways to alleviate traffic congestion. We don't need to be subtle about this issue anymore: building highway capacity without integrating transportation planning and project design with regional and local land use planning is counterproductive.

Lewis Mumford warned us more than fifty years ago when he said, “Americans will soon have every facility for moving around the city, and no reason whatsoever to go there.” Transportation investments which serve a well-thought-out land use plan pay dividends; those which take an engineering-only approach cause terrible side-effects or at least, don't perform very well or very long. My company summarizes the integrated approach in three words: community, mobility and environment. It is sound public policy to respect all three.

- (3) **Bring all stakeholders and points of view to the table.** As I mentioned, I've built a lot of infrastructure and now, as a principal with HDR, I look forward to being involved with building a lot more. For those projects to succeed, all who have a stake in them must inform their concept and design. The “good old days”, in which a Robert Moses in New York or in my state, a Glenn Jackson

could locate and authorize a project by fiat, are gone. The public, with good cause, won't stand for it. Similarly, federal, state, regional and local agencies have their responsibilities under law, and they are bound to carry them out.

An open, inclusive process of considering all the issues involved in a major infrastructure investment is legally, pragmatically, and politically required.

The good news I have to report, Mr. Chairman, is that these principles are not simply lofty ideals. They are standard practice in my community, and as a result Portland is widely considered to be one of America's most livable cities.

My community's experience shows that the best way to "streamline NEPA" is to go through the planning process right the first time and only once. We have made a sustained commitment to comprehensive land use and transportation planning. We work collaboratively to integrate the requirements and address the concerns of federal and state regulatory agencies in our plans and projects. We then ask those agencies to sign off early on purpose and need. We base our project priorities on the plans. We are thrifty in our expenditure of public monies. We build transportation projects on time and on budget. And our transit projects in particular outperform their projections.

Our experience allays some concerns about environmental review:

(1) It is not my experience that environmental groups and NIMBY's (not-in-my-back yard neighborhood groups) will exploit environmental review and tie needed projects up for years. If there is any place in America where this should be true, it is Portland, Oregon. Our state is loaded with environmentalists (remember the book "Ecotopia"?), and our city is populated with neighborhood activists. In fact, Portland actually goes so far as to provide funding and staff support for neighborhood associations and gives them a free land use appeal right for discretionary land use decisions. Some might expect this to be a recipe for paralysis.

Yet the contrary is true. In the ten years I served as a Portland City Commissioner and as Portland's representative to the MPO for our region, we built dozens of major highway, transit, sewer, and water projects, and other major facilities. In almost no case...allow me to repeat that...in almost no case have projects been held up by appeals, litigation or multiple trips through the NEPA process or through state or local review. I'm proud of that track record; I believe that I made good decisions. I must admit, though, that I was not infallible. Some appeals are meritorious; they are part of the checks and balances system, and their scrutiny accomplishes a legitimate purpose of these laws: avoiding bad projects, or reshaping them to be good ones.

Similarly, in ten years of rapid growth and dramatic change in the built landscape of my city, only citizen blocked a handful of private development projects in Portland or neighborhood appeals. This paradox is explained by the fact that we have taken

the coordination, public involvement and alternatives analysis goals of NEPA and TEA-21 to heart. We plan, we work for consensus, and we follow our plans. We are a case study that demonstrates that good administrative practice gets good treatment under the federal requirements. We demonstrate that even in a city with Endangered Species swimming through its downtown, federal and state agencies can reach agreement and construction of public works and private development can continue apace.

(2) Environmental review does not need to hold up projects or add significantly to their costs. If my community's citizens are "green," they are also "tight." Oregonians are frugal, and expect frugality in public expenditure. In my experience, this expectation is more likely to be met with a truly good faith effort to follow these planning and alternatives analysis requirements. To borrow a popular phrase, planning is expensive and time-consuming, but not compared to the alternative.

(3) These laws and regulations don't foster internecine warfare among public agencies; done right, environmental review reduces interagency conflict. The Oregon DOT, like most state DOTs, is still primarily a road and highway organization. The ODOT staff has, however, incorporated this planning-based approach in their work. They, in return, expect counties and municipalities to work collaboratively with them; for example, we are transitioning some former state highways located in urban areas into locally-managed streets. These projects don't require environmental review, but the cooperative working relationships forged in environmental review makes these other "win-win" agreements possible.

Environmental review requirements, well integrated and well administered, help assure that good projects are advanced with public support, avoiding adverse impacts and mitigating unavoidable impacts. This translates into public acceptance and smoother permitting. While there are opportunities for better administration of such reviews, changes in law are not generally needed to make this happen. Indeed, efforts to expedite project delivery are likely to fail and work against sound decision-making if they set arbitrary time limits, curtail public and judicial review, limit consideration of alternatives and determinations of project purpose and need, or allow use of project segmentation and analysis models insensitive to induced traffic and other indirect impacts. Such approaches are likely to spur increased conflict and reduced public support for transportation funding and programs.

It's not possible to mandate cooperation, consensus and trust. Trying to push projects forward by the means I just listed will fail because in a complex environment like the design and permitting of a major public works project, cooperation, consensus and trust are necessities, not niceties. Likewise, it's not possible to measure a transportation project's success on transportation or engineering terms alone, so evaluation measures, if the Committee pursues them, should evaluate a project's affect on a community's goals and plans. Land use results – i.e. the places where Americans live their lives – are not a "secondary effect."

When I was first contacted about testifying before your committee, I was reluctant to accept the invitation. I knew that the subject was streamlining the approval process for transportation projects, and that the committee would, necessarily, confer with experts on the specific language of federal law and the regulations, both current and draft, which have been promulgated to implement these laws. My reticence was based on my understanding that I am not one of those experts and, more powerfully, that I have spent ten years governing a growing city and building major infrastructure projects without having to think much about NEPA or the planning requirements of TEA-21.

That, ultimately, is my message and why I am here after all: if you take the commonsense planning, coordination and public involvement requirements of these federal policies seriously, they don't get in your way. If you are committed to the spirit of these laws, the particulars are relatively unimportant. And as a local or state official, your time is much better spent in genuine consensus-building and integrated planning than in complaining about the regulations or defending against citizen suits. Our experience is that if citizens participate in the planning process and have a clear buy-in and responsibility for commitment, there are few suits. The plan is the community's plan. I should also emphasize that one does not need to adopt Portland's approach, or anyone else's; a community is free to plan its own future, not imitate anyone else's approach in order to get these beneficial results.

I'm not simply saying that if one plans, coordinates and communicates, the federal regulatory requirements are not so bad. The results can be better than that. A community which first, engages in real, comprehensive, and sustained land use planning, and which makes infrastructure decisions consistent with that plan, and conducts a genuine and genuinely open process of alternative analysis not only gets through the environmental review process with a minimum of difficulty; the people of this community own the results of the planning process and get to live in a better place.

That is the opportunity that environmental review offers to states and localities. I hope that this committee, in its work on the next transportation bill, encourages us all to get serious about taking it.

Thank you. I would be pleased to answer any questions.

Attachments:

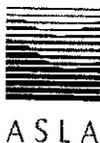
- Attachment 1, "Expediting Project Delivery Without Sacrificing Environmental Protection," summarizes broadly supported principles for accomplishing improved project delivery and better environmental stewardship through better administration of the planning and project review process. These principles are fully consistent with the approach we have followed to achieve success in Portland.
- Attachment 2, "Questions and Answers About Environmental Streamlining," provides important background on the debate over streamlining vs. stewardship and transportation project delivery, including information about sources of project delay identified by AASHTO and FHWA studies.
- Attachment 3, "The Most Environmental Impact: Forests, Highways and Army Corps of Engineers," shows the share of agencies issuing Environmental Impact Studies (EISs) by year and the trends in number of EISs filed each year. These charts show that transportation still accounts for a large share of projects that are so environmentally significant as to trigger a full EIS, but that the number of EISs filed is actually declining slightly overall.
- Attachment 4, "Environmental Streamlining: Better Decisions from Integrated Transportation Plans/Reviews? Or Steam-rolling for Destructive New and Bigger Highways and Airports?," summarizes key talking points developed by Environmental Defense to explicate the current public policy issues in this area and offering ideas for what streamlining should and should not seek to accomplish if it is to protect the environment and expedite project delivery. These are principles that are highly consistent with our experience in Portland and I commend them to your attention.
- Attachment 5, "Comments by Environmental Defense on Proposed Metropolitan Planning and NEPA Streamlining Rules," provides important background on the statutory requirements for regional planning in TEA-21 and how these relate to NEPA requirements, Title VI of the Civil Rights Act, and other elements of the federal highway law that require consideration of the adverse effects of air pollution prior to the approval of plans and specifications for a highway, as well as measures to eliminate or minimize the adverse effects of air pollution. The approaches advocated in these comments are consistent with Portland's efforts to integrate transportation, growth management, and air quality efforts.
- Attachment 6, "Letter to Transportation Secretary Rodney Slater from Rep. John Lewis and four other members of Congress, December 2000", calls for U.S. DOT to adopt a national mobility goal to measure the performance of metropolitan transportation system and ensure equal access to employment opportunities and public facilities through regional transportation plans and timely progress towards this goal through transportation improvement programs. Adoption of this goal would be consistent with making our communities better places to live, with greater transportation choices, with a transportation system that delivers effective performance for all citizens, fostering a sense of place and a sense of region built on access to opportunities.

Attachment 1:

EXPEDITING PROJECT DELIVERY WITHOUT SACRIFICING ENVIRONMENTAL PROTECTION

In an effort to accelerate transportation project delivery, some have suggested short-changing the environmental review process by eliminating public participation and imposing deadlines on participating agencies. However, recent data tell us that well over half (62%) of delayed projects are stalled due to lack of funding, local support and project complexity – not environmental review. More expedient project delivery – and better projects -- can be realized through more sensible planning, early stakeholder involvement and simply taking advantage of existing programs. Better administration of current environmental laws by state and federal agencies and project sponsors is the key to success, not changes to law. Specifically, we propose the following:

- ❑ **PLANNING** -- Transportation planning which considers communities and protected resources such as public parks, wildlife habitat, historic sites and scenic areas will produce better projects that are less likely to incur opposition and delay. Integrate existing resource protection efforts into transportation planning to ensure future projects will avert impacts. Taking protected resources into account at the beginning, and planning accordingly will both protect resources and facilitate project approvals. Effective policy would support efforts to develop, harmonize, and coordinate state and local transportation, environmental, resource and land use planning.
- ❑ **INVOLVEMENT** – Involve the affected community early, substantively and continuously throughout the planning and project review process. Since so much delay is attributed to local controversy and lack of support, it makes sense to design projects with significant public participation in order to build support and improve acceptance. Promote more public involvement in transportation plans.
- ❑ **COORDINATION** – Mandate better coordination among participating agencies. Direct state DOTs to work collaboratively with state and federal resource agencies, municipalities and other interested parties to develop environmentally sound transportation projects and plans. States can ensure participation by employing TEA-21's under-utilized §1309(e), which authorizes compensation for resource agencies' increased transportation project review workload.
- ❑ **CLASSIFICATION** – Properly classify projects for environmental review. Too often, problems in project reviews arise because transportation agencies seek to waive appropriate environmental review for a complex project with multiple impacts by classifying it as a Categorical Exclusion or Environmental Assessment. This often causes later legal or regulatory delay as critics seek to challenge a flawed administrative process.
- ❑ **ALTERNATIVES AND IMPACTS** – Effectively consider a wide variety of alternatives, as well as secondary, induced and cumulative impacts in project planning, design and review. The best process engages stakeholders in identifying partial build alternatives, travel demand management strategies, alternative investments, and other approaches to avoid or mitigate negative impacts. Build consensus for action by addressing broader stakeholder concerns, rather than imposing narrowly focused objectives on the community. Many delays, especially for controversial projects, arise when agencies have failed to effectively consider impacts on specific populations or neighborhoods, or the effects of transportation infrastructure projects on land use, travel behavior and public health.



TRI-STATE TRANSPORTATION CAMPAIGN



QUESTIONS & ANSWERS ABOUT ENVIRONMENTAL STREAMLINING Steam-rolling or Improving Transportation Project Delivery?

What is Environmental Streamlining?

During the legislative battle to reauthorize the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1997 and 1998, the highway building industry and interests strongly pressed Congress to include language that would “streamline” the environmental review procedures as they are applied to transportation construction projects. Many projects, they contend, are needlessly delayed by strict environmental regulations, increasing costs and denying American drivers the efficient transportation system they deserve. “Over the years, the well-intentioned NEPA process has become enmeshed in a web of duplicative bureaucratic reviews.” (*Cooperative Environmentalism*, American Highway Users Alliance, http://www.highways.org/roadblock/co_op_enviro.html)

In 1998, Congress rejected the streamlining proposals put forward by the highway lobby that would have seriously undermined many of the nation’s key environmental accountability laws, such as the 1969 National Environmental Protection Act (NEPA). The Transportation Equity Act for the 21st Century (TEA-21) instead affirmed recent best administrative practices by encouraging a more coordinated transportation project environmental review process. US DOT has since helped foster adoption of better practices across the nation through guidance and training. Proposed final rules based on TEA-21 planning and project review language have been shelved recently after several years of development. However, some in the road lobby have continued to press for a rollback of environmental laws through rulemaking and legislation. With TEA-21 up for reauthorization in 2003, these issues will be the subject of several congressional hearings.

Why do we need a transportation project review and planning process?

Transportation planning and project review requirements were put in place by our elected officials in response to the serious damage done to countless individuals and communities by the road and transportation construction industry. Highways create profound permanent changes to our communities and regions, imposing significant impacts on surrounding areas, including economic, social, cultural, as well as environmental.

Before NEPA, road builders across America bulldozed homes, neighborhoods, farms, and businesses in cities, suburbs, and rural areas without recourse for citizens and local leaders to shape decisions. Thanks to NEPA and ISTEA/TEA-21 reforms, residents now have a right to know about the effects of transportation project decisions before they are final and opportunities to help shape consideration of alternatives to proposed transportation projects and plans. These laws work with other environmental statutes, like the Clean Air Act and Endangered Species Act, to help protect public health, community well being, and the natural environment from potentially profound negative impacts of transportation investments. The time it takes to review projects under NEPA

is often well spent in producing better projects and decisions. Without NEPA, countless places we now cherish as economic, cultural, and environmental assets, such as old town New Orleans or Washington, DC's Rock Creek Park would have been paved as freeways.

What Does TEA-21 Say About This?

TEA-21, the successor to ISTEA, contained §1309, which mandates that the DOT Secretary will "develop and implement a coordinated environmental review process for highway construction and mass transit projects..." The elements of streamlining include:

- Agency identification and participation: At the earliest possible time, the DOT shall identify and notify all state and federal agencies with jurisdiction or review/permitting responsibilities for the project.
- Concurrent reviews: Presently, projects are reviewed by many different agencies in sequence. Each agency must wait for the one before it to review the project. Section 1309 suggests these reviews take place simultaneously where practicable.
- Cooperatively determined time periods: All agencies involved in the review will agree to delivery dates, after considering respective resources and other commitments.
- Assistance to affected Federal agencies: State DOTs may provide funds to the reviewing and permitting agencies to assist them in meeting the cooperatively determined time periods.
- Dispute resolution: In the event that a review cannot be completed within the cooperatively determined time period, the DOT will provide notice and enter into additional consultation before closing the matter.

Why do road projects take so long to deliver?

Transportation projects that receive Federal support must follow environmental review procedures prescribed in the National Environmental Policy Act (NEPA), which also acts as an umbrella process for guiding compliance with key elements of other Federal environmental laws, such as the Endangered Species Act, Clean Water Act, and the National Historic Preservation Act. NEPA establishes three classes of environmental review actions for transportation projects, based on the magnitude of their anticipated environmental impacts:

- I. Environmental Impact Statement (EIS) - For major projects with significant impacts
- II. Environmental Assessment (EA) - For projects where impacts are not clearly established
- III. Categorical Exclusion (CE) - For minor projects with little or no significant impacts

Non-Environmental Factors. Despite the rhetoric, the vast majority of transportation projects are not subject to environmental review and very few are actually delayed. According to a 2000 study by the association of state transportation agencies (AASHTO), 91% of all environmental documents produced by state DOTs are Categorical Exclusions (CE). Less than 2% are EISs. Contrary to the horror stories generated by highway advocates, processing times for environmental review average between 8 months and 3.5

years, depending on the level of complexity associated with the analysis. (*Environmental Streamlining: A Report on the Delays Associated with the Categorical Exclusion & Environmental Assessment Processes*, by TransTech Management, Inc., October 2000).

Recent studies by the Federal Highway Administration and AASHTO including a survey of 33 responding state DOTs, show that delay in project delivery are most often due to lack of funding or low priority project (33% of delay), local controversy (16%), and complex project/no reason given (13%). Projects that raise complex environmental issues - specifically, wetlands, historic structures and places and parkland impacts - do take longer to review, but these issues arise in only a small share of projects. FHWA found that in projects in which an EIS is required (those with significant impacts to the environment or human health), the NEPA process accounted for 28% of the total time required for the entire project development process. The NEPA process time is not necessarily additive and is often coincident with other activities and phases completed by the state DOT or project sponsor.

Lack of Funding TEA-21 significantly increased funding for new roads and highways. It did not, however, increase funding to the agencies charged with reviewing and permitting all of these new projects. Projects that require review may be delayed because they are sent to already overburdened resource agencies which are not funded, staffed or equipped to meet the additional demand. Some increase in the timeliness and effectiveness of project reviews could be achieved by addressing this discrepancy.

Complexity of Review. According to a 2001 FHWA study, the median time for a NEPA process to be completed is 3.0 years (median) or 3.6 years (mean). The NEPA process starts from the Notice of Intent, through interagency meetings, public scoping process, study and modeling of alternatives, preparation of a draft EIS or EA, public hearings, and finalization of environmental document and record of decision, including the usual consultation process with affected local elected officials. Even in the 1970s, when environmental projects and their documents presented fewer complex issues, mean time for the NEPA process was 2.2 years. For complex projects, a three years is often the minimum time necessary to complete an effective NEPA process. Arbitrary deadlines that short-circuit such project reviews would sacrifice effective involvement of affected communities and development of strategies to mitigate or avoid adverse impacts.

According to the FHWA review, the length of time for the NEPA process to occur depends on whether certain issues are involved—if a wetlands (section 404 of the Clean Water Act) permit is involved, the time increases from 2.4 years to 4.3 years. If the right-of-way involves public parkland (section 4f of the DOT Act), the mean time increases from 2.8 years to 4.7 years. More complex projects take more time and cannot be legislated with one-size-fits-all deadlines.

Regional Difference. Regional differences are also striking. Region 10 had a minimum and median NEPA time of 1 year, with 6 of 11 projects finishing their NEPA process in 1 year. Region 1 also had a minimum NEPA process time of 1 year, but a maximum of 9 years and thus a median of 4.5 years. In fact, every region except one had a minimum NEPA process time of 1 year (FHWA 2000).

This indicates that natural resource agencies can and do process NEPA documentation in a short period for appropriate, non-complex projects now.

CQ535

Unrealistic Expectations. In a review of projects catalogued by 33 state DOTs designated as categorically excluded from NEPA (CE) or requiring only an Environmental Assessment (EA), AASHTO reports (Transtech Management, 2000) that state DOTs processed, on average, 294 CEs and 21 EAs annually. Delays were reported according to whether the project was delayed "more than 15 days" and "more than 30 days." Several state DOTs may have had very unrealistic expectations about the length of time in which natural resources agencies would process NEPA documents. These expectations ranged from a minimum of one week for a CE to an average of 8 months, and two weeks for an EA to an average of 14 months.

Miscategorization of Projects. The AASHTO survey showed that delay reported by state DOTs was, not surprisingly, related to the complexity of the project. State DOTs reported that Section 4f (DOT Act), Section 106 (National Historic Preservation Act) and Section 404 (Clean Water Act) accounted for most of the delay (53-66%), with Endangered Species (35%) and Community Impacts (16%) falling much farther behind. Unlike the FHWA study, however, the AASHTO survey did not correlate delay, and the length of delay, with confounding variable like 404, 4f and 106 issues.

Based on the high number of CEs and EAs that involved 404, 106 or 4f issues reported in the AASHTO survey, it is likely that state DOTs reporting delays in this survey had processed some complex projects with significant impacts using lower-level environmental documentation than required. This can result in natural resource agencies needing to request more information to document impacts and to analyze mitigation measures, which delays sign-off in the review process. Perhaps the state DOTs in the AASHTO study should have processed the CEs as EAs, and processed the EAs as EISs, given the prominence of these confounding 404, 4f and 106 issues. The DOTs' expected response times from environmental resource agencies would have been more realistic, tending more toward the average length of time, causing fewer delays to be reported. There is anecdotal information that in some states, no-impact enhancement and bikeway projects may have been subject to excessive reviews relative to their scope, delaying them and increasing their cost.

What Do Environmental Groups Say About Environmental Streamlining?

There is no question that America's transportation infrastructure is imperative to our mobility, productivity and success. However, we cannot deny that it has also had significant impacts on our environment. Four million miles of roadways cover no less than 1% of our total land area, approximately the size of the state of South Carolina. Unfortunately, not all of those roads were planned wisely, leaving a destructive – and permanent – footprint on our landscapes and wildlife habitat. New or expanded freeways can become a powerful force for sprawl, traffic, and pollution growth. These in turn lead to increased incidence of childhood asthma, cancer, and premature death of those with respiratory disease. Major road projects have often harmed the vitality of older communities, reduced access to jobs and public facilities for people without cars, and exacerbated environmental injustice. For all these reasons it is imperative that

transportation decisions be made only after careful consideration of not only the immediate need and purpose, but also the long-term and cumulative effects and strategies to mitigate these. As well, transportation decisions cannot be made in a vacuum, but only after consultation with all stakeholders and interested parties.

However, there are opportunities to improve the quality and reduce the length of transportation project reviews without compromising the environment, community, and cultural resource protection. Much of the delay in project delivery of which transportation agencies complain can be avoided if these agencies identify and meaningfully address conflicts at the beginning of the planning process, rather than being forced to address them later after litigation or extended interagency conflict.

The environmental community strongly objects to any measure that would weaken our nation's environmental protections – regulations that receive widespread public support and that are largely responsible for the quality of life we enjoy today.

What are the keys to success in improving transportation project delivery?

- 1. Involve stakeholders early, substantively, and continually in planning and project review.** Accomplishing this will require greater funding for resource agencies and public involvement in the process. For example, the U.S. Fish and Wildlife Service has received no additional funding to do environmental reviews since TEA-21 was passed, even though its workload of projects to review has risen by more than 70 percent. State DOTs have the authority to fund resource agencies to be involved in the project design and review process and some, like Pennsylvania, do so. Far too many projects are delayed because they are planned and designed before regulatory agencies and affected stakeholders are ever consulted. If they are involved from the beginning, they can steer transportation agencies clear of problems early.
- 2. Consider and mitigate or avoid secondary, induced, and cumulative impacts.** Many delays, especially for controversial projects, arise when agencies have failed to consider effectively the disparate impact of benefits and burdens on different subgroups or neighborhoods or the effects of transportation on land use, travel behavior, and public health. The federal transportation planning requirements established in ISTEA and TEA-21 encourage regional and state transportation plans that consider needs and requirements of other sectors. Many regions and states are making progress in integrating transportation, land use, air quality, water quality, habitat conservation, and community economic development planning. Such integration allows identification of more cost-effective projects that satisfy more constituencies with fewer adverse impacts. But many agencies still resist adoption of best practice analysis methods, segment projects into small sections to avoid considering cumulative impacts, and seek to avoid accountability for project and plan impacts.
- 3. Effectively consider alternatives in planning and project reviews.** An effective process engages stakeholders in identifying partial build alternatives, travel demand management strategies, alternative investments, and other approaches to avoid or mitigate negative impacts and builds consensus for action by addressing broader

stakeholder concerns, rather than simply boosting mobility. NEPA Project Purpose and Need definition is a critical step in accomplishing this. If the Purpose and Need is too narrowly defined, the review process may face delay or failure because the wrong project gets designed and it does not address critical community problems.

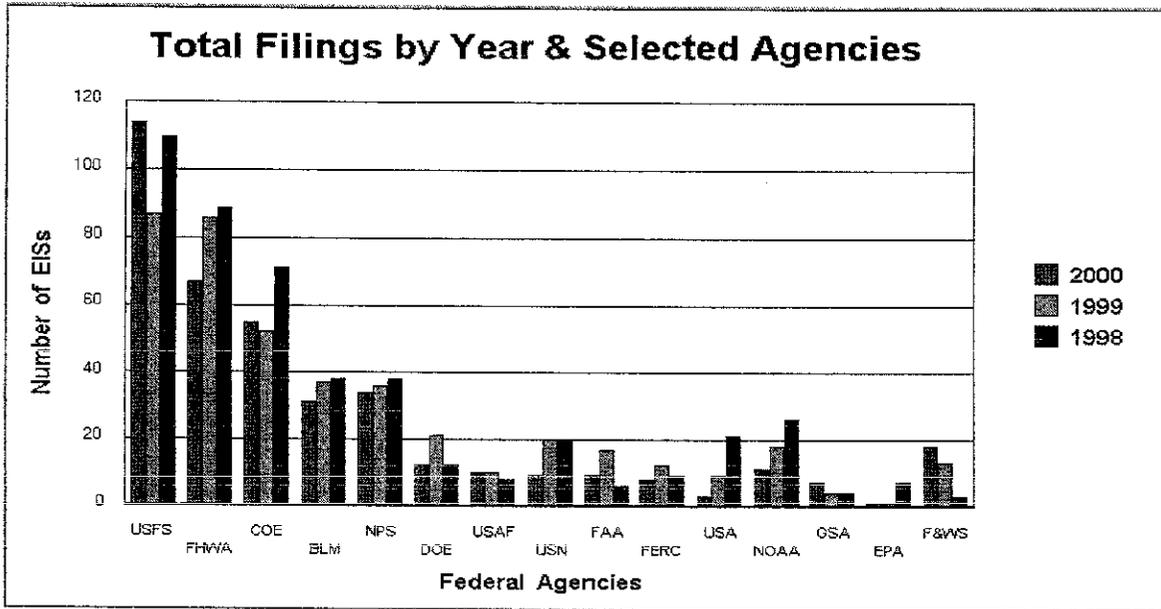
4. **Properly classify projects for environmental review.** Too often, problems in project reviews arise because transportation agencies seek to waive appropriate environmental review for a complex project with multiple impacts by classifying it as a Categorical Exclusion, causing later legal or regulatory delay as critics seek to challenge a flawed administrative process. On other occasions, transportation agencies may subject small and very low impacts enhancement projects, such as a bikeway, to cumbersome environmental review that causes extensive delay and increased cost without significant gains in the quality of the project.

Are changes needed in law to achieve better transportation project delivery?

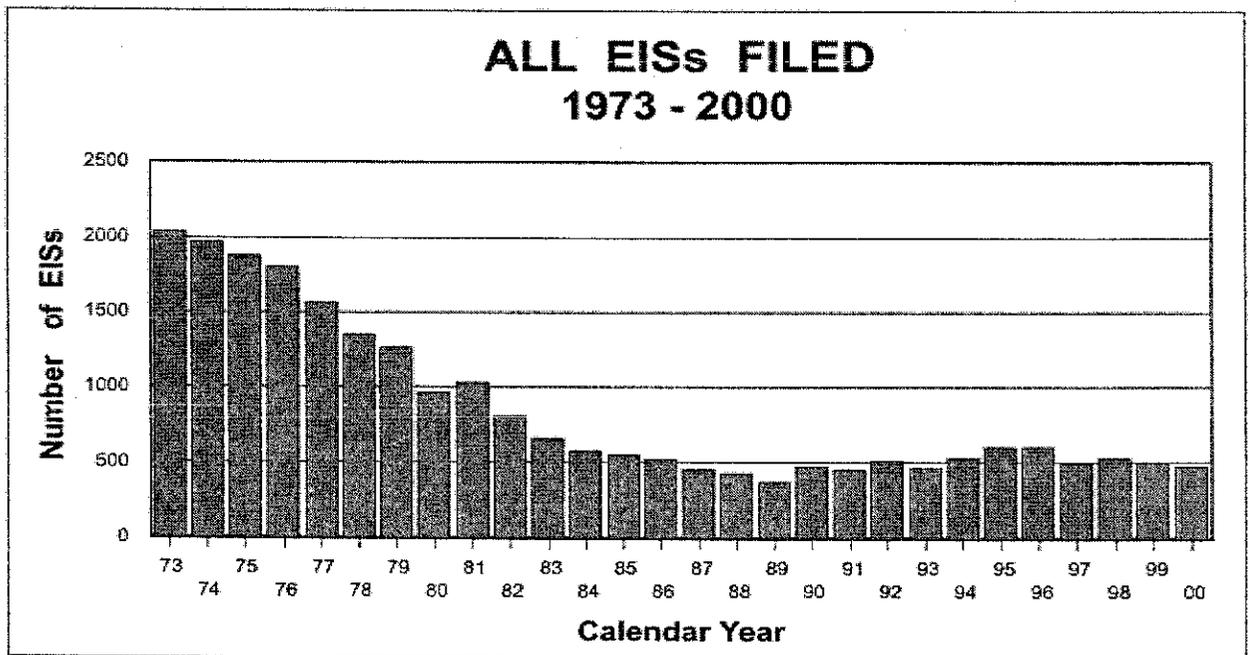
Improving transportation project delivery by the above principles requires better administration of the planning and project review process under existing statutes. Changes in law could be helpful, but only if they foster more timely and widespread adoption of these principles by transportation agencies.

Efforts to weaken NEPA and other project review requirements with artificial deadlines and restrictions on involvement of resource agencies and the public in the definition of purpose and need and identification of alternatives are destined to disable effective reviews, leading to more conflict and litigation over contentious projects. Efforts to weaken NEPA undercut US DOT efforts to encourage transportation and resource agencies to support best practices in transportation project review that can improve project delivery. Congress should support and strengthen the initiatives by some state transportation agencies to foster stronger environmental stewardship and more broadly integrated planning and project development.

Attachment 3: The Most Environmental Impact: Forests, Highways, and Army Core of Engineers



The Number of EISs Filed is Decreasing



**Environmental Streamlining:
Better Decisions from Integrated Transportation Plans/Reviews?
Or Steam-rolling for Destructive New and Bigger Highways and Airports?**

June 2002

Environmental Defense

History of Environmental Streamlining Efforts

- Council on Environmental Quality (CEQ) study on NEPA's effectiveness (1997)
- TEA-21 (federal transportation law, 1997-1998) streamlining provisions
- FHWA, ACOE, USEPA regional memoranda of understanding
- FHWA-FTA rulemaking 1999-2000

“Environmental Streamlining” encompasses diverse efforts to:

- distract attention from growing administrative failure in transportation project delivery process
- expedite project delivery by limiting or changing environmental laws & review process
- foster environmental stewardship at state DOTs
- coordinate planning and project reviews by transportation and resource agencies to
- better consider alternatives, secondary, cumulative, indirect impacts, with early effective involvement of stakeholders

Why do we need transportation project reviews?

- Before NEPA, road builders bulldozed homes, farms, businesses, natural areas with little notice, information, or recourse for public or local officials

Right-to-Know: Information, Alternatives, and Mitigation

- National Environmental Policy Act of 1969
 - consider alternatives to proposed actions
 - consider and mitigate secondary, induced, cumulative impacts on environment and communities

Federal Highway Law USC 23 Section 109

- eliminate or minimize adverse health and community impacts of projects as condition of approval
- public involvement and systematic interdisciplinary approach as essential parts of development process

Core Laws Assuring Information & Accountability

- Sec. 4(f) and 106: historic resource impact review
- Clean Water Act: Sect.404 Army Corps permits
- Clean Air Act: conformity of transportation plan with adopted public health air pollution plans
- Civil Rights Act Title VI: consider and mitigate disparate distribution of benefits and burdens
- Endangered Species Act: protect habitats
- Americans With Disabilities Act: protect access
- TEA-21: planning framework and funding

TEA-21: Promoting Coordinated Environmental Review Process

- Road lobby effort to weaken NEPA in TEA-21
- TEA-21 called for coordinated environmental review process to be established by DOT with:
 - Agency identification and participation
 - Concurrent review where appropriate and feasible
 - Cooperatively determined time periods considering resources and other commitments
 - Potential state funding for Federal resource agencies
 - Dispute resolution and consultation

What TEA-21 Environmental Streamlining did NOT do

- Amend NEPA or other federal environmental laws or limit judicial review under these laws
- Change purpose and need determinations or limit challenges to project justifications
- Mandate concurrent review when it isn't feasible or foreclose reconsideration of items not fully addressed during concurrent reviews
- Change the substance of required federal oversight

TEA-21: Integrate MIS into NEPA and Transportation Planning

- ISTEPA required Major Investment Study for investments with significant effect on capacity, traffic flow, congestion, mode share
- TEA-21 eliminated stand-alone MIS but ISTEPA MIS requirements were to be integrated into planning and NEPA requirements
- Proposed new planning and project review regulations to accomplish this are stalled

Major Investment Studies Must Consider

- Direct/indirect costs of reasonable alternatives
- Social, economic, environmental effects
- Energy consumption and safety
- Operating Efficiencies and Financing
- Land use and economic development

Do environmental reviews cause unnecessary delays?

- State DOT environmental documents review:
 - 91% are Categorical Exclusions (CE): no review
 - 7% are Environmental Assessments (EA): small study
 - less than 2% are Environmental Impacts Statements (EIS): major projects with significant impacts - these take on average 3-3.6 years (28% of project time)
 - Of projects with full EIS:
 - 3.0-3.6 years for NEPA review: 28% of project time
 - complex projects add length to reviews: wetlands, parkland/historic impacts, endangered species

Key Sources of Delay in Transportation Project Delivery

- Lack of funding/low project priority
- No consensus about project purpose and need
- Complex issues raised by major projects
- Inadequate support for resource agencies doing reviews to be engaged early and effectively
- Inadequate consideration of alternatives
- Inadequate consideration of impacts, mitigation
- Misclassification: CE when EA/EIS needed or EA when CE or programmatic review appropriate

Integrating Transportation Planning and Project Review

- Disjointed planning and project reviews often miss alternatives that could mitigate or eliminate adverse impacts

The Latest Threats

- Airport Streamlining Approval Process Act of 2002 H.R. 4481;
- Bob Stump Nat'l Defense Author. Act for FY2003 H.R. 4546;
- Pipeline Infrastructure Protection to Enhance Security and Safety Act H.R. 3609
- EXP*DITE-- Expediting Project Delivery to Improve Transportation and the Env't Act

Salient Features of Environmental Streamlining

- Mandatory inclusion in "coordinated review process"-- or else defer to its decisions
- 30-45 days review periods for all environmental agencies on major projects
- Woodshed approach to conflict resolution
- Concurrent processing of permits and NEPA process-- not logical, sequential review
- Public input not mentioned at all
- Limited judicial review of decisions

Impacts of Streamlining

- Tips balance between federal government and state and local prerogatives
- Reduces local and regional power to review projects, choose alternatives acceptable to communities and environment
- Harms environment and human health
- One size fits all approach to projects

Why is This Happening Now?

- Highway project delivery pipeline has slowed down, airport runway projects face opposition
- Amount of federal money for highways doubled since ISTEA, but fewer projects being built
- Contractors, pork-barrel politicians, others dissatisfied
- State DOTs and others are looking to scapegoat environmental reviews for their own administrative failures and opportunity to weaken environmental accountability

Example of Possible Effect of Airport Streamlining

- Pennsylvania has 136 public-use airports
- Hearings on State Airport System Plan now
- Airport bill would place in federal bureaucrats' hands (FAA) all power to determine purpose and need of airport capacity expansion projects *and the determination of reasonable alternatives*
- Pennsylvania airport master plan and EA process— out the window?

Streamlining Should Not

- Mess with NEPA and other existing core community/environmental protection laws
- Short-circuit laws with artificial time limits
- Force concurrent decisions on detailed permits while in broad planning stage
- Delegate authority for federal reviews except for small, no-impact projects
- OK projects without adequate mitigation

Streamlining Should

- Integrate MIS into planning/NEPA reviews
- Use products of planning in project reviews if
 - best-practices used for analysis of induced demand, secondary and cumulative impacts
 - resource agencies, public effectively engaged
 - significant mitigation is achieved with demand management, transportation pricing, investment in alternatives that enhance travel choices, equity, environmental performance

How to Streamline for Better, Quicker Results, Consensus

- Involve stakeholders early, effectively, continually
- Consider, mitigate secondary, induced, cumulative impacts
- Partial build/TDM alternatives, address broad purpose/need
- Properly classify projects
- Partnerships for community environmental stewardship

Environmental Stewardship Agenda for TEA-3?

- Integrated Planning and Program Review funding program for transportation, land use, air and water quality, habitat protection, GHG reduction: data collection, analysis tools, plan harmonization, public involvement, partnerships
- Requirement that state/regions consider alternative transportation and land use scenario in long range plans that optimizes progress towards integrated federal/state/local goals

Conclusions

- Streamlining through best practices will get better projects built with less conflict and delay
- Streamlining will spur conflict, resistance, delays if it seeks to curb accountability, informed public involvement, or weaken right-to-know laws and requirements for mitigation

9/21/2000 COMMENTS BY ENVIRONMENTAL DEFENSE ON PROPOSED METROPOLITAN PLANNING AND NEPA STREAMLINING RULES

Environmental Defense submits the following comments on the proposed revised metropolitan planning and NEPA-streamlining rules. These comments are submitted on behalf of the 400,000 members, staff, officers and board of Environmental Defense, a not-for-profit organization incorporated in the State of New York, but with members in every state of the Union.

I. COMMENTS ON DOT METROPOLITAN PLANNING RULEMAKING: ENVIRONMENTAL DEFENSE SUPPORTS EFFORTS TO STREAMLINE CURRENT REGULATORY STRUCTURES BY INTEGRATING METROPOLITAN PLANNING, NEPA REVIEWS OF PROJECTS, AND ASSESSMENT OF TITLE VI COMPLIANCE

Transportation system planning and development has broad and often destructive impacts on natural resources and adverse impacts on environmental values important to the American people. The principle objectives of the environmental community are the development of transportation planning programs and the adoption of transportation alternatives that will help

- reduce or eliminate the loss of wild lands, critical habitat for endangered or threatened species, and farmland to development;
- preserve critical wildlife habitat;
- reduce air pollution in nonattainment areas;
- prevent unacceptable health risk from exposure to toxic air contaminants emitted by highway vehicles; and
- reduce combustion of fossil fuels that contribute to global warming.

In the transportation context, these environmental objectives are largely consistent with the objectives of other communities of interest, including the interests of low income, racial, ethnic and disabled minorities who seek to enhance access to employment, housing, educational facilities, churches and public facilities and to avoid disparate adverse health and economic burdens, and interests committed to preserving cultural resources and valuable features of the built environment. This consistency among objectives is shared because the strategies that serve each of these interests include the expansion of transit and transit-oriented development and the reduction of SOV use (VMT) and highway-dependent development. Taken together, these interests represent the views of a broad segment of the American public. Their objectives provide appropriate criteria for the evaluation of DOT's proposed metropolitan transportation planning regulations and the effort to integrate and streamline those requirements with the previously separate requirements under NEPA and 23 USC §109(a) and (h) that govern individual project reviews.

Proper implementation of TEA-21, the Clean Air Act, Clean Water Act, the Endangered Species Act, NEPA, Title VI of the Civil Rights Act and the Americans

With Disabilities Act can serve these mutually shared objectives. The proposed revisions to DOT's metropolitan planning and NEPA rules provide a context for allowing environmental, mobility, economic development, energy and equity objectives to be adequately considered and most effectively achieved through the selection of choices that optimize all of these equally valid objectives. The revision of these regulations provides an opportunity to require that alternatives to traditional highway investment and highway-dependent development be given full and comprehensive analysis, and that the pros and cons of the two divergent paths with regard to each of these multiple objectives be fully explored in the transportation planning arena.

Commenters therefore support DOT's efforts to create a decision-making structure that eliminates the overlap, gaps and repetition between the systems level decisions made by MPOs and the project level decisions made by implementing agencies, while at the same time ensuring that all the major interests are heard in the planning process, and that the product of an integrated planning/NEPA process ensures consideration of alternatives that can maximize the overall benefits to the American people from transportation investments. We believe that this effort at streamlining will improve the planning and implementation of projects by highlighting that mix of investments that will optimize the multiple interests outlined above. We therefore urge DOT to clarify the mechanisms for integrated decision-making, and to highlight the ways in which an integrated planning/NEPA process should evaluate the environmental, mobility, economic development, energy and equity objectives established under various federal laws and policies.

Many elements of these four major objectives have been adopted by law to provide national guidance for the metropolitan planning process and the review by federal agencies of proposed projects and programs that receive federal funds. These laws include TEA-21, the Clean Air Act, NEPA, the Clean Water Act, the review of adverse impacts on environmental, social and economic values under 23 USC §109, the Endangered Species Act, and the equitable impacts of programs on low income, racial, ethnic and disabled communities under the Civil Rights Act and the Americans With Disabilities Act. DOT has not previously attempted to integrate these various objectives into one decision-making process. The current proposal attempts to achieve that result.

Those who oppose this effort to develop an integrated decision-making process obviously have a stake in being able to isolate, and thereby ignore, one or more of these valid objectives of the transportation planning process. The process for deciding how the nation's transportation investments are to be made is too important to allow a process to continue that leaves major objectives and major community interests out of the process. The vast sums at stake and the health, mobility, economic and other needs of so many communities that can be adversely affected by these decisions demand that the process be open, comprehensive and take all legitimate interests into account.

Environmental Defense believes that the proposed rules begin to lay out a comprehensive, integrated planning/NEPA process, but falls short in a number of

respects. We also identify ways in which we believe the proposal should be improved to achieve the Department's objectives, or must be improved to meet the applicable requirements of federal law.

A. TEA-21 REQUIREMENTS FOR REGIONAL PLANNING.

TEA-21 revised and re-enacted Title 23, U.S. Code, which governs the funding, construction and planning of highways and other major transportation facilities other than transit, and also made substantial changes to the Federal Transit Act in Title 49. In large metropolitan areas, federal law allows the expenditure of federal transportation funds only on transportation projects that are included in transportation plans and transportation improvement programs ("TIPs") adopted by metropolitan planning organizations and incorporated into the state transportation improvement program. 23 USC §§134 and 135. The designated metropolitan planning organizations ("MPO") for each city larger than 200,000 population is required to adopt a 20-year long range transportation plan and a three-year TIP identifying the transportation projects that will qualify for federal transportation funding in each metropolitan planning area.

1. REGIONAL TRANSPORTATION PLANS REQUIRED TO ACCOMPLISH THE STATUTORY OBJECTIVES FOR PLANNING.

In § 134(a)(2) Congress directed MPOs to develop long range transportation plans that "accomplish" the "objective" enacted in paragraph (1):

(2) Development of plans and programs.--To accomplish the objective stated in paragraph (1), metropolitan planning organizations designated under subsection (b), in cooperation with the State and public transit operators, shall develop transportation plans and programs for urbanized areas of the State.

The "objectives stated in paragraph (1)" are:

(1) Findings.--It is in the national interest to encourage and promote the safe and efficient management, operation, and development of surface transportation systems that will serve the mobility needs of people and freight and foster economic growth and development within and through urbanized areas, while minimizing transportation-related fuel consumption and air pollution.

These are not hortatory goals, but are described in the title of the subsection as the "general requirements" of the section. Under the terms of the Act, these requirements should be applied to guide the metropolitan planning process. Environmental Defense asks that the planning rules require MPOs to at least develop a transportation/land use scenario and investment strategy that would optimize each of these four objectives. In current practice, more often than not, these requirements are ignored by MPOs as factors to be taken seriously, and

are usually not satisfied by the Plans and TIPs adopted by most MPOs. Most MPO Plans do not –

- provide for the development of a surface transportation system that will improve or even maintain mobility for all population groups;
- foster economic growth and development in the area to the extent feasible with transportation investments;
- minimize transportation-related fuel consumption; and
- minimize air pollution.

Quantitative evidence has recently become available indicating that regional plan scenarios other than highway-oriented plans adopted by most MPOs could much more closely approach these statutory objectives by investing substantially more in transit and transit-oriented development. Evidence from Portland, Denver and other western cities indicate that combined land use and transit investments can reduce VMT by as much as 17% compared to freeway-oriented sprawl development scenarios. These strategies also produce comparable reductions in fuel consumption and air pollution, in addition to enhanced mobility. They foster economic development by reducing the costs of travel and reducing the public and private costs of regional development.

Table 1: Comparison of Portland and Atlanta Reprinted from Nelson 2000'

TABLE 2 Comparing Regulatory Regimes: Portland and Atlanta Changes Between Mid-1980s and Mid-1990s		
Measure	Portland Urban Containment	Atlanta Business As Usual
Population Growth	+26%	+32%
Job Growth	+43%	+37%
Income	+72%	+60%
Government Revenue	+34%	+56%
Property Tax	-29%	+22%
Vehicle Miles Traveled	-2%	+17%
Single Occupant Vehicle	-13%	+15%
Commute Time	-9%	+1%
Air Quality in Ozone Days	-86%	+5%
Energy Consumption in BTUs per Capita	-8%	+11%
Neighborhood Quality	+19%	-11%

Source: Adapted from Author C. Nelson, 1999, *Urban Containment = Central City Vitality and Quality of Life*, Paper presented to Bridging the Divide, U.S. Department of Housing and Urban Development, Washington, DC, (December 13-14).

The evidence from Portland OR of improved mobility, lower transportation costs and improved personal income, reduced fuel consumption and improved air quality presented by Nelson supports the conclusion that substantially different outcomes with regard to the four “objectives” defined by TEA-21 can be achieved with different planning approaches. The outcomes that will result from highway investment and highway-dependent development are much more likely to produce the results observed in Atlanta, which has been shown to exacerbate pollution, produce the highest VMT/person rates in the world, stimulate higher fuel consumption rates, and ultimately, impair mobility and slow economic growth. This

evidence demonstrates that metropolitan plans that invest primarily in increased highway capacity and thereby promote sprawl do not optimize or satisfy the statutory objectives of metropolitan planning.

TEA-21 therefore provides a framework for requiring DOT rules that must require metropolitan areas to at first identify, and then adopt, investment and land use strategies that would better approximate the objectives in the Act. Commenters believe that if MPOs engage in an exploration of how these statutory objectives may be optimized, then plans will have crossed the initial hurdle of demonstrating that more beneficial alternatives are feasible and cost-effective. Then we can move beyond those threshold issues to stimulate a public debate and create even greater public awareness over the mobility, cost, fairness and environmental advantages of such plans compared to highway-dependent sprawl development.

2. RELATIONSHIP BETWEEN PLANNING FACTORS AND PLANNING "OBJECTIVES" REQUIRED BY TEA-21.

The implementation of the planning objectives required by § 134(a) is not in conflict with the statutory bar against judicial review of plans based on the planning factors in §134(f). TEA-21 prohibits judicial review of transportation plans and programs based on consideration of the seven planning factors in § 134(f), but the 1998 amendments do not bar enforcement of the planning factors by DOT through either its ad hoc review and approval of TIPs or through its planning regulations. In addition, while there is significant overlap between the planning factors in § 134(f) and the four planning "objectives" in § 134(a), the Act does not bar judicial enforcement of the statutory objectives which are required to be "accomplished" by an MPO plan. Nor does the bar against judicial review of an MPO's failure to address each of the planning factors bar a suit against DOT for failing to adopt planning rules that track the "general requirements" of the Act. Thus, the planning rules provide an opportunity for DOT to flesh out how the four planning objectives of § 134(a) will be implemented through the transportation planning process.

ED asks that, at a minimum, DOT should revise the planning regulations to require that MPOs develop at least one investment/land use scenario that optimizes each of the four planning objectives for the applicable metropolitan area. To support this requirement, DOT should review regional plans from the largest 50 metropolitan areas to identify strategies and programs that are the most effective in improving mobility while supporting economic development and minimizing fuel consumption and air pollution. ED also believes that such plans are ultimately required by the Act.

3. TOOLS FOR ACHIEVING THE PLANNING OBJECTIVES OF TEA-21.

Environmental Defense believes that numerous strategies are available that promote the optimal accomplishment of the four objectives defined by TEA-21. The most important and most effective of these, as demonstrated by Nelson, above, is a general commitment to serve mobility demand with expanded transit and other shared-ride services rather than increased highway capacity. But in addition to this

broad policy direction, there are numerous specific strategies that support transit-oriented system development. Some of these strategies include land use options, and others are emissions control measures that help reduce motor vehicle emissions. Taken together, there is a large and highly effective array of options that support the adoption of regional plans designed to optimize the four planning objectives.

A candidate list of reasonably available strategies for adoption as part of regional plans in almost all cities might include:

1. Commuter Choice Programs: parking cash out, tax credit and other incentives for employer subsidies of transit fares, and tax incentives for employee purchase of transit and van benefits;
2. Discounted pre-paid transit fare instruments designed for effective Commuter Choice promotion (e.g. \$65/month regional passes), reduced transit fares and fare free zones;
3. Accelerated bicycle and pedestrian improvements and bicycle/pedestrian access to transit;
4. Land use transportation control strategies: large scale in-fill redevelopment with TDM and encouraging accessory apartment development in transit oriented neighborhood and centers;
5. Replace diesel fleet vehicles with CNG or electric to reduce high-risk toxic emissions and improve the attractiveness of bus travel;
6. Transit priority treatment and improved traveler information services;
7. Value pricing and road and parking pricing incentives and information services;
8. Transit and paratransit service expansion (e.g., to achieve a targeted increase in person trips by transit and paratransit);
9. I/M for diesel vehicles and/or roadside pull over testing of diesels;
10. CARB diesel fuel;
11. I/M enhancements: e.g.: extend dynamometer test to constant 4 wheel drive vehicles; require replacement of dysfunctional catalyts; raise repair cost waiver limits; expand geographic scope; provide repair subsidies or tax credits to low income persons.

a. Selected Strategies Reasonably Available Everywhere --Commuter Choice.

CA535

Background. For the vast majority of working Americans, a free parking space at work has for decades been the sole commuter benefit offered by employers. If you drive alone to work you gain the benefit. If you take transit, carpool, walk, or bike, you lose the benefit and likely pay your own daily transit fare. With this kind of incentive, it's no surprise that on any given day nine out of ten American commuters drive to work (Hu and Young, 1992) and nine out of ten of the cars driven to work have one occupant (Pisarski, 1996). Yet the 85 million "free" or subsidized employer parking spaces actually cost American business \$36 billion per year (Association for Commuter Transportation, 1996). By spurring more driving, these subsidies exacerbate traffic congestion and air pollution.

1998 Federal Tax Code Change Makes Commuter Choice Reasonably Available Across America. New federal tax law changes make Commuter Choice incentive strategies universally available as potential Transportation Control Measures to meet Clean Air Act requirements in areas that fail to meet the National Ambient Air Quality Standards to protect public health. The 1998 Federal Transportation Equity Act for the 21st Century (TEA-21) gives new incentives to reward employees and employers who help reduce traffic and pollution problems. The Commuter Choice provisions in TEA-21, Section 9010, modify the Internal Revenue Code and enable employers to offer employees options for qualified transportation fringe benefits. There are three principal Commuter Choice options: (1) Employees can purchase up to \$65 dollars per month in transit benefits using pre-tax income (an amount that increases to \$100 in 2002) which slashes the effective cost of transit. (2) Employers can offer tax-free subsidies for their employees' transit costs, with the same limits. And (3) employers can now offer cash in lieu of parking -- "cashing-out" old inflexible parking subsidies.

Emission Reduction Benefits. The most effective Commuter Choice option is the parking cash-out incentive, which helps reduce use of single passenger motor vehicles for those who have the alternative of carpooling, telework, bicycling, walking, or using public transportation. A study of California companies offering this new cash-out option found that one out of eight employees who formerly drove to work chose to leave their car at home so they could instead take a raise in pay (Donald Shoup, 'Evaluating the Effects of Cashing Out Employer-Paid Parking,' *Transport Policy*, Vol. 4, No. 4, Oct. 1997, pp. 201-216.). The share of commuters diverted from solo driving by a cash out option was highest in urban centers with good transit options and lower in suburban fringe areas where transit is not available or very limited and where even carpooling is harder to arrange.

The other Commuter Choice options are employer-paid transit benefits and employee purchase of transit or vanpool benefits using pre-tax dollars. Both of these reduce the cost of using public transportation or vanpools where these are available. EPA recently made estimates of the emissions benefits of the Transitchek program in New York, a transit subsidy program targeting commuters that takes advantage of this federal law change. EPA estimated reductions of about 85 Tons/Yr VOCs, 73 TPY NOx, and 615 TPY CO in 1999. In

correspondence with staff of the Senate Environment and Public Works Committee in 1999, the EPA Office of Mobile Sources estimated that a national commuter choice program assuming a 5-10% employee participation rate would generate:

- A reduction in commute VMT of 1.6 to 3.2%
- Reductions in VMT of 10,000,000,000 to 20,000,000,000 miles
- Emission Reductions of...
 - HC: 27,000-54,000 short tons
 - CO: 240,000-480,000 short tons
 - NOx: 16,800-33,600 short tons
 - CO₂ 1,180,000- 2,360,000 metric tons

Effects on Employee/Employer Costs. The savings for employees offered by the federal tax law changes are significant and make a high level of employer and employee participation in the next several years realistic. For example, an employee earning \$50,000 per year who spends \$1000 annually on transit could realize a tax savings (at 42%) of \$420 as a result of paying their transit cost using pre-tax dollars, exercising one of the new Commuter Choice options, while their employer would gain payroll tax savings (at 7.65%) of \$76 per employee (Arthur Andersen). Even if the cost to set up and administer the program equals 2% of the transit benefit, the employer will still enjoy payroll savings of \$56. Employers are likely to face new costs to offer transit passes or added cash income in lieu of parking, but these can also translate into substantial cost savings of several types. It is much cheaper for an employer to boost non-taxable employee benefits than to offer added taxable income to retain or attract workers, which is an increasing issue in a tight labor market. If the employer is able to expand employment without adding more parking spaces or to otherwise avoid the cost of building, leasing, or maintaining parking spaces for workers, capital cost savings can amount to \$5,000 to \$20,000 per avoided space and operating costs can amount to \$750 to \$3,000 or more per year per avoided space. Such savings are often significant enough to more than pay for a cash in lieu of parking or transit pass benefit.

State Commuter Choice Incentives. Several states and local governments have offered added transit tax credits, including Washington, New Jersey, and Georgia. Maryland in 1999 adopted the largest tax credit; a 50 percent state tax credit for employer-provided transit benefits that saves employers up to \$30 a month per employee. Some governments, like Connecticut and Montgomery County, Maryland, sell discounted transit passes to employers, matching employer contributions dollar for dollar, to stretch federal and state tax benefits even farther. Several years ago California adopted a law requiring large employers who lease parking spaces to offer employees added cash income in lieu of parking, but implementation of the law was impeded until recently when conflicting federal tax laws which had worked against cash-out programs were changed.

Broad Support for Commuter Choice Incentives. Commuter Choice programs have been shown to unite the diverse interests of environmentalists, business, labor and transit and highway advocates. Most realize that Commuter Choice is good for business and for communities. Commuter Choice is a voluntary incentive

that boosts travel options and supports more efficient use of the roads and transit we already have. It can provide quick relief to traffic-strained communities and will expand market opportunities for new forms of access to suburban jobs. Low- and moderate-income workers benefit particularly, since commuting costs represent a larger relative burden on them, and they tend to be more reliant on ridesharing and transit. The Alliance for Clean Air and Transportation, a new national group representing a diverse array of sectors, including the road builders, automobile industry, environmentalist and health groups, the American Association of State Highway and Transportation Officials, the National Association of Regional Councils, and the US DOT and EPA, in February 2000 adopted a consensus goal of making Commuter Choice benefit programs a standard part of the American worker benefit program over the next five years.

The Need to Go Beyond Marketing and Generalized Expressions of Support.

However, Commuter Choice will have an effect on air pollution only if people know about it and use it, and if the opportunities for cost savings offered by aggressive implementation of these incentives are made evident and available to developers, building owners and tenants, and commuters. Marketing alone has been shown to be inadequate to win widespread adoption of Commuter Choice incentives. Mandates for employers to meet pre-established requirements to reduce employee commuting car trips have evoked resentment and resistance from some businesses. But there are many other strategies that can be taken by states, regional bodies, and local municipalities that can foster rapid and widespread adoption of Commuter Choice incentives so these might become available to the average commuter. Additional financial incentives and support by transportation agencies and other government bodies are essential to rapid adoption of Commuter Choice voluntary incentives and can be highly cost-effective in reducing congestion and pollution.

Commitments for Commuter Choice. The measures below are a reasonably available set of steps that municipal, regional, and state agencies can take to assure that potential VMT-reduction, transit ridership improvement, and air pollution reduction benefits from Commuter Choice will be realized in a timely manner. Non-attainment areas could also include the following reasonably available elements as part of their SIPs:

- (1) Municipal and state agencies within the TMA and/or non-attainment area should adopt written commitments that they will provide public leadership by offering Commuter Choice options to their own workforce on a rapid implementation timetable, including management, administrative, and budget commitments to make this possible, and
- (2) Municipal and state agencies within the TMA/non-attainment area should adopt written commitments that they will aggressively promote Commuter Choice options to employers and commuters in their region with marketing, technical and administrative assistance, new transit fare products, and new financial incentives for employers and employees that are adjusted annually in an effort to meet stated performance targets.

- (3) The RTP and/or SIP should include targets and timetables for (a) providing different segments of the labor force with Commuter Choice options of various types and (b) achieving increased levels of use of various Commuter Choice incentives by various portions of the labor force. For example, an MPO plan and/or SIP could identify the following model targets, which could be used as the basis for estimating optimal planning objectives and/or SIP credits if accompanied by commitments to reasonably linked funding and policy commitments that could be anticipated to meet these targets:

<i>Illustrative Target for Share of Employees or Employers Who Are Offered Opportunity to:</i>			
Public Sector Employees in Region	To Purchase Pre-Tax Transit/Van Benefits	Receive Employer-Paid Transit/Van Benefits	Receive Added Cash Income in Lieu of Parking at Work
1 st year	50%	50%	10%
2 nd year	100%	75%	25%
3 rd year	100%	100%	50%
4 th year	100%	100%	75%
5 th year	100%	100%	100%

<i>Illustrative Target for Share of Employees or Employers Who Are Offered Opportunity to:</i>			
Private Sector Employees in Region	Purchase Pre-Tax Transit/Van Benefits	Receive Employer-Paid Transit/Van Benefits	Receive Added Cash Income in Lieu of Parking at Work
1 st year	25%	10%	5%
2 nd year	50%	25%	10%
3 rd year	75%	50%	20%
4 th year	85%	65%	40%
5 th year	90%	75%	60%

<i>Illustrative Target Share of Employees Offered Opportunity for Benefit Who Use It:</i>			
	Purchase Pre-Tax Transit/Van Benefits	Receive Employer-Paid Transit/Van Benefits	Receive Added Cash Income in Lieu of Parking at Work
1 st year	20%	10%	10%
2 nd year	20%	15%	15%
3 rd year	20%	15%	15%
4 th year	20%	20%	20%
5 th year	20%	25%	25%

- (1) Municipal, regional, and state agencies within MPO planning region and/or the non-attainment area should identify for priority funding in the next Transportation Improvement Program (TIP) and Regional Transportation Plan (RTP) Commuter Choice promotion initiatives and related incentives. This should include funding for:
 - (a) transit, rideshare, and alternative commute program marketing, paid advertising, and transportation management associations,
 - (b) development of new pre-paid discount transit fare instruments and seamless regional transit fare and service coordination designed to facilitate easy marketing (e.g., introducing a new unlimited use \$65/month regional transit pass that can be purchased by or through employers),
 - (c) promotion of pre-paid employer-subsidized transit fare instruments to both employers and employees,
 - (d) transit fare buy-down programs that match employer contributions towards employee transit commute benefits with public sector subsidies (e.g., the Montgomery County, MD, Fair Share program) or tax credits (e.g., the Maryland or Washington State Tax Credits for employers who pay for transit benefits or who offer cash in lieu of parking payments)

- (1) Municipalities should agree to incorporate incentives for adoption and use of Commuter Choice incentives by employees, employers, and developers through additional flexibility in the application of zoning parking requirements, in requiring that leases and property transactions separately identify the cost of parking spaces and offer options for reduced parking in exchange for covenants and agreements to incorporate cash in lieu of parking and employer paid transit benefits in building leases and other real estate transactions. Municipalities should agree to require Commuter Choice strategies to be considered in traffic planning, site plan and development review decisions, zoning and parking ordinance revisions, access-to-jobs programs and local tax policy.

b. Accelerate and Expand Investment in Pedestrian and Bicycle Improvements.

Background. Transportation agencies have begun to program more bicycle and pedestrian transportation improvements in recent years, making these reasonably available in all metropolitan areas. A large share of these projects offer transportation and related air quality benefits by giving travelers expanded travel choices for short and medium length trips within communities and for access to public transportation. Projects that restore or improve walking and biking connections between neighborhoods to schools, for example, may significantly reduce 'serve passenger' trips made by parents to drop or pick up their kids at school. Projects that overcome natural or man-made barriers to safe and comfortable bicycle and walk travel to shopping centers, park-and-ride lots, transit stations, employment centers, or recreational areas may significantly reduce motor vehicle use for access to these activities. Especially when combined with improved transit, expanded financial incentives for use of alternatives, land use and urban design strategies that reduce trip lengths and automobile dependence, and social

marketing efforts, investments in pedestrian and bicycle facilities can have a major impact on the number of motor vehicle trips in an area, and typically somewhat lesser impacts on vehicle miles of travel.

Emission Reduction Benefits. The reduction of emissions stemming from improved pedestrian and bicycle is often disproportionately higher than the accompanying reduction in motor vehicle trips and vehicle miles of travel. This is because motor vehicle emissions per mile traveled are highest when engines are cold. Regional travel demand models are usually poorly suited to characterizing the nature, attributes, barriers and potential for non-motorized travel modes. The often inadequate and poor quality local data on walking and bicycling has frequently lead to gross misestimation of the potential for non-motorized modes to play a role in travel and even greater misestimates of their potential to reduce air pollution. When well integrated into a community and regional transportation demand management system, bicycle and pedestrian improvements usually have a potential to multiply the effectiveness of other strategies to reduce motor vehicle trips and emissions by enhancing access to public transportation, influencing travelers to choose closer destinations instead of more distant ones, and enhancing the livability and attractiveness of existing communities, supporting infill development, and boosting travel choice.

SIP Commitments for Pedestrian and Bicycle Improvement TCMs. Most regional transportation improvement programs (TIPs) and regional transportation plans (RTPs) include some pedestrian and bicycle improvements, usually composing a miniscule percentage of the 20 year plan budget. At this very small level of expenditures on bicycle and pedestrian improvements, there can be little hope of making very much of the region pedestrian and bicycle friendly or to have an appreciable effect on travel demand, mobility, fuel consumption and emissions from these projects. It is a reasonably available measure to accelerate the rate of project programming and funding commitments for bicycle and pedestrian projects, for example by building out the projected 20-year RTP bicycle and pedestrian program in a period of three to five years. If a region is today spending one percent of its RTP capital and operating budget on bicycle and pedestrian projects and programs, it can achieve this SIP objective by increasing spending on these projects to five or six percent of the total. Funds for this might be found by slipping slightly the timetable for buildout of some other projects in the TIP and RTP that can be expected to increase emissions and thereby delay timely attainment of healthful air quality.

A bicycle and pedestrian SIP commitment might also include funding of a program for community-based bicycle and pedestrian planning and improvements. In a very large share of communities there is significant unmet demand for the retrofit of sidewalks, for pedestrian traffic safety improvements, for enhanced connections of neighborhoods to schools, and for better pedestrian and bicycle access to public transportation. A SIP commitment to fund planning and public involvement to identify, design solutions, and address local needs such as these is a critical part of assuring effective additional efforts in this arena beyond the accelerated funding of TIP and RTP bicycle and pedestrian projects. Because of the difficulty of

estimating emission reduction benefits related to many small scale projects, it is important for the SIP emission analysis to aggregate these into a performance-oriented package. In other words, the SIP should set realistic but ambitious mode share objectives and trip reduction objectives related to improving bicycle and pedestrian friendliness of particular areas, fund travel monitoring and planning to evaluate the effectiveness of the overall effort, and not waste time evaluating each individual component of the non-motorized travel investment and service enhancement effort. As the overall package is implemented, the investments, plans, and policies should be actively evaluated together and resources allocations and policies should be refined in response to experience.

c. Large and Small Scale Transit-Oriented In-fill Redevelopment with Demand Management

Background. There is a growing consensus among land development and real estate experts that some of the best emerging opportunities for market-responsive growth of new housing and employment are in infill redevelopment in existing communities, including urban and inner suburban areas that have been in decline in recent decades. (see for example, Roxanna Guilford, 'Experts say inner cities will boom in 21st century,' *Atlanta Business Chronicle*, May 7, 1999) Steps are being taken by some regions to facilitate this shift in development focus. For example, Portland, Oregon, Newark, New Jersey, and Atlanta, Georgia are all taking steps in various phases of progress, towards renewal of brownfields and older neighborhoods.

Emission Reduction Benefits. There is substantial evidence that significant air quality benefits can be achieved by modifying land development patterns to limit urban sprawl and facilitate transit use. A recent EPA-funded report concludes that careful land use planning can reduce vehicle trip lengths and promote shifts to transit, bicycling and walking modes. EPA, Office of Mobile Sources, *Background Information for Land Use SIP Policy*, Final Report, Contract No. 68-C7-0051 (9/30/98)(available on EPA, OMS web site, and appended to our prior comments as Exhibit D). For example, the report cites studies showing that development at infill sites can result in vehicle NOx emissions that are 27% to 42% lower than at more dispersed locations. *Id.* at 5. The report identifies specific strategies to achieve such results, including planning that promotes transit-oriented development, density transfers, and design elements that encourage pedestrian, bike, transit and ridesharing activity (e.g., narrower streets, sidewalks, bike lanes, traffic calming devices). *Id.* at 10-11. The report further identifies a number of cities throughout the nation where such strategies have been adopted and included in air quality plans. *Id.* at 20-33. For example, the maintenance SIP for Portland, Oregon identifies several land use TCMs, including an urban growth boundary, requirements for transit-oriented development, and a regional parking policy. *Id.* at 24-25. The 1994 Sacramento, CA., ozone SIP contains land use-related TCMs, including a requirement that new developments include mitigation measures to achieve a 15% reduction in vehicle emissions. *Id.* at 22-23. The San Francisco clean air plan includes land use planning measures, and programs to promote pedestrian travel and traffic calming. *Id.* at 21-22. The EPA report also identifies a number of other land use TCMs that have been adopted in other cities,

although not yet included in clean air plans. Id. at 26-30. All of the above-referenced strategies are within the arena of potential RACM that must be considered by the states. See 42 U.S.C. 7408(f)(1)(A)(xiv).

The Atlanta region recently won approval from EPA for a TCM which is composed of a projected 6 million square foot mixed use infill brownfield redevelopment on a 135-acre parcel, together with a regionally significant highway bridge across an interstate road that is needed for site access, and a comprehensive transportation demand management and transit service package for the site and nearby area. This project qualified as a TCM because it was possible to demonstrate that the package of measures, investments, and development would contribute to reduced regional vehicle miles of travel by locating more jobs and housing close to the regional center with appropriate services and incentives.

Commitments for Land Use Strategies. Other regions should be encouraged to develop pilot projects that build upon these models for land use strategies and/or TCMs with comprehensive travel demand management, transit services, and appropriate incentives.

To pick one example in the Washington, DC region, a land use strategy could be focused on the New York Ave/NOMA (North of Massachusetts Ave) corridor Metro-oriented redevelopment zone. The DC Government could identify and package a focused redevelopment zone, related transportation improvements, and supportive transportation demand management policies as a comprehensive land use strategy, building on the precedent set by the Atlantic Steel project in Atlanta, which recently qualified as a SIP TCM. In Atlanta, this 135-acre brownfield redevelopment site in Midtown Atlanta required major transportation investment in the form of a highway bridge across I-75/I-85 to connect it to a MARTA metro station and provide needed access for a 6 million square foot mixed use development. The Atlantic Steel project could only proceed if this transportation project was bundled with added transit investments and services, the in-fill redevelopment project and appropriate urban design guidelines, and supportive transportation demand management to assure that it would reduce total motor vehicle trips and travel in the region. US EPA helped the Atlanta region with technical modeling assistance that helped demonstrate the emission benefits. This innovative packaging of strategies allowed the transportation investments to move forward despite a transportation conformity lapse in metropolitan Atlanta which blocked other new highway funding approvals.

With the DC region facing tight motor vehicle emission budgets, a similar approach could be followed for the NY Ave/NOMA corridor redevelopment, where a new metro station and transit oriented redevelopment proposals are gathering momentum, but have not yet been accounted for in the regional transportation land use, transportation, and air quality planning process. Similar strategies that also qualify for emissions reduction credit as a SIP measure could be developed in other regions to assure priority access to funding for transportation investments needed to support in-fill development and to safeguard such investments should a region fall into a conformity lapse.

A smaller scale land use strategy would be geared to removing zoning, permitting, building, parking, and site design code barriers that now impede adaptive reuse of existing buildings for accessory apartments, neighborhood serving retail, and environmentally appropriate home-based business uses in residential areas. Many local jurisdictions now prohibit accessory apartments or make it difficult to provide affordable 'granny flats' in existing single-family homes in transit-oriented neighborhoods close to employment centers. One reasonably available land use strategy would facilitate such conversions with code changes, technical assistance and financing, for example to help empty nesters age in place while repopulating older neighborhoods back to their historic population levels. By helping more working families live close to jobs, this would cut vehicle miles of travel, congestion and pollution. The RTP and/or SIP could establish targets for creating new housing units in place in existing transit served neighborhoods, for example, for accessory units to provide for a 1% increase in the number of total housing units per year in zones that are within walking distance of designated 'smart growth' centers or within walking distance of transit operating at least once every 15 minutes.

d. Diesel Fleet (Bus, Vans, Municipal vehicles) Phase-out and Replacement.

Background. An air pollution control measure that has been implemented in an increasing number of areas around the nation is the phase-out of diesel buses and fleet vehicles on an accelerated schedule and replacing them with new buses and fleet vehicles powered by substantially cleaner fuels, such as natural gas or stored electric power. Although this strategy primarily serves the objective of minimizing air emissions, it can also enhance the attractiveness of busses as an alternative to driving and could reduce consumption of fuels that contribute most to greenhouse gas emissions and dependence on foreign energy sources.

Emission Reduction Benefits. Studies show that in-use emissions of NOx and VOCs by natural gas buses are about one-third those of diesel buses. Natural Resources Defense Council, *Exhausted by Diesel, How America's Dependence on Diesel Engines Threatens Our Health*, Ch. 6 at 1-2 (1998)(available at: www.nrdc.org/nrdcpro/ebd/chap6.html). See also T.C. Coburn, B.K. Bailey, and K.J. Kelly, National Renewable Energy Laboratory, Results from Federal Emissions Tests on Alternative Fuel Vehicles and their Implications for the Environment and Public Health. A just released report by the National Association of State and Local Air Quality Officials looking at the health impact of particulates concludes that up to 125,000 Americans may contract cancer as a result truck, bus and other diesel engine emissions. Numerous businesses and bus systems around the nation are now using CNG vehicles, and thus it is clearly an established technology. NRDC Report at 3-10. For all these reasons, and given the substantial number of diesel fleet vehicles operating in most regions, a diesel conversion program is clearly a RACM that must be considered for inclusion in the SIP.

SIP Commitments for Diesel Bus Replacement. Although the issue cost of purchasing alternative fuel vehicles is higher than conventional diesel fuel buses, clean fuel buses are a wise investment in the long run. Diesel buses cost 30 to 50 thousand dollars more than standard diesel buses. Natural gas costs average 15

to 40% less than gasoline or diesel and the engines require less maintenance so you get a long term operating cost benefit. The greatest benefit it offers is the reduction of harmful smog to our health. Over its expected lifetime a CNG bus will save approximately 190 thousand gallons of diesel fuel, also decreasing dependency on petroleum. A city in California recently became the first public agency in U.S. to park a fleet of Diesel buses and switch overnight to a fleet of 100% natural gas, reporting few difficulties in making the transition due to extensive training of staff for the change.

A SIP for diesel bus replacement should identify the timetable for bus replacement, the age of buses being replaced, and adequate funding resources for the replacement.

B. NEPA AND THE METROPOLITAN PLANNING PROCESS.

The essential elements of NEPA are 1) identification of the purpose and need for a proposed project or program, 2) an assessment of a project's or program's significant impacts on the human environment, 3) consideration of alternatives when significant impacts are expected, 4) identification of mitigation measures to eliminate or minimize significant impacts, and 5) a public process for review of need, impacts, alternatives and mitigation options. These are elements of decision-making under NEPA that we believe apply to the development of multiple transportation projects in a metropolitan area. They are currently not elements required to be considered in the metropolitan planning process. Instead, they are required to be considered as part of each project review under NEPA. This approach requires the implementing agencies with little responsibility for making regional, systems level decision, to evaluate the cumulative environmental and other impacts of multiple projects in a region. It also empowers the implementing agencies to second-guess, and then effectively veto, the regional choices made by an MPO by rejecting those regional choices as options to be considered in the EIS process under NEPA.

The current process therefore requires overlap and duplication by requiring implementing agencies to reconsider regional impacts and alternatives that may have been considered by the MPO, and also to undermine the authority to make regional systems decisions granted to MPOs by TEA-21. DOT's proposed rules provide an opportunity to remedy these defects in the current program.

Currently, the NEPA process is typically applied, if not exclusively, to individual highway and transit projects. In almost all cases, the only impacts reviewed are at the corridor level. As a result, most of the impacts of the transportation system we are most concerned about, e.g., loss of wild lands and farmland to regional development, regional air pollution, energy consumption and greenhouse gas emissions, are ignored. The cumulative impact of multiple project decisions on mobility, access for the transit-dependent, public and private costs, and large scale environmental impacts are not addressed. The current NEPA process is not serving the major interests and objectives outlined above, nor is it supporting the development and consideration of alternative plans that can approach the statutory objectives of TEA-21.

The failure of the transportation planning process and the NEPA process to address these impacts is the legal Achilles' heel of project development under current law. NEPA challenges to highway projects have begun to raise the lack of cumulative impact analysis as a basis for stopping projects. See, e.g., the 1997 decision of the 9th Circuit court of appeals in which a highway EIS was remanded when the EIS failed to catalogue past projects and discuss the cumulative impacts of past, present, and expected future projects in the area. The Court held that the agency did not meet its burden to fully explain the cumulative impacts. *Carmel-By-The-Sea v. U.S. Dept. of Transp.*, 123 F.3d 1142 (9th Cir. 1997). To address this requirement of NEPA, DOT must either advance the NEPA consideration of cumulative and regional impacts and alternatives into the MPO planning process, or consider those impacts separate from the planning process in which those decisions are made by MPOs.

The approach to integrating NEPA into the planning process that is described in the proposed rule makes an attempt to open the option of considering such impacts in the planning process, but is fraught with potential pitfalls. The proposal places almost exclusive emphasis on using the planning process to satisfy the need under NEPA to identify an individual project's purpose and need. The proposal does not address any requirement that the NEPA process address cumulative regional impacts, or more importantly, address alternatives to the regional planning approach that provides the assumptions used to support findings of project-level purpose and need.

If the NEPA process is to meaningfully address regional and cumulative impacts, it should be integrated into the planning process. For NEPA to be integrated into the planning process, regional planning must then consider alternatives on a regional scale. NEPA, then, links back to the requirement for accomplishing the four planning objectives under TEA-21 above. When NEPA requires an assessment of alternatives, one of the issues always is what alternatives must be considered besides the proposed project and the no-build alternative. TEA-21 provides an answer: to the extent Congress defined the "objective" of the planning process, then it also defined the parameters of at least one planning scenario that must be considered, or in NEPA terms one of the alternatives to the projects proposed in the region, i.e., a fiscally constrained scenario that optimizes each of the four statutory planning objectives.

1. Incentives and Guidelines to Support MPO Completion of Regional NEPA Analyses.

We recognize that DOT may not require MPOs to take on responsibility for performing as part of the regional planning process a regional and cumulative impact analysis that meets the requirements of NEPA. However, we believe that DOT can provide clear regulatory guidelines and incentives to MPOs and implementing agencies that would encourage and facilitate the cooperative integration of NEPA into the planning process. These would include 1) developing a procedure in the planning rules that would clearly empower an MPO that chooses to undertake responsibility for regional NEPA analysis, and 2) an

incentive by ensuring the availability of resources when an MPO undertakes the responsibility.

MPOs are not likely to accept the responsibility for regional analyses that would meet NEPA criteria if 1) they lack assurance that their work product will be used to guide the subsequent corridor-level review of individual projects, and 2) they are not provided the incremental staff and resources that allow such reviews to be performed. DOT's rules can overcome these obstacles by establishing criteria and a procedure for MPOs to enter into MOAs with implementing agencies that commit the MPO to undertaking the analysis responsibility while committing the implementing agencies to use the results of the MPOs assessment of alternatives and choice of preferred alternative. The undertakings could be linked administratively by modifying the proposed rule that would prohibit the approval of individual projects until after the completion of NEPA review and conformity. That rule could also prohibit the approval of individual projects that are not consistent with the system approach developed by the MPO pursuant to its delegated NEPA responsibilities.

The rule could allow an MPO to opt into the NEPA process by adopting certain provisions into its regional transportation plan. Once those elements of its plan are adopted and incorporated into the statewide transportation plan, those provisions would govern both the MPO's and the state DOT's relative rolls with regard to addressing various aspects and scales of analysis under NEPA. Such a process, subject to some federal minimum criteria, would also allow each MPO and its State DOT to shape particular elements of the NEPA partnership to meet their respective needs.

At the same time, however, the federal rules also need to make clear that if an MPO opts into this NEPA responsibility, federal funds available to the State to perform NEPA reviews would need to be transferred to the MPO. This could be accomplished through the statutory authority that allows federal agencies to make funds available to state and local entities to promote the streamlining of project reviews.

II. NEPA RULE COMMENT – ENVIRONMENTAL DEFENSE SUPPORTS THE INTEGRATION OF SOCIAL AND EQUITY ISSUES REQUIRED BY 23 USC §109 AND THE CIVIL RIGHTS ACT INTO A SINGLE REVIEW PROCESS UNDER THE NEPA UMBRELLA.

Environmental Defense supports DOT's view that all project impacts, including social, economic, equity and energy impacts of projects that are required to be evaluated under 23 USC § 109(h) and the Civil Rights Act, should be included in an integrated analysis that is exposed to public scrutiny through the NEPA review process. We understand that a comprehensive assessment of the environmental, social, economic, equity and energy impacts of projects would include all corridor-level impacts that adversely affect such important values as—

- human health;
- interests protected under Title VI of the Civil Rights Act;

- protection of open space and wildlife habitat, with special emphasis on preservation of critical habitat for endangered and threatened species;
- preventing global warming; and
- the four values identified as “objectives” of the transportation planning process: mobility, economic growth, minimizing air pollution and fuel consumption.

Although ED supports DOT’s comprehensive framework for addressing these issues and stakeholder interests, we are also concerned about a number of issues that are not adequately addressed by the proposed rule, including the failure to fully describe the relationship between project-level reviews and related regional analyses performed as part of the planning process, the cumulative impacts of multiple projects in a region on important environmental, social and economic values when those impacts are not fully addressed as part of the planning process, the failure to clarify the scope of alternatives that must be considered at the regional level either as part of the planning process or an assessment of cumulative impacts as part of project-level assessments, and the apparent abandonment of DOT’s current regulatory interpretation of 23 USC § 109(h) that requires the adverse effects of a project to be mitigated as a condition for approval.

These concerns are raised in the context of specific examples of adverse impacts that are reasonably anticipated to result from the approval of major highway capacity-expanding projects. We take this approach for three reasons: 1) we believe these issues are of major public concern and deserve the attention of the Department’s top decision-makers, 2) these issues are already being raised or will be raised in the near future with regard to specific planned or proposed highway projects, and 3) we believe the final rules should be written to specifically anticipate how the Department and implementing agencies will address these issues.

ISSUE I: CANCER AND OTHER ADVERSE HEALTH RISKS FROM TOXIC AIR POLLUTANTS AND FINE PARTICLES EMITTED BY HIGHWAY VEHICLES.

This first issue is presented in response to recent evidence showing that people living in communities located near heavily traveled highway facilities are being exposed to concentrations of toxic and hazardous air pollutants emitted by motor vehicles that cause an extremely high and unacceptable risk of cancer including childhood leukemia, and other respiratory and cardiovascular disease.

The most compelling evidence is presented in a research report released in March 2000 by the South Coast Air Quality Management District in California that demonstrate both measured and modeled regional exposures to toxic air pollutants across a large portion of the Los Angeles air basin. The study demonstrates that toxic pollutants emitted by motor vehicles measured at eight sites accounts for an unacceptably high cancer risk in the range of 1 in 1,000 exposed individuals to 1 in 700. See, Multiple Air Toxics Exposure Study-II (March 2000)[attached]. The study

found that the total cancer risk in the L.A. Basin from toxic air pollutants measured at these 8 monitoring sites ranges from 1,100 in 1 million (or 1 in 900) to 1,700 in 1 million (or 1 in 670), and that 90% of the total cancer risk is attributable to toxic air pollutants emitted by mobile sources. Id. ES-3, ES-5. Most of the mobile source cancer risk is associated with exposure to the toxic pollutants benzene, 1,3 butadiene, formaldehyde and diesel particulate matter ("DPM"). The concentrations measured at these eight sites appears not to measure the actual high exposure site since the Compton monitoring site measured the highest concentrations of other mobile source-related toxic pollutants, but DPM was not measured at that site. If DPM concentrations at that site are proportionally higher compared to other sites in the study in the same ratio as benzene, 1,3 butadiene and formaldehyde, the actual peak cancer risk would likely exceed 1 in 500 exposed persons.

In addition, concentrations of toxic pollutants estimated by a regional air quality model show that neighborhood exposures near heavily traveled highways is significantly higher than exposures monitored at the regional monitoring stations, producing a cancer risk as high as 1 in 130 (5800 in 1 million) in some receptor areas. Id., Fig. 5-3a, p.5-11. These estimates may be conservative since the concentrations estimated by the model in receptor areas where monitoring stations measured actual concentrations showed that the model in almost all cases underpredicted the measured concentrations.

Significantly, the estimates of increased cancer risk predicted in MATES-II is supported by recent epidemiology data. Evidence of the incidence of childhood leukemia in Denver during the late 1970s and early 80s, Pearson and colleagues (2000), shows an association between residential location within 750 feet of a major traffic corridor and an elevated incidence of childhood leukemia. These data suggest that exposure to higher than regional urban background concentrations of motor vehicle emissions is a significant risk factor for childhood leukemia.

In addition, other research provides evidence of increased incidence of other adverse health outcomes for residents of neighborhoods near heavily traveled highways. Brunekreef and colleagues (1997) show that adverse health outcomes including premature mortality and increased morbidity through increased respiratory and cardiovascular effects are associated with the increase in ambient fine particulate matter, e.g., particles less than 2.5 microns in diameter ("PM_{2.5}") from roadway sources.

Taken together, this evidence requires that a comprehensive risk assessment be performed to determine the health risks for neighborhoods located near heavily traveled roadways that are proposed to be built or expanded in densely populated metropolitan areas, and that alternatives to the development of high cancer risk travel corridors be chosen as the preferred alternative or that mitigation be adopted to prevent the incremental health risk attributable to toxic air pollutants emitted from these projects.

A. Approximating Exposures Outside The L.A. Basin.

The MATES-II study demonstrates that the modeling tools are available to perform risk assessments to estimate cancer risk attributable to motor vehicle emissions on a regional scale, and traditional EPA-approved line models are available to assess the incremental risks for populations living in close proximity to highway sources of air toxic emissions.

It is reasonable to use the MATES-II results as a screening tool to identify the travel corridors outside the L.A. basin where unacceptably high cancer risks are likely. These results are relevant to estimating exposure to toxic air pollutants for populations outside of the L.A. Basin when population densities and vehicle trips are comparable to those observed in heavily traveled highway corridors in the L.A. Basin. Exposures to toxic air pollutants by residents living near heavily traveled highways outside of the L.A. Basin can be reasonably estimated by comparing with the concentrations measured and/or modeled near roadways with similar traffic levels in Los Angeles. MATES concentration maps indicate that the highway corridors associated with the highest modeled and measured concentrations of toxic air pollutants are the Harbor Freeway (I-110), Long Beach Freeway (I-710), and the Santa Ana Freeway (I-5) through Los Angeles and Anaheim. CalTrans data shows that these corridors carry annual average daily traffic (AADTs) of between 200,000 to 350,000 vehicles.

Residents located near heavily traveled highway corridors with comparable AADTs in other urbanized areas should experience exposures to mobile source toxic air pollutants at least as high as those reported in Los Angeles. Emissions from highways with comparable AADTs in the other 49 states would be expected to be higher than those observed in California because emissions of DPM and toxic VOC species are lower for both diesel and gasoline-fueled vehicles that are subject to California emissions standards and that burn fuels meeting California fuel standards. Therefore, it is reasonable to estimate that exposures to mobile source toxic pollutants for residents near highways with AADTs above 200,000/day will likely be higher than those reported in MATES-II, but for screening purposes can reasonably be assumed to experience exposures at least as high as those reported in L.A.

For residents located immediately adjacent to heavily traveled highways, cancer risks will be significantly greater than those reported for the 8 regional monitoring stations in MATES-II. The higher modeled peak concentrations are more likely to approximate exposures for nearby residents. Standard line models used to estimate concentrations of criteria pollutants emitted by motor vehicles on highways generally show that concentrations at the right-of-way are ten times higher than concentrations 300 meters away from the R-o-w. Thus exposures for families living closest to heavily traveled highways may be substantially greater than the concentrations measured at regional monitoring stations reported in MATES-II.

B. Significance Of Health Risks.

These high cancer risks for nearby residents, and even higher risks for those living adjacent to roadways, far exceed the risk levels adopted by EPA and Congress in setting national health standards, and are unacceptable to the residents of these neighborhoods. EPA has summarized the consensus cancer risk policy of federal agencies as requiring careful assessment of cancer risks in situations where the population risk is greater than 1 in 1 million.

Where the entire U.S. population is exposed to a chemical classified as a probable human carcinogen, the agency consensus appears to be that risks less than 1 in 1 million generally can be found acceptable without consideration of other factors while risks greater than that level require further analysis as to their acceptability.

56 Fed. Reg. 7757 (February 25, 1991). On the other hand, EPA and other federal agencies have generally acted to reduce cancer risks greater than 1 in 10,000. *Id.* Here, the cancer risk for those living near heavily traveled highways is at least 1 in 1,000 to 1 in 650.

Except for diesel particulate, these risk estimates are derived from well-established risk factors that have been the subject of intensive scrutiny for many years. Although the MATES-II cancer risks are derived from risk factors adopted by the California environmental agencies, those factors do not differ significantly from those reported by EPA. See Integrated Risk Information System (EPA, Cincinnati, OH)[<http://www.epa.gov/iris>]. In addition, these risk estimates are NOT for the maximally exposed individual living adjacent to heavily traveled highway corridors, but rather for regional populations. Nearby neighborhood exposures are substantially higher, and may be as much as an order of magnitude higher for the maximally exposed individuals.

With regard to diesel particulate, the cancer risks in MATES-II are estimated based on unit risk factors adopted by California, but not yet by EPA. "The current EPA position is that diesel exhaust is a likely human lung carcinogen and that this cancer hazard exists for occupational and environmental levels of exposure." 65 FR 35,446 (June 2, 2000). This characterization of DPM as a carcinogen is supported by NIOSH, the International Agency for Research on Cancer, and WHO. *Id.* The National Toxicology Program at NEIHS on May 15, 2000, also listed diesel particulate as a "known human carcinogen." Although a risk factor for DPM has not yet been adopted by a federal agency, more than enough data has been accumulated from numerous epidemiological studies to allow a risk factor to be adopted for risk assessment purposes.

It is also clear that this issue, or the need to assess health risks in heavily traveled corridors will not be resolved by regulatory action proposed by EPA. EPA's current proposed diesel rule anticipates that "selected air toxics chosen for analysis are expected to decline by the same percentage amount as hydrocarbon exhaust emissions." 65 FR 35,460. EPA estimates that heavy duty vehicles "account for about 3 percent of national VOC and 8 percent from mobile sources in 2007." 65 FR 35,458. Total VOC reductions expected from the rule, as shown in

Table II.D-3, are about 230,000 t/yr from a 2007 HDV inventory of approximately 430,000 t/yr. While a significant reduction in total HDV emissions, this 55% reduction of air toxic emissions from HDV will reduce total vehicle emissions of air toxics by only about 4.5% between now and 2020. This reduction in total highway vehicle emissions will not significantly reduce cancer risk in heavily traveled highway corridors.

In addition to cancer risks, the increased mortality and other adverse health effects attributable to fine particle exposures currently measured in these corridors raise additional questions about the public health price we are asking citizens to pay as a result of increased highway capacity. DOT has recently estimated the adverse health effects attributable to highway vehicle emissions, including increased premature deaths and other serious respiratory and cardiovascular diseases, to cost the American public in excess of \$40 to \$64 billion/year, depending on whether a premature death is valued at \$2.7 million or \$4.8 million. See Table 9, Addendum to the 1997 Federal Highway Cost Allocation Study Final Report, U.S. Department of Transportation, Federal Highway Administration (May 2000).

Table 9. Estimated Economic Costs of Motor Vehicle-Related Air Pollution in 2000

Pollutant	Impact	Costs of Rural Motor Vehicle Travel \$1990 (millions)	Costs of Urban Motor Vehicle Travel \$1990 (millions)	Costs of All Motor Vehicle Travel \$1990 (millions)
Particulate Matter	Mortality ²	12,695	21,558	31,162
Particulate Matter	Non-fatal Illness	3,683	6,232	9,183
Sulfur dioxide, nitrogen dioxide, carbon monoxide	Non-fatal Illness	0	51	51
Ozone	Non-fatal Illness	28	16	47 ³
Total		16,406	27,857	40,443 ⁴

¹ Costs for "criteria" pollutants only (does not include toxic pollutant costs). Excludes certain health-related costs and costs of reduced visibility, crop damage, and material damage not quantified by EPA.

² Mortality costs based on DOT's \$2.7 million estimated cost of a premature death.

³ Does not include ozone mortality costs, which are highly uncertain.

⁴ Comparable estimate using EPA's value of life is \$64,681.

Source: Abt Associates, 1998, pages 9-11.

As noted in the cost study, these costs do not include the health effects caused by air toxic emissions from highway vehicles discussed above. A disproportionately high portion of the adverse health effects associated with these costs, as well as the costs themselves, will be experienced by nearby communities and not the larger community as a whole. These risks become doubly troubling if

the residents who are most affected are the least empowered among us, and the least able to move or take other actions to defend themselves from the adverse health risks of motor vehicle pollution.

Therefore, commenters believe that this evidence of --

- significant risk of adverse health effects from current exposures to regional concentrations of motor vehicle pollution;
- the large incremental risk for citizens living in close proximity to heavily traveled roadways, and
- the increased exposure and corresponding health risk that can be expected if increased capacity contributes to increased mobile source emissions in these corridors;

requires analysis and the adoption of non-polluting transportation alternatives and/or development of mitigation measures under NEPA, 23 U.S.C. § 109, and Title VI of the Civil Rights Act before any action may be taken to approve highway projects that cause or contribute to cancer risks in excess of acceptable risk levels, premature mortality from various cardio-pulmonary diseases, and the increased incidence and severity of the morbidity effects of exposures to emissions from motor vehicles.

C. Legal Authority Requiring Assessment of Health Risks.

NEPA, section 109(h) of title 23, DOT's current regulations implementing these statutory requirements in 23 CFR Part 771, and applicable judicial precedents require that an agency consider the adverse public health effects of air pollution associated with the construction of a highway. See *Lathan v. Volpe*, 350 F Supp 262 (WD WA 1972); *Keith v. Volpe*, 352 F Supp 1324, 1335 (CD CA 1972); see also 40 CFR § 1508.8; 40 CFR 1502.16. The proposed rules, however, are unclear about what stage of the process these effects will be addressed, how alternatives will be considered in the process, and whether mitigation will be required if alternatives are not selected.

1. NEPA.

It is well settled that an EIS must be performed for any federally funded activity that will or may have a significant impact on the human environment. Agencies and courts generally require an EIS when evidence "show[s] that the proposed project would materially degrade any aspect of environmental quality."¹ Courts do not need to find that the action will have significant effects – only that the action may cause significant effects.² Where there are substantial questions as to

¹ See *Sierra Club v. Babbitt*, 69 F. Supp. 2d 1202 (E.D. Cal.1999); *Davis v Coleman*, 521 F2d 661, 673 (9th Cir. 1975). Citing *Environmental Defense Fund v. Armstrong*, 487 F.2d 814, 817 n. 5 (9th Cir. 1973); *Save Our Ten Acres v. Kreger*, 472 F.2d 463, 466 (5th Cir. 1973).

² See *Davis v Coleman*, 521 F2d 661, 673 (9th Cir. 1975).

whether the project will create a significant impact, it is not reasonable for an agency not to do an EIS.³

It has long been recognized that air pollution associated with highways has a significant impact on the human environment. In the context of air pollution, a brief or conclusory discussion of impacts is insufficient to satisfy the mandates of NEPA. See *I-291 Why? Ass'n v. Burns*, 517 F.2d 1077, 1080 (2nd Cir. 1975). One court noted that an incomplete or limited evaluation of the air pollution created by a highway expansion is egregious because "automobile emission was responsible for approximately 50% of the air pollution throughout the country . . ." See *Keith v. Volpe*, 352 F Supp 1324, 1334 (CD CA 1972). Therefore, where evidence shows that toxic and hazardous air pollutants emitted by mobile sources cause a significant risk to public health, a full EIS examining the extent to which each project will add to existing adverse health effects by allowing increased exposure to hazardous and toxic air pollutants emitted by mobile sources is required to reveal the true public health risks associated with the expansion of major highways.

2. 23 U.S.C. § 109(a) and (h).

In addition to NEPA, federal highway law, 23 USC §109(a), requires consideration of the adverse effects of air pollution prior to approval of the plans and specifications for a highway, and § 109(h) requires measures that "eliminate or minimize" the adverse effects of "air pollution".

In a case challenging DOT's approval of a highway project without assessing its impact on air pollution, the court in *D.C. Federation of Civic Associations v. Volpe*, 459 F.2d 1231 (D.C. Cir. 1971), held that 23 U.S.C. § 109(a) required such an analysis:

We can find no basis in the statute's language or purpose for the conclusion that certain hazards are, as a matter of law, immaterial to the Secretary's evaluation of a project's safety. The District Court would surely agree that Congress did not intend to permit construction of a bridge in a situation, however rare, where air pollution would be a significant threat to safety. It does not follow, of course, that air pollution will be a significant hazard in all- or even any-highway projects. And the District Court apparently concluded that no extraordinary dangers are likely to arise from the Three Sisters Bridge. Still, the gathering and evaluation of evidence on potential pollution hazards is the responsibility of the Secretary of Transportation, and he undertook no study of the problem.

DOT's approval of the highway bridge was remanded.

³ See *Sierra Club v. Babbitt*, 69 F. Supp. 2d 1202, 1214 (E.D. Cal.1999); *Davis v Coleman*, 521 F2d 661 (9th Cir. 1975). The court said it was obvious that the construction of a large intersection on a major highway would have significant impacts on the quality of the human environment, despite the states conclusory assertions to the contrary.

Federal highway law goes beyond NEPA by requiring that the decision to approve a highway be –

made in the best overall public interest taking into consideration the need for fast, safe and efficient transportation, public services, and the costs of eliminating or minimizing such adverse effects and the following: (1) air, noise, and water pollution; (2) destruction or disruption of man-made and natural resources, aesthetic values, community cohesion and the availability of public facilities and services; (3) adverse employment effects, and tax and property value losses; (4) injurious displacement of people, businesses and farms; and (5) disruption of desirable community and regional growth. Such guidelines shall apply to all proposed projects with respect to which plans, specifications, and estimates are approved by the Secretary after the issuance of such guidelines.”

23 USC §109(h). At a minimum, this provision requires DOT to determine the costs of eliminating or minimizing the adverse health effects attributable to air pollution, and then requiring mitigation in the “best overall public interest.”

DOT’s 1987 regulations implementing this requirement and NEPA providing that the analyses required by §109(a) and (h) are to be performed as part of the NEPA review of the project. 23 CFR Part 771. The proposed NEPA rules continue to adopt this integrated approach. Thus because both §109(a) and (h) require an analysis of the adverse effects of air pollution and the costs of eliminating or minimizing such effects, an EIS is required.

Section 109(h) also requires DOT to “eliminate or minimize” the adverse effects attributable to a new or expanded highway. This provision is implemented through DOT regulations in 23 CFR §771.105, but has not been applied by FHWA with regard to the adverse health affects associated with toxic and hazardous air pollutants emitted from highway projects. The current DOT regulation adopts as --

the policy of the [Federal Highway] Administration that:

- (b) Alternative courses of action be evaluated and decisions be made in the best overall public interest based upon a balanced consideration of the need for safe and efficient transportation; of the social, economic, and environmental impacts of the proposed transportation improvement; and of national, State, and local environmental protection goals.
- (c) Public involvement and a systematic interdisciplinary approach be essential parts of the development process for proposed actions.
- (d) Measures necessary to mitigate adverse impacts be incorporated into the action. Measures necessary to mitigate adverse impacts are eligible for Federal funding when the Administration determines that:
 - (1) The impacts for which the mitigation is proposed actually result from the Administration action; and

(2) The proposed mitigation represents a reasonable public expenditure after considering the impacts of the action and the benefits of the proposed mitigation measures. In making this determination, the Administration will consider, among other factors, the extent to which the proposed measures would assist in complying with a Federal statute, Executive Order, or Administration regulation or policy.

On its face, paragraph (d) requires that measures necessary to mitigate the adverse health effects of hazardous air pollutants be incorporated into the plans and specifications for the project. Subparagraphs (1) and (2) then establish criteria for determining whether the costs of mitigation are eligible for federal funding. But the rule does not appear to contemplate the approval of a project that would have significant adverse effects on human health without requiring that those effects be mitigated. This requires that the project either include measures to eliminate long-term human exposure to the levels of hazardous air contaminants that are associated with significant risks of adverse health effects, or that alternatives be developed that can prevent these adverse health effects.

3. Title VI Of The Civil Rights Act, And Related Guidance.

Causing adverse health effects such as increased incidence of cancer, increased premature death and other serious diseases to populations near heavily traveled highway corridors also takes on a discriminatory character when these impacts are imposed disparately on low income, ethnic or racial minorities.

a. Requirements of the Civil Rights Act.

Title VI and its regulations prohibit recipients of federal funds from engaging in intentional discrimination on the basis of race, color or national origin, as well as unjustified adverse disparate impact discrimination for which there are less discriminatory alternatives. Title VI provides that "[n]o person in the United States shall on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." *42 U.S.C. § 2000d*. DOT has promulgated regulations that bar disparate impact discrimination by recipients of federal funds to effectuate the provisions of Title VI. *See 42 U.S.C. § 2000d-1, 49 C.F.R. § 21.5(b)(2)*. *Accord, Memorandum from Attorney General Janet Reno to Heads of Departments and Agencies that Provide Federal Financial Assistance, Use of the Disparate Impact Standard in Administrative Regulations Under Title VI of the Civil Rights Act of 1964 (July 14, 1994)*.

The President's Order on Environmental Justice requires each federal agency, including FHWA, to make achieving environmental justice part of its mission. *Exec. Order 12,898 (Feb. 11, 1994)*. DOT and FHWA have in turn promulgated orders to implement the President's Order. *DOT Order on Environmental Justice (DOT Order 5610.2) (April 15, 1997)*; *FHWA Actions To Address Environmental Justice in Minority Populations and Low Income Populations 6640.23 (Dec. 2, 1998)*. These orders affirm the principle of using the

planning process to implement Title VI, related civil rights statutes,⁴ and the federal environmental laws to avoid intentional and adverse disparate impact discrimination. DOT recently issued Guidance to MPOs confirming that these criteria are to be applied in reviewing transportation plans and TIPs. CQ535

While Title VI and [environmental justice] concerns have most often been raised during project development, it is important to recognize that the law applies equally to the processes and products of planning. The appropriate time for FTA and FHWA to ensure compliance with Title VI is during the planning certification reviews conducted from Transportation Management Areas (TMAs) and through the statewide planning finding rendered at approval of the Statewide Transportation Improvement Program (STIP)."
See FHWA and Federal Transit Administration ("FTA"), Memorandum re: Implementing Title VI Requirements in Metropolitan and Statewide Planning (Oct. 7, 1999) at 2.

A valid disparate impact claim under Title VI has three main components. First, an action by an agency that receives federal funding has a disparate adverse impact based on race, ethnicity or national origin. The disparities may be demonstrated through statistical evidence, numerical disparities or anecdotal evidence. Second, any action that has such a disparate impact must be justified by business necessity. Third, even if the action would otherwise be justified by business necessity, the action may be prohibited if there are less discriminatory alternatives to accomplish the same end. A disparate impact claim does not require proof of intentional discrimination. *See United States Department of Justice, Civil Rights Division, Title VI Legal Manual (Sept. 1998) ("DOJ Title VI Legal Manual") at 53-59 and cases cited.*

The federal environmental laws are an integral part of the transportation equity framework. The civil rights laws require equal justice for all under the environmental laws as well as the transportation laws. The environmental laws can also provide substantive standards for assessing intentional and disparate impact discrimination claims. *See, e.g., Transportation Equity Act for the 21st Century ("TEA-21") (codified in titles 23, 49 and scattered sections of title 42, U.S.C.); Clean Air Act, 42 U.S.C. § 7401 et seq. as amended; National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4234; and the environmental review requirements for highway projects in 23 U.S.C. §109(h).* Thus, for example, an action that will add air pollution and have an adverse disparate health impact against low income, ethnic or communities of color would not be justified by business necessity and might in some cases also depart from substantive clean air standards in violation of both the Clean Air Act and Title VI. A number of less discriminatory alternatives might be readily available – such as compliance with Clean Air Act standards in cases where standards apply, or in cases where standards do not apply, taking actions that avoid the increased pollution such as providing mobility with non-polluting alternative modes, or protecting communities from the harmful exposures by creating protective buffer zones.

⁴ *See, e.g.,* 49 U.S.C. section 5332(b).

b. Applying the Civil Rights Act to Address Pollutant Exposures.

CQ535

Disparate impacts of motor vehicle pollution on communities is a concern brought into focus by a growing body of evidence that neighborhoods located in close proximity to large numbers of motor vehicles are exposed to substantially higher concentrations of primary fine particles and hazardous air pollutants known to cause cancer and cause or exacerbate other serious adverse health effects including asthma, cardiovascular and lung disease. Included in this recent research is evidence that children living within 750 feet of a major roadway are 12 times more likely to contract leukemia than children living farther away. Unlike secondary pollutants such as ozone that are formed in the atmosphere and cause regionally dispersed exposures, primary pollutants are most concentrated at the source. Populations living near sources of motor vehicle emissions such as highways and interchanges are exposed to substantially greater concentrations of the vehicle pollutants that endanger public health. The motor vehicle pollutants of particular concern include fine particles smaller than 2.5 micrometers in size, and the carcinogens benzene, 1,3 butadiene, formaldehyde, and numerous components of diesel particulate matter.

The signatories to this request are concerned about the adverse health effects of exposure to these pollutants by all our residents; low income and middle class alike. Children are especially at risk from all of these effects, including a greater likelihood of suffering from childhood leukemia and other life-threatening diseases.

But this concern focuses most on the residents of neighborhoods adjacent to the major Interstate and other heavily traveled highway corridors where average daily vehicle trips are currently in the 150,000 range and projected to increase substantially after the proposed capacity expansion in the corridor, and corridors where future travel is expected to reach the 150,000 AADT range. Because residents living near such heavily traveled traffic corridors are at risk of experiencing substantially increased incidence of cancers, premature mortality, more frequent hospitalizations for respiratory and cardiovascular disease, more frequent asthma attacks requiring medical attention, greater use of medications and increased costs of medical care, prescriptions and loss of income from lost work time, they request that an EIS be prepared for each such project.

An appropriate consideration of alternatives under NEPA necessarily should include an evaluation of the extent to which reallocation to transit of the funds allocated to these highway projects could contribute significantly to reducing travel demand, VMT and diesel-fueled vehicles thereby reducing resulting emissions of toxic air pollutants. An analysis of the health and other benefits to be obtained from an optimal transit investment strategy would best be undertaken at the planning stage. But if such an analysis is not performed by MPOs, such analysis must be performed by the implementing agencies before any project EIS is approved.

To the extent that a regional analysis reveals disparate health impacts on low income, racial or ethnic minorities that are not consistent with the requirements

of Title VI, then such analysis needs to be considered by DOT as a basis for not approving an MPO's plan and TIP.

D. The Proposed Rule Does NOT Provide Assurance That This Issue Will be Effectively Addressed.

Most large metropolitan area long-range plans and TIPs may be expected to include a number of new or expanded highway projects where traffic levels are likely to cause or contribute to cancer risks in excess of 1 in 1,000 (perhaps all projects with 150,000 AADT or more where human populations reside within 300 meters of the R-o-W). In many of these corridors, the associated toxic or hazardous air pollutants emitted by mobile sources already are creating a cancer risk far above the levels that would trigger an assessment to consider the need for mitigation measures to protect public health. Proposed new capacity in both new and existing highway corridors, and expected increases in daily vehicle trips that would occur in and be promoted by such new capacity, will significantly increase the unacceptably high cancer risks to populations exposed to hazardous air pollutants in these corridors. These high cancer risks trigger an obligation under NEPA and § 109(h) of the federal highway code to assess the magnitude of these risks to regional populations, to residents living nearby and to families living immediately adjacent to these highway facilities, to identify mitigation measures, and to require the implementation of measures necessary to "eliminate or minimize" the adverse effects of air pollution attributable to the project.

These projects typically are not being analyzed for their contribution to emissions of hazardous air pollutants, either as part of the planning process, the NEPA process or as part of the scoping and design of the projects. Neither the plans, specifications and estimates nor a project agreement may be lawfully approved under 23 U.S.C. § 106(a) until the adverse effects on public health attributable to the emissions of hazardous air pollutants from mobile sources in these corridors are assessed, and alternatives necessary to prevent those adverse effects are selected as the preferred alternative or mitigation is required as part of the project approval.

The current planning and NEPA processes do not provide a context for evaluating the full scope of alternatives that could protect the public from these cancer risks. Project-level review of individual highway projects do not provide the appropriate scale for consideration of alternatives that would include land use, transit-oriented development and regional expansion of transit services as strategies for reducing overall travel demand or SOV use, or fleet conversions or fuel modifications that could significantly reduce regional emissions of diesel particulate and other hazardous air pollutants.

At the same time, the planning process as conducted by most MPOs, and certainly as required by DOT's current planning regulations, do not require that health risks attributable to the emissions of toxic air pollutants from mobile sources be considered at all, nor do they consider regional alternatives that could reduce VMT and emissions of air toxics.

The proposed rules take a step in the right direction by allowing the agencies responsible for the planning process to evaluate impacts on a regional scale, and to consider regional alternatives, but this approach is not required. If a regional scale impact analysis is not voluntarily undertaken by regional planning agencies, there is no procedure identified in the proposed rule that provides for regional scale analysis of impacts, alternatives or mitigation measures such as buffer zones around major travel corridors. If such a regional scale analysis were undertaken by FHWA outside the planning process, there is also no mechanism to ensure that regional alternatives are implemented as part of the regional plan and TIP.

To remedy these deficiencies in current practice, we ask DOT to require that all projects above a threshold likely to contribute to exposures that would be associated with cancer risks greater than 1 in 1 million be subject to a risk assessment to characterize the local exposures and provide reliable information to local residents of their expected cancer risk. The risk assessment should be included in an EIS that considers the range of regional and corridor-level alternatives that could reduce travel demand or SOV use, and mitigation measures that would ensure effective separation of human populations from areas likely to be contaminated with unacceptable high concentrations of carcinogens and other threats to human health.

ISSUE 2: EFFECTS OF INDUCED DEMAND.

Looming large over all assessments of the adverse effects of vehicle use and the evaluation of alternative transportation investments is the failure to account for the widely recognized phenomenon known as "induced demand." The failure to account for this effect of the construction of new highway capacity results in the serious underestimation of VMT in a corridor, and consequently the failure to accurately estimate motor vehicle emissions for conformity purposes or for performing a risk assessment to predict the adverse health effects of mobile source air toxics, the overestimation of the mobility benefits of new capacity, the failure to account for the land use effects of temporarily improved travel times in a corridor, and the under-valuation of the benefits of non-highway transportation alternatives.

Environmental Defense submits a report by Norman Marshall, a respected expert in this field, summarizing the latest research quantifying the magnitude of this effect in the U.S. This evidence demonstrates that the effect is large, is relatively consistent wherever it has been measured, and can significantly undermine the reliability and usefulness of travel demand and VMT forecasts for virtually all purposes if it is not taken into account.

Based upon his experience reviewing the transportation planning tools applied in four of the nation's largest cities, Mr. Marshall also documents that induced demand is generally not being addressed in a comprehensive way by MPOs in the planning process. He concludes that this failure casts into doubt the acceptability of VMT projections used for conformity determinations, the travel

demand assumptions used to justify the need for individual projects, and the meaningful comparison of alternative projects and services.

Based on this evidence, Environmental Defense asks DOT to require that induced demand be expressly addressed in the regional planning process, in making conformity determinations under the Clean Air Act, and in all corridor-level EISs and EAs under NEPA. Tools for reliably assessing the effect of this phenomenon are rapidly emerging, and will quickly evolve into the planner stock-in-trade if planners are required to account for this effect. The failure to provide national guidelines that provide consistent uniform practices will merely invite frequent legal challenges to regional plans, conformity determinations and EISs on the ground that these analyses are fundamentally flawed by the failure to adequately address this statistically proven effect of new capacity.

III. OTHER CIVIL RIGHTS ACT AND AMERICANS WITH DISABILITY ACT CONCERNS.

Environmental Defense supports DOT's effort to require consideration of the disparate effects of transportation investments on low income, racial, ethnic and disabled communities. We believe the Department is taking a major step forward in requiring meaningful consideration of the kinds of adverse disparate impacts on communities of color that are prohibited by the Civil Rights Act, and the discriminatory effects on the disabled that are prohibited by the Americans With Disabilities Act . However, we are concerned that the proposal goes no further than elevating the visibility of these issues without requiring remedial measures designed to undo the disparate effects of decades of investment in highways that disadvantage by diminishing mobility and access for populations that do not own or operate personal motor vehicles. Although legally DOT's duty to remedy these adverse effects on mobility and access may be limited to populations protected under the Civil Rights Act or the Americans with Disability Act, the policy issues implicated by these concerns extend to all populations that do not drive, including the elderly, the disabled, unlicensed teenagers and those who cannot afford personal motor vehicles. In most cities, these underserved or dis-served populations are 30% of the community. Their mobility needs are real, are legitimate, and must be met too.

To move beyond the mere expression of concern for these populations, Environmental Defense asks that DOT adopt a national mobility goal for all populations in the community, and planning requirements that govern data collection and analysis and the development of strategies to meet the national mobility goal within a reasonable period of time.

The national mobility goal should be aimed at the development of regional transportation systems that serve SOV-owners and those who are dependent on other modes more or less equally with regard to essential mobility criteria. The essential criteria for measuring the performance of regional transportation systems should include, at a minimum--

- the comparative costs of travel and travel time for those who drive and those who are transit-dependent;
- equal access to places where existing and new jobs, affordable housing, educational services and public facilities are located;
- the social and economic impacts on communities that result from effective access to employment opportunity, housing located within a reasonable commute of jobs and educational facilities and community facilities in various portions of the metropolitan area.

Quantitative performance measures to assess the performance of regional transportation systems should be developed through the planning process, and MPOs should be required to adopt strategies that are designed to move the region toward the national goal. The continued award of grants subject to the requirements of Title VI of the Civil Rights Act and the ADA should be conditioned on the adoption and expeditious implementation of strategies designed to achieve the national mobility goal.

IV. CONCLUSIONS.

Based on the data, legal analyses and policy considerations discussed above, Environmental Defense makes the following requests and recommendations--

1. Environmental Defense generally supports streamlining proposals designed to ensure that the gaps between the current planning process and the NEPA/§109 review of projects are eliminated by establishing procedures that allow for adequate consideration of the regional and cumulative impacts of transportation investments as part of the regional planning process. We also request that more specific procedures be adopted in the rule to allow MPOs to accept responsibility for performing a regional impacts analysis adequate to meet the requirements of NEPA, and to provide assurances that implementing agencies will accept and rely upon adequate NEPA analyses performed by MPOs.

2. Environmental Defense also supports DOT's efforts to streamline the current fragmented review of the environmental, social, economic, equity and energy impacts of transportation decisions by integrating all these criteria required to be addressed by applicable federal laws into the regional planning and NEPA review process.

3. Environmental Defense is concerned, however, that these reviews may not be performed adequately, or may not be adequately documented and explained so that they may be exposed to full and careful public scrutiny and debate. To ensure that the planning/NEPA/§ 109 processes openly address the needs and concerns of all interests with a stake in the environmental, social, economic, equity and energy impacts of transportation decisions, Environmental Defense asks that the recommendations adopted by DOT as part of its review of the adequacy of the public involvement program implemented by the Atlanta Regional Council be adopted as requirements of the metropolitan planning rules.

See Assessment of Environmental Justice and Public Involvement in the Atlanta Metropolitan Area (Draft Report), U.S. Department of Transportation (April 17, 2000).

4. Environmental Defense objects to provisions of the proposed rules that weaken current regulatory requirements that govern the review of projects and the consideration of alternatives. Specifically, we oppose the removal of language in current 23 CFR § 771.105(d) implementing § 109(h) that requires the mitigation of adverse effects of highway projects. We believe the text of the current rule is required by law and should be retained in the new rules. DOT has offered no rational basis for the modification and weakening of these requirements. The proposed rule change is therefore arbitrary and capricious.

5. The proposed rules should be revised to make clear that no plans, specifications and estimates, nor any project agreement required by 23 U.S.C. § 106(a) may lawfully be approved for highway projects that expand capacity in heavily traveled corridors or that will become a heavily traveled corridor until an EIS has been completed that fully evaluates the full range of adverse environmental, social and economic effects of the proposed projects, evaluates both regional and corridor scale alternatives to the proposal, and identifies appropriate mitigation to "eliminate or minimize" these adverse effects as required by 23 USC § 109(h), and that includes necessary mitigation in the plans and specifications for each project.

6. We oppose DOT's failure to retain language in the current MIS rule, 23 CFR § 450.318(c), that defines the scope of alternatives to be considered as part of a corridor-level review for major capacity enhancing projects. The proposed rules should be revised to make clear that the scope of any analysis of alternatives to proposed projects performed to satisfy NEPA will consider a range of corridor-level alternatives at least as broad as those required to be considered in the current MIS rule, 23 CFR 450.318(c). We believe the current rule has served well to guide project reviews, has become familiar to agencies and local governments involved in the review process, and is a good outline of the scope of corridor-level review of alternatives required by NEPA. The requirement in TEA-21 to integrate the MIS process into the NEPA process does not provide a justifiable basis for deleting the language from the MIS rule, but rather argues for carrying it forward into the streamlined NEPA process.

7. Environmental Defense requests that DOT modify the final rule to establish guidelines for the appropriate consideration of the four objectives in 23 USC § 134(a) that are required to be accomplished by metropolitan plans. Such guidelines should require that MPOs identify a fiscally constrained planning scenario for the region that will optimize the four objectives. Such guidelines should identify the types of projects, programs, facilities, services, pricing and tax incentives and land use strategies that will most likely be expected to optimize these four objectives. At a minimum, MPOs should be required to consider all such measures and provide a rational basis for not adopting them as part of a regional transportation plan.