U.S. Department
of Transportation
**Federal Highway
Administration**

METROPOLITAN PLANNING TECHNICAL REPORT

Report No. 9 May 1996

Developing Effective Congestion Management Practices - Part I

Capital District (Albany, NY) Case Study--Congestion Management System Development

— **Capital District Transportation Committee**

Developing an Effective Congestion Management System--Report Two

— **North Central Texas Council of Goverments**

This is one of a series of reports issued periodically by the Federal Highway Administration's Office of Environment and Planning, Metropolitan Planning Division (HEP-20), 400 Seventh Street, SW, Washington, DC 20590. The purpose of the series is to share the latest information on metropolitan planning techniques and analytical procedures. This series will include the results of in-house and contract research, papers written or presented by staff, and summaries of workshops or conferences. Comments on these reports, and recommendations for material to include are welcome.

PREFACE

This is the ninth in a periodic series of reports issued by the Metropolitan Planning Division, Federal Highway Administration. Included in this issue are two final reports of recent research in the area of metropolitan transportation planning, specifically with regard to congestion management. The research behind both reports was sponsored by the Metropolitan Planning Division. This document was produced and is being distributed as part of a continuing effort by FHWA's Office of Environment and Planning to share timely and pertinent information to the transportation community.

The material for this issue was prepared as part of the "Developing Effective Congestion Management Systems" initiative, for which four metropolitan areas were chosen as case studies: Albany, NY; Dallas / Ft. Worth, TX; Seattle, WA; and Washington, DC. A brief summary of the initial experiences of these four regions was presented in a previous issue, ***Metropolitan Planning Technical Report Number 8*** (September 1995). This issue contains the full text of the final case study reports from the Albany and Dallas MPOs, respectively, the Capital District Transportation Committee (CDTC) and the North Central Texas Council of Governments (NCTCOG). Readers can expect future issues to present final reports from the Seattle and Washington, DC case studies.

Both reports included here share examples of practice and increase the professional knowledge of those working to develop, implement, and sustain **congestion mitigation** and **mobility enhancement** activities. The information varies in discussion from the technical and institutional, to the planning process in general. The material is also relevant to state DOT and MPO staff continuing work with congestion management systems (CMSs) -- one of the six management systems outlined in the *Intermodal Surface Transportation Efficiency Act (ISTEA)* of 1991.

It is recognized that each MPO and state DOT is different, and that they will vary widely in their ability to apply or benefit from these case study experiences. Selected for the variety of approaches they present, the cases are presented as examples of practice.

FHWA would also like to note the efforts of ***Chris O'Neill*** and ***John Poorman*** of CDTC, and those of ***Dan Rocha*** of NCTCOG, in preparing the reports that follow.

TABLE OF CONTENTS

TABLE OF CONTENTS (CONTINUED)

TABLES

FIGURES

APPENDICES

CHAPTER 1

INTRODUCTION

This report explains the efforts of the Capital District Transportation Committee (CDTC) to integrate the congestion management system with the MPO planning process. The premise of CDTC's Congestion Management System (CMS) is that such integration allows the most effective implementation of congestion management, while recognizing that the CMS is not intended to replace the regional transportation plan, the Transportation Improvement Program, or other important parts of the planning process. Specifically, this report focuses on the integration of the CMS and CDTC's development of a next generation regional transportation plan, called New Visions.

While there are significant aspects of the regional transportation plan that go beyond the purview of the CMS, CDTC's experience has been that many products of New Visions have provided or will provide direct enhancements to congestion management.

An important feature of New Visions has been the work of nine task forces which have engaged a variety of transportation providers, planners, and stakeholders from the community in addressing specific issue areas for the regional transportation plan. The task forces have identified needs and developed principles and recommended actions, and along the way have provided CDTC with products that inform and enhance the Congestion Management System.

It must be noted that congestion management actions will compete for limited resources with needed infrastructure renewal projects, safety improvements, economic development and other highway and non-highway projects that do not have a congestion focus. It is in the context of CDTC's Regional Transportation Plan and Transportation Improvement Program that the priorities among competing needs are set and the ability to achieve competing goals is determined.

This report will focus on the New Visions effort and its implications for the congestion management system. More specific discussion of the CMS is available in the CDTC document *The Metropolitan Congestion Management System: A Structure Approach to Addressing Congestion Issues in Regional Transportation Plan Development, Short Range Programming and the Management System*, December 1995. Other reports are available for more discussion of the supporting technical work for New Visions.

CHAPTER 2

"NEW VISIONS"

As identified in CDTC's Continuing Operations Plan (Prospectus), 1990-95, emphasis areas adopted for the CDTC 1990-95 planning period included community assistance toward integration of local land use and regional transportation planning, increased integration with NYSDOT planning and project development activities, greater integration of highway and transit investment and service decisions, and efforts to assist in the integration of federal, state and local financial support for transportation planning and implementation.

The passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 reinforced CDTC's priorities. CDTC's commitment to integration matched well with the ISTEA mandates for comprehensive planning and formal "management systems". The ISTEA legislation renewed CDTC's commitment to major outreach to communities, elected officials, interest groups and other parties.

As part of this commitment, CDTC published a *Regional Transportation Plan* (RTP) Report in 1993 which updated the work of CDTC that was performed in 1990, when the last RTP report was published. The purpose of the 1993 report was to document the significant progress that had been made towards established planning goals and also to introduce and highlight the major events that would become CDTC's "*New Visions*" effort.

As drafted, the 1993 regional plan focused on committed actions over the next ten years. It acknowledged that they are largely incremental (transit park-and-ride lots, traffic management actions, demand management actions, limited highway widenings) and, as such, will be insufficient alone to meet the transportation needs of the area over a 25-year horizon. The plan stated a current, long term "vision" for the region in terms of thirteen commitments. These are commitments to:

1. Pavement and Bridge Infrastructure Rehabilitation
2. Public Transportation Infrastructure
3. Intermodal Facilities
4. System Management
5. Congestion Management
6. Transit Initiatives and Demand Management
7. Bicycle and Pedestrian Accommodation
8. Integration of Land Use and Transportation Decisions
9. Strategic System Improvements
10. ADA Accessibility
11. Public Safety
12. Clean Air & Protection of Natural Resources
13. New Paradigms, New Technologies, New Visions

For congestion management, commitments to a regional incident detection and freeway and arterial management system are among the significant commitments of the existing plan. Among the strategic system improvements are commitments to elimination of five one-to-two mile bottlenecks, construction of 2,000 park-and-ride spaces and major access improvements to the Albany County Airport.

These thirteen commitments constitute a full agenda for the next ten years, and pave the way for consideration of "non-incremental" actions such as congestion pricing, regional land use actions and major investments.

The existing plan uses performance measures such as projected energy consumption, the number of congested corridors and ridership on transit to demonstrate that a bigger vision and more significant commitments are required to meet long-range needs.

CDTC wanted to engage in a major high visibility effort to properly address the ISTEA mandates and examine the non-incremental actions. CDTC staff realized that the development of this type of effort plan requires ample time to have meaningful dialogue with a wide variety of stakeholders. Toward this end, CDTC launched their public outreach effort in the summer of 1993. This constituted a major component of the long-range plan effort which was organized into a project called "*New Visions*". The *New Visions* approach established a forum for investigation of fundamental paradigms. It provides an opportunity to step back from the ten year focus and look at where we are and where we want to go over the longer-term.

The New Visions effort is explicitly designed to fit the structure shown in Figure 1. That is, it embraces the concept of outreach at the ground floor of the process. As part of this process, CDTC established contact with over 500 "stakeholders" and launched nine task forces composed of over 100 committed business leaders, environmental advocates, freight operators and users, state and local government leaders and other stakeholders.

The nine task forces cover the following subjects:

1. Urban Issues
2. Transit Futures
3. Expressway Management
4. Arterial Corridor Management
5. Highway and Bridge Infrastructure
6. Bicycle and Pedestrian Travel
7. Goods Movement
8. Demographics and Land Use Futures
9. Special Transportation Needs

These task forces capture the subjects of the management systems, but clearly go beyond the letter of the management systems regulations into the broad range of subjects cited under the ISTEA metropolitan planning regulations.

A key feature of New Visions is that each task force is required to address public safety, land use, environmental impact, resource efficiency, equity and social justice in its deliberations.

Phase 1 of the New Visions effort (which lasted six months) resulted in the identification of current and projected (year 2015) conditions, policy issues and candidate actions. One hundred thirty individuals attended a full-day conference held in December, 1993 to review "white papers" produced by the task forces and provide direction to phase two (currently underway).

During Phase 2 of New Visions, CDTC conducted technical work to support the task force discussions and continued the consensus-building process. The ultimate product will be a clear statement of vision, explicit presentation of principles, a refinement of the commitments made in the ten-year plan and a statement of specific intentions (build this, avoid that, etc.). A statement of congestion management principles has been approved and incorporated into the plan and into the Congestion Management System.

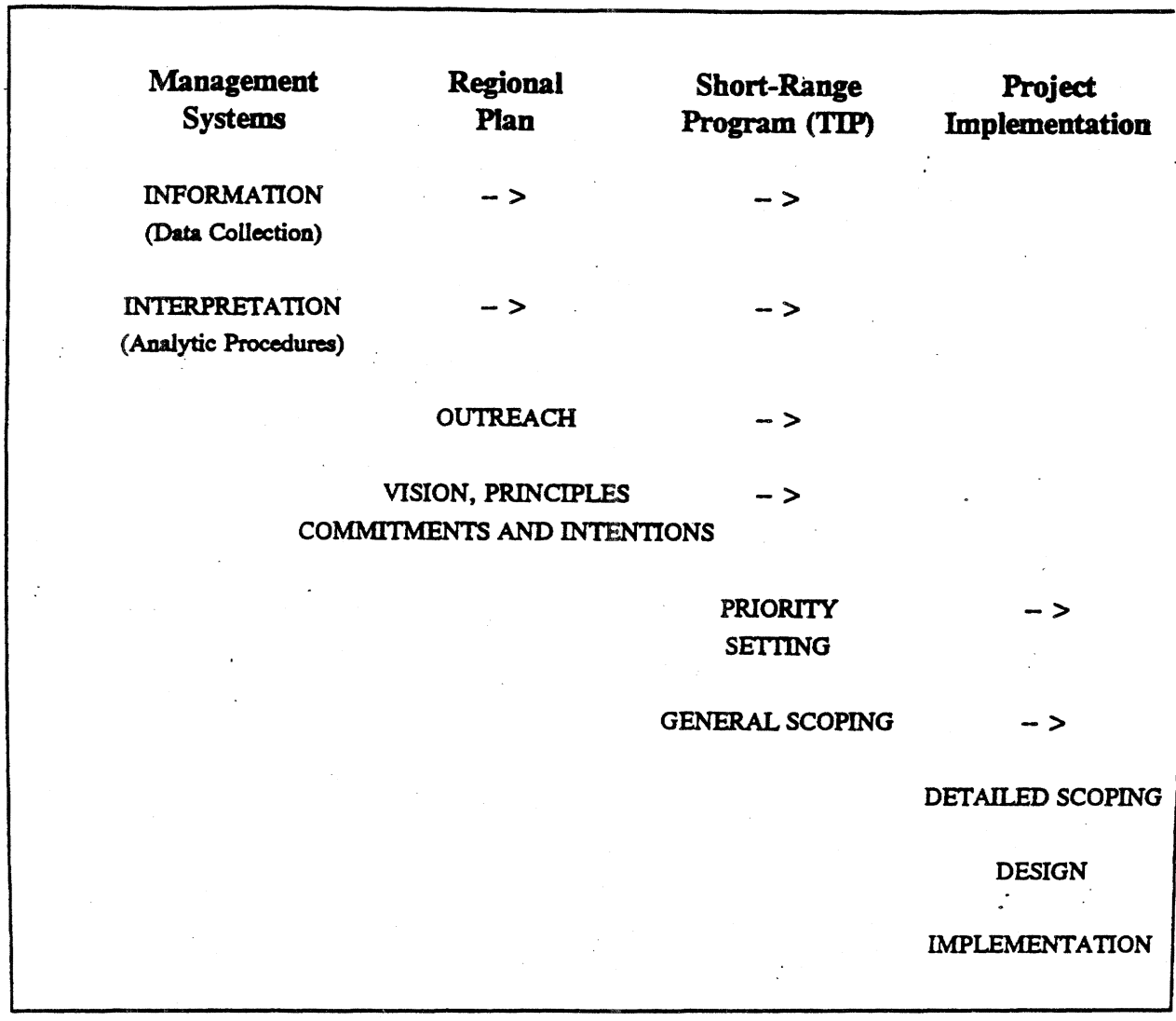
Integration of all subjects into a single vision for the region is the goal of the New Visions exercise. This integration is best represented by the core performance measures that were developed in conjunction with each of the nine task forces. These performance measures consciously focus attention on those measures that are most relevant to the community as a whole. Through the broad dialogue a set of measures has emerged that is elegant in its brevity and also innovative in its comprehensiveness.

These performance measures will not produce a next-generation transportation plan that emphasizes travel time to the exclusion of other issues. Instead, use of the list of measures will provide for an informed discussion of such wide ranging actions as fixed guideway transit options, transfers of jurisdiction of highway between local and state government, programs to eliminate vertical and horizontal obstructions to truck traffic and standards for driveway spacing on arterials. Each of these actions and others will be measured based on its contribution to the core measures which are discussed in Chapter 3.

Figure 1 is intended to indicate that the management systems are the most logical location for data collection and basic interpretation of system performance. This information then feeds the plan development and short range programming process. The most appropriate location for outreach is during the regional transportation plan development; outreach in the TIP process is important, but is most valuable only if the basic dialogue has occurred regarding the underlying vision, principles, commitments and intentions of the metropolitan area.

Figure 1

CDTC's Perspective on the Aspects of the MPO Planning Process



In practice, the various components -- management systems, the plan, and the TIP -- are not so easily differentiated. The "interpretation" shown in Figure 1 for the management systems cannot be viewed in isolation from the fundamental visioning and principle-setting exercises of the plan development. *Indeed, CDTC's extensive efforts in developing its "New Visions" next-generation regional transportation plan indicates that the flow of policy from the plan to the data collection process is as important, perhaps more important than the flow of information from the management systems to the plan.* As a result, CDTC's Congestion Management System documentation discusses the plan development and program development processes as an integral part of CMS.

Further, last TIP project implementation process led to greater attention toward better incorporation of project design activities into the overall structure. NYSDOT project designers need to be more fully exposed to the decision process that led to programming the project; this is essential if these designers are going to be sensitive to the multiple objectives (congestion relief, access management, demand management, bike and pedestrian accommodation, aesthetic treatment) of the kinds of capital projects that derive from an integrated planning process. To that end, NYSDOT Region 1 has increased the involvement of the localities and the CDTC staff in what had been largely an internal-NYSDOT effort to scope and design federal-aid highway projects.

It should be noted that the broad visioning exercise contained in the regional transportation plan development cannot and should not be limited to subjects of the management systems. Issues such as metropolitan land use policy (for example, urban reinvestment philosophy or the conscious acceptance of congestion to minimize urban sprawl) and public transportation access policy (such as providing transit service to all areas above a certain density) are not clearly captured by the management systems if they are not directly designed to address congestion, safety, infrastructure condition or other management system subjects.

As part of the New Visions effort, CDTC adopted a set of congestion management principles which are not only an important component of CDTC's Congestion Management System, but also are important in project selection for the Transportation Improvement Program (TIP). Briefly, the congestion management principles are:

1. Management of demand is preferable to accommodation of single-occupant vehicle demand growth.
2. Cost-effective actions are preferable to physical highway capacity expansion.
3. Land use management is critical to the protection of transportation system investment.
4. Capital projects designed to provide significant physical highway capacity expansion are appropriate only under certain conditions.
5. Significant physical highway capacity additions carried out in the context of major infrastructure renewal are appropriate only under certain conditions.
6. Incident Management is essential to effective congestion management.
7. Corridor protection and official street mapping are necessary to preserve options.

Adoption of the congestion management principles has made an important contribution to CDTC's decision making process. These principles call for consideration of demand management, cost effective operational actions, incident management, land use management, and corridor protection. These principles have also been helpful in making tradeoffs between different objectives. For example, if a bridge needs to be replaced over an interstate highway, the congestion management principles say that instead of automatically increasing capacity to fully accommodate thirty year traffic needs, a trade off analysis must compare the incremental cost with critical capacity needs present today.

As mentioned, outreach is a major component of the New Visions process, and is therefore also a large component of the CMS. For example, each of the nine task forces created under new visions looks at congestion as a contributing performance measure to their work. Some of the task force work is paying dividends in ways that were not imagined when the new visions outreach process began. For example, the State Police, the Thruway Authority, the State Department of Transportation, the Capital District Transportation Authority and others are members of the Expressway Management Task Force. This task force has been enthusiastically pursuing incident management and has asked CDTC to facilitate the dialogue that must take place among these agencies and local police departments, fire departments, and emergency medical service providers regarding procedures for traffic management during an expressway incident. This was an unexpected dividend that we did not discover until we formed the Task Force. Similar stories can be told for the other task forces contributing to congestion management, including Arterial Management, Transit Futures, Goods Movement, Pedestrian and Bicycle, Land Use, Demographic and Growth Futures, and Urban Issues. We will continue to broaden the outreach beyond the task forces, but contributions to congestion management and the New Visions effort have already been made.

CHAPTER 3

PERFORMANCE MEASURES

Performance measures are a key component of the CDTC Congestion Management System. Performance measures are also central to the development of the Regional Transportation Plan and the Transportation Improvement Program. Core performance measures were developed during Phase 2 of New Visions and were accepted by all nine task forces. In addition, several task forces developed supplemental performance measures which more specifically applied to the issues being addressed by each task force. The New Visions core performance measures are listed in Table 1.

New Visions Performance Measures

The development of "core" and "supplemental" performance measures focussed New Visions task force discussions on the consideration of objective information. This focus on objective information helped to articulate a coherent rationale for task force recommendations and allows stakeholders beyond task force members to understand and endorse them.

Core performance measures are divided into three categories: Transportation Service, Resource Requirements, and External Effects. Transportation service measures access, accessibility, congestion, and flexibility. Resource requirements concentrate on safety, energy and economic costs. The external effects of transportation are considered in terms of air quality, land use, environmental, and economic impacts.

Supplemental performance measures were also articulated by some task forces concerned with specific issues not covered under "core" performance measures. Four task forces created "supplemental" measures: Transit Futures, Goods Movement, Infrastructure, and Special Transportation Needs. Items such as pavement conditions, transit costs per new rider, clearance restrictions impacting trucks, and the number of accessible buses were identified as supplemental measures. More detail regarding these measures is available in the New Visions Technical Report series.

Use of this list of core performance measures provides for an informed discussion of a wide variety of transportation strategies, actions, and projects. CDTC developed these core performance measures assuming that:

a) It is appropriate to present some impacts in monetary terms.
b) It is more appropriate to present other impacts quantitatively, but not in monetary terms.
c) Some impacts do not lend themselves to quantitative measurement and are more appropriately discussed in a narrative fashion.

TABLE 1

CORE SYSTEM PERFORMANCE MEASURES

Transportation Service

Access:	What travel alternatives exist? *(Measure: Percent of person trips within a defined non-auto (walk, bike, transit) to auto time difference[1]; percent of person trips with a travel time advantage for non-drive-alone modes (including carpools); number or percentage of major freight movements with modal alternatives[2])*
Accessibility:	How much time does travel take? *(Measures: travel time between representative locations, including major intermodal facilities; peak vs. non-peak, by quickest mode)*
Congestion:	What is the level of exposure to traffic congestion? *(Measures: excess delay: recurring, non-recurring by mode [auto, transit, freight, bike, pedestrian][3])*
Flexibility:	Can the system respond to unexpected conditions? *(Measures: reserve capacity on system[4]; percent of person trips that could be accommodated by modes other than auto in an emergency[5]; number of corridors with reasonable alternatives during closure or disruption[6]; amount of risk associated with fixed capacity investment[7])*

Resource Requirements

Safety:	What are the safety costs associated with transportation? *(Measure: estimated societal cost of transport. accidents)*
Energy:	How much energy is consumed in providing, maintaining and using the transportation system? *(Measure: equivalent gallons of fuel / day for transp. capital, maintenance, operation and use)*
Economic Cost:	How much does the transportation system and its use cost, in addition to safety and energy costs? *(Measures: annualized capital, maintenance, operating and [monetary] user costs for transp. system; value of commercial time in travel)*

External Effects

Air Quality:	What is the effect of the transportation system on air quality? *(Measures: daily emission levels (HC and NOx); air quality attainment status)*
Land Use:	How does the transportation system affect land use? *(Measures: amount of open space; dislocation of existing residences and businesses; land use -transportation compatibility index[8]; community quality of life measure[9])*
Environmental:	How does the transportation system affect key environmental features? *(Measures: impacts on sensitive areas [wetlands, parklands, historic areas, archaeological sites, etc.); noise exposure index[10]])*
Economic:	How does the transportation system support the economic health of the region? *(Measures: narrative discussion of economic-activity supporting or constraining features of transportation system)*

TECHNICAL NOTES FOR TABLE 1

1. *Suggested maximum acceptable time difference is approximately 15 minutes; up to 20 minutes for longer trips; values may be summarized by sub-region (central cities, inner suburbs, outer suburbs, small cities and villages, rural areas).*

2. *While choice of mode for freight movement is largely decided by cost factors, availability of alternative modes is a measure of access.*

3. *Person hours used for all values except for truck traffic, for which vehicle hours is more relevant.*

4. *Reserve capacity is defined by corridor and is modally-weighted.*

5. *Maximum value derived from access value (see footnote 1), further constrained by non-auto system capacity (bus capacity, etc.).*

6. *Reasonable alternatives for personal travel during closure or disruption of a highway facility would include transit (if on a separate right-of-way) or parallel highway facilities; reasonable alternatives for freight primarily include parallel highway facilities within a few miles' distance. Modal alternatives for freight are best captured under access measures (see footnote 1.)*

7. *Risk is defined as the "opportunity cost" of over-investing or under-investing in a capital project if projections of conditions prove incorrect. Examples would include loss of rights-of-way that become needed in the future; construction of fixed highway or transit capacity predicated on future demand that does not materialize; construction of facilities at conservative scales that turn out to be under-sized.*

8. *Index is primarily based on levels of traffic or other transportation intrusion in residential areas, defined as daily traffic divided by average residential driveway spacing. Also includes a measure of compatibility between arterial function and local access function, defined as daily traffic divided by average commercial driveway spacing.*

9. *Measure is a combination of quantitative and qualitative factors that reflect community quality of life by subregion (central cities, inner suburbs, outer suburbs, small cities and villages, rural areas). It is intended to measure how the transportation system (in existing and alternative future scenarios) affects land use and other conditions within a defined "community". Socioeconomic factors such as population and employment shifts, are combined with measures of mobility, documentation of real estate and road ownership patterns, and cultural factors to paint a picture of how transportation, and its interaction with land use, has influenced our quality of life at the community level.*

10. *Index is primarily based on product of dBa and number of households in areas in which dBa exceeds accepted thresholds.*

Through this approach, CDTC attempted to structure policy decisions and investments around a full articulation of impacts. Those impacts which can be converted into monetary terms combine to represent the system cost; the other impacts represent additional performance measures. In this approach, there are no value judgements made regarding the appropriate trade-offs between cost and performance or among various measures of performance. Measures which are not represented in monetary terms may be as important as or more important than those expressed in monetary terms.

For those impacts which can be described in monetary terms, CDTC developed a methodology to estimate the marginal monetary costs of travel in the Capital District. This approach departs from traditional transportation analytical processes in several ways. First, monetary calculations are limited to those impacts which involve a direct or indirect monetary impact that is not primarily distributional in nature. Second, a wide range of impacts are addressed. Third, travel time, with the exception of commercial and other on-the-job travel time, is not given a monetary value. Rather, the effect of travel time is assessed under a separate performance measure, accessibility. Finally, trade offs between monetary and non-monetary performance measures can be made by policy makers, without reducing the decision to a single monetary value. This methodology is explained in CDTC's *Estimated Marginal Monetary Costs of Travel in the Capital District: Transportation Policy Analysis Based on Incremental Cost and Performance,* April 1995.

Table 2 presents values of performance measures in a summary fashion. This impact summary is presented in terms of *change from 1990* under trend conditions and is based on CDTC and CDRPC forecasts of stable employment, modest population growth, further suburbanization of development and continuing increases in travel demand (but at a slower rate of growth than in the 1980's).

Year-2015 conditions will be worse than shown in Table 2 if current commitments are not carried out. Overall, even *with* our current commitments, the performance of the Capital District's transportation will decline if the demographic and land use forecasts are correct. This is most dramatic for congestion, but of equal concern in terms of resource requirements and land use impacts. Ever-increasing travel by individuals and goods will be difficult for our existing transportation system to absorb without loss of options, loss of mobility, and a reduction in overall quality of life. However, both the incremental strategies proposed in New Visions and resolution of the major policy choices facing the Capital District will be required to counteract long term trends.

Congestion Management System Performance Measures

The CDTC Congestion Management System performance measures represent a subset of the New Visions performance measures; these can be used at the corridor level and will allow monitoring and prioritization of congestion needs in the region. Excess delay is the primary measure of congestion. Excess delay is defined as delay experienced at level of service "E" or "F". The measure of excess delay supports the evaluation of the first CDTC CMS goal:

Table 2
New Visions System Performance Measures
Summary of Existing and Future Conditions

CORE MEASURES		1990 Conditions	Trend 2015 Conditions With Current Commitments	Qualitative Summary of Impact	
Transportation Service					
ACCESS	Percent of PM Peak Hour Trips Transit Accessible	18.60%	15.20%	XX	•
	Percent of PM Peak Hour Trips With Transit Advantage	0.40%	0.33%	XX	•
	Percent of PM Peak Hour Trips Accessible by Bicycle	28.9% (1995)	26.4%	X	•
ACCESSIBILITY	Travel Time between Representative Locations; see Appendix; Sample Time: Selkirk Yards to Saratoga Springs (minutes, PM Peak)	58.8	78.4	XX	•
CONGESTION	Daily Recurring Excess Person Hours of Delay	6,546	34,298	XXXX	•
	Excess Person Hours of Peak Hour Delay Per PMT	1.1	4.0	XXXX	•
	Daily Excess Vehicle Hours of Delay by Truck	125	732	XXXX	•
FLEXIBILITY	Reserve Capacity on the Urban Expressway and Arterial System (PM Peak Hour Vehicle Miles of Capacity)	554,900	371,191	XXX	•
Resource Requirements					
SAFETY	Estimated Annual Societal Cost of Transportation Accidents, Millions of Dollars ($M)	$515 M	$1,065 M	XXXX	•
ENERGY	Daily Fuel Consumption (thousands of gallons)	880	1080	XXX	•
ECONOMIC COST	Annual Vehicle Ownership and Operating Costs for Autos and Trucks, Millions of Dollars ($M)	$1,095 M	$1,632 M	XXXX	•
	Other Monetary Costs of Transport: Highway and Transit Facilities and Service, Parking Facilities, Environmental Damage, Millions of Dollars ($M)	$779 M	$1,020 M	XXX	•
External Effects					
AIR QUALITY	Daily Hydrocarbon (HC) Emissions (kg)	47,632	18,002	✓✓✓✓	•
	Daily Nitrogen Oxide (NOx) Emissions (kg)	53,661	30,846	✓✓✓	•
LAND USE	Residential Use Traffic Conflict: Miles at LOC "E" or "F"	82.4	126.0	XXXX	•
	Arterial Land Access Conflict: Miles at LOC "E" or "F"	29.9	49.5	XXXX	•
	Dislocation of Existing Residences and Businesses		29	X	•
	Community Quality of Life- Factors that reflect community quality of life in the central cities, inner suburbs, outer suburbs, small cities and villages, and rural areas.	Trends include warning signals. Proactive strategies will be required to impact trends.		X	
ENVIRONMENTAL	Number of Major Environmental Issues to be Resolved to Implement Existing Commitments		21	X	•
ECONOMIC	How does the transportation system support the economic health of the region?	Transportation makes possible much of the region's economic activity.		X	

✓✓✓✓	Positive impact greater than 50%, 2015 relative to 1990.
✓✓✓	Positive impact between 20% and 50%.
✓✓	Positive impact between 10 and 20%.
✓	Positive impact less than 10% or not quantified.
	Negligible impact expected.
X	Negative impact less than 10% or not quantified.
XX	Negative impact between 10 and 20%.
XXX	Negative impact between 20 and 50%.
XXXX	Negative impact greater than 50%, 2015 relative to 1990.
•	Indicates impact has been quantified.

Support growth in economic activity and maintain the quality of life in the Capital District by limiting the amount of "excess" delay encountered in the movement of people, goods and services.

Excess person hours of delay is measured for the peak hour and on a daily basis. Non-recurring delay will be an important measure for congestion management, although development of non-recurring delay numbers is a major task underway for the CMS, and numbers are not yet available. Other measures based on excess delay include excess person hours of delay per person miles travelled, excess vehicle hours of delay by truck, and number of corridors with critical congestion.

While all excess delay is considered congestion[1], CDTC recognizes that the transportation user's perception of congestion is related to its magnitude or severity. Corridors experiencing critical congestion may warrant different consideration from other, more modest or more localized congestion locations. For this reason, particular attention will be paid to corridors experiencing significantly greater congestion than typical. These corridors are defined as contiguous highway segments that, in aggregate, exceed certain thresholds. In CDTC's regional planning efforts of recent years2, thresholds were established on the basis of magnitude (the total excess vehicle hours of delay (XVHD) in a corridor) and by severity (excess vehicle hours of delay (XVHD) per vehicle mile of travel (VMT)). Comparable thresholds for excess person hours of delay (XPHD) per person mile of travel (PMT) are required for CDTC's Congestion Management System. These values are shown in Table 3. CDTC identified twenty-nine corridors with critical congestion expected in the year 2000. The twenty-nine critical corridors are listed in Table 4. Twenty-seven corridors exceed thresholds both for severity and magnitude, two corridors exceed only severity thresholds and seven exceed only magnitude thresholds.

For example, daily transit ridership, vehicle miles of travel, and vehicle occupancy are not measures of congestion, and yet congestion is related to these measures. Success in increasing transit ridership or auto occupancy or decreasing vehicle miles traveled will assist in congestion management and should be noted as a system achievement, even when congestion remains.

---

[1] *This assumes that the delay is caused by heavy demand which is not being accommodated. Some excess delay (long waits at traffic signals which have little traffic) may be unrelated to congestion, but these situations are rare.*

[2] *See Analysis of Year 2000 Congestion Levels in Critical Corridors of the Capital District, CDTC, October, 1993.*

TABLE 3

Thresholds for Significant or Critical Status

Magnitude of PM Peak Hr Excess Delay		Severity of PM Peak Hr Excess Delay	
Magnitude	Qualifications	Severity	Qualifications
0	0.0 hours excess delay	0	0.0 excess delay/ 1000 pmt
1	0.1 - 29.9 hours	1	0.1 - 2.4 excess hours/ 1000 pmt
2	30.0 - 59.9 hours	2	2.5 - 4.9 excess hours/ 1000 pmt
3	60.0 - 199.9 hours	3	5.0 - 9.9 excess hours/ 1000 pmt
4	200 or more hours	4	10.0 or more hours/ 1000 pmt
A value of 2 rates as significant A value of 3 or 4 rates as critical		Value of 2 rates as significant Value of 3 or 4 rates as critical Minimum of 2000 PM peak hour vehicle miles of travel pmt = person miles of travel	

These thresholds are specific to travel expectations in the Capital District of New York. Defining "critical" levels of congestion in Los Angeles would require different standards of performance.

In addition, consistent with the New Visions performance measures, measures which do not measure congestion directly are included in the CMS. These measures support the evaluation of the second CDTC CMS goal, which is:

> *Make contributions to the avoidance and mitigation of congestion on all modes by implementing demand management programs first, before performing capacity expansions. Reducing single occupant vehicle travel can be accomplished by encouraging telecommuting and programs that reduce the need for travel, balancing travel demand by time of day, encouraging use of transit, ridesharing, pedestrian and bicycle modes, improving operational efficiencies and achieving complementary transportation and land use systems.*

Table 4
Year 2000 Excess Person Hours of Delay
In Critical Congestion Corridors

	Year 2000 PM Peak Hour	
	Magnitude: Excess Person Hours of Delay	Severity: Excess Person Hours of Delay per 1000 PMT
New Karner Road/Vly Road Guilderland-Colonie	437	30.2
NY 443 Albany, Bethlehem	90	21.5
Balltown Road Niskayuna, Clifton Park	334	20.4
NY 85/New Scotland Ave Bethlehem, Albany	411	14.3
NY 50/Freeman's Bridge Road Scotia, Glenville	229	12.6
WSR/ASR/Wade/SCR Town of Colonie	251	12.2
Downtown Albany	120	12.1
Wolf/ASR/Maxwell/SCR/Osborne/Everett Colonie	417	10.9
NY 2 Colonie	83	10.9
Northway (I-87)/FR Guilderland-Clifton Park	1263	10.7
NY 7 Troy, Brunswick	221	10.6
Washington Ave/Fuller Rd Albany,Colonie,Guilderland	273	9.5
NY 7 Colonie, Niskayuna	166	8.8
NY 7 Schenectady, Rotterdam	131	8.8
US 20 Albany, Guilderland	187	8.7
NY 9W Albany	47	8.5
US 4/NY 32 Cohoes, Waterford	44	8.4
Glenridge/Maple/Alplaus Glenville	90	7.4
New Scotland/Hackett/Whitehall Albany, Bethlehem	82	6.9
Guilderland/Heldeberg/Curry/Cra Schenectady, Rotterdam	215	6.2
NY 5 (Central Avenue) Albany, Colonie T., Colonie V.	206	5.8
Union/Eastern/McClellan/Brandywine Schenectady	114	5.2
NY 146 Clifton Park, Halfmoon	117	4.2
I-787 Albany, Menands, Watervliet	254	3.0
US 9 Albany, Colonie, Halfmoon	152	2.7
US 4 /Washington Ave Rensselaer, Troy, North Greenbush	60	2.7
I-890/NYS Thruway (Exit 25) Rotterdam	87	2.5
I-90 Albany	187	2.5
US 9/NY 50/Downtown Saratoga Springs	59	1.5

Notes:

1. PMT stands for person miles of travel.
2. Thresholds for critical congestion status are defined by magnitude or severity as follows: a corridor with congestion magnitude greater than 60 excess person hours of delay in the PM peak hour is defined as a critical congestion corridor; and a corridor with more than 5.0 excess person hours of delay is defined as a critical congestion corridor.

Table 5 provides a set of comprehensive performance measures for the Congestion Management System that are consistent with the performance measures defined for CDTC's New Visions. Year-2000 and Year-2015 "null" conditions represent the "best guess" of conditions likely to be present without actions contained in the 1993-98 Transportation Improvement Program or any further actions to be identified in coming months and years.

Access, accessibility, and system flexibility are important measures which encourage consideration of alternatives to single occupant vehicle (SOV) travel. Safety and air quality measures can be improved with congestion management and will be considered in developing congestion management actions. Demand management strategies which reduce single occupant vehicle travel are called for in the CMS goals, and monitoring of demand management performance measures is essential. Finally, the integration of land use with transportation strategies and investments has been recognized as an important tool for congestion management, and therefore land use performance measures are part of the Congestion Management System.

The Arterial Management Task Force developed two indices of arterial conflict. These two measures are shown in Table 5. The Residential Use-Traffic Compatibility Index is based on traffic volume and residential driveway spacings; the Arterial-Land Access Compatibility Index is based on traffic volume and commercial driveway spacings. With both indices, conflict increases as traffic volume increases and as distance between driveways decreases.

In order to calculate the values of the arterial conflict indices, CDTC conducted an inventory of residential driveway spacing and commercial driveway spacing on major arterials in the Capital District. This inventory will be updated periodically. In addition, as new development occurs, data will be maintained on miles of arterials with service roads, driveway consolidation and corridor management actions, and on new development built with pedestrian and transit-oriented design.

An extensive data collection effort supports the calculation and forecasting of performance measure values. Values for many of these measures are estimated using CDTC's regional travel model structure (the Systematic Traffic Evaluation and Planning [STEP] model). CDTC maintains a current flow representation of travel on the model as well as future forecasts of travel. Post-processors are used with STEP model data to generate values for excess delay, as well as many other performance measures.

To keep monitoring and forecasting efforts manageable, the number of performance measures listed for the Congestion Management System is less than the full set of New Visions performance measures. However, the Congestion Management System will be fully integrated with the New Visions Regional Transportation Plan.

Table 5
Congestion Management System Performance Measures

Performance Measures of Congestion			1990	1995	2000 No Build	2000 TIP	2015 No Build	2015 Committed
Congestion	Recurring Excess Person Hours of Delay	Peak Hour	1,988	5,008	7,672	4,808	16,172	10,769
		Daily	6,546	17,426	27,119	14,623	57,758	34,298
	Recurring and Non-recurring Excess Person Hours of Delay	Average Daily						
		Annual						
	Excess Person Hours of Peak Hour Delay Per PMT		1.1	2.4	3.4	2.1	6.0	4.0
	Excess Vehicle Hours of Delay By Truck	Peak Hour	39	104	155	107	340	240
		Daily	125	347	529	311	1,171	732
	Number of Corridors with Critical Congestion Levels		14	24	29	19	33	24
Congestion Related Performance Measures								
Access	Percent of PM Peak Hour Trips Transit Accessible		18.60%					15.20%
	Percent of PM Peak Hour Trips With Transit Advantage		0.40%					0.33%
	Percent of PM Peak Hour Trips Accessible by Bicycle			28.9%				26.4%
	Safe Pedestrian Access: Number of Traffic Signals With Pedestrian Protected Phases							
Accessibility	Travel Time between Representative Locations; see Table 5 Selkirk Yards to Saratoga Springs shown here (minutes, PM Pk)		58.8	63.9	68.5	68.2	82.3	78.4
	Percent of PM Pk Hr Trips With More Than 5 Minutes Delay		2.7%	10.1%	13.8%	7.6%	27.6%	19.2%
Flexibility	Reserve Capacity on the Urban Expressway and Arterial System (PM Peak Hour Vehicle Miles of Capacity)		554,900	476,146	416,518	469,957	321,106	371,191
Safety	Estimated Annual Societal Cost of Transportation Accidents, Millions of Dollars ($M)		$510.0 M	$689.7 M	813.4 M	$763.2 M	$1,108.4 M	$1,053.3 M
Air Quality	Daily Hydrocarbon (HC) Emissions (kg)		47,632	34,837	22,428	21,788	18,601	18,002
	Daily Nitrogen Oxide (NOx) Emissions (kg)		53,661	48,903	36,460	36,333	31,033	30,846
Land Use	Residential Use Traffic Conflict: Miles at LOC "E" or "F"		82.4					126.0
	Arterial Land Access Conflict: Miles at LOC "E" or "F"		29.9					49.5
	Miles of Arterials with Service Roads, Driveway Consolidation and Corridor Management Actions							
	Percentage of New Development Built with Pedestrian and Transit-Oriented Design							
Demand Management	Park-and-Ride Spaces Available							
	Millions of Daily Vehicle Miles Travelled (VMT)		17.7	20.5	22.5	22.3	26.5	26.3
	Daily VMT per Capita		22.8	25.7	27.6	27.4	31.2	30.9
	Daily Transit Ridership		55,000	47,600				46,000
	Peak Hour Vehicle Occupancy							
	Journey to Work SOV Mode Share		76.4%					

TECHNICAL NOTES FOR TABLE 5

1 *Portions of the table shaded in grey indicate that values of performance measures are not yet available.*

2 *Recurring delay refers to delay experienced under normal traffic conditions, without incidents or unusual weather conditions.*

3 *Non-recurring delay refers to delay that results from incidents, weather conditions, or special events.*

4 *Excess delay refers to the amount of delay that occurs at level of service "E" or "F".*

5 *Trips are considered transit accessible if the trip can be made in a reasonable time, relative to the auto travel time (door to door).*

6 *Trips are considered to have a transit advantage if they can be made faster by transit than by auto (door to door).*

7 *Trips are considered to be accessible by bicycle if they are within a reasonable distance by routes that can be travelled by bicycle.*

8 *Hydrocarbon and Nitrogen Oxide emissions are derived from the MOBILE5A emissions model based on levels of vehicle travel, speed and congestion.*

9 *Residential Traffic Conflict: Miles at Level of Compatibility (LOC) "E" or "F" refers to the number of miles of major arterials with this rating. The LOC index was developed based on an inventory of residential driveways on major arterials and traffic volumes. LOC "E" or "F" ratings occur at arterial segments with frequent residential driveways and higher traffic volumes. Year 2015 values are based on traffic volume growth only.*

10 *Arterial Land Access Conflict: Miles at Level of Compatibility (LOC) "E" or "F" refers to the number of miles of major arterials with this rating. The LOC index was developed based on an inventory of commercial driveways on major arterials and traffic volumes. LOC "E" or "F" ratings occur at arterial segments with frequent commercial driveways and higher traffic volumes. Year 2015 values are based on traffic volume growth only.*

11 *Transit Ridership for 1995 is a preliminary estimate based on CDTA ridership from August, 1994 to July, 1995; and based on 1994 Upstate Transit ridership.*

CHAPTER 4

PLANNING AND INVESTMENT PRINCIPLES

Exploration of congestion issues and the menu of alternative actions in recent years has led CDTC to follow certain principles in relationship to congestion avoidance and mitigation. Congestion management issues were partially articulated during the development of CDTC's 1993-98 Transportation Improvement Program and are included as policy in CDTC's regional transportation plan, adopted in December 1993. They can be stated as principles which will guide the selection of actions. Cost-effective actions should derive from these principles.

One of the major tasks given to each of the New Visions task forces was to develop planning and investment principles. The task forces viewed this as an important assignment, and several task forces spent a considerable amount of effort developing wording that dealt with the relevant issues in a meaningful way, and at the same time represented a consensus of the task force members. For several task forces, the exercise of developing principles was a learning experience along the path of building consensus; a chance to discover and understand the differences of opinion among members, and to find areas of mutual agreement. At times the struggle in developing the wording of the principles involved trying to find a balance between being visionary and being realistic. Areas of mutual agreement were not always positions that could have been predicted in advance.

The Planning and Investment Principles articulated to date by New Visions Task Forces are presented below. These principles are intentionally broad and not focussed on specific actions. Wording was crafted to lead to convergence rather than divergence of opinion among New Visions participants, the general public, and elected officials. Except for the congestion management principles, the principles are still in draft form and will be presented to the public for review during phase 3 of New Visions. These principles will be re-organized to better reflect overlap and points of consensus between task forces in the coming months. No priority order is implied in this listing.

The congestion management principles have been adopted and incorporated into the CDTC Congestion Management System. However, the other planning and investment principles, when adopted as part of the regional transportation plan, will also influence the selection of cost effective capacity and mobility projects.

CONGESTION MANAGEMENT PRINCIPLES *(Adopted in 12/93)*

1. **Management of demand is preferable to accommodation of single-occupant vehicle demand growth.** All things equal, actions that shift demand from single occupant vehicles to other modes, shift travel to uncongested periods of the day or reduce the need for travel are preferred over actions that accommodate the desire to travel without constraints. Demand management actions have both a spillover and a cumulative effect

not present with physical actions. Demand management actions taken to relieve congestion in one corridor spill benefits over to other corridors by simultaneously moderating demand in those corridors, as well. Over a period of time, a cumulative benefit comes from the development of a critical mass of transit usage to support higher level transit service, from creating momentum for voluntary accommodation of pedestrian and bicyclists in new development design, or from establishing acceptance for innovative work schedules and telecommuting. These benefits are not present in actions that accommodate unconstrained single-occupant auto travel.

2. **Cost-effective operational actions are preferable to physical highway capacity expansion.** Historic financial constraints and categorical funding programs have perhaps provided resources more readily for capital investment than for continuous operational improvements. In the Capital District, a third of the 400 intersections analyzed by CDTC staff over the past four years had congested conditions that would respond to low cost signal timing and lane striping changes. Where applicable, these operational actions are many times more cost-effective than physical expansion.

3. **Land use management is critical to the protection of transportation system investment.** Development in the Capital District in coming years is expected to add significant traffic pressures along existing two-lane and four-lane arterials. Unconstrained development is likely to add to the number of driveways serving isolated developments. This will result in a deterioration in the through capacity and operating speed of these arterials, will aggravate the existing difficulty in effectively serving suburban development with transit and will frustrate any attempts to create safe travel opportunities for pedestrians and bicyclists. It will also frustrate efforts at efficient goods movement and local delivery. Without careful treatment, the land available for development along these arterials can support an amount of development that will far exceed the ability of these roads to handle through traffic (which is their primary function), local land access and effective accommodation of transit, bicycle and pedestrian modes.

4. **Capital projects designed to provide significant physical highway capacity expansion are appropriate congestion management actions only under certain conditions.** These are the following:

   a. "Critical" levels of congestion are currently present or are expected to be present under short-range (no greater than ten year) forecasts;
   b. Demand management (including appropriate application of non-auto actions) and operational actions are not expected to reduce congestion from "critical" levels;
   c. Demand management (including appropriate application of non-auto actions) and operational actions are incorporated into the design of the physical expansion to minimize expansion requirements and maximize the service life of the improvement;
   d. New development and/or existing trip generators contribute appropriately to the cost of the action (including the demand management and other non-construction aspects);
   e. A land use management program or agreement exists to provide reasonable assurance

that the new capacity created will be effectively managed and preserved;[3] and,

f. The expansion is considered to be consistent with regional, county and local land use and development plans.

Projects primarily intended to serve through traffic or designed to serve statewide purposes are not subject to these criteria.

5. **Significant physical highway capacity additions carried out in the context of major infrastructure renewal are appropriate only under certain conditions.** In cases such as the replacement of a bridge, long-lasting decisions about capacity expansion often must be reached long before critical congestion levels are reached and before local demand management actions are in place. In order to assure consistency of these decisions with the overall Congestion Management System, it is necessary to revise traditional design policies and procedures. Traditionally, facilities have been designed sufficient to accommodate projected demand at acceptable levels-of-service throughout the physical design life of the facility. For a bridge structure, for example, this involves designing to accommodate traffic projections for a date thirty years beyond the expected date of completion of the project. Variance from this policy has been granted primarily in situations in which there are practical impediments to full accommodation of future demand.

The revised design approach reaches a determination of facility design through a risk assessment (tradeoff analysis) that focuses on the opportunity cost of selecting alternative designs.

Assuming that it is a given that an infrastructure project is a priority at a given location, the risk assessment focuses on several factors:

a. Incremental costs and benefits of designs which add capacity to accommodate future traffic, relative to less-accommodating designs;
b. The projected amount of time that will lapse before a given design with greater capacity would be expected to have annual benefits sufficient to return an incremental benefit/cost ratio comparable to other *capacity* projects included in the TIP;
c. The additional expense involved in providing the incremental capacity at that later date, rather than during the initial project;
d. The degree of uncertainty present regarding future demand forecasts; and,
e. The compatibility of the additional capacity with regional, county and local land use plans.

In these cases, capacity expansions can be considered consistent with the congestion

[3] *Capacity projects primarily intended to serve statewide goals are not addressed by this land use management criterion.*

management system under the following conditions:

a. The risk assessment indicates that, even with effective operational and demand management actions, critical congestion is likely to occur at the location;
b. The combination of time lapse until a competitive incremental benefit/cost ratio is reached and the additional expense of providing the capacity later points to doing the work now; and,
c. The capacity expansion is compatible with regional, county and local land use plans.

In all cases, the desirability of the expansion must be fairly clear before the investment is made.

6. **Incident management is essential to effective congestion management.** While most congestion management actions are directed at recurring congestion, congested corridors experience significant "non-recurring" congestion due to accidents, vehicle breakdowns and similar incidents. This experience is most severely felt on limited access, high speed facilities operating at very high traffic densities. Minor incidents can generate significant delays. Effective incident detection and management can save as much time and operating cost as major investments in physical expansion.

7. **Corridor protection and official street mapping are necessary to preserve options.** Long-range congestion management must include protection of corridors for possible future transportation use. This includes protection of options for future provision of sidewalks, bicycle paths, transit connections, service roads and/or new collector or arterial highways. Opportunities for protection are presented in the context of development approval, transportation project design, in conjunction with utility right-of-way creation or revision and during review of proposed abandonment of transportation facilities (such as a rail line.) Official action, through land acquisition or street mapping are minimal at present, and expanded use of these tools must be considered. Not all congestion management actions can be implemented immediately; options for future action must be preserved whenever possible. A risk assessment must be conducted to determine the merit of preserving a particular corridor.

URBAN ISSUES *(Final Draft)*

1. **Strong central places are engines that drive regional economic growth. Economically successful regions are healthy primarily because they are efficiently organized. Transportation investments are a tool that can be used to strengthen the region's core.** There are tremendous advantages to strengthening the Capital District's urban areas. The necessary transportation, water, sewer, and other infrastructure is already present -- thus reducing the cost of development. Transportation investments geared towards creating more livable, walkable urban places will provide choice in the marketplace, allowing for increased diversity to flourish and the region as a whole to prosper.

2. **Urban environments have advantages that allow for the development of livable communities. Transportation investment priority should continue to discourage highway capacity expansions, and, where possible, assist in urban revitalization.** Adopted congestion management principles that require system management, demand management, and transit improvements prior to highway capacity expansion are important in preserving existing urban activity. The possibility of fixed guideway transit and high speed intercity rail connections, in particular, should be advanced as tools to aid urban revitalization through system design and station location.

3. **A partnership between local government and transportation providers, such as NYSDOT and CDTA will have multiple benefits.** Issues such as appropriate design standards in project implementation, stretching limited state and federal transportation dollars, and linking land use approvals to transportation improvements are all more likely to reach satisfactory resolution if addressed through a mutually respectful and beneficial partnership.

4. **Transit, cycling, and walking are used more heavily in urban areas.** There are numerous low-cost ways that these modes can be encouraged -- essentially, we need to plan and build all of our capital projects as if the pedestrian, bicyclist, and transit rider exist and have legitimate needs. Design features such as bus stops/shelters, medians on major arterials, crosswalks and pedestrian-actuated signals at intersections should be integral to urban project design -- not extras. Intentionally "slow" streets in residential areas have merit and can contribute to urban "livability". Maintenance considerations and money for ongoing maintenance also must be included as enhanced pedestrian and bicycle systems are developed.

5. **Cities currently shoulder an unequal proportion of the region's special needs populations, poor people, and households without cars. The social function of the provision of transit and transportation services should be explicitly recognized and taken into account in transportation funding decisions.** In addition, the drain that the provision of social service places on urban areas lessens the amount of money available in municipal budgets for basic maintenance and rehabilitation of the transportation infrastructure.

6. **Transportation improvements must be designed to improve neighborhood integrity.** Historically, many major transportation investments have been disruptive to neighborhood cohesion. There is an opportunity to use transportation improvements to bring neighborhoods together -- to increase owner-occupancy, to provide increased accessibility, and to enhance community values.

7. **Neighborhood-based local planning efforts are important to the success of an overall regional plan that emphasizes livable communities.** Regional transportation plans are implemented by other agencies -- NYSDOT, CDTA, and local governments. It is important that the principles and "paradigm shifts" that the regional transportation plan

advances be based upon and reinforced with local participation in planning efforts and project development activities. Through a convergence of "bottoms up" and "top down" shifts in our thinking about the transportation/land use connection, mutually beneficial solutions to regional and local problems will be able to be achieved.

INFRASTRUCTURE REPAIR AND RENEWAL *(Final Draft)*

1. **CDTC is committed to the maintenance, repair and renewal of the existing highway and bridge system in a manner that protects and enhances rideability, public safety and accessibility while minimizing overall costs of providing and using the system.** Appropriate investment in repair and renewal of existing facilities is a higher priority than investment in expanded capacity.

2. **Funding for appropriate repair and renewal will be based on the function and condition of the facility.** All principal arterials and other major facilities in the Capital District are vital to the economic life of the region, regardless of whether they are currently owned by a city, town or the state.

3. **Geometric standards (lane and shoulder width, provision of bike lanes and sidewalks, transit accommodations, vertical and horizontal alignment, clearances, etc.) and design processes will be based on the function and location of the facility and the type of repair.** Greater latitude in fitting the process and geometry to the needs is critical to providing highway and bridge infrastructure in a cost-effective manner.

4. **Significant physical highway capacity additions carried out in the context of major infrastructure renewal are appropriate only under certain conditions.** The revised design approach reaches a determination of facility design through a risk assessment that focuses on the opportunity cost of selecting alternative designs. In all cases, the desirability of the expansion must be fairly clear before the investment is made. (The risk assessment approach is discussed in greater detail in CDTC's adopted Congestion Management Principles.)

BICYCLE AND PEDESTRIAN ISSUES *(Final Draft)*

OVERALL THEME: Encouraging bicycle and pedestrian travel is the most socially, economically and environmentally responsible approach we can take to improving the performance of our transportation system.

1. **Cycling and walking should be recognized as equal partners with motor vehicles in the transportation system; project development should facilitate expansion of cycling and walking in the system.** In the Capital District, more people commute to work by bicycle or on foot than by using transit. Aside from sidewalks in the downtown areas and a small number of paths or bike lanes, this is without any direct investment in bicycle or pedestrian infrastructure. Investments in new bicycle and pedestrian facilities will tap the

latent demand for travel via these modes, encouraging people who would travel these ways "if it was safe" to do so.

2. **Better accommodation of cycling and walking will enhance mobility for Capital District residents with the fewest travel choices.** Many Capital District residents either choose not to or cannot afford to own a car. Not providing reasonable opportunities for bicycle or pedestrian travel limits their mobility by making them dependent on transit schedules (and coverage), taxis or friends. In addition, bicycle and pedestrian accommodations can eliminate the dependence on cars in suburban areas where subdivision designs and the local street networks combine to effectively require car travel for all trip purposes.

3. **Better accommodation of cycling and walking can enhance transit use by making it more accessible.** People are willing to travel on foot for a short distance to bus stops. However, this willingness is reduced when the trip to or from the bus stop is uncomfortable. Wide, paved shoulders and/or sidewalks connecting residential areas to bus routes will make bus travel more attractive. Cyclists would be more inclined to bike to bus stops if there were safe shoulders or bike lanes as well as (a) secure bike storage facilities at the stops and/or (b) bike racks on the buses.

4. **Possible bicycle/pedestrian-related improvements should be considered from the perspective of developing a system -- not just based on whether a particular facility is currently used.** As was observed at the first New Visions conference, "bicyclists (and pedestrians) are not stupid." If they feel that a facility is not comfortable or safe, they will not use it. Still, this facility might be along a potentially well-used bicycle/pedestrian travel route. We should look to remedy the *barriers* to bicycle and pedestrian use along facilities which would combine to form very attractive routes for both local and regional travel.

5. **Barriers to bicycle and pedestrian travel can often be removed quickly and inexpensively.** Whether by smoothing over a rough shoulder with some blacktop or by re-timing a traffic signal to allow pedestrians (and wheelchairs) adequate time to cross a busy intersection, bicycle and pedestrian accommodations are often low cost, particularly when compared to even the simplest roadway project. Both as "add-ons" to existing highway projects and as free-standing efforts, we should be finding ways to quickly remove some of the main barriers to these modes of travel.

6. **Cyclists and pedestrians are vulnerable to travel surface conditions and motor vehicles; maintenance practices should insulate them from danger.** Bicycle and pedestrian facilities should be maintained to a higher standard than motor vehicle facilities typically are. Broken glass, snow, ice, and rough surfaces are common hazards; more frequent sweeping, plowing, rehabilitation (repaving) and other practices should be the rule in maintaining the facilities we have and any new facilities developed in the future.

Along with proper maintenance of bicycle and pedestrian facilities, we need to heighten motorist awareness of cyclists and pedestrians. Crosswalks and bike lanes should be clearly signed and marked. Pedestrian phases at busy intersections (and near transit stops) would provide additional protection. Separate bicycle stop lines at intersections would increase visibility along with giving cyclists a chance to "pull away" ahead of turning vehicles.

SPECIAL TRANSPORTATION NEEDS *(Final Draft)*

1. **Better utilization of existing vehicles/programs is preferable to capital expansion.** Adding more buses to the transit fleet and/or adding more STAR vehicles is not the answer to accommodating increased demand for special transportation service. A wealth of transportation inventory is owned and operated by area human service agencies; much of it is underutilized. A "plan" to integrate the services offered by these agencies and those offered by CDTA should be developed and followed. If it is determined that there is still a transportation shortfall, even with coordination, then vehicles should be added to the fleet.

2. **The ability of a disabled person to independently select transportation mode and time of travel is preferable to travel arranged by an agency or transit authority.** The Americans with Disabilities Act (ADA) of 1990 stresses the importance of independence and mainstreaming. Mobility disabled persons should be encouraged to use the fixed route transit system to the extent possible. Increased investment in mobility training will aid in the transition from dependence on paratransit transportation service to fixed route service.

3. **Pedestrian initiatives should address the mobility impaired and elderly population.** Creation of crosswalks and incorporating walk phases into signal timing plans at the busiest Capital District intersections will not necessarily accommodate the elderly or mobility impaired user. Curb cuts must be made available. Adequate crossing time must be given to pedestrians at crosswalks; standards should be set so that a mobility impaired individual can easily cross in the time allotted to the walk phase. It should be noted that the New York State *Manual on Uniform Traffic Control Devices* (MUTCD) provides both mandatory and permissive warrants for pedestrian signal timing. The New York State Department of Transportation (NYSDOT) has adopted a policy that when applying these warrants, consideration should be given to any *significant concentrations* of young, elderly or mobility impaired pedestrians using the site. As more mobility impaired persons are mainstreamed with regard to public transportation (as per the ADA), and as our population ages, the words "significant concentrations" should be dropped from NYSDOT's policy statement.

4. **Locating facilities that provide services to the elderly and disabled population in downtown areas and along major corridors is preferable to locating them in suburban and/or rural areas away from major roadways and fixed transit routes.**

As the population matures, the number of facilities providing services to the elderly and mobility impaired elderly will likely increase. Also, the State's emphasis on de-institutionalization will create additional "day program" facilities for the mentally disabled. The provision of transportation for these groups will become a major issue. As facilities are built, it is essential that they be located in places where transit is easily accessible and in places that are conducive to walk trips.

5. **The New York State Department of Transportation and local transportation departments should begin to enhance sign reflectivity and letter sizes to accommodate the needs of the older user.** By 2015, over one fifth of the population will be age 60 and above. The older persons of 2015 will have grown up in a period when use of the automobile was a part of everyday life. These older people will tend to remain in the suburbs and have high expectations about driving and mobility. At the same time, older persons, because of their age will experience visual problems related to depth perception, visual field, visual acuity and glare sensitivity. Preliminary research by the federal government suggests that improving sign reflectivity, increasing letter heights on signs and improvements in stopping sight distances goes a long way in accommodating the needs of the older driver while allowing them to maintain their independence and mobility.

GOODS MOVEMENT *(Final Draft)*

1. **Goods movement is an integral part of economic well being of the Capital District. As such, all transportation capital and operating projects will consider the impact on goods movement in their planning, design, and implementation.** The Task Force has identified a priority system for improvement where addressing current deficiencies will significantly impact goods movement and improve system performance.

EXAMPLES:

- Bridge projects - clearances and load limits if significant truck travel
- Arterial corridor management - site design, service roads, and driveway spacing and location policies consideration of freight deliveries
- Rail transit and bike trail initiatives - shared use of freight lines
- Pavement reconstruction - amount of truck use as design consideration for turning radii, pavement thickness, etc.
- Mobility/congestion relief - impact specifically considered
- IVHS - Commercial applications and impacts

2. **There are four primary freight facilities in the Capital District: Port of Albany/Kenwood Yards, Albany County Airport, Selkirk Rail Yards, and the Thruway/Interstate System. There are also a number of secondary facilities. Maintaining the health and improving the efficiency of these existing facilities is a priority.** Project eligibility under the Intermodal Surface Transportation Efficiency Act

(ISTEA) somewhat limits the extent of influence that the CDTC can have on internal intermodal facility efficiency. There are three arenas where our influence is greatest. They are:

a) Surface access to intermodal facilities;
b) System safety issues; and
c) air quality improvement initiatives.

CDTC should concentrate its planning activities and capital investments in these three areas.

3. **Historically, the private sector has provided an efficient goods movement system. Public sector goods movement activities should be approached as partnership opportunities.** This is particularly true in the area of technological innovation.

ARTERIAL CORRIDOR MANAGEMENT *(Final Draft)*

1. **The transportation system of the Capital District should be maintained and developed as an important part of the region's attractiveness.** The Capital District is in competition with other regions. Transportation is a basic resource that enhances the region's competitive position. Protecting the economic base requires that the transportation system "works": that good connections are provided between and within regional centers, and that the region has a reputation for being accessible. The existing transportation system should be maintained and developed into an effective multimodal system. As congestion and transportation problems become major issues in many metropolitan areas around the nation, the Capital District should protect and strengthen its transportation system as a marketable asset.

2. **The arterial street and highway system should continue to serve as the basic foundation of the area's surface transportation system.** The arterial highway system is primarily intended to move traffic; and while it also provides service to adjacent properties, such service should be a secondary function of these highways. Improving highways for their traffic movement function should only be part of any solution. In order to improve the area's living environment, all functions must be attended to by balancing the rights of property owners for access with the need to protect arterial function and community safety by eliminating or avoiding traffic conflicts. In addition, any solution should acknowledge that the dual functions of the highway are not always compatible.

3. **Land use management is critical to the protection of transportation system investment. Failure to carefully consider land use impacts in the transportation system could lead to premature breakdown of arterial function in critical corridors.** Development in the Capital District in coming years is expected to add significant traffic pressures along existing two-lane and four-lane arterials. Without careful treatment, the land available for development along these arterials can support an amount of

development that will far exceed the ability of these roads to handle through traffic (which is their primary function), local land access and effective accommodation of transit, bicycle and pedestrian modes. Transportation function should be protected through pro-active corridor management work that fosters efficient corridor settlement patterns and embraces site design that limit access to highways, are transit friendly, and support provision of pedestrian access.

4. **Rather than impairing private interests, the arterial corridor management planning process places them in concern.** The region's economy cannot afford to allow private investments in land development to be impaired by obsolescence of the highway facilities on which they depend. The objectives of planning in connection with arterial highways is to design facilities which will adequately serve the traffic needs of the highway system while guiding surrounding land uses so that these highway facilities become forces which stabilize rather than jeopardize private capital investment in this region. Development opportunities should be embraced when access, transit, and pedestrian issues are properly addressed. When proper planning occurs, the conflict with arterial function is minimized.

5. **Guidelines that evolve from recommended arterial management actions must be flexible enough to deal with the Capital District's various roadway types and the specific land use patterns surrounding them. The particular needs of urban centers, which may involve traffic calming for pedestrian and parking purposes, should be able to be accommodated under a workable set of guidelines.** If any arterial management program is to work, it should be developed in such a manner as to be suitable for different design, land use, and traffic conditions. To impose the same guidelines on an urban arterial that may be applicable to a high-speed rural facility may lead to loss of valuable economic development, but more often, it leads to arbitrary exceptions which, in the course of time, may weaken the program.

6. **Development of arterial corridor management guidelines should build upon current good design practice.** Guidelines should be developed within the existing regulatory and policy framework which includes NYSDOT's *Policy and Standards for Entrances to State Highways*, county and local highway law, and CDTC's "Standards/Criteria for Highway System Evaluation Recommended for Use in Regional and Community Transportation Studies" and CDTC's *Regional Highway System Review*. Guidelines should be crafted for use in conjunction with existing land use and zoning control mechanisms such as site plan review and subdivision regulations.

7. **Public transit, sidewalks, and bicycle facilities should be routinely considered as part of the transportation infrastructure.** Increased opportunities for public transit use and walking as alternatives to auto travel can reduce congestion and conflict levels along Capital District arterials. Transit service works best when it is considered as an integral part of roadway design as well as development and site plans.

1. **Transportation investments should preserve and enhance the Capital District's existing urban form, infrastructure, and quality of place.** The Capital District already has many unique attributes that other regions strive for:

   - The region is a collection of communities that work together and that possess livable, community scale.
   - The region is multi-centered with the most intensive suburban development in the center of the region rather than at the fringe. Suburban and urban areas are interdependent.
   - Traditional transit corridors link urban centers.
   - The region's modest growth rate is a strength because it affords the time and the opportunity to put in place plans and policies that encourage growth in harmony with the region's objectives.
   - The region is endowed with a diversity of parks, a relative abundance of open space and a wealth of recreation and tourism attractions.

   (Urban form refers to the pattern of buildings, spaces and transportation networks that make up an urbanized region).

2. **Transportation investments should encourage residential and commercial development to locate within an Urban Service Area defined for the Capital District.** This urban service area can be generally defined as the urbanized area in Albany, Rensselaer and Schenectady Counties and the Saratoga Sewer District in Saratoga County. This urban service area may be extended to include areas which already have infrastructure in place; but further study will be necessary to define the boundaries. Adequate space exists within this urban service area to accommodate the growth foreseen for the Capital District, especially if opportunities for infill and redevelopment are taken advantage of.

3. **Transportation investments should not encourage development in environmentally sensitive areas. Open space should be preserved.** Development should be discouraged in environmentally sensitive areas both within and outside the urban service area. Open space should be viewed as a valuable resource throughout the region.

4. **Transportation investments should encourage community scale, mixed use development in locations with pedestrian access and transit in both suburban and urban centers.** When residential development occurs far from arterials or when the separation between residential and commercial development is too great, accessibility is limited to the auto only. When development occurs close to arterials with a mix of complementary uses, people are given access to alternative modes, for example walking, biking, and transit, as well as the automobile. Transportation investments should provide

pedestrian enhancements and provide for transit centers in high density urban and suburban corridors.

5. **Design of street layout and location of complementary uses can and should create a pedestrian scale and provide access to other modes without compromising the attractiveness of development.** The Capital District is rich in traditional, walkable neighborhoods. Pedestrian connections between land uses should be encouraged in the design standards for new subdivisions and new commercial centers. Consistent with community design goals, pedestrian and bicycle enhancements to existing subdivisions and activity centers should be encouraged. Transportation investments should provide for pedestrian or bicycle paths connecting subdivisions to each other and to activity centers.

6. **Transportation and land use plans should provide a framework that facilitates predictable development.** By engaging in a coordinated land use/transportation planning process a community can weigh development decisions against its articulated vision of the future. Knowledge of existing transportation facilities and how they interact with land use and other infrastructure needs will lend predictability to the development process. Such predictability is important for public and private investment decisions. Transportation and land use plans should consider both local and regional impacts.

7. **The transportation system of the Capital District should be maintained and developed as an important part of the region's attractiveness.** The Capital District is in competition with other regions. Transportation is a basic resource that enhances the region's competitive position. Protecting the economic base requires that the transportation system "works": that connections are well provided between and within regional centers, and that the region has a reputation for being accessible. The existing transportation system should be maintained and developed into an effective multimodal system. As congestion and transportation problems become major issues in many metropolitan areas around the nation, the Capital District should protect and strengthen its transportation system as a marketable asset.

8. **Transportation investments should be supportive of urban reinvestment in city centers and along urban corridors.** The economic competitiveness of the Capital Region depends upon its city centers to serve as core areas for business, government, education, health care, culture and entertainment. There are eight cities in the Capital District and various important urban corridors; these include the four central cities of Albany, Schenectady, Troy, and Saratoga Springs and radial arterials like Route 5 and Route 20. Failure to attract and support development in the city centers and urban corridors will contribute to further loss of activity in these areas and additional decentralization. Transportation investments supportive of growth and redevelopment in city centers and urban corridors should be made to promote the efficient use of land and existing infrastructure. Furthermore, state numbered highways and other facilities serving regional needs within city limits should have equitable access to federal, state and county transportation funding.

9. **Transportation investments should be sensitive to the natural and physical landscape of rural areas and should not encourage urban or suburban type development in those areas. Rural features such as hamlets, villages, farmland, and open space should be preserved.** Transportation investments designed to address access and circulation issues should be sensitive to the particular characteristics of the affected area. Factors such as agricultural districts or lands, existing zoning and development patterns, and historic, scenic, and open space preservation issues should be considered to assure that improvements will be harmonious with the surrounding landscape. Transportation investments should not encourage development in areas lacking adequate provision of public water and sewer services, or at low densities outside the urban service area. Such development often renders rural roads insufficient, subsequently raising expectations for higher design standards on these roads.

TRANSIT FUTURES *(Final Draft)*

1. **Transit service is expected to serve four different objectives in the Capital District: to contribute to congestion management, air quality and energy savings; to offer an alternative travel mode to reduce dependence on the auto; to provide essential mobility for those who do not operate a private vehicle; and, to serve as a tool to support regional and local land use policies.** These separate roles have differing demands on resource requirements and differing implications for service design.

2. **The value of public investment in transit facilities and services must be considered in relation to these multiple objectives.** Comparison of transit investment with other alternative uses of public resources, including other transportation investments, must fairly examine costs and benefits to transit users and non-users. Congestion management benefits accrue primarily to auto users, for example, while emissions reductions are a broad social benefit and alternative mobility is a targeted benefit.

3. **Transit facilities and services can be an essential element of the social, economic and cultural fabric of a metropolitan region if supportive policies and investments are in place.** The role of transit in a community is related not only to specific transit investment decisions but also to policies and decisions related to the provision of employer parking, design and density of new development and treatment of the pedestrian environment. Actions in these areas must work in concert with transit system design in order to allow transit to provide a significant contribution to the metropolitan area.

4. **In particular, the success of transit service is tied to accommodation of the pedestrian.** While there are growth markets for park-and-ride services and for bike-transit connections, transit services usually provide the middle leg of trip with the "walk mode" at each end of the trip. Unless the pedestrian is successfully accommodated in his

or her attempts to travel quickly, safely and conveniently to and from the transit service, there can be little success in maintaining or expanding the contribution of transit to the community.

EXPRESSWAY MANAGEMENT *(Final Draft)*

1. **Maintaining traffic flows on Capital District expressways is critical for both economic and social reasons.** The Capital District's economic competitiveness is in large part rooted in the use of its expressway system both for exclusively over-the-road freight movement and to connect with air, boat and rail shippers. In addition, the expressway system is heavily used for commuting and general circulation within the region. It enhances the region's quality of life by providing access to a wide range of local activities and to those of other regions.

2. **The Capital District's expressway "system" is more than just a network of highways: technology and human resources are critical to its effectiveness.**

   The complete system includes those traffic monitoring and control technologies which facilitate maintenance of traffic flows, as well as the staffs of those transportation, police, fire, and medical service agencies which maintain traffic mobility or safety. The system should involve the following activities or functions:

   * monitoring traffic and weather conditions
   * controlling traffic
   * communicating and coordinating among agencies
   * responding appropriately to incidents
   * informing travelers of conditions

3. **To make this expanded system as effective as possible, it is critical that future transportation investments support development of non-highway elements in the local and public service agencies of the Capital District.**

4. **Investments in traffic management, particularly related to construction and incidents should also be seen as investments in the safety of the highway system.**

5. **Proper management of the expressway system must also include management of arterial feeders and receivers which connect the expressways to the remainder of the roadway network.** Expressways are not entities unto themselves, and access to and from arterials cannot be considered a "given." Making optimal use of the expressway system requires elimination of difficulties in connecting to/from local land uses.

6. **Major capital projects must have a plan for operating budgets for the life of the project.**

CHAPTER 5

THE HARD WORK OF BUILDING CONSENSUS:
The New Visions Task Force Experience

As mentioned in Chapter 2, nine task forces were established as part of the New Visions project. During "phase 1" of new visions, the task forces spent six months identifying current and projected (year 2015) conditions, policy issues and candidate actions. Phase one culminated in a full-day conference. One hundred thirty individuals attended the conference in December 1993; "white papers" produced by the task forces were presented and direction was provided by the participants regarding "phase 2" of the New Visions effort.

During phase 2 of the new visions effort, each task force concentrated on the identification of planning and investment principles, identification of task force specific supplemental performance measures (if any) and the identification of recommendations that will constitute a preliminary "plan of action" (for the 21st century). Phase 2 is currently underway and is expected to be completed in December 1995 at a second conference.

Phase 2 discussion intensity and productivity varied by task force. This phase required a tremendous commitment of staff time-- all CDTC senior staff facilitated one or more of the nine task forces. It should be noted that in preparation for this phase, CDTC staff participated in a series of training courses that focussed on meeting facilitation skills.

NYSDOT participated in an official capacity in all of the task forces; and very actively in most task forces. One of the achievements of the task force process was the opportunity to engage the state DOT in honest discussions about the issues before us-- it strengthened the NYSDOT/MPO relationship. In addition, it provided an opportunity for other functional areas within NYSDOT to engage in the MPO process. Historically, the Planning and Programming offices of NYSDOT have been closely involved in CDTC activities. Representatives from NYSDOT Traffic and Safety, Commercial Transport, Transit and Maintenance and Structures offices were also able to actively participate in the New Visions process through participation on Task Forces. This provided the "non-traditionally involved" NYSDOT staff with a stronger knowledge of what the MPO is, and what the role of each agency is.

The phase 2 process brought together people who might normally been thought of as adversaries. This process encouraged a free exchange of ideas, welcomed an understanding of different perspectives; and brought some people into the process that had never been involved in the CDTC planning process, the NYSDOT planning process or in the transportation planning process in general.

Many of these meetings had the nature of let's roll up our sleeves, and find a solution; and brainstorming was actively encouraged. If polarization of ideas occurred (and it did), it was a true learning process for participants. Participants were encouraged to find a balance between being visionary and realistic.

Demographic, Land Use & Growth Futures

Participants of this task force included representatives from the four counties; a consultant (not hired to do technical work, just participating); an area university; an area community college; cities and suburban towns; the business community (Center for Economic Growth; Niagara Mohawk Power Corporation); NYSDOT; and the regional planning commission. This task force was charged with giving consideration to various land use development scenarios and evaluate the impacts of different policy choices from a regional perspective. The land use scenarios took the form of "what if" questions to allow discussion of which development patterns might be more desirable that others. CDTC's land use model assisted in framing the "what if" questions quantitatively.

The task force looked at patterns of regional development and used the land use model as a tool for evaluating alternative growth patterns.

The land use model showed that:

- Transportation is only one factor in explaining development patterns; accessibility is necessary but not sufficient for development. Other factors would be necessary to influence development patterns.
- It will be difficult to significantly change regional patterns of development; for example Saratoga will experience the fastest growth (under any scenario); and that
- Congestion has "countervailing" impacts--while it may make the outlying areas less attractive, it also makes the cities less accessible. While congestion may encourage centralization of housing development, it may also encourage decentralization of employment. Any policy designed to influence development patterns using congestion as a tool must consider these countervailing impacts.

Other conclusions included:

- As a result of hearing presentations from each of the four counties about development patterns in each county, the Task Force developed the concept of an urban service area for the Capital District. The purpose is to encourage development to locate where existing infrastructure– especially sewer, and water -- already exists to support development; and where development can be absorbed into existing street network and public services, including transit systems. The principle calls for transportation investments to **encourage** residential and commercial development to locate in an urban service area. However, the task force recognized that transportation alone is not enough, and that other supporting policies will be needed.

- The task force recognized that a good planning process, as well as a good transportation system, are very attractive for economic development, and that economic development is an important goal.

At times, this task force became polarized along different lines, for example, along the lines of city versus suburban needs. Hard work was needed to arrive at consensus, and there were areas of disagreement at the end of phase 2. The Task Force did reach a strong consensus that urban reinvestment was desirable. Where disagreement remained was over how best to revitalize the cities, especially since so much of what is needed goes beyond transportation investments.

Nevertheless, it was concluded that the urban centers are vital to the economic health of the region and that the decline of the urban centers is a major regional issue. While there was not always consensus about **how** best to revitalize cities, there was a consensus that urban centers as well as suburban centers are both very important to the region. It is important for the region to support the city centers and urban areas, to keep them vital, in order to keep this region vital.

The transportation impacts of an urban reinvestment strategy were tested and found to be positive, including transportation benefits to the suburbs. *Increased activity in established urban areas can reduce overall transportation costs.*

There was also consensus that it is important for the region to protect suburban character, to keep the region's suburbs from being overwhelmed with development; and that it is important for the region to protect rural character, to prevent suburbs from expanding into rural areas.

The task force determined that local plans and community goals must be at the foundation of any regional vision.

Infrastructure

Participants of this task force included representatives from NYSDOT planning division, NYSDOT structures and NYSDOT highway maintenance; county, city, and town engineers; and a private construction firm. The composition of this task force was unusual in that CDTC was a player in what is traditionally NYSDOT domain. Pavement and bridge deterioration models developed by CDTC, in cooperation with NYSDOT, were used to guide some of the decisions of this task force.

Some key recommendations of this task force were a little surprising. For example, the task force proposed that design upgrades to some higher volume non-state roads might be desirable, and could be accomplished with a jurisdictional transfer of roads (using associated federal-aid for those roads). The task force recognized that upgrades and jurisdictional exchange might be desirable by other task forces as well, such as the bicycle and pedestrian task force; the goods movement task force; the transit task force and the arterial management task force. It was noted that upgrades could help form a priority treatment network to accommodate pedestrian, bicyclists, freight transit and arterial management needs.

Transit Futures

Participants of this task force included representatives from CDTA (both staff and board); Amtrak; an environmental organization; an area university; the business community; a rail advocacy organization; the City of Albany; NYSDOT; CDRPC; a private consultant and a marketing firm.

The transit futures task force assessed the potential for application of fixed guideway transit in the Capital District by the year 2015. Parsons Brinkerhoff took the lead on performing a feasibility study and cost analysis; CDTC staff took the lead on performing the demand analysis. The consultant compared the Capital District region to "peer cities" which have or are considering rail transit. The peer comparison revealed that the overall size of the potential fixed guideway market, as measured by total population and employment, is smaller in Albany than in other peer cities. This finding suggests that there is a limited capacity in the region for supporting an extensive network of fixed guideway facilities.

The analysis also examined four corridor specific applications-- light rail transit between Albany and Schenectady; an express light rail or busway service along the Northway corridor, a local light rail or automated guideway connector in the urban core; and a commuter rail service using existing rail lines. These applications are less costly than the "full" systems considered.

This task force drafted a report entitled "Annual Marginal Monetary Costs of Travel in the Capital District" which addresses all the costs of travel -- parking, vehicle costs, accident, highway & transit capital and operating; regional air pollution, other environmental factors.

Most noteworthy was the consideration of aggressive non-fixed guideway transit strategies as well. The task force looked at:

- An expanded feeder service, linked to trunk lines, in central suburban areas
- Fare policies such as free fare, lowered fares, income based fares
- Improved transfer processes
- Site design, urban reinvestment, greater mixed use development, redevelopment and intensification of transit corridors
- Highway and parking pricing
  ITS
  cash out parking subsidies
  congestion pricing

The task force recognizes that the performance measures used for judging the relative merit and tradeoffs of pursuing fixed guideway service in the Capital District will serve as a basis for comparing fixed guideway to other actions identified by the eight other task forces.

Special Transportation Needs

This task force's membership list included representatives from CDTA, county office for the aging, Cerebral Palsy Center for the Disabled, NYSDOT regional office, NYSDOT transit division, advocates for the disabled, a private bus company. the Center for Independence, an ARC and a medical transportation company. Although this membership list was an extensive list of potential players, actual participation was limited to NYSDOT representatives, CDTA, the Center for Independence, the CP Center and occasionally the county Office for the Aging. This was in direct contrast to the wide-eyed enthusiasm that the transit futures task force members had for discussing the future of transit in the area.

CDTC has been involved in addressing special transportation needs for over a decade. Levels of involvement over the years ranged from evaluation of FTA Section 16 vehicle applications to scheduling meetings of area agencies for the purpose of discussing coordination of transportation service. CDTC conducted a survey of needs in 1977 and 1987 and put together a directory of services in the late 70's as well as the late 80's. Despite this continued involvement, very little progress has been made toward taking "real" steps toward better cooperation and coordination between agencies. For example, situations still exist where two separate agencies will travel to the same rural part of the area to pick-up one client each; often within minutes of each other (the vans may even pass one another). These trips can't be shared either because of an internal agency barrier or a funding source barrier. Providers of agency based transportation have become so frustrated that they have adopted a defeatist attitude regarding the usefulness of conducting and participating in coordination activities. This mind-set filtered down to the task force level.

Nonetheless, in spite of this "reticence" or "reluctance" of the group, the task force was able to make progress toward identifying planning and investment principles, supplemental performance measures and an action plan.

Six actions have been recommended:

- Encourage real coordination
- Expand the geographic coverage of the paratransit system
- Increase investment in mobility training
- Integrate land use and transportation policy
- Replace street & highway signs with signs with larger letter heights and increased retroreflectivity
- Implement a community based transportation system

Expressway Management

Participants in this task force included representatives of NYSDOT's Planning Division and its Traffic & Safety Bureau; the New York State Thruway Authority; the New York State Police; the Samaritania service patrols; an area traffic engineering consultant; and the Capital District

Transportation Authority. This group had considerable first-hand knowledge of how and where expressway problems occur, their typical durations, and other effects. During meetings, task force members often exchanged "war stories" of incidents, extents of resulting congestion, the intrigues of interagency relationships at incident scenes, and other items which would probably never be reflected in plans produced without this sort of involvement. It can be argued that planning's products rest on a better foundation when this "from the field" insight is included in the process. In fact, the group seemed to be asking, "Why didn't anyone ever call us together before?"

The task force members were so enthusiastic about the idea of specifically studying the region's expressway incident management needs that they formed an Incident Management Subcommittee. The Subcommittee held focus group meetings with members of the police, fire and emergency medical service communities and sent out an agency survey intended to inventory available incident management resources and needs in the region.

Because of "turf" issues surrounding many elements of expressway incident management, the task force decided that CDTC was the perfect forum for the incident management subcommittee -- it was seen as a neutral agency with nothing in the way of control to gain for itself. The task force envisioned CDTC as an umbrella agency for incident management, facilitating communication and planning by members of the emergency response community.

The efforts of the task force are noteworthy from a CMS standpoint not only for an enhanced understanding of congestion and methods for mitigating congestion, but also for the proactive effort to dialogue with and involve local municipalities and service providers. This local interaction has produced better information for planning, and has also spurred some new cooperative planning efforts at the local level, as agencies have learned from their work with CDTC that simply getting around the table and talking to each other can produce gains in the ways they do business.

The task force developed a draft Intelligent Transportation System (ITS) Strategic Plan, a draft Expressway Incident Management System Development Plan and evaluated major alternatives for addressing congestion on the Northway (I-87), such as adding an HOV lane, an additional general use lane, and two reversible median express lanes. This task force was also supportive of the investigation by the transit futures task force of major transit alternatives for the Northway corridor.

Arterial Corridor Management

Participants of this task force included representatives from the town and county planning departments; planning board members; NYSDOT Planning Department; NYSDOT Traffic & Safety; a Town chief of Police; and a neighborhood association.

CDTC staff is already working under contract with the largest town in CDTC's planning area to determine appropriate mitigation fees for new developments to pay toward highway

improvements. This town is actively insisting on driveway spacing guidelines, and provision of service roads. CDTC has established a good working relationship with the town to provide consulting services under contract; CDTC has also conducted transportation/land use studies under contract with several other towns.

CDTC, through its arterial management task force is trying to build on to these relationships. CDTC has drafted driveway spacing guidelines, and access management guidelines that can be adopted by NYSDOT. In conjunction with this effort, CDTC conducted an inventory of residential and commercial driveway spacing on major arterials and has integrated this data base with traffic volume data. This process has led to development of a Land Use - Transportation Compatibility Index, which is a measure of level of conflict -- as traffic volume increases, the conflict level increases with the number of driveways. Levels of compatibility, ranging from A (no conflict) to F (severe conflict) were derived much like highway level-of-service criteria. In addition, the driveway spacing and traffic volume data base was merged with available accident data, so that relationships could be derived, relating driveway spacing, traffic volume and likelihood of accidents. These analyses were performed individually for both commercial and residential data bases.

The task force has recommended that the information put together for the task force be packaged in a handbook format for use in training programs for area Planning Boards.

Goods Movement

Participants of this task force included representatives from the Business Council of New York; UPS; Conrail; CP Rail Systems, Port of Albany; Albany County Airport; Center for Economic Growth; New York State Motor Truck Association; NYS Thruway; private trucking firms; CDRPC; and NYSDOT. This task force could be characterized as cooperative and open to free exchange of information.

Getting and keeping the attention of the private sector participants for long-range planning issues was difficult. The task force considered itself a "core" group, but found it necessary to perform periodic "reality checks" with the larger goods movement community. Midway through phase 2, this task force conducted a "freight roundtable" for private and public carriers, to discuss and prioritize goods movement issues. The task force also conducted a survey of truckers, barge operators, and other freight operators. The effort expended by the staff to support these outreach mechanisms was worthwhile -- the survey response rate was not only successful, but it collected opinions for the first time from an important sector of the transportation community.

The roundtable and survey efforts confirmed that the goods movement community thinks that intermodal solutions are important, and that it is important to improve access to the port, Conrail yards, and the Albany airport. The task force recommended that barriers such as low clearances should be removed during the normal course of business. Compared to other metro areas in the Northeast, the goods movement people told us that infrastructure barriers were not

an *urgent* concern in our metropolitan area, although they do present an ongoing concern.

Not surprisingly, the task force identified congestion as a big concern--"time is money"! This task force also emphatically stated that there should be no additional taxes on goods movement, and in fact, taxes should be reduced. This task force recognizes the value of this type of forum and will keep meeting, even after phase 2 of New Visions is completed. A key task force recommendation is the creation of a freight advisory committee to the CDTC.

Bike and Pedestrian

Participants of this task force included representatives from the NYSDOT, CDTA, County Planning Offices; Thruway Authority; several Capital District cities; CDRPC, Conrail, Saratoga County Heritage Trail Committee; bicycle advocates; and environmental advocates.

This group was encouraged by recent efforts by NYSDOT to incorporate bicycle standards into project design; and CDTC's commitment to program bicycle paths with CMAQ funds. However, this task force was very strong in their view that more needs to be done in the areas of project design, intersection design, signal timing for pedestrians, crosswalks, and bike paths.

This was a group very committed to their subject; at times the challenge was to get them to think strategically and to focus on what is realistic and achievable, rather than identify all the barriers to pedestrian and bicycle travel in the region. This task force initially proposed a 1000 mile network for improvements, but by working as a group and making tradeoffs, the focus became a 350 mile priority network for bike and pedestrian improvements in the Capital District. It was determined that the priority network improvements could largely be accomplished as part of ongoing reconstruction projects.

This task force met often and accomplished items that were beyond the intended agenda of creating the task force. An inventory of obstacles to cycling and pedestrian travel was compiled, and an informational brochure containing a "cookbook" of bicycle and pedestrian initiatives was designed, published and distributed.

The task force provided input into design guidelines, but philosophical differences of opinion exist regarding bike paths vs. shoulder right-of-way. Even this note was valuable to the planning process, though, as it reminded participants that there is no single "right" way to accommodate cyclists. Rather, creativity and making a genuine effort to determine the most appropriate bicycle treatment for a given location should be part of every highway project.

Another noteworthy element of the task force's work came in its asking CDTC staff to summarize pedestrian movements at major intersections; it was found that pedestrian traffic is 30% or more of total intersection traffic at some locations during certain times of day. This has been a valuable conscious-raising statistic to cite in presenting the group's ideas--a more specific example of the point that "we are all pedestrians sometime".

Recommendations by this task force included:

- Encourage sidewalks in suburban areas
- Install pedestrian phases at traffic signals in urban and suburban places, even if this reduces vehicle level of service.
- Provide education-- to local towns, cities, etc. as well as motorists.

Urban Issues

City planners from eight cities were represented on this task force, in addition to CDTC, NYSDOT, CDRPC and representatives from neighborhood groups from the region's three major cities. This task force identified strategies to revitalize urban areas. It was recognized that transportation alone will not "improve" a city, but will play a major role in improving the livability of a city.

One of the major accomplishments of this task force was the development of a Community Quality of Life core performance measure, which considers socioeconomic factors, mobility factors, real estate/ road ownership factors, and cultural factors for urban, inner suburban, outer suburban and rural areas. This index goes beyond the land use-transportation compatibility index and tries to articulate some non-quantifiable attributes (eg. a "sense of place") as well as quantifiable attributes. This exercise pointed out some of the unique problems that the cities are faced with-- concentrations of poverty, and huge amounts of tax-exempt properties (state buildings and other institutions) which deprive the cities of an adequate revenue base.

The community quality of life measure also identified attractiveness of urban places--urban places have cultural amenities, service availability, diversity, social interactions, "liveable communities" are generally pedestrian friendly.

The task force recommendations included:

- Discourage highway capacity expansions; recognize that transportation projects in the urban areas are less likely to involve capacity expansions than suburban arterials. Funding criteria should not discourage urban projects.

- Encourage intersection safety, downtown congestion and circulation projects; infrastructure investments that protect traffic function; pedestrian, bicycle and transit oriented investments.
- Provide "connections" between neighborhoods and communities.
- New developments should pay their way with regard to transportation needs/effects-- develop traffic impact fees and explore other ways to provide equitable funding..

CHAPTER 6

CONSENSUS STRATEGIES DEVELOPED BY THE TASK FORCES

Over 100 transportation actions were proposed by the New Visions task forces. Even though these actions were independently developed, there was a large amount of overlap. Many of these actions have been grouped into strategies that appear to have broad support -- others represent major policy choices for the region and are discussed in the next chapter.

The actions that are considered to be part of the "consensus" strategies will be incorporated into the draft long-range transportation plan unless serious problems are identified during this public review period (12/95 through 6/96). For these strategies, there appears to be little question about their desirability -- the debate centers around relative priority in constrained budget times. The questions are really more about how, who, how much and where -- not whether.

Each strategy narrative describes expected benefits and institutional and budgetary implications of adopting the strategy. Then, candidate actions that would implement the strategy are listed, together with the name of the originating task force. Further detail on the candidate actions can be found in the technical reports. Summary tables of the impact of the strategies follow the descriptions.

During phase 3 of New Visions, these strategies will be presented to the public as "consensus strategies", yet public comment will be sought to confirm the consensus that was found by task forces. The public will be asked to comment on these consensus strategies by responding to the following questions.

- *Do you agree that the strategies are desirable, and that further debate about them should center around relative priority (and budgets)?*
- *From your perspective, which of the consensus strategies will require the greatest concerted effort in order to be successful?*
- *If financial resources are insufficient to reach full success with all of these strategies, are there any strategies that you believe should receive particular budgetary priority?*
- *Do you believe that these strategies are sufficiently important that the Capital District should consider additional funding sources if expected revenues are not sufficient?*
- *Are there other broad strategies that you believe should be incorporated into the RTP?*

1) Creatively Complete Existing Commitments

Honor CDTC's commitments to strategic transit and highway projects, using New Visions strategies to refine project scope and designs. CDTC's existing commitments make a substantial contribution to pavement and bridge conditions, preservation of transit services, intermodal connections and strategic transportation improvements linked to land use plans. The task forces have emphasized the need to be creative in carrying out these projects in order

to be economically efficient and sensitive to a wide range of project objectives, such as bike and pedestrian accommodation, landscaping and the like.

Expected Benefits: Being more creative -- trying new approaches using the principles developed from New Visions -- will make our existing resources go further. Modest, but noticeable benefits will accrue to almost every aspect of transportation system performance, most notably the condition of the region's infrastructure.

Implications: Significant institutional changes will be required from all levels of government to successfully implement this strategy. The budgetary implications are presumed to be neutral -- the strategy is one that makes better use of existing revenues.

Candidate Actions:

- Continue to support TIP and Congestion Management System (CMS) actions. (Arterial Management and Goods Movement)
- Improve continuity between the planning, programming and design processes by adopting a systems approach to project development. (Urban Issues)
- Increase the efficiency of transportation spending. (Goods Movement)

Maintain Good Highway and Bridge Conditions

Maintain the region's highways and bridges in a state of good repair.

Expected Benefits: Maintaining the tremendous public investment that has been made in transportation infrastructure is the smart thing to do. We are not building many new roads, so we have to take care of existing facilities. A performance-based management strategy paints bridges before they corrode, builds more durable pavements, and matches design treatment to road function (not necessarily ownership or funding category). This provides baseline support to the regional economy.

Implications: Infrastructure projects have long been the priority for CDTC and NYSDOT. Strides in overall pavement and bridge condition have been made. The continuing need to devote upwards of 70% of our TIP resources has major budgetary consequences. The reserve capacity impacts for this strategy are represented in Table 6 as negative. The implication is that when a risk assessment approach is embraced in designing infrastructure projects, building in reserve capacity that might be needed in the future can be exchanged for resources to do more to address current capacity needs.

Candidate Actions:

- Embrace a "risk assessment" approach for capacity considerations in designing infrastructure projects. (Infrastructure)
- Use federal-aid money on local repair strategies for non-state roads; be more creative in the use of resources. (Infrastructure)

Reduce Jurisdictional Barriers

Reduce jurisdictional barriers that prevent desired actions and cause inequity in transportation quality or design. Jurisdiction can be a major obstacle to effective transportation systems. Roads are owned by the state, counties, cities, towns and villages. Transit systems, the Port of Albany, airports and rail systems are operated separately from road systems. Funding available for maintenance, operation and capital improvement vary widely by community and level of government. Decision processes and design standards for highway design and traffic signal systems vary widely.

This consensus strategy embraces many of the actions suggested by the task forces; most of the 100+ actions involve efforts to better integrate decision process, find greater efficiencies by elimination of duplication, and to provide resources based on need and function, rather than based on ownership.

Expected Benefits: The primary benefits of reducing the barriers result from efficiency improvements in government and societal costs.

Implications: There are major legal and institutional changes required to implement this strategy to any great extent. Legislation may be required to enable jurisdictional changes or to adjust funding programs to focus on function, not ownership. Budgetary considerations would like involve trade-offs that can be made to balance.

Candidate Actions: [See also #8 Priority Networks and #11 Incident Management]

- Transfer road jurisdiction to align with function. (Infrastructure).
- Ensure that TIP funding decisions recognize that state numbered highways and other facilities serving regional needs within city limits should have equitable access to federal, state and county funding. (Growth Futures)

Design Effective Facilities

Design transportation facilities to accommodate bicyclists and pedestrians, address the needs of an aging society, provide for goods movement and delivery, and reduce conflicts between local and through traffic. This involves embracing multiple objectives with any major project, rather than focusing primarily on physical condition or traffic capacity in its design.

Expected Benefits: Modest improvements in performance are seen across almost all measures. In particular, user and societal costs are very positively influenced.

Implications: The major implication is budgetary. The economic cost impacts for this strategy represented in Table 6 are on a per-project basis. To fully implement the strategy will require dedicated transportation fund sources, probably over those projected from existing sources. Please refer to the "Budget Issues and Options" section of this Workbook for further information.

Candidate Actions:

- Make transportation investment policy bicycle, pedestrian and transit friendly. (Transit, Urban Issues, Bike and Pedestrian)
- Incorporate landscaping and other enhancement techniques into project design. (Arterial Management)
- Explore the judicious use of traffic signals along residential corridors to improve the safety and efficient movement of traffic and pedestrians. (Arterial Management)
- Support investment in access management improvement. (Arterial Management)
- Remove infrastructure barriers to goods movement as part of the cycle of infrastructure repair. (Goods Movement)

Table 6
Impacts of Consensus Strategies
(qualitative estimates based on technical evaluations)

CORE MEASURES		1 Creatively Complete Existing Commit-ments	2 Maintain Good Highway and Bridges	3 Reduce Juris-dictional Barriers	4 Design Effective Facilities
Transportation Service					
ACCESS	Availability of reasonable non-auto alternatives	✔			✔
	Provision of non-SOV alt. with time advantage				✔
	Modal alternatives for freight				✔
ACCESSIBILITY	Travel time by best mode	✔			
CONGESTION	Excess hours of delay	✔			✔
FLEXIBILITY	Reserve capacity	✔	✖		✔
	Non-highway emergency capacity				✔
	Corridor alternatives during disruption		✔	✔	✔
	Fixed capacity risk		✔	✔	✔
Resource Requirements					
SAFETY	Societal costs of accidents	✔	✔	✔	✔
ENERGY	Total energy consumption	✔	✔	✔	✔
ECONOMIC COST	Government costs		✔	✔	✖
	User and societal costs		✔	✔	✔
	Total user, gov't and societal costs	✔	✔	✔	✔
External Effects					
AIR QUALITY	Daily emissions	✔			
	Attainment status	✔			✔
LAND USE	Amount of open space				
	Disruption of residences and businesses				✔
	Highway/land use compatibility index	✔			✔
	Support community quality of life	✔			✔
ENVIRONMENTAL	Sensitive areas impacted				✔
	Exposure to undesirable noise levels				✔
ECONOMIC	Overall support for economic health	✔	✔	✔	✔
SUPPLEMENTAL MEASURES	Percent Poor Condition for Highways	✔	✔	✔	✔
	Percent Fair Condition for Highways	✔	✔	✔	✔
	Percent Deficient Bridges	✔	✔	✔	✔
	Percent Bridges w/ Serious Deterioration	✔	✔	✔	✔
	Highway and Railroad Constraints	✔	✔	✔	✔

✔	Noticeable positive impact.
	Negligible impact expected.
✖	Noticeable negative impact.

Pro-actively Plan

Maintain and increase proactive local land use and transportation planning efforts. Emphasize consideration of potential impacts of development *before* development is proposed and allow developers to know what is expected.

Expected Benefits: Improvements are most noticeable in overall community quality of life. This is a reflection of the improvements in compatibility between traffic and development and more sensitive placement of development (avoidance of agricultural and open space areas, and minimal disruption of adjoining houses and businesses) that results when planning is proactive instead of reactive. Continuing and expanding these efforts will be essential for the protection of transportation investments.

Implications: There are both budgetary and institutional implications of a more integrated land use and transportation planning process. CDTC has experienced success in integrating land use and transportation planning in a number of corridor studies completed or now underway. Comprehensive land use planning at the local level should be encouraged and integrated with transportation planning through cooperation with local communities. Funding for comprehensive planning at the local level is an issue. The desirability and feasibility of developing a *regional* land use visions is discussed as a major transportation policy choice for New Visions discussed later in this Workbook.

Candidate Actions:

- Provide funding for and staff participation in community-based corridor-level land use/transportation plans. (Growth Futures)
- Conduct a survey of high tech and service industry firms to determine the transportation component of location decisions. (Growth Futures)
- Conduct a study of the transportation needs of rural areas and develop guidelines for transportation systems development and investment in rural areas. (Growth Futures)
- Ensure that local planning boards consider the regional transportation impacts of development decisions. (Urban Issues)
- Develop mechanisms to share the economic benefits and costs of regionally significant development projects regionally. (Urban Issues)
- Strengthen land use planning and coordination: strengthen municipal planning; pursue policies that ensure accommodation of pedestrian, transit, and access management concerns in the site planning review process; and improve agency coordination. (Arterial Management)
- Promote the development of access management plans for priority network arterials in cooperation with municipalities, the New York State Department of Transportation and county highway and planning departments. (Arterial Management)

Ensure Transportation - Land Use Compatibility

Recognize and address situations where transportation design or use is incompatible with the neighborhood. Pursue efforts to reduce conflicts between the transportation system and its surroundings.

Expected Benefits: There are direct transportation system benefits, in terms of improved access, accessibility, congestion relief and flexibility from improving the "fit" between transportation and adjoining land uses. This is because many of the specific actions that would implement this strategy are aimed at improving the availability and desirability of non-auto modes. Correspondingly, making the Capital Region a more bicycle- and pedestrian-friendly place improves overall quality of life, which has positive spillover benefits for the economy.

Implications: Much of this strategy is a change in approach or philosophy. As such, institutional barriers can be expected. Budgetary impacts primarily involve a shift in priorities, not necessarily an increase in funding levels. An increase in funding levels would, however, make successful implementation of this strategy more likely.

Candidate Actions:

- Make transportation investment policy bicycle, pedestrian and transit friendly. (Bicycle and Pedestrian, Arterial Management, Growth Futures, Urban Issues, Transit Futures)
- Encourage redevelopment and intensification in transit corridors. (Transit Futures)
- Incorporate traffic calming steps in existing and upcoming transportation projects; pursue at least one major, free-standing traffic calming project such as a street closure or lane reduction in each of the four counties of the Capital District by the year 2005. (Bicycle and Pedestrian)
- Expand the local road network to include greater use of service roads and collector streets. (Arterial Management)

Design Vibrant Communities

Focus growth to reinforce existing and create new mixed use, vibrant neighborhoods that are efficient to serve with transportation and reinforce community pride.

Expected Benefits: There are many benefits to making the Capital District a vibrant place. There is a growing body of evidence that regions that are "special" places -- where visitors and residents alike feel community pride and activity -- are more likely to be strong economic regions as well. The nature of work is changing away from manufacturing towards technology and service intensive industries. Unlike factory owners who need to locate near natural resources, information-intensive businesses can locate anywhere. Those regions that are able to attract such businesses will be the regions where people want to live.

Furthermore, the kinds of things that are done to increase liveliness -- increased pedestrian activity using mixed land uses -- provide benefits to the overall workings of the transportation system. Positive impacts to resource requirements and external effects are also evident.

Implications: The major changes needed are institutional. Education and awareness are the first step. Then, planning and zoning practices must be updated. Direct budgetary impacts are minimal.

Candidate Actions:

- Direct transportation improvements and services to reunite and reconnect neighborhoods and communities. (Urban Issues)
- Identify transportation investments which improve access to and enhance urban waterfronts. (Growth Futures)
- Encourage greater mixed use development through zoning changes to carefully allow commercial activity in or near existing residential areas and through greater use of planned unit development processes that allow and encourage combinations of retail, office and residential development within a single development. (Transit Futures)

Focus on Priority Treatment Networks

Focus investment on identified important, interconnected facilities.

Expected Benefits: The identification of priority networks makes the most efficient and effective use of available resources. By directing funding to the functionally most significant part of the transportation system, the largest impact will be seen.

Implications: To fully implement all task force recommendations would require increased funding. However, this strategy does provide helpful guidance in times of constrained budgets, as well.

Candidate Actions:

- Establish a priority treatment network (Infrastructure)
- Approve the priority bicycle/pedestrian network as an official planning reference, and take steps to improve the bikeability and walkability of network facilities. (Bicycle and Pedestrian)
- Support an access management policy for a priority network of arterial streets and highways. The policy will reinforce street hierarchy, establish driveway spacing guidelines for commercial corridors, establish signal spacing guidelines, and adopt a residential street standard. (Arterial Management)
- Eliminate infrastructure barriers (clearance limitations, load limits, etc..) on the priority truck network. (Goods Movement)

Improve Site and Access Design

Improve the site and access design practice to better accommodate pedestrian, bicycle, freight and auto access.

Expected Benefits: There are numerous benefits to improving site and access design. Accidents are reduced, as are total costs and energy consumption. The transportation system *works* better if all modes are accommodated, and transportation is less disruptive to communities.

Implications: Changes in design practice do not necessarily cost more money. Institutional changes will be required, however.

Candidate Actions:

- Improve the pedestrian and bicycling environment. Provide sidewalks along a much greater percentage of streets and highways in the transit service area than is the case today. Provide bicycle accommodations along arterials either as part of routine highway construction work or through stand-alone bike projects. (Transit Futures)
- Improve site design- Too often, site design for new development is carried out with only passing consideration of the site's relationship to adjacent properties or of its interface with non-auto modes of access; much can be gained by simply raising the profile of these two subjects during the site design process. (Transit Futures)
- Integrate land use and transportation through better site design practices so that facilities that primarily serve the elderly and handicapped are located in places where fixed route accessible bus service is available and usable. (Special Transportation Needs)
- Improve the pedestrian and bicycling environment by improving pedestrian linkages between adjacent parcels and by provision of sidewalks along a much greater percentage of streets and highways than is the case today. (Special Transportation Needs)
- Routinely consider transit as an integral component of the transportation system when undertaking site development review and corridor reconstruction. (Arterial Management)
- Improve delivery access through improved site design, implementation of commercial parking programs, and targeted infrastructure improvements. (Goods Movement)

Table 7
Impacts of Consensus Strategies
(qualitative estimates based on technical evaluations)

CORE MEASURES		5 Plan Pro-Actively	6 Trans-portation Land Use Compat-ibility	7 Design Vibrant Commun-ities	8 Focus on Priority Treatment Networks	9 Improve Site and Access Design
Transportation Service						
ACCESS	Availability of reasonable non-auto alt.		✔	✔	✔	✔
	Provision of non-SOV alternatives with time advantage		✔	✔	✔	✔
	Modal alternatives for freight					
ACCESSIBILITY	Travel time by best mode		✔			
CONGESTION	Excess hours of delay	✔	✔	✔	✔	✔
FLEXIBILITY	Reserve capacity		✔	✔	✔	✔
	Non-highway emergency capacity		✔	✔	✔	✔
	Corridor alternatives during disruption					
	Fixed capacity risk					
Resource Requirements						
SAFETY	Societal costs of accidents	✔	✔	✔	✔	✔
ENERGY	Total energy consumption		✔	✔	✔	✔
ECONOMIC COST	Government costs	✔	✔	✔	✖	✔
	User and societal costs	✔	✔	✔	✔	✔
	Total user, gov't and societal costs	✔	✔	✔	✔	✔
External Effects						
AIR QUALITY	Daily emissions		✔	✔	✔	✔
	Attainment status		✔	✔	✔	✔
LAND USE	Amount of open space	✔	✔	✔		
	Disruption of residences and businesses	✔				
	Highway/land use compatibility index	✔	✔	✔	✔	✔
	Support community quality of life	✔	✔	✔	✔	✔
ENVIRONMENTAL	Sensitive areas impacted	✔	✔			
	Exposure to undesirable noise levels					
ECONOMIC	Overall support for economic health	✔	✔	✔	✔	✔
SUPPLEMENTAL MEASURES	Highway and Railroad Constraints					✔
	Port Operations				✔	

✔	Noticeable positive impact.
	Negligible impact expected.
✖	Noticeable negative impact.

Develop Intelligent Transportation Systems

Use highway, transit, toll/fare and communications technology that improves the safety, reliability and efficiency of the entire transportation system.

Expected Benefits: Intelligent Transportation Systems implementation relieves some congestion and makes the existing transportation system more flexible. While increasing governmental costs of transportation, other resource utilization is made more efficient. Implementation will help CDTC to maintain its "Clean Air" status and provide support for the local economy.

Implications: There are both budgetary and institutional implications of the ITS implementation. Budgetary investment will depend upon the benefits that are perceived or proven from pilot uses of new technology. The degree of benefit is linked to the degree of implementation. The use of some ITS technology has significant "human factors" implications, often leading to changes in the way agencies do business.

Candidate Actions:

- Implement Intelligent Transportation Systems (ITS) on task force-identified network. (Expressway Management)
- Aggressively pursue new technologies. Through partnerships with the private sector and among public agencies, significant strides in managing our mobility can be made. (Goods Movement)

Manage Traffic Incidents Effectively

Coordinate individual public safety agency efforts into a unified, effective system to respond to accidents and other traffic tie-ups quickly on all major highways.

Expected Benefits: Incident management is critical to reducing regional congestion levels. Congestion is directly tied to air quality, the cost of accidents, energy consumption, and user costs

Implications: Incident management programs are not capital-intensive -- they do require an ongoing source of operating funds, however, to be effective in the long-term. Work of the Incident Management Subcommittee of the Expressway Management Task Force has also shown that there is much to be gained by increased communication between agencies that have a role in responding to and clearing accidents.

Candidate Actions:

- Implement the Expressway Incident Management Development Plan. (Expressway Management)

Expand Public-Private Partnerships

Build partnerships among all transportation providers and their clients so that transportation investments achieve multiple community objectives. Work with contractors to reduce the duration of highway disruptions; increase private sector transportation service delivery; continue sharing financial responsibility for improvements caused by private development traffic.

Expected Benefits: Expanding public/private relationships will improve the effectiveness of resources spent on transportation.

Implications: This strategy leverages the resources of the public sector through partnerships with the private sector. Institutional changes often result as both the public and private sector adjust to new operating realities. Actions to build public/private relationships become more urgent and necessary as government shrinks. Mutually beneficial arrangements -- win/win situations, if you will -- can often be worked out.

Candidate Actions:

- Work through the existing regional structures to build a coalition between the public and private sectors in the region to lobby for regional transportation projects. (Growth Futures)
- Pursue public/private partnerships which leverage use of public funds. (Growth Futures)
- Fully assess the impacts and the long-term costs of associated with development and its design. (Urban Issues)
- Proactively create partnerships and emphasize public participation in transportation planning, programming and implementation. (Urban Issues)
- Increase private contributions to transportation. (Urban Issues)
- Include demand management and transit support expenses as elements of developer-financed traffic mitigation programs. (Transit Futures)

Support Intermodal Transportation

Integrate transportation modes into a "seamless" and efficient system.

Expected Benefits: Intermodal transport is an important component of the overall transportation system. Improving connections between modes -- both for freight and for people -- helps the whole system work better and provides economic benefits.

Implications: Direct budgetary consequences of implementing this strategy will come in the form of specific capital projects aimed at improving intermodal connections. Policy encouragement will require actions by other levels of government, in addition to continued CDTC attention.

Candidate Actions:

- Improve intermodal connections. (Transit Futures)
- Adopt, or encourage the state to adopt, policies to support intermodal transport of goods in and through the Capital District. (Goods Movement)
- Improve surface access to the Port of Albany. (Goods Movement)
- Implement improved surface access to the Albany County Airport. (Goods Movement)
- Focus on the efficiency of intermodal movements through public/private partnerships as the best strategy to maximize transportation investments. (Goods Movement)

Table 8
Impacts of Consensus Strategies
(qualitative estimates based on technical evaluations)

		10 Develop Intelligent Transportation Systems	11 Manage Traffic Incidents Effectively	12 Expand Public-Private Partnerships	13 Support Intermodal Transportation
CORE MEASURES					
Transportation Service					
ACCESS	Availability of reasonable non-auto alternatives				
	Provision of non-SOV alt. with time advantage				
	Modal alternatives for freight				
ACCESSIBILITY	Travel time by best mode		✔		
CONGESTION	Excess hours of delay	✔	✔	✔	✔
FLEXIBILITY	Reserve capacity	✔		✔	✔
	Non-highway emergency capacity	✔	✔	✔	
	Corridor alternatives during disruption	✔	✔		
	Fixed capacity risk				
Resource Requirements					
SAFETY	Societal costs of accidents	✔	✔	✔	
ENERGY	Total energy consumption	✔	✔	✔	✔
ECONOMIC COST	Government costs	✖		✔	
	User and societal costs	✔	✔	✔	✔
	Total user, gov't and societal costs	✔	✔	✔	✔
External Effects					
AIR QUALITY	Daily emissions	✔	✔	✔	✔
	Attainment status	✔	✔	✔	✔
LAND USE	Amount of open space				
	Disruption of residences and businesses				
	Highway/land use compatibility index	✔		✔	
	Support community quality of life	✔		✔	
ENVIRONMENTAL	Sensitive areas impacted				
	Exposure to undesirable noise levels				
ECONOMIC	Overall support for economic health	✔	✔	✔	✔
SUPPLEMENTAL MEASURES					
	Highway Infrastructure Constraints			✔	✔
	Railroad Infrastructure Constraints			✔	✔
	Port of Albany and Canal Operations			✔	✔
	Airport Operations	✔	✔	✔	✔

✔	Noticeable positive impact.
	Negligible impact expected.
✖	Noticeable negative impact.

Provide Appropriate Transit Service

Maintain the bus fleet in a state of good repair and adapt transit service to meet 21st century needs. Identified needs include reducing dependence upon the auto, provision of essential mobility to those without cars (including those with special needs), management of congestion and support of local development policy.

Expected Benefits: There are multiple benefits from providing appropriate transit service to the Capital District. These benefits are not only to transportation service measures, although these are important, but also to resource requirements and the reduction of external effects from transportation. Adapting transit service to meet 21st century needs will make the region more accessible and improve access. Congestion will be reduced and the system will be better able to respond to disruptions. Accidents and energy consumption will go down. Along many measures, the Capital Region will be a better place to live, because quality of life and the region's economy will benefit.

Implications: Supporting transit costs money. Trying new approaches will require experimentation with different techniques -- and not all of the experiments will work. What will be important, though, is the regional commitment to continuous improvement of the transit system, regardless of choices made regarding fixed guideway use. In the long term, traditional federal and state fund source, especially for operating costs, may require additional sources of funding.

Candidate Actions:

- Recognize and support the social function of transit and transportation services. (Urban Issues)
- Maintain transit equipment and facilities in a state of good repair. (Transit Futures)
- Acquire "Clean Air" buses. (Transit Futures)
- Establish and maintain service standards. (Transit Futures)
- Consider special transportation needs in service design. (Transit Futures, Special Transportation Needs)
- Improve bus waiting areas. (Transit Futures, Urban Issues)
- Integrate transit system design needs into highway design and developer financing. (Transit Futures)
- Implement advanced transit technology. (Transit Futures)
- Develop feeder service in the central suburban area. (Transit Futures)
- Improve transfer processes. (Transit Futures, Urban Issues)
- Provide preferential traffic treatment for buses in key corridors and service areas. (Transit Futures)
- Explore more flexible labor rules. (Transit Futures)
- Engage the private sector in transit service delivery where appropriate. (Transit Futures, Urban Issues)

- Integrate special transit services into the regional system. (Transit Futures, Special Transportation Needs)
- Increase employer participation in transit promotion and financing. (Transit Futures, Urban Issues)
- Adopt effective fare policies. (Transit Futures)
- Secure reliable public funding for transit. (Transit Futures)
- Expand the geographic coverage of the existing paratransit system (i.e. STAR) so that heavily populated suburban areas (such as Clifton Park) are served. (Special Transportation Needs)
- Strongly encourage coordination of all agency operated special transportation vehicles. (Special Transportation Needs)
- Increase investment in mobility training for mobility impaired vehicles. (Special Transportation Needs)
- Establish a community based transportation system in suburban areas of the Capital District. (Special Transportation Needs)

Treat All Modes Fairly in the Capital Program

Review and revise project evaluation criteria for capital projects as necessary to ensure that all transportation projects reflect New Visions principles and products.

Expected Benefits: A comprehensive re-examination of the project evaluation criteria used at CDTC, NYSDOT, and CDTA is a necessary implementation step in making New Visions a reality. Benefits from so doing are seen across a variety of performance areas. Main changes that are perceived to be needed are ones to better capture the external impacts of transportation decisions -- to regional quality of life, the compatibility of transportation with adjacent land use, and support for the economy.

Implications: The implications are for a reassessment of budgetary priorities, not necessarily an increase in resources. A continuation of the consensus building approach of New Visions will be very important.

Candidate Actions:

- Develop and adopt TIP project selection criteria that encourage the appropriate programming of Enhancement projects allowed under ISTEA to protect, secure and enhance environmentally-sensitive lands. (Growth Futures)
- Ensure that TIP funding decisions recognize the multiple public objectives of transit service. (Transit Futures)
- Incorporate bicycle and pedestrian accommodations into appropriate projects on the 1994-99 TIP. (Bicycle and Pedestrian)
- Place a regional "set-aside" project on the TIP providing funding for spot improvements which would enhance the cycling and walking environments. (Bicycle and Pedestrian)

- Place a major project on the TIP providing funding for development of a new bicycle/pedestrian facility in one major travel corridor in each of the four counties of the Capital District. (Bicycle and Pedestrian)
- Adopt a region-wide program to replace street and highway signs with signs that have enhanced reflectivity and increased letter heights to accommodate the visual needs of the older driver. (Special Transportation Needs)
- Ensure that TIP funding decisions recognize that state numbered highways and other facilities serving regional needs within city limits should have equitable access to federal, state and county funding. (Growth Futures)
- Reexamine the TIP project selection criteria and process to better recognize goods movement. (Goods Movement)

Enhance Demand Management

Support economic health by decreasing drive-alone, rush-hour trips.

Expected Benefits: Demonstrable transportation service benefits accrue from a moderate demand management approach. Accident costs, emissions, and energy consumption are reduced, together with congestion.

Implications: Demand management is an integral part of transportation system management. Budget implications are minor. There are significant institutional challenges to implementation, however.

Candidate Actions:

- Establish a program to promote "high tech" solutions as cost-effective alternatives to traditional transportation investments (e.g. Telecommuting, Teleconferencing, Teleshopping, Congestion Pricing). (Growth Futures)
- Continue ridesharing support programs. (Transit Futures)
- Cash out parking subsidies. (Transit Futures)
- Engage New York State as a full partner in parking management and transit promotion. (Transit Futures)
- Consider highway pricing (particularly congestion pricing) and broad parking policies. (Transit Futures)
- Continue development of peripheral and remote park and ride lots. (Transit Futures)

Reach Out for Full Participation

Reach out to local communities, policy makers, businesses and individuals with information, technical assistance and on-going opportunities for participation with CDTC and its members in making transportation-related decisions.

Expected Benefits: An open public process makes transportation responsive. If the parameters of performance that have been chosen that are indeed important to people, then a more responsive process will show benefits across the board. The benefits of an inclusive process are seen in implementation successes that are not possible otherwise.

Implications: The implications of a transportation-planning process driven by public involvement are potentially far-reaching. Increases in funding to transportation will not occur without public support. Adapting the capital program and planning process to be more flexible -- to change in response to feedback -- will likely involve some institutional adjustments.

Candidate Actions:

- Distribute materials which would help to incorporate the principles of bicycle and pedestrian accommodation into the planning process. (Bicycle and Pedestrian)
- Develop an outreach program that promotes access management principles and concepts. (Arterial Management)
- Proactively create partnerships and emphasize public participation in transportation planning, programming and implementation. (Goods Movement, Urban Issues)
- Create a standing bicycle and pedestrian subcommittee. (Bicycle and Pedestrian)
- Provide for cyclist/pedestrian representation on CDTC committees. (Bicycle and Pedestrian)

Table 9
Impacts of Consensus Strategies
(qualitative estimates based on technical evaluations)

		14 Provide Appropriate Transit Service	15 Treat All Modes Fairly in the Capital Program	16 Enhance Demand Management	17 Reach Out for Full Participation
CORE MEASURES					
Transportation Service					
ACCESS	Availability of reasonable non-auto alternatives	✔	✔	✔	✔
	Provision of non-SOV alt. with time advantage	✔	✔	✔	✔
	Modal alternatives for freight				
ACCESSIBILITY	Travel time by best mode			✔	
CONGESTION	Excess hours of delay	✔	✔	✔	
FLEXIBILITY	Reserve capacity	✔	✔	✔	
	Non-highway emergency capacity	✔	✔	✔	✔
	Corridor alternatives during disruption				
	Fixed capacity risk	✔			
Resource Requirements					
SAFETY	Societal costs of accidents	✔	✔	✔	✔
ENERGY	Total energy consumption	✔	✔	✔	✔
ECONOMIC COST	Government costs	✖			
	User and societal costs	✔		✔	
	Total user, gov't and societal costs	✔		✔	
External Effects					
AIR QUALITY	Daily emissions	✔	✔	✔	
	Attainment status	✔	✔	✔	
LAND USE	Amount of open space	✔	✔		✔
	Disruption of residences and businesses				✔
	Highway/land use compatibility index	✔	✔		✔
	Support community quality of life	✔	✔		✔
ENVIRONMENTAL	Sensitive areas impacted		✔		✔
	Exposure to undesirable noise levels				
ECONOMIC	Overall support for economic health	✔	✔	✔	✔
SUPPLEMENTAL MEASURES	Ridership	✔	✔		✔
	Public cost per person trip served (transit)	✔			
	Public cost per person trip served (auto)	✔			
	Marginal cost per new rider served	✔		✔	
	Overall government transit costs				
	Benefit/Cost (B/C) measuring only $	✔			
	Rider friendliness	✔	✔	✔	✔
	# of bus shelters at facilities	✔	✔		✔
	% fixed route accessible service	✔			✔
	% intersections accommodate mobility impaired	✔			✔
	% of highway signs meeting standards	✔			✔
	# human service agencies coordinate transportation	✔			✔

✔	Noticeable positive impact.
	Negligible impact expected.
✖	Noticeable negative impact.

CHAPTER 7

MAJOR POLICY CHOICES RESULTING FROM PHASE 2 OF NEW VISIONS

Beyond carrying out the consensus strategies, there are five major transportation policy *choices* that resulted from the work of the task forces during phase 2. Each policy choice can significantly shape the region's future. Each carries with it major budgetary consequences. Choosing a policy direction will involve risk-taking by decision-makers. Not choosing a direction will also have consequences, as seen in the trend projections presented earlier in this Workbook. The common characteristic of these choices is that none will proceed without broad regional support. To make progress, major institutional questions will need to be asked -- and answered. These are fundamental choices, related to transportation, that the region must make.

From the New Visions work, the *major transportation policy choices* facing the region appear to be the following:

- √ How should we deal with growing congestion on the *Northway* -- projected to be the most critically-congested corridor in the Capital District? With additional carpool lanes, bus lanes, general purpose lanes, express bypass lanes, rail transit service or with less costly actions? How high a priority is addressing this congestion?

- √ What role should we establish for *transit*? In particular, is there sufficient interest in one of the "fixed guideway" options to seriously explore all the actions that would be necessary to make the option work?

- √ Given that the bulk of transportation resources is spent on *highway and bridge reconstruction*, what rebuilding policy do we follow? Do we focus primarily on keeping roads and bridges in a state of good repair? Or do we seek budgets that are large enough to address safety, bike and pedestrian accommodations and truck clearance issues *routinely on all important state, county, city and town roads* as part of reconstruction work?

- √ Is it desirable to state a regional land use policy to guide transportation investment? Is it possible to state a policy that is *meaningful* that can draw the *support of state, county and local governments*?

- √ How will the Capital District pay for the improved transportation system that is desired? Through better use of existing state and federal taxes and user fees? Is there support for a local financing mechanism to support transportation?

These subjects and the alternative strategies available to the region are described in the following pages. After a brief description of the issues, the nature of the choice is outlined. Alternative approaches, and their pros and cons are presented. A summary of the impact of

these choices on various parameters of performance is shown in tables. The Budget choices because of their overriding importance, appear in a separate chapter following this one.

In presentations to the public during phase 3 of New Visions, the following questions will b used to focus discussion:

- *Do you agree that these five policy areas represent critical choices facing transporta tion policy makers in the Capital District?*
- *Do you agree that, aside from relative priorities and budgets for the "consensus strategies, these five policy areas represent the most important transportation choice facing the Capital District?*
- *If no, what other policy choices are as important as or more important than thos listed above?*

There are also specific questions about each policy choice that will be asked when structurin the public discussion during phase 3.

NORTHWAY CONGESTION

Description

The Northway is the most congested transportation corridor in the region. Forecasts show tha it will remain so in the future, with congestion progressively worsening. Forecast regiona congestion is shown in Figure 2. A number of management and capacity-increasing proposal are on the table, including transit projects. The major highway capacity-increasing alternative will have capital costs between $70 million and $90 million, not including interchange an access arterial improvements. The major transit alternatives considered will have capital cost between $100 million and $390 million for all aspects of a broad transit initiative.

Nature of the Choice

The extent to which congestion can and should be addressed, the level of investment, and the selection of the most desirable alternative are major policy questions for the region. The choice is a major budgetary question, as well as a priority issue.

Options Put Forth by Task Forces

The Expressway Management task force acted as an advisory committee to a NYSDOT sponsored study of the Northway corridor. The Transit Futures task force also considered the Northway corridor in the development of its fixed guideway alternatives based on market research showing the corridor as promising for increased transit use.

Three major highway alternatives were developed by the Expressway Management task force for policy consideration. These alternatives include addition of a fourth "general use" lane in each direction; two reversible median express lanes; and a carpool lane or "high occupancy

vehicle" lane. The carpool lane alternative provides higher speeds for those who travel by carpool as well as those who travel by express bus. All three alternatives would include adding highway capacity between Exit 1 and Exit 10 of the Northway. The impacts of these three alternatives are summarized in Table 10.

The major transit alternatives considered by the Transit Futures task force for the Northway corridor include light rail in the median of the Northway or commuter rail on existing freight lines -- to draw people away from the Northway. The impacts of these two alternatives are also summarized in Table 10.

Discussion

Traffic on the Northway has experienced dramatic growth, with average daily traffic doubling in many locations between 1974 and 1992. The theoretical maximum volume of a three lane expressway is routinely reached or exceeded in the AM peak period on the Northway, and unstable flows and traffic slowdowns are becoming frequent in the AM and PM peak periods. By the year 2015, peak period demand on the Northway is expected to increase by over 30 percent. Delay will increase dramatically, increasing the peak period driving time for peak Northway trips by significant amounts. For example, in the afternoon peak hour, on a day without incidents, the trip from the State Office Campus to exit 10 of the Northway is forecast to increase from 31 minutes in 1990 to 51 minutes in 2015. Incidents or poor weather conditions will result in even longer delays.

The Expressway Management task force evaluated a number of demand management and incident management alternatives in the Northway corridor and concluded that these strategies, while essential, will not be enough to address the severe congestion foreseen for the Northway. Other smaller scale highway alternatives were examined, including east and west side service roads and a managed shoulder / contraflow lane, and were found to be worthy of consideration but not sufficient to address long term needs. These strategies will provide benefits to the Northway corridor, but will only provide partial relief to the congestion problem. In addition, the Demographic, Land Use and Growth Futures task force considered the traffic impacts of diverting some of the expected future growth away from Saratoga County. However, under all development scenarios considered, the Northway can be expected to be the corridor with the most severe congestion in the Capital District.

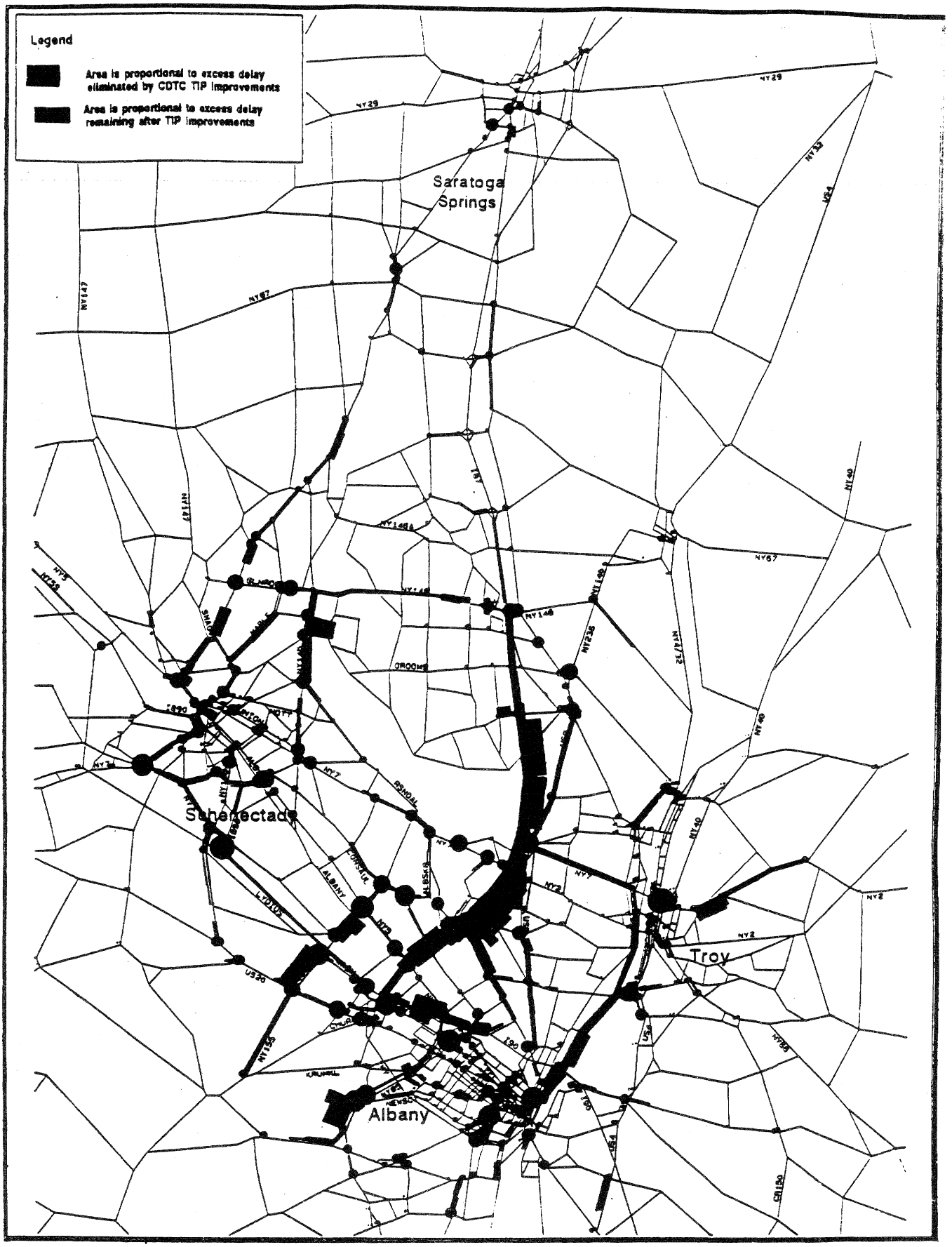


Figure 2
Excess Delay with Year 2015 Travel

Effects on Performance Measures

The impacts of the highway and transit alternatives were evaluated based on travel demand levels forecast to exist in the year 2015. Impacts at points further in the future may differ as would impacts in 2015 if the forecast level of population and employment prove to be incorrect. The impacts also do not include assumptions of "generated" travel on highways or transit -- travel induced by having a better transportation system. Impacts are limited primarily to those related to diversions from one route to another route or from one mode to another mode.

Under the measure of access, the Northway light rail transit (LRT) alternative and the commuter rail alternative provide the most dramatic improvement. The number of person trips with transit as a reasonable alternative during afternoon rush hour would increase by over 19,000 with both transit alternatives. The carpool lane alternative would also have a positive impact on access, because person trips with a travel time advantage over the drive alone mode would increase significantly.

All five major Northway alternatives would provide significant improvement in accessibility. Travel times to the commuter travelling "by fastest mode" from the State Office Campus to Exit 10 on the Northway in the PM peak hour would be reduced by between 9 and 16 minutes under the three highway alternatives. For the carpool lane alternative, the travel time savings would be primarily experienced by those travelling in the carpool lane.

The three highway alternatives would be very effective in reducing congestion in the Northway corridor, reducing between 4,600 and 7,100 daily person hours of excess delay. These numbers represent between 15 percent and 22 percent reduction of total regional excess delay in the year 2015. The transit alternatives would each reduce regional excess delay by less than 3 percent.

Fixed guideway transit alternatives provide greater emergency capacity and long-term travel growth capacity for the Northway corridor than the highway alternatives. However, fixed guideway transit investment is a risky proposition due to the small percentage of trips that are pre-disposed to use transit and the inflexibility of the alignment once it is built. Looked at another way, the transit options are ones the region would have to grow into, while highway widenings are improvements the region may grow out of.

While the highway Northway alternatives are expensive, total safety, user and societal costs are expected to exceed construction costs. While the light rail and commuter rail alternatives will have significant safety, user and societal cost benefits, capital costs and operating costs will lead to an overall negative economic cost impact. Improvements in access and community character must be viewed as offsetting the net monetary cost of the transit investments. Substitution of bus service for the light rail service or reduction in the commuter rail cost could improve the economic cost measure.

The impacts of all of the projects on emissions of hydrocarbon and nitrogen oxides would be negligible for comparative purposes, although decreases in hydrocarbon emissions of less than 1.3 percent were calculated due to all five of the major Northway alternatives, and nitrogen oxide emission increases of less than 0.8 percent were calculated for the highway alternatives.

By improving the quality of transportation service in this important corridor, all five alternatives would support the economic health of the region. The CDTC Land Use Model suggests that residential development could be marginally increased by increasing highway or transit capacity in the Northway corridor, while improving the accessibility of the cities would help to retain employment in the urban areas.

The transit alternatives improve community quality of life because they represent an investment in the urban communities of the region that would help concentrate development in urban corridors. The Northway highway alternatives will improve the highway/land use compatibility index by providing dramatic traffic relief to Route 9 in Saratoga County and in Colonie, and as well as to other arterials in Colonie. The Northway light rail alternative will also provide some relief to those arterials.

Questions For the Public

The public will be asked to respond to the following questions regarding Northway options.

Given the limited resources available under expected federal and state funding programs (and based on the costs and benefits discussed above):

- *Do you believe that mitigating congestion on the Northway is sufficiently important to warrant what could be (depending on the highway or transit option chosen) the single most expensive transportation project in the region over the next 20 years?*
- *Do you believe that investment in addressing Northway congestion is sufficiently important that the Capital District should consider additional funding sources if expected revenues are not sufficient?*

Table 10
Impacts of Major Northway Options
(qualitative estimates based on technical evaluations)

CORE MEASURES		Provide a Fourth General Use Lane	Provide Two Reversible Median Express Lanes	Provide a Carpool Lane (HOV Lane)	Transit Applic 2 Northway Light Rail Transit/ Busway	Transit Applic 4 Commuter Rail	
Transportation Service							
ACCESS	Availability of reasonable non-auto alt.				✔✔✔	✔✔	•
	Provision of alternatives with non-SOV time advantage			✔✔✔✔	✔✔✔✔	✔✔✔✔	•
	Modal alternatives for freight						
ACCESSIBILITY	Travel time by best mode	✔✔	✔✔	✔✔✔	✔	✔	•
CONGESTION	Excess hours of delay	✔✔	✔✔	✔✔✔	✔	✔	•
FLEXIBILITY	Reserve capacity			✔	✔	✔	•
	Non-highway emergency capacity			✔	✔	✔	•
	Corridor alternatives during disruption		✔	✔	✔	✔	
	Fixed capacity risk	✖	✖	✖	✖✖✖✖	✖✖	•
Resource Requirements							
SAFETY	Societal costs of accidents	✔	✔	✔	✔	✔	•
ENERGY	Total energy consumption	✔	✔	✔	✔	✔	•
ECONOMIC COST	Total user, gov't and societal costs	✔	✔	✔	✖	✖	•
External Effects							
AIR QUALITY	Daily emissions						•
	Attainment status	✔	✔	✔	✔	✔	
LAND USE	Amount of open space						
	Disruption of residences and businesses						
	Highway/land use compatibility index	✔	✔	✔	✔		
	Support community quality of life				✔	✔	
ENVIRONMENTAL	Sensitive areas impacted						
	Exposure to undesirable noise levels						
ECONOMIC	Overall support for economic health	✔	✔	✔	✔	✔	

✔✔✔✔	Positive impact greater than 50%, relative to the null.
✔✔✔	Positive impact between 20% and 50%.
✔✔	Positive impact between 10 and 20%.
✔	Positive impact less than 10% or not quantified.
	Negligible impact expected.
✖	Negative impact less than 10% or not quantified.
✖✖	Negative impact between 10 and 20%.
✖✖✖	Negative impact between 20 and 50%.
✖✖✖✖	Negative impact greater than 50%, relative to the null.
•	Indicates impact has been quantified.

ROLE OF TRANSIT

Description

Public transit in the Capital District is at a crossroads. Overall usage is in decline due to changing demographics and suburbanization, while STAR system usage continues to increase. Communities look for increased levels of transit service in order to connect people with jobs, yet levels of continued governmental support are uncertain -- for example, Congress cut levels of federal operating assistance to CDTA by 40% for 1996.

During the New Visions Phase 2 efforts, CDTC's task forces have reaffirmed a belief that transit does play a vital role in the life of the metropolitan area -- providing options, assuring essential mobility, contributing to congestion management and energy savings, and supporting efficient land use patterns. A series of strategies are suggested to enhance the effectiveness of transit in meeting these multiple objectives; these strategies have been described in previous sections of the workbook.

Nature of the Choices

Major policy choices face the Capital District regarding transit even if there is general agreement that there is a vital role for transit in the region's future. Given the reduction in federal operating assistance, even a desire for the modest service improvements suggested in the consensus strategies produces a major policy choice regarding transit *financing*. Does the Capital District community perceive sufficient benefits from CDTA and other transit services to consider additional local governmental financing? Or should transit service be reduced to a service level that transit fares and expected levels of public funding can support? This is a fundamental policy choice that must be considered.

Of considerable interest also to the Capital District community is the recurring question of whether a rail transit service or other form of *"fixed guideway"* transit investment would provide noticeably greater benefits to the region than bus-in-mixed-traffic transit can. Obviously, if financing for modest bus improvements constitutes a major policy choice then it is clear that the benefits of an expensive transit initiative would need to be compelling before any financial commitment to such an initiative is possible.

Options Put Forth by the Task Force

The Transit Futures Task Force examined a range of bus transit service options, from reducing service and raising fares to increasing service and cutting fares. The actions included in the consensus strategies focus on service restructuring for efficiency and on modest service expansion in suburban areas. These actions require additional public financing -- *financing which may need to come from local sources.*

Regarding fixed guideway options, the Transit Futures Task Force worked with consultant assistance from Parsons, Brinckerhoff, Quade & Douglas, Inc. to examine fixed guideway options for the Capital District. The examination concluded by listing four feasible fixed guideway applications: *light rail transit or busway service between Albany and Schenectady (as a land use strategy); express Northway LRT or busway service; a local LRT or automated guideway connector in the urban core; and a commuter rail service using existing rail lines. Each serves a very different purpose from the others and is shown as a representation of the potential role of fixed guideway transit in the Capital District.* These are depicted in Figure 5.

Discussion

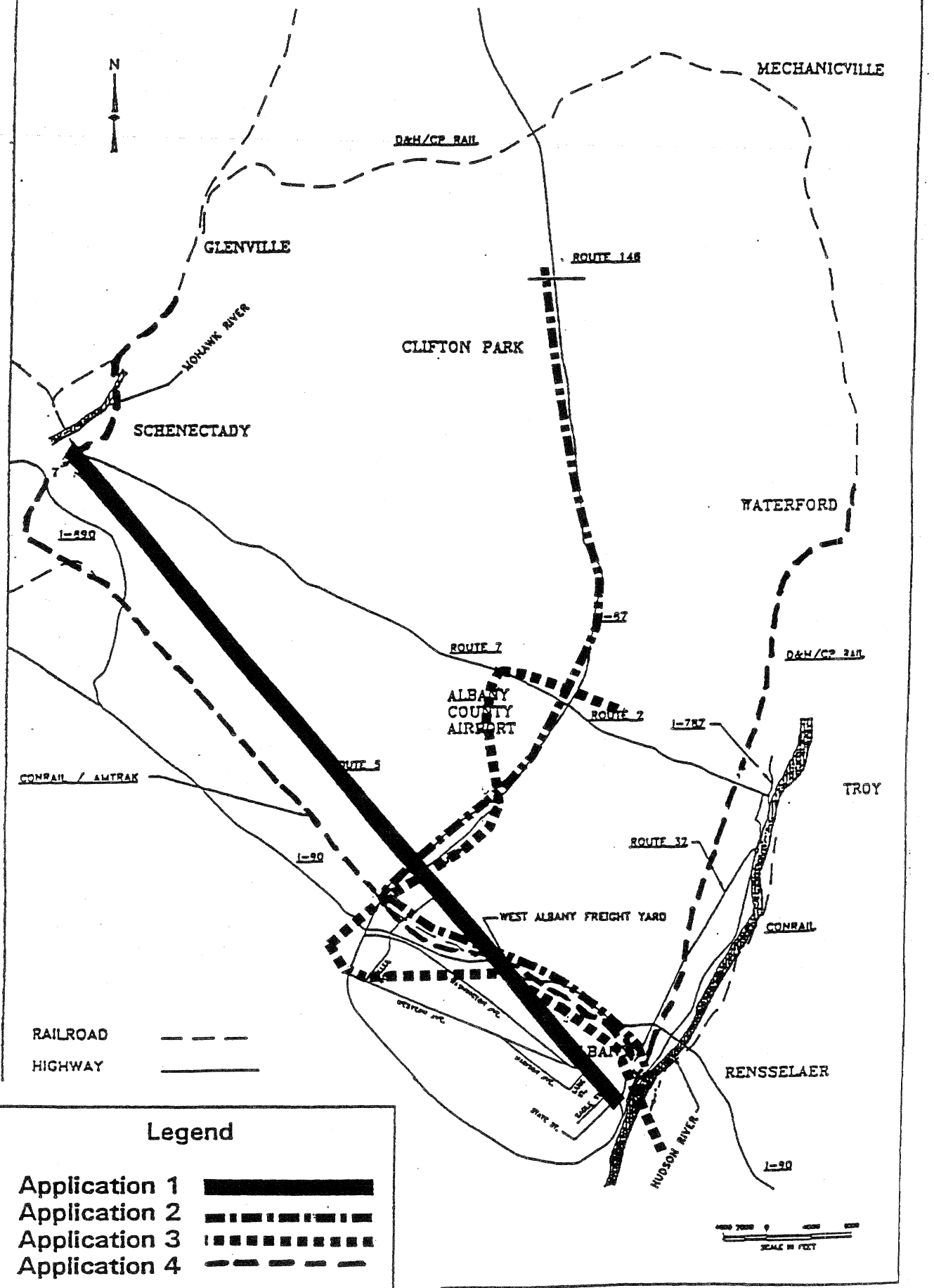
Currently, public financing sources provide for all of CDTA's capital needs and about 60% of its operating expenses. Public funds also support Upstate Transit capital and operating expenses and those of many other publicly-sponsored transit services in the area. On an annual average basis, this public support totals approximately $35 million.[4] Federal, state and local commitments at this level are not secure. Commitments for increased levels to provide for service expansion, to accommodate increased demand for STAR service or to adjust for reduced passenger revenue could be pursued *only if there is broad support from the Capital District community.*

Fixed guideway options such as light rail, busways or commuter rail are being implemented in metropolitan areas across the country. These investments are directed either at addressing congestion in growing travel corridors or at reinforcing traditional locations of urban development. Primarily, these new systems have a downtown focus. Increasingly, financial plans for new systems rely on local financing more than on expectation of discretionary federal funding for construction; ongoing operating funding also requires a permanent funding source.

The task force's examination of fixed guideway options included consideration of costs -- which would be quite substantial -- and benefits in a very comprehensive manner. The task force recognized that a lot of further study would be required if any of the options appeared promising. Therefore, the task force examined broad issues to help the Capital District community determine whether or not further study is warranted.

[4] *This public support comes from a mix of federal, state and local general funds and dedicated taxes (such as the federal gas tax and the state's mortgage recording fee.) In aggregate, the entire annual public support to transit in the Capital District is equivalent to about a one-half cent sales tax, or about a ten-cent gasoline tax.*

Figure 3
Fixed Guideway Transit Applications



Legend

- Application 1
- Application 2
- Application 3
- Application 4

Effects on Performance Measures

Financing of existing service

To prepare background information on the basic choice regarding transit financing, the Transit Futures Task Force examined both the effects of expanding service and the effects of cutting service. This examination is described in greater detail in the *Transit Futures Report*, October, 1995.

Briefly summarized, the results indicate that modestly expanding service comes at a price of increased governmental support which may exceed the *monetary* benefits to society.[5] Benefits to society are largely *non-monetary*: increased access to alternatives to auto travel, an enhanced ability to handle highway disruptions and closures and at least marginal congestion, energy, air quality and land use benefits.

Cutting service has the exact opposite impact. Reducing transit service would probably save more money in tax support than it costs in increased highway user costs and environmental damage -- at least in the short term. The greatest negative effects of service cuts are felt in *non-monetary* measures of access to non-auto options and flexibility to deal with unexpected events. Perhaps the greatest impact of reduced service would be the indirect effects of the increased difficulty of Capital District residents to participate in society and the economy without cars. If this difficulty leads to an inability of individuals to find and hold jobs or to an inability of firms to find and retain employees, then a significant monetary effect of the service cut could result. This effect is difficult to measure.

Fixed Guideway Transit Options

The key technical findings related to fixed guideway transit are the following, condensed from a fuller discussion in the *Transit Futures Report* and the *Fixed Guideway Transit Investigation Summary Report*:

1. *Total population and employment is smaller in the Capital District than in other metro areas pursuing fixed guideway transit. Also, region-wide population and employment densities are considerably below those in other areas.*

2. *On a more positive note, centralization of population and employment within the three central cities of Albany, Schenectady, and Troy - where traditional transit markets are located -- is consistent with and in some cases greater than other areas pursuing fixed guideways. In addition, the Capital District's development pattern of urban hubs and an interior suburban area is an unusual situation which means that "dual hub" corridors may be constructed with major concentrations of trip making at both ends of the corridor.*

[5] *The cost-effectiveness of service expansions can be improved through the use of the actions listed under the consensus strategies. These actions focus to a great degree on improved service efficiency.*

3. *When combined with increased parking costs in downtown Albany and improved bus service (limited additional feeder service and better transfer scheduling), each of the tested fixed guideway applications improves access measures and transit ridership noticeably.* ***Generating net monetary benefits to users, government and society depends upon land use changes that go beyond what the transit investment itself would cause.***

4. *Each of these options requires significant financial commitment, well beyond the levels currently available to CDTA and other transit operators in the Capital District. At the high end of cost estimates for rail transit, the additional transit cost could be as much as $39 million annually (for capital and operating). If the entire amount of the additional cost came from a supplemental sales tax, this amount is equivalent to about a four-county tax of one-half cent.*[6] *Any of these options would also require strong public support and political commitment in order for the necessary land use investment and parking pricing to be carried out.*

5. *Benefits of any fixed guideway investment would need to be sufficiently compelling in order for there to be support for a supplemental sales tax or other mechanism necessary to implement the improvements. Further study is needed the context of a federally-required "Major Metropolitan Transportation Investment Study" that looks at all options to achieve stated goals before sufficient information could be available to commit to any fixed guideway investment.*

A brief outline of the four applications highlighted in the *Fixed Guideways Transit Investigation Summary Report* and their effects on performance measures are provided below:

1. **Light rail service in the Northway median, with a continuation to downtown Albany.**

   Light rail service in the Northway median from Clifton Park (approximately Exit 9) to Colonie, and along the rail right-of-way to downtown Albany (Application 2 tested in the fixed guideways report) could provide a travel time advantage over auto travel in this critical corridor and provide significant growth potential in the most-rapidly growing travel corridor of the region. Time advantage would be a significant contributor to turning around a currently-declining Northway corridor transit usage. Northway light rail construction (at an estimated $386 M, with an additional $10 M) would be considerably more expensive than alternatives of bus lane or guided busway construction and would be less flexible than bus options. Northway light rail construction would represent a permanent commitment of available right-of-way to rail transit. The task force could not assess the ability of light rail to attract more riders than would a bus service of the same frequency, speed and cost.

[6] *A greater levy would be required if the tax were applied to only one or two counties. Alternatively, the annual additional costs would be equivalent to about a 12-cent regional gasoline tax.*

Performance benefits from this action are most noticeable in the areas of providing a time-competitive transit option to a greatly-increased percentage of peak hour trips and in providing a high capacity for growth in demand over time periods that extend beyond 2015.

2. **Develop commuter rail service from Saratoga and Schenectady Counties into downtown Albany.**

   Commuter rail service (Application 4) could serve the growing Saratoga County commuter market with service along both the Hudson River corridor and the Amtrak corridor through Schenectady. It would be intended to accomplish multiple objectives: helping mitigate Northway congestion while simultaneously reinforcing traditional urban areas -- Waterford, Cohoes, Green Island/Troy/Watervliet, Menands, Albany, Rotterdam and Schenectady. This land use and urban effect is distinct from what is possible through bus options or the light rail option using the Northway median. Demand estimates show nearly as much demand for the railroad alignment as for service directly along the Northway.

   Current cost estimates indicate that commuter rail capital and operating costs ($154 M capital and $10.9 M annual operating) would be higher than those for Northway bus options, but less than for light rail. Commuter rail service differs from light rail service in that trial service can be provided with limited capital investment.

3. **Redevelop the Central Avenue / State Street corridor between Albany and Schenectady with increased development densities and development "nodes" around transit stations served by light rail transit.**

   The Albany-Schenectady light rail option (Application 1) must be considered primarily in the context of a significant land use initiative. The transit component would be perhaps-necessary but not sufficient cause for redevelopment and intensification of this traditional urban corridor. This corridor saw its early 20th century development come about as a result of rail service and has the makings of a pedestrian-friendly, transit-oriented corridor through strategic redevelopment. A NY 5 corridor in which the existing suburban-type developments (e.g. Colonie Center, Westgate, Mohawk Mall) expand toward the street with increased densities, grid streets, sidewalks and re-located and re-designed parking is fully compatible with light rail investment. More intense development locations would be the most likely candidates for transit stations. In combination with feeder bus service, this option can help integrate the suburban areas (including Wolf Rd. and the Albany County Airport area) into the urban core anchored by downtown Albany and downtown Schenectady. Among all options, this one has the greatest potential to build upon existing development to make the most of the Capital District's unique geographic composition.

   Benefits of this land use / transportation action are shown across a wide range of performance measures. Monetary savings to users and society considerably exceed the

marginal public costs of providing the service -- if the land use intensification occurs. However, such an investment carries a high level of risk by devoting substantial resources to a single corridor which may or may not develop as intended.

For this reason, this option should not be pursued with the belief that the light rail investment will be the precipitating cause of land use change. Rather, it should be considered only in the context of a demonstrated desire of governments and businesses to commit to a program of continuous redevelopment and intensification in the corridor. Further investigation of the whole package, including examination of design implications for highway operations, is needed before the light rail option in this corridor merits inclusion in regional plans.

Should such investigation produce serious interest and commitment to the land use side of the package, the light rail service would still require as much as $340 M in capital investment and nearly $10 M in additional annual operating costs. As is true for the Northway light rail option, this level of investment most likely be the single largest transportation investment on the region's agenda for the next 25 years and would therefore require support from throughout the region.

A fixed guideway *bus* option in this corridor is a service variation that could be considered if the Route 5 redevelopment concept has support. The fixed guideway bus option would be located in the median of the corridor (just as the light rail line would be), with formal stations at appropriate intervals and feeder bus service.

The bus variant would maintain the same potential for travel time savings as the rail option. It would gain flexibility in being able to leave its exclusive lanes if necessary; however, it would lose any intangible attractiveness that rail modes possess over bus modes in attracting riders.

4. **Develop a circulator guideway service linking major shopping, office and other trip generators in the central part of the region.**

Application 3 in the fixed guideway report, which focuses on linking major generators and creating a regional "export industry" out of the nearly 10,000,000 square feet of regional retail space along the Northway from Western Ave to NY 7, would appear to work best with technology that -- at least for the present -- is too costly to pursue. An elevated guideway service that laces its way from the Airport (or NY 7) to Wolf Rd, through Northway Mall, Crossgates, Stuyvesant Plaza, SUNYA, the State Office Campus and heads downtown to circulate among major generators has the potential to be a 21st century technology (with short headways and small capacity vehicles) fit to 21st century transportation needs (significant growth in non-commute travel with random arrival patterns). Extensions to Clifton Park could be considered.

Private participation is possible to facilitate the shopping connections; use of the service to both tie the Airport (and perhaps the Rensselaer Amtrak station) to downtown Albany and at the same time leverage the economic potential of the retail space along the Northway provides multiple objectives for the investment. As an elevated guideway, the system could be fit exclusively on commercial, industrial or institutional land with very little impact on residential areas.

Unfortunately, at a generic capital cost estimate of $50 M per mile or more (based on recent experience with applications of limited scale), an automated guideway system serving these connections appear beyond the Capital District's reach. Should implementation of similar new technologies elsewhere help reduce the costs of signal control and vehicles significantly, this system could be examined further.

An at-grade, light rail version of the major generator connection application is an available variation that could provide the connections without relying on new technology. However, the "ring road" nature of many of the generators (Crossgates, SUNYA, State Office Campus) would provide a challenge in designing direct access to destinations difficult for light rail. Connection to the Rensselaer Amtrak station would be less feasible. Current estimates indicate that the light rail version would carry capital costs in excess of $300 M and $7.6 M in annual operating costs.

Table 11 presents a summary of the effects of these fixed guideway choices on key performance measures. Estimates of impacts shown in Table 11 are derived, where possible, from the detailed technical evaluations documented in the Fixed Guideway Transit Investigation Summary Report and in the more detailed "Capital District Fixed Guideway Transit Feasibility Study: Estimation of Demand Potential and Performance Measures", April 1995.

Note that all values are relative to year 2015, trend conditions with a 30% reduction in transit service from 1990 levels. Note also that all applications shown in the Table include a downtown parking pricing action.

Table 11 also includes performance of the fixed guideway options relative to supplemental measures identified by the Transit Futures Task Force. These supplemental measures include measures of effectiveness traditionally used to examine fixed guideway investment, such as cost per new rider served and overall benefit-to-cost ratio. On these scores, it is the Albany-Schenectady investment that fares best -- on the assumption of significant land use reinvestment. Without that reinvestment, and for all other fixed guideway options, the traditional benefits do not equal the cost of the systems by the year 2015. This restates the message from the core measures: namely, fixed guideway investment's desirability must be based on non-monetary benefits, on benefits beyond 2015 or on support for corridor intensification efforts.

Questions for the Public

As a result of the task force work, several major policy questions emerge. These major questions are:

- *If state and federal revenues are not sufficient to continue transit service at current or modestly-enhanced levels, do you believe that the benefits of transit service are sufficiently high that the Capital District should consider additional funding sources?*

- *Knowing the high likely cost of the "fixed guideway" transit applications identified by the Transit Futures Task Force, do you believe that any of these applications provides sufficient benefits to warrant further investigation?*

- *Specifically, do you believe that the "fixed guideway" transit options that contribute to addressing congestion in the Northway corridor -- bus-only lanes, light rail transit in the median or commuter rail on existing rail rights-of-way -- warrant serious consideration in further study of Northway options?*

Table 11
Impacts of Fixed Guideway Investment
(qualitative estimates based on technical evaluations)

		Applic. 1 Albany-Schen. LRT/ Busway	Appl 1 urb Applic 1 with urban reinvestm't	Applic 2 Northway LRT/ Busway	Applic 3 Circulator LRT/AGT	Applic 4 Commuter Rail	
CORE MEASURES							
Transportation Service							
ACCESS	Availability of reasonable non-auto alt.	✔✔✔	✔✔✔	✔✔✔	✔✔	✔✔	•
	Provision of alternatives with non-SOV time advantage	✔✔✔✔	✔✔✔✔	✔✔✔✔	✔✔✔✔	✔✔✔✔	•
	Modal alternatives for freight						
ACCESSIBILITY	Travel time by best mode	✔	✔	✔	✔	✔	•
CONGESTION	Excess hours of delay	✔	✔✔	✔	✔	✔	•
FLEXIBILITY	Reserve capacity	✔	✔	✔	✔	✔	•
	Non-highway emergency capacity	✔	✔	✔	✔	✔	•
	Corridor alternatives during disruption	✔	✔	✔	✔	✔	
	Fixed capacity risk	✖✖✖✖	✖✖✖✖	✖✖✖✖	✖✖✖✖	✖✖	•
Resource Requirements							
SAFETY	Societal costs of accidents	✔	✔	✔	✔	✔	•
ENERGY	Total energy consumption	✔	✔	✔	✔	✔	•
ECONOMIC COST	Total user, gov't and societal costs	✖	✔	✖	✖	✖	•
External Effects							
AIR QUALITY	Daily emissions		✔				•
	Attainment status	✔	✔	✔	✔	✔	
LAND USE	Amount of open space	✔	✔				
	Disruption of residences and businesses	✖	✖				
	Highway/land use compatibility index	✔	✔	✔	✔		
	Support community quality of life	✔	✔	✔	✔	✔	
ENVIRONMENTAL	Sensitive areas impacted						
	Exposure to undesirable noise levels						
ECONOMIC	Overall support for economic health	✔	✔	✔	✔	✔	
SUPPLEMENTAL MEASURES	Transit system usage	✔✔✔	✔✔✔	✔✔✔	✔✔✔	✔✔✔	•
	Public cost per person trip served,transit	✖✖✖✖	✖✖✖✖	✖✖✖✖	✖✖✖✖	✖✖✖	•
	Public cost per person trip served,auto	✔	✔	✔	✔	✔	•
	Marginal cost per new rider served	$9.00	no net cost	$14.00	$8.50	$9.65	•
	Overall government transit costs	✖✖✖✖	✖✖✖✖	✖✖✖✖	✖✖✖✖	✖✖✖	•
	Benefit/Cost measuring only $	0.6	2.8	0.2	0.5	0.2	•
	Rider 'friendliness'	✔	✔	✔	✔	✔	

✔✔✔✔	Positive impact greater than 50%, relative to the null (at current service levels).
✔✔✔	Positive impact between 20% and 50%.
✔✔	Positive impact between 10 and 20%.
✔	Positive impact less than 10% or not quantified.
	Negligible impact expected.
✖	Negative impact less than 10% or not quantified.
✖✖	Negative impact between 10 and 20%.
✖✖✖	Negative impact between 20 and 50%.
✖✖✖✖	Negative impact greater than 50%, relative to the null.
•	Indicates impact has been quantified.

REGIONAL LAND USE / VISION

Description

Integration of land use is essential for protecting our region's transportation investments. Without land use management, unconstrained development will add to the number of driveways serving isolated developments. Such development will result in a deterioration in the through capacity and operating speeds of our roads, will aggravate the existing difficulty in effectively serving suburban development with transit and will frustrate attempts to create safe travel opportunities for pedestrians and bicyclists. Without careful treatment, the land available along arterials can support an amount of development that far exceeds the arterial ability to handle through traffic (which is their primary function), local land access and effective accommodation of transit, bicycle and pedestrian modes. CDTC has had a long-standing commitment to coordinating transportation and land use, and *ensuring transportation - land use compatibility* is a consensus strategy for New Visions.

The major policy choice presented here is about whether it is desirable to prepare and implement a *regional* vision of land use and development.

Nature of the Choice

Many task force participants pointed out that land use and development decisions in our region are disconnected, with competition amongst municipalities hurting overall regional competitiveness. This has also been a major finding of the State Commission on the Capital Region. Municipalities have to weigh the costs of new development and supporting infrastructure against the benefits of tax revenues that new development will generate. Where public opposition to new development exists, developers will be encouraged to seek locations with the least barriers, which may not be the most desirable locations from a regional perspective. The result can be that development threatens the community character of suburban and rural areas, while cities decline. Further, that lack of predictability in the development process can discourage economic development.

A number of task forces recognized the important relationship between land use and transportation. New Visions places land use considerations in the forefront as a way to preserve our transportation system. While transportation policies will influence land use and development patterns, there are many other local and regional policies and market forces which also influence land use and development. The choice presented here is whether the Capital District should develop a regional land use vision, or continue current practice in which each municipality typically deals with development as it occurs, pursuing land use and transportation coordination at the local level only. Development and implementation of regional land use policies does not occur presently because of local control over land use decisions. Cooperation and dialogue among municipalities will be necessary, as well as respect for local community goals and values. ***Public support for a regional land use vision will be essential.***

Discussion

The Demographic, Land Use and Growth Futures Task Force was interested in whether or not it was possible to change regional patterns of development. If it was possible, what would be a preferred pattern? All four counties of the region have been suburbanizing -- measured by both households and employment. Saratoga has been the fastest growing County. These trends have led to increasing traffic congestion in the suburbs, and notably in the Northway corridor. The CDTC Land Use Model was developed to examine alternative land use and development scenarios in the Capital District. It will be difficult to change regional patterns dramatically. For example, it is highly likely that Saratoga County would continue to experience the fastest growth, under any scenario. The analysis of the impacts of different development scenarios is further described in the task force report *Evaluation of the Transportation Impacts of Land Use and Development Scenarios*.

Options Put Forth by Task Forces

Urban Service Area - There are significant benefits to encouraging development to occur where adequate water and sewer infrastructure are already in place. The Growth Futures task force proposed establishment of an Urban Service Area for the Capital District. An established Urban Service Area would encourage new commercial and residential development to locate in existing developed areas with adequate water, sewer, and transportation infrastructure. Increased activity can be absorbed there due to the extensive street network and public services, including transit. It may be feasible to define the Urban Service Area as the urbanized area in Albany, Rensselaer and Schenectady Counties (based on Census Bureau criteria) and the Saratoga Sewer District in Saratoga County. The Urban Service Area can be extended to include areas which already have infrastructure in place; but further study will be necessary to define its boundaries. Use of an Urban Service Area does not mean that safety and pavement and bridge conditions *outside* the area are ignored or given low priority. It simply means that public funding for transportation improvements that encourage or accommodate development is focussed on areas within the agreed boundary.

The Goods Movement Task Force has also recommended that regional goals for compact development and optimal use of existing industrial land would be fostered by public policies encouraging the location of freight-intensive industries along existing rail lines.

Special Attention and Priority to Urban Revitalization Needs - The Growth Futures and Urban Issues task forces recommended that urban reinvestment be encouraged. Transportation benefits would accrue from a more intensive future development in the urban areas of the region. However, it was recognized that transportation policies alone would not cause urban reinvestment. Many other policies would be necessary. The Urban Issues task force proposed a set of strategies and actions to promote urban reinvestment and revitalization. The task force considered many factors which support the community quality of life in the central cities, inner suburbs, outer suburbs, small cities and villages, and rural towns of the Capital District.

These factors are described in the task force report *Community Quality of Life: Measurement, Trends, and Transportation Strategies*. Strategies to reinvest in our cities and urban areas were found to preserve the community quality of life not only for the cities, but for the suburbs and rural towns as well. Transportation strategies are essential to pursue, but must be coordinated with other regional development policies to be most effective.

The Transit Futures Task Force recognized the important relationship between land use development patterns and transit. Investigation into the feasibility of fixed guideway transit options for the Capital District pointed to the paramount importance of a coordinated approach. Major transit investments could be a tool to encourage reinvestment in urban areas.

While transportation policy can contribute to urban reinvestment, a regional land use and development vision will require additional supporting policies. The development of a comprehensive regional plan would allow the Capital District to preserve and enhance its existing urban form, quality of place, and economic competitiveness.

Effects on Performance Measures

Impacts of a regional land use vision that includes an Urban Service Area and urban reinvestment are summarized in Table 12. The impacts of the regional land use vision are positive across a variety of performance measures, including economic cost. Although the benefits are very high, implementation of the regional land use vision will be difficult, and the task of building public support and cooperation among municipalities will be a challenge.

Access to transit, and other modes would be supported by encouraging development to occur in urbanized areas in proximity to arterials with transit service. The urban reinvestment scenario tested by the Growth Futures task force resulted in an 8 percent increase in person trips considered transit accessible in the afternoon peak hour in year 2015. The scenario would also increase the number of trips that can be made by walking and cycling by virtue of locating more development in closer proximity to complementary uses. Accessibility in the region would increase by modest amounts. The most notable travel time savings under the urban reinvestment scenario were found in the Northway corridor, where travel time savings of 5 minutes would be achieved in the afternoon peak direction. Infill and redevelopment of urban areas and compact development would moderately relieve congestion in the region. The urban reinvestment strategy was found to decrease PM vehicle hours of excess delay by 10 percent. The benefits were found to be most notable in suburban towns and in the Northway corridor.

A regional land use vision would have traffic safety and energy benefits. Economic cost would include modest planning and implementation costs which would be offset by benefits to governments; user and societal costs savings could exceed those in the transportation sector. Air quality impacts would be moderately positive. Open space outside of the Urban Service Area would be protected, and infill and redevelopment would preserve open space within the Urban Service Area. Protection of open space would be a major benefit. The Urban Service

Area would help to protect areas with insufficient water and sewer infrastructure from development that would threaten groundwater resources.

In combination with other CDTC transportation - land use policies and arterial management actions, a regional land use vision would have dramatic benefits to the highway and land use compatibility index. Residential land use conflict would be minimized, and arterial land access conflict would minimized in developing corridors.

The Urban Service Area with urban reinvestment would provide significant protection for community quality of life. Several task forces recognized the importance of keeping the central cities vital; protecting suburban character and preventing the suburbs from being overwhelmed by development; and protecting rural character by preventing suburbs from expanding into rural areas. A regional land use vision could achieve these goals.

The Urban Service Area will encourage economic development by reducing the cost and increasing the efficiency of development by using existing infrastructure. However, restricting development locations may increase the cost of new houses by increasing land value and mitigation costs. A regional land use vision would provide significant support for economic growth. It would provide predictability to the development process, making this region attractive to developers. The protection and strengthening of community character and the livable community scale of the Capital District will enhance this region's competitive position into the 21st century.

Questions for the Public

The public will be asked to respond to the following questions regarding regional land use.

Given the limited resources available under expected federal and state funding programs (and based on the costs and benefits discussed above):

- *Do you believe it is desirable for the Capital District's municipalities to reach general agreement on where future development should be directed within the region?*
- *Do you believe that it is important for CDTC to direct significant investment to support revitalization of older urban areas and older corridors?*

Table 12
Impacts of Regional Land Use/Vision
(qualitative estimates based on technical evaluations)

CORE MEASURES		A regional land use vision encouraging more intensive development in an Urban Service Area defined for the Capital District, combined with a set of strategies for urban reinvestment and revitalization.	
Transportation Service			
ACCESS	Availability of reasonable non-auto alternatives	✔✔	*
	Provision of non-SOV alt. with time advantage	✔	*
	Modal alternatives for freight	✔	
ACCESSIBILITY	Travel time by best mode	✔	*
CONGESTION	Excess hours of delay	✔	*
FLEXIBILITY	Reserve capacity	✔	
	Non-highway emergency capacity	✔	
	Corridor alternatives during disruption		
	Fixed capacity risk		
Resource Requirements			
SAFETY	Societal costs of accidents	✔	*
ENERGY	Total energy consumption	✔	*
ECONOMIC COST	Total user, gov't and societal costs	✔	*
External Effects			
AIR QUALITY	Daily emissions	✔	*
	Attainment status	✔	
LAND USE	Amount of open space	✔✔	*
	Disruption of residences and businesses		
	Highway/land use compatibility index	✔✔✔	*
	Support community quality of life	✔	
ENVIRONMENTAL	Sensitive areas impacted	✔	
	Exposure to undesirable noise levels		
ECONOMIC	Overall support for economic health	✔	

✔✔✔✔	Positive impact greater than 50%, relative to the null.
✔✔✔	Positive impact between 20% and 50%.
✔✔	Positive impact between 10 and 20%.
✔	Positive impact less than 10% or not quantified.
	Negligible impact expected.
✖	Negative impact less than 10% or not quantified.
✖✖	Negative impact between 10 and 20%.
✖✖✖	Negative impact between 20 and 50%.
✖✖✖✖	Negative impact greater than 50%, relative to the null.
*	Indicates impact has been quantified.

INFRASTRUCTURE RENEWAL OPTIONS

Description

Capital District system-wide pavement and bridge conditions have stabilized in recent years, due to a combination of substantial funding commitments and improved maintenance practices. With the funding levels reflected in the *1994-99 Transportation Improvement Program (TIP)*, the overall condition improves somewhat (see New Visions Technical Report *Long Range Infrastructure Issues in the Capital District* for more detail). If funding proves to be less available that shown in the 1994-99 TIP, making steady improvement in conditions will be a challenge.

Nature of the Choice

It is NYSDOT policy to upgrade roads to meet NYS design standards during the course of rehabilitation and reconstruction projects. For bridges, this includes removing any clearance restrictions or load limits. For roads, such standards include lane widths, the provision of shoulders, and turning radii at intersections. In 1994, the design manual used by NYSDOT personnel was changed to increase the attention given to the accommodation of bicyclists and pedestrians. There is no formal NYSDOT policy regarding arterial corridor management, the provision of service roads, or driveway consolidation, although these subjects are sometimes considered during the permit process for curb cuts on state routes.

Local governments rarely have the resources to undertake design improvements except when federal aid is involved; therefore, design upgrades usually occur only when federal aid is available. For federal-aid projects, NYSDOT generally administers the design work and relies on its design standards and policies on behalf of the local jurisdiction that owns the road.

The choice that faces the region is the approach used during the cycle of infrastructure renewal. A focus on pavement and bridge conditions (only) will provide for stable pavement and bridge conditions and may lead to significant improvements in these conditions (if 1994-99 TIP funding levels are maintained) -- but may not accommodate the multiple objectives put forth in New Visions, such as accommodating bicyclists and pedestrians, removing constraints to goods movement, and improving arterial corridor function. Alternatively, pursuing a wide range of improvement with each rehabilitation or reconstruction project may reduce the number of roadway miles or the number of bridges that can be repaired unless additional funds are obtained or significant efficiency improvements found.

Options Put Forth by Task Forces

The Bicycle and Pedestrian Issues Task Force, the Arterial Corridor Management Task Force, and the Goods Movement Task Force all identified *priority road networks*. These will help in identifying appropriate treatments for different types of roads (based on function and location) in constrained budget times. But more than that, the task forces have made a compelling case

that these issues are important enough to warrant special attention -- and potentially increased funding if necessary to make these improvements.

Bicycle and pedestrian accommodation performed in conjunction with road reconstruction (and in conjunction with the few committed "strategic" capacity projects) will provide for meaningful improvements to the system as a whole. Because the current "system" for bicyclists is discontinuous, ongoing work is required to provide an environment that significantly supports the use of these modes.

Preservation and enhancement of arterial function is necessary to allow our existing road system to function into the 21st century. With attention to signal timing, driveway spacing and service roads, additional traffic growth can be absorbed in many locations without major widenings. Safety is improved and congestion relieved. Good planning can also foster efficient corridor settlement patterns that are transit-friendly and supportive of pedestrian and bicycle transportation. A systematic corridor-by-corridor approach will have long-term benefits.

Eliminating barriers to freight movement will preserve the economic function of the region's transportation system and give us advantage over other regions.

Routine incorporation of transit accommodation into road projects will, over time, impact the attractiveness of transit. If bus stops have shelters and safe access and pullouts are provided, taking the bus is a more pleasant experience - and thus more likely to occur.

Discussion

An approach to infrastructure renewal that embraces a multiple objective project design philosophy has major budgetary implications, as well as potential institutional ramifications. Basic infrastructure renewal is already the largest category in the CDTC TIP -- using these projects to accomplish multiple objectives will further increase the funding required.

Institutionally, issues revolve around jurisdictional issues. The example of NY 5 (Central Avenue/State Street) was repeatedly used by task forces to illustrate differences in design treatment that currently result when the road is owned by the state vs. the municipality. Realigning road ownership with function would result in the transfer of high-volume roads to the state and lower-volume road to the cities, towns, and counties. This would result in a more consistent treatment by functional classification, but many legal and institutional barriers would need to be overcome to make this occur.

Effects on Performance Measures

Table 13 shows that increasing our infrastructure budget sufficient to embrace multiple objectives has some major benefits. Transportation system performance is improved, particularly in the areas of access and congestion. Geometric upgrades to important, non-state roads would be expected to "pay for themselves" in reduced costs of crashes. Improved arterial design (signal spacing, reduced conflict) would be expected to improve both traffic flow and safety -- which will allow these arterials to absorb more growth without additional widening and will help maintain the livability and community character of the region's residential arterials. The total costs related to planning, designing, and constructing improvements to achieve regional arterial management goals were estimated by the Arterial Management task force to range between $15 and $25 million over the 25-year plan design period. Costs can be minimized by constructing service roads, sidewalks, and shared driveways during the land development process. Retrofitting existing developed corridors can be accomplished in conjunction with site redevelopment, re-use, or expansion, and as part of routine public highway reconstruction projects. The public and private costs would be totally offset by the reduction in crash costs alone. Additional accessibility, economic development, and land use benefits would be expected as well.

An estimated 94,000 afternoon rush hour trips are currently five miles or less in length and about 12,000 are less than one mile long.[7] Conversion of even a small portion of these trips to bicycling or walking would result in lower emissions, decreased fuel consumption, and reduced congestion. Removing barriers to goods movement increases the accessibility and flexibility of the transportation system and provides ongoing support for the regional economic role of freight.

Questions for the Public

The public will be asked to respond to the following questions regarding Infrastructure Renewal Options.

Given the limited resources available under expected federal and state funding programs (and based on the costs and benefits discussed above):

- *Do you believe that sidewalks, bicycle accommodations and access improvements (driveway consolidation, better spacing of traffic signals, provision for service roads) and landscaping should be included routinely in major highway reconstruction projects on all "priority" roads?*
- *Do you believe that these improvements are sufficiently important that the Capital District should consider additional funding sources if expected revenues are not sufficient?*

---

[7] *Making the Capital District More Bicycle- and Pedestrian-Friendly: A Toolbox and Game Plan. New Visions Technical Report. Page 21.*

Table 13
Impacts of Major Infrastructure Renewal Options
(qualitative estimates based on technical evaluations)

CORE MEASURES		Investment large enough to address bike, pedestrian and safety accommodations, proper access accommodation, and truck clearance issues routinely on all "priority" state, county, city and town roads as part of reconstruction work.	
Transportation Service			
ACCESS	Availability of reasonable non-auto alternatives	✔	*
	Provision of non-SOV alt. with time advantage		
	Modal alternatives for freight	✔	
ACCESSIBILITY	Travel time by best mode		
CONGESTION	Excess hours of delay	✔	*
FLEXIBILITY	Reserve capacity	✔	
	Non-highway emergency capacity	✔	
	Corridor alternatives during disruption	✔	
	Fixed capacity risk	✖	
Resource Requirements			
SAFETY	Societal costs of accidents	✔✔✔	*
ENERGY	Total energy consumption	✔	
ECONOMIC COST	Total user, gov't and societal costs	✔	*
External Effects			
AIR QUALITY	Daily emissions	✔	
	Attainment status	✔	
LAND USE	Amount of open space		
	Disruption of residences and businesses	✖	
	Highway/land use compatibility index	✔✔✔	*
	Support community quality of life	✔	
ENVIRONMENTAL	Sensitive areas impacted		
	Exposure to undesirable noise levels		
ECONOMIC	Overall support for economic health	✔	

✔✔✔✔	Positive impact greater than 50%, relative to the null.
✔✔✔	Positive impact between 20% and 50%.
✔✔	Positive impact between 10 and 20%.
✔	Positive impact less than 10% or not quantified.
	Negligible impact expected.
✖	Negative impact less than 10% or not quantified.
✖✖	Negative impact between 10 and 20%.
✖✖✖	Negative impact between 20 and 50%.
✖✖✖✖	Negative impact greater than 50%, relative to the null.
*	Indicates impact has been quantified.

BUDGET ISSUES AND OPTIONS

Budget issues are among the most important for the New Visions process to sort out. The Response Worksheets include questions regarding budget priorities that are repeated at the end of this section.

Sources of Financing of Capital District Transportation

Current transportation financing is an intricate mix of intergovernmental transfers and other complexities. Funds are raised directly from users (transit fares, for example) for services received, indirectly from users (gasoline taxes, for example) for costs associated with use, and from the general public. Both user-based and general revenue sources are used to collect transportation funding at the local level, at the state level and at the federal level. At least seventeen different funding sources are used to finance governmental highway and transit functions in the Capital District.

New York State uses revenues collected both at the federal level and at the state level in its work. CDTA and other transit providers use a mix of federal revenues, state revenues, local revenues and fares. Local governments carry out highway functions primarily with local revenues, but also use state funds and, occasionally, federal funds.

Table 14 presents an estimate of the total tax and fee burden of the four-county Capital District's residents and businesses for revenues sources used at least partially for highway and transit purposes.

Due to the complexity of all these inter-governmental transfers and direct and indirect sources, the reader is cautioned to view these numbers as approximates provided to facilitate discussion of new financing ideas. They have been derived from several data sources and relate to various calendar or fiscal years between 1992 and 1995. For this reason, a range of estimates is provided for each value.

Table 14 also relates the tax and fee sources to their use in financing the program of projects shown in CDTC's 1994-99 Transportation Improvement Program. (It should be noted that the 1994-99 TIP assumes the ability to spend carryover balances of federal authorizations during the five-year period; thus, the annual average federal funds shown in the TIP exceeds a single year's authorizations.)[8]

[8] *Discussion of the assumptions used and data sources for developing the estimates of annual revenues is contained in the Technical Appendix to this Workbook.*

TABLE 14

Highway and Transit Revenue Sources

Preliminary Estimates Subject to Confirmation and Revision for Draft Plan

REVENUE SOURCE with at least partial use for highway or transit	Form of Tax/Fee	Approximate Total tax & fee collections attributable to Cap. Dist.	Annual $ to Transport. Reflected in 5-year Cap. Dist. program	Capital District gain/ loss in annual revenue from change in tax or fee
Revenues for Federal-Aid Program				
Federal Fuel Taxes	dedicated	$55 - 65 M	$67 M	1 cent per gallon = $3.4M/yr
Heavy Vehicle Fees, Excise Taxes	dedicated	8 - 10 M	10 M	
Federal personal income taxes	general	1550 - 1800 M	4 M	
Corporate, other non-dedicated taxes	general	600 - 700 M	2 M	
Deficit borrowing	general	-	2 M	
Revenues for State Program and State Aid				
State fuel taxes	part ded.	25 - 30 M	26 M	1 cent per gallon = $3.4M
Highway Use Tax (heavy vehicles)	part ded.	8 - 10 M	11 M	
Vehicle, driver registration fees	general	22 - 26 M	1 M	
Petroleum Business Tax	dedicated	4 - 6 M	6 M	
Thruway tolls	dedicated	20 - 25 M	23 M	
State personal income taxes	general	440 - 510 M	13 M	
Corporate, all other state taxes	general	425 - 500 M	15 M	
Sales Tax (State share is 4%)	general	275 - 325 M	7 M	1 cent per dollar = $70M/yr
Bonding (borrowing)	general	-	3 M	
Personal Property Tax on Vehicles	-	-	-	1% of vehicle = $27M/yr
Revenues for Local Gov't Program				
Transit Fares	dedicated	9 - 11 M	10 M	10 cent fare = $0.8M/yr
Traffic mitigation fees and assessments	dedicated	1 - 4 M	3 M	
Mortgage Recording Fee	part ded.	20 - 30 M	7 M	
Property tax and other general taxes	general	1150 - 1325 M	11 M	
Sales Tax (Local share is 3 or 4%)	general	235 - 275 M	8 M	1 cent per dollar = $70M/yr
Congestion tolls	-	-	-	Max. feasible = $10-20M/yr
Parking tax	-	-	-	$1/day = $10-60 M/yr
Annual Capital District Totals		$4.850 - $5.650 M	$227 M	

'General' taxes support general funds to finance a range of activities including national defense, state and local law enforcement, education, community development and social programs, in addition to highways and transit.

Dedicated taxes are restricted to highway and/or transit purposes.

As shown in the above table, the governmental highway and transit functions in the Capital District (ranging from snow plowing to building bridges and buying buses) are supported by a mix of federal, state and local-based taxes and fees. CDTC's 1994-99 TIP and other maintenance and repair work not shown on the TIP is predicated upon an expectation of approximately $85 M annually in federal funds (37%), $105 M annually in state funds (46%) and $39 M annually in local funds, developer assessments and transit fares (17%). (Not shown in Table 14 are other, site-specific highway investments made directly by developers to mitigate traffic impacts.)

Resource Expectations

Because transportation revenues draw from federal, state and local taxes and user fees as well as private developer resources, projecting future revenues is a difficult and risky undertaking. Future revenues are related not only to levels of future transportation demand (generating user fees) and overall economic growth (generating taxes) but also to public policy.

The annual revenue values shown in Table 14 are consistent with those shown earlier in Figure 2 for the 1993 Regional Transportation Plan. However, at the present juncture in American history elected leaders at all levels of government are rethinking fundamental assumptions about the size and role of governments. While there is broad support for a strong continued governmental responsibility in the transportation arena, the details concerning the relative responsibilities of the federal, state and local governments in funding highway, transit and other transportation services are likely to receive considerable adjustment in coming years. As a result, it is extremely difficult to project the resources that can be expected to be available for new initiatives.

Indeed, actions that have transpired since the 1993 RTP was approved all argue for revising funding forecasts downward from those in Table 14. Congress has *not* provided full funding at the levels authorized in the Intermodal Surface Transportation Efficiency Act (ISTEA) -- levels of funding assumed by CDTC to be available. Further, New York State's 1995-96 budget spreads a four-year State Dedicated Fund program of projects out over five-years in order to more accurately reconcile commitments to revenue projections. As a result, CDTC's five-year TIP will need either to be pared back or stretched out over a longer period.

If federal and state funding does not rebound to levels anticipated in the TIP and the 1993 RTP, the Capital District will be challenged in completing its existing commitments. CDTA is already facing the challenge of absorbing a 40% cut in federal operating assistance -- a loss sufficient to require consideration of noticeable service cuts and a retrenchment from CDTC's 1993 RTP commitment to "continue transit service at existing levels". Clearly, the ability of the Capital District to undertake new initiatives identified through the New Visions process is predicated on making the most out of existing resources and preparing a compelling case if additional resources are required.

While projections of future funds cannot be made with confidence, and CDTC has not prepared any policy positions regarding long-term financing, the following technical assessment *can* be made to guide discussions about financing options for New Visions' initiatives:

1. Future resources for transportation nationwide will draw *primarily* from the existing mix of sources. Nationwide, the contribution of new funding sources (congestion tolls, for example) can be expected to provide only a fraction of the total transportation resources in the coming twenty years.

2. Funding for transportation purposes is related to funding for all other government functions and revenues. Reliance on dedicated fund sources does not remove transportation funding from the policy debate over taxes and government functions.

3. Reduction in funding from one level of government puts increased pressure on revenues from other levels of government, from users and from the private sector. Congress' recent, sizable cut in federal operating assistance for transit service is an example of this type of pressure. This pressure can be expected to be most intense with regard to expensive initiatives that are primarily of local benefit, such as a rail transit initiative.

4. Finding new financing streams will be challenging. Support for new financing may be present only if:

   a) there is a belief that existing funds are being spent efficiently; and,
   b) the user or taxpayer asked to provide the financing is convinced that the benefits of the transportation investment exceed the additional cost.

5. General tax sources (sales taxes, for example) have the ability to generate significantly more revenues than user-based sources (gasoline taxes, for example). For example, a one-cent sales tax in the Capital District produces $70 million per year. A one-cent per gallon gasoline tax produces $3.4 million per year.

6. Traditionally, it has been considered appropriate to use a mix of user-based and general revenues to support governmental transportation costs. This is based on the "public goods" logic that users of transportation receive only part of the benefits of the public facility or service and should be expected to pay only part of the cost. Other parts of society benefit from the presence of a highway or from transit service and can be asked to bear part of the burden of its ongoing cost.

Funding Opportunities

If, after further investigation, CDTC determines that additional funding must be found to complete existing commitments and/or new initiatives, there are several broad options available. Information on these options is valuable to the discussion of the New Visions choices. It is not appropriate to consider any of the consensus strategies or major transportation policy choices identified by the New Visions Task Forces without consideration of where the financing will be obtained.

As identified in task force discussions and in New York State Department of Transportation's "The Next Generation... Transportation Choices for the 21st Century" (July 1995 draft), the following are the leading opportunities to fill holes in funding of existing commitments and to underwrite new initiatives:

1. Secure federal funding at the authorized levels of the ISTEA and retain New York's share of transportation authorizations and appropriations. As stated in NYSDOT's "The Next Generation", "While the federal tax on fuel has more than quadrupled since 1983, the share of federal funds that pay for transportation programs in New York State has declined. Simultaneously, federal mandates, such as those contained in the Americans with Disabilities Act, have added to the cost of providing transportation. Federal funding for transportation programs will need to be reauthorized in 1997. Thus, there is an opportunity to work with transportation providers within and outside the State to secure needed transportation funds." (p. 90) While federal transportation funding is being reduced, a sizable balance remains in the federal highway trust fund, both in the highway and transit accounts. Other federal-level initiatives cited in the NYSDOT report include:

   * developing a strategic federal program to "transportation infrastructure that will enhance the nation's competitiveness in the global economy."

2. Maximize efficiency in the use of existing resources. As noted earlier, a compelling argument for additional funding must begin with citation of efficiencies. New Visions task forces and others have highlighted several potential areas of efficiency:

   * coordinating and consolidating human service agency transportation
   * coordinating CDTA and State University of New York at Albany (SUNYA) and other transit services
   * better coordinating or fully consolidating highway maintenance operations (towns, villages, cities, counties, state)
   * increasing the use of the private sector in service delivery
   * engaging in partnerships with private construction contractors to reduce costs and increase longevity of highway projects
   * employing a "risk assessment" tradeoff analysis before committing to new highway or bridge capacity elements of a routine infrastructure renewal project.

* integrating transportation planning with land use and development planning so that public or private investment maximizes the "bang for the buck".

3. Consider greater use-based revenue sources. As cited in the "Next Generation" draft plan, pricing "transportation based on usage ... could also help achieve other desirable transportation goals such as congestion reduction, or energy and environmental goals." (p. 89) If a compelling argument for new revenues is made, among the options available are:

   * providing authority for an additional per-gallon fuel tax, perhaps on a local option basis. Currently, local governments in New York do not have authority to impose a use-based, dedicated fee.

   * considering congestion pricing on major facilities such as the Northway, with variable pricing by time of day or type of vehicle to discourage peak-hour, single-occupant travel while raising funds for desired initiatives.

   * considering parking pricing, either as part of a congestion pricing strategy (discouraging single-occupant travel in congested areas) or as part of an overall transit marketing and financing arrangement. (A $1 / day downtown parking fee would generate about $6 million per year; a $3 / day fee was used by the Transit Futures Task Force in testing fixed guideway applications.) Extending the application to other geographic areas provides additional resource potential.

4. Consider dedicating a supplemental portion of a broad-based tax. Nationwide, it is typical for major local transportation initiatives to include partial or primary financing through dedicating a portion of a broad-based tax, such as a sales tax. Few metropolitan areas in the nation undertake major highway upgrade or fixed guideway transit system development efforts without a new local funding stream. Generally these actions are offered to the public on a referendum basis and often are part of a broad package of both highway and transit initiatives. In California, the metropolitan TIPs include projects funded through a local-option supplemental sales tax. Boulder, Colorado's initiatives have been funded with a 1/4 cent dedicated sales tax. A recent metro Seattle referendum (which was defeated by voters) would have dedicated taxes sufficient for a seven billion dollar transit system initiative.

5. Explore additional private sector opportunities to finance transportation improvements or services. CDTC's task forces have encouraged CDTC to continue this region's successful process of public - private highway financing through such mechanisms as mitigation fees. These mechanisms help share costs of improvements equitably between developers and the public. Additional opportunities for private sector include:

* encouraging employers to contract directly with CDTA or other operators for transit services, such as bus service that circulates through employment centers and feeds trunk routes.
* developing new transit pass programs that, similar to the "EcoPass" program in Boulder, Colorado, provide for steep pass discounts to any employer that secures passes for all employees.
* changing state legislation to allow NYSDOT to accept private funds directly (from developers) to undertake a joint transportation improvement, and to allow the private sector to accept public funds to undertake a joint transportation improvement.

6. Examine all other possibilities. Among those financing mechanisms suggested in the NYSDOT "Next Generation" report or used in neighboring states are:

* establishing a regional infrastructure bank (NYSDOT, p. 89).
* privatizing more of the transportation system (NYSDOT, p. 89.)
* exploring personal property taxes as a substitute for or supplement to other revenues. This option has not been cited by NYSDOT or by any of CDTC's task forces but has a particular advantage in being a deductible tax from federal personal income tax. As shown in Table 14, a 1% annual ad-valorem personal property tax could raise approximately $27 million as a replacement for or supplement to other taxes which are not deductible. Personal property taxes are used in other states.

Questions for the Public

The public will be asked to respond to the following questions regarding financing options:

Of the broad categories below, which do you believe should receive increased funding priority in the future, which should receive reduced funding priority in the future and which should receive about the same funding priority in the future as they currently receive?

Transit capital (equipment, construction)
Transit operations
Highway & bridge repair and reconstruction
Highway maintenance (snow, pothole work)
Intelligent Transportation Systems
Bike and pedestrian accommodations
Truck clearance and access improvements
Grade crossing and other safety work
Telecommuting and demand management
Strategic highway widenings
Truck bypass and urban bypass construction

- *Will the budget priorities suggested in your responses above require an increase overall in funding for transportation purposes? If yes, from what source(s)?*

Federal trust fund (gas tax, etc.)
Federal general fund (income tax, etc.)
State dedicated fund (gas tax, etc.)
State general fund (income tax, etc.)
Local dedicated fund (gas tax, etc.)
Local general fund (property and sales tax)
"Congestion pricing" tolls on certain facilities
Other highway use fees
Transit fares
Private sector work (such as construction by developers)
Private sector fees (such as traffic mitigation fees)

CHAPTER 8

CONCLUDING REMARKS

The Regional Transportation Plan is a comprehensive long range (20-25 year) plan for the transportation system of the region, updated every three years by the MPO (CDTC in the Capital District). The RTP includes goals, objectives, and policies. The RTP also recommends specific transportation improvements. The most recent update of the CDTC RTP occurred in December of 1993. CDTC's Regional Transportation Plan focuses primarily on the *surface transportation system* -- highway and transit systems and intermodal connections to rail, air and water transportation.

The 1993 RTP includes a wide array of initiatives to designed to address growing traffic congestion. These range from what is perhaps the largest voluntary demand management program in the nation to the implementation of a 110-mile Advanced Traffic Management System. Nearly 2,000 park-and-ride lot spaces will be constructed over the decade, integrated land use - transportation plans will be implemented in at least two-thirds of critically congested corridors and major, multi-modal transportation improvements will be carried out to address several long-standing corridor problems. The actions committed in the coming decade will cut the growth in traffic congestion by nearly one-half, increase transit usage above current (1993) levels and reduce daily hydrocarbon emissions. Access to intermodal facilities will be improved, notably through work surrounding the Albany County Airport and through construction of a new truck bypass connecting to the Selkirk rail yards. In total the plan will place the Capital District in an excellent position to compete economically well into the next century.

The 1993 RTP Report lays out a host of issues that need to be addressed to ensure mobility, maintain the transportation infrastructure, achieve intermodal integration, build communities and enhance the Capital District's economic development potential. The 1993 RTP makes commitments to 10-year program of projects, representing a full agenda for the next decade. It also paves the way for consideration of "non-incremental" actions such as congestion pricing, regional land use actions and major investments such as High Occupancy Vehicle (HOV) lanes or fixed guideway transit (such as light rail).

The major effort required - particularly the time needed to have a meaningful dialogue with a wide range of stakeholders - to properly address the ISTEA mandates and examine these "non-incremental" actions was organized into a project called *New Visions*. The 1993 RTP is the foundation upon which New Visions has been built. This highly visible approach to developing a regional consensus on transportation provides an opportunity to step back from the ten-year focus reflected in the 1993 RTP. This enables us to look at where we ***want*** to go over the longer-term, as well as the financial resources required to meet our long-term needs and desires. The objective is to formulate a multi-modal plan, including policies and financial strategies, that reflects a consensus regarding the direction and focus that will meet the

region's mobility and other needs for transportation in the Capital District for the next 25 years.

New Visions is a process built around public involvement. During Phase 1, public scoping sessions and a survey strongly influenced the structure and content of all the work that has followed. A conference forum in December 1993 provided important feedback on whether the right issues had been chosen for further study. Phase 2, the technical research and analysis phase lasting almost two years, was directed by nine task forces involving over 120 people. Phase 3 -- conducting a public dialogue -- is occurring now, and this dialogue will be recorded using a workbook and corresponding response worksheets.

New Visions provides a structure to investigate creative ways to tackle these issues. Stakeholder groups not previously represented at the CDTC have been given a voice in a process driven by public involvement. CDTC fully expects that just hearing the perspectives of a wide range of participants is going to sensitize traditional CDTC participants to new points of view. Simply identifying widely diverging positions helps focus later discussions that eventually lead to the identification of common ground and consensus strategies.

New Visions is focused on the year 2015. The importance of pursuing a long-range vision is related to end-state conditions the region (collectively) hopes to prevent or those we wish to encourage. After all is said and done, CDTC members will still be left with hard choices. Consensus may not be possible on all subjects. But the visioning effort, the exploration of "where do we want to lead this region?" will leave a legacy of openness and sensitivity to a wide range of transportation objectives that will affect transportation decisions for the better.

Task forces are the heart of New Visions. Organized in nine subject areas, the task forces have developed their own dynamics. Facilitated by CDTC staff, task forces vary the frequency of meetings, number of members, and volume and type of technical work performed based on their needs and available resources. There are two type of task forces -- interdisciplinary and technical. Task force membership on interdisciplinary task forces includes a range of interested parties, with Planning and Policy Committee representation. Technical task forces are composed of members with technical expertise in the topic. Efforts have been made to insure that all affected constituencies are represented. A full list of task force members appears in the Appendix. Like CDTC itself, task forces operate by consensus and have focussed upon finding positions that others may also be able to support.

The nine subject areas received task force attention:

- Demographics, Land Use and Growth Futures
- Infrastructure Renewal
- Transit Futures
- Special Transportation Needs
- Expressway Management
- Arterial Corridor Management

- Goods Movement
- Bicycle and Pedestrian Issues
- Urban Issues

Task Forces tried to be sensitive to overlap in issue areas, and the impact that their deliberations may have on other aspects of plan development. Where appropriate, joint meetings of task forces were held to review draft reports.

Each task force produced a report to conclude the first two phases of New Visions. CDTC has, with the help of the nine task forces, drafted a vision of the Capital District in 2015, reached a tentative consensus on 19 strategies to improve transportation, proposed over 100 actions, and put forth guiding investment principles.

After all the technical and policy work, the time has come to knit it all together and grapple with some big policy questions. The choices that CDTC and its members make may be critical to supporting a healthy economy, protecting the environment, ensuring mobility and providing a high quality of life in the Capital District.

During Phase 3, task forces will primarily focus on the fifth component of their original mission -- determining their future role based on the results of the New Visions process. To the degree that the task of incorporating solutions to the identified issue has been completed, the mission is complete and the task force may choose to dissolve. To the degree that there are areas of ongoing concern -- be it in implementation monitoring, upcoming project proposals, or more general matters -- an ongoing role for the task forces is possible. Several task forces -- Goods Movement, Bicycle and Pedestrian Issues, Incident Management, and Arterial Corridor Management -- feel that an ongoing role is appropriate. Others - Urban Issues and Transit Futures -- will monitor New Visions Phase 3 before suggesting an appropriate future role.

CDTC's perspective on the New Visions process in general is a positive one. Through the New Visions process, a vision for the future of the Capital Region is taking shape. However, this is not to say that the process has not been difficult at times, nor to say that the process was not time consuming. The first phase -- scoping -- began in March of 1993. Two public scoping sessions were held. Valuable advice on the priority and importance of issues to be studied and the structure of the process to investigate them was provided. Based on this input, the nine issue-oriented task forces were created. A set of white papers covering current and year-2015 trend conditions, issues requiring further investigation, and an initial list of candidate actions was developed. Phase 1 ended with a public forum in December 1993.

Phase 2 of New Visions -- technical analysis and consensus building -- resulted from the input received at the public forum. In over 1000 hours of meeting time alone, more than 120 stakeholders in the transportation system worked together to ask some fundamental questions and search for affordable solutions. Phase 2 has resulted in a comprehensive body of technical work on the major transportation issues identified in Phase 1. A technical report series was

developed that documents the work of these task forces. The Phase 2 work produced new analytic tools and innovative approaches to policy evaluation -- tools and approaches that are already receiving national attention.

Phase 3 - public dialogue - has recently begun. A workbook has been developed to aid the digestion of the task force work that has been produced to date. The workbook is a crucial piece of CDTC's side of the Phase 3 conversation with the public. Widespread distribution of the workbook will be accomplished through the use of a travelling slide show, a summary brochure, and public meetings.

Even though documentation of the New Visions effort can be summarized in several neat paragraphs, one should not conclude that undertaking a similar effort will be an easy process. The New Visions effort has been going on since the Spring of 1993, and is expected to continue for an additional six months or so, with the CDTC staff available to give presentations to groups, provide additional information, and help in any way to fill in the response worksheets in the coming months. While the results of the RTP effort make the task worthy of the resources required, any organization wishing to use this concept to put together a vision for their area should be aware that this effort requires *a tremendous, ongoing, commitment of staff time*. Nonetheless, invaluable benefits have resulted from the New Visions effort:

- Investigation of a comprehensive set of issues (ranging from bikes to light rail, from truck clearances to land use visions) in parallel achieved a level of planning integration rarely seen in regional transportation planning.
- An ongoing commitment to increased data collection has been established
- Partnerships with service providers have been established
- The CMS has been integrated with the planning process
- Non-traditional players are now "plugged into" the process
- More than just congestion is considered in planning for the future
- The doors have been opened to the goods movement community
- Project design has been integrated with the project implementation process
- The New Visions process has endorsed multi-modal decision making

In closing it is safe to say that the New Visions process has helped CDTC integrate congestion concerns with other equally important regional and transportation concerns. The RTP and CMS are two projects that are separate yet inextricably entwined.

APPENDIX A

CDTC MEMBERSHIP LISTS

CDTC POLICY COMMITTEE MEMBERS

Officers
Fred G. Field, CDRPC (Chairperson)
Dennis J. Fitzgerald, CDTA (Vice-Chairperson)
Richard A. Maitino, NYSDOT Region 1 Director (Secretary)

Voting Members
Michael G. Breslin, Albany County Executive
Margaret B. Buhrmaster, Schenectady County Legislature
Michael Corrigan, Rensselaer County Executive
John Daly, NYSDOT Commissioner
Frank J. Duci, Mayor of Schenectady
Eugene Eaton, Mayor of Troy
Thomas J. Higgins, Mayor of Mechanicville
Charles E. Houghtaling, Albany County Legislature
Gerald D. Jennings, Mayor of Albany
Marvin R. LeRoy, Clifton Park Supervisor
Stephen D. Morgan, NYS Thruway Authority
J. Leo O'Brien, Mayor of Watervliet
Francis H. Potter, Schenectady County Legislature
Almeda C. Riley, Mayor of Saratoga Springs
John F. Ryan, Mayor of Rensselaer
Robert D. Signoracci, Mayor of Cohoes
Michael Sullivan, Saratoga County Board of Supervisors
Wayne E. Wagner, Glenville Supervisor
Henry F. Zwack, Rensselaer County Legislature

Advisory Members
Thomas J. Ryan, Federal Transit Administration, Regional Administrator
Harold J. Brown, Federal Highway Administration, Division Administrator

CDTC PLANNING COMMITTEE MEMBERS

Officers
Fred Doeing, Albany County DPW (Chairperson)
Milton Mitchell, City of Schenectady Public Works (Vice-Chairperson)
John P. Poorman, CDTC Staff Director (Secretary)

Voting Members
David Atkins, Schenectady County Planning
David Bailey, Troy Engineering and Public Works
Geoffrey Bornemann, Saratoga Springs City Planning
Willard Bruce, City of Albany General Services
Richard Carlson, NYSDOT Region 1
Chungchin Chen, CDRPC
Kevin Corcoran, Glenville Planning
Lawrence Gordon, Saratoga County Planning
John Hahn, Clifton Park Community Development
Bruce Hidley, Watervliet City Clerk
Jeff Lipnicky, Bethlehem Planning
Michael Mastropietro, Rensselaer County Highway Engineer
Robert Mitchell, Colonie Engineering and Planning
Robert Pasciullo, Rensselaer City Planning
Paul Poirier, NYS Thruway Authority
Jack Reilly, CDTA Planning
Diane Sturman, Niskayuna Planning
Charles Valenti, Cohoes Community Development

Advisory Members
Edward Davis, NYS Department of Environmental Conservation
Joe Rich, Federal Highway Administration
Robert Ritter, Federal Transit Administration

NEW VISIONS TASK FORCE MEMBERS

DEMOGRAPHICS AND GROWTH FUTURES TASK FORCE

Members
Richard Amadon, Community Relations, New York Telephone
Paul Bray, Albany Roundtable
Bob Bristol, The Saratoga Associates
Kevin Cushing, Niagara Mohawk Power Corporation
Kevin De Laughter, Town of Colonie, Engineering and Planning Services
Cliff Ellis, Department of Geography and Planning, State University of New York at Albany
Steve Feeney, Schenectady County Planning Department
Rocky Ferraro, Capital District Regional Planning Council
Larry Gordon, Saratoga County Planning Board
Jack Mahoney, Hudson Valley Community College
Jeff Marko, New York State Department of Transportation (NYSDOT), Region 1
Milton Mitchell, City of Schenectady
Don Odell, Albany County Planning Department
George Roberston, Schenectady Economic Development Corporation
Patty Salkin, Government Law Center
Diane Sturman, Town of Niskayuna
Einar (Sy) Syvertson, Center for Economic Growth
Linda von der Heide, Rensselaer County Planning Office

Staff Support
Christopher R. O'Neill
John P. Poorman
Anne Benware

TRANSIT FUTURES TASK FORCE

Members
Wally Altes, Albany-Colonie Chamber of Commerce
Bill Brizzell, Empire State Passengers Association
Willard Bruce/Joann Ryan, City of Albany Planning Office
Nancy Carey, Picotte Company
Richard Carlson, NYSDOT Region 1
Thomas Chawluk, Sr., Empire District, Amtrak
Chungchin Chen, Capital District Regional Planning Council
Dennis J. Fitzgerald, Capital District Transportation Authority (CDTA)
Dr. Bernard A. Fleishman
Tom Floyd, Amtrak
Paul Kulls, General Manager, Upstate Transit
George List, Rensselaer Polytechnic Institute
Tom McGuire, Economic Planning Services
Jack Reilly, CDTA Planning
Louis Rossi / Doug Burgey, NYSDOT Planning
Loretta Simon, Environmental Advocates
Jan Simpson, Transit Division, NYSDOT Transit Division
Brian Zweig, Certified Marketing Services

Staff Support
John P. Poorman
Christopher R. O'Neill
Kristina E. Younger
Ira Hirschman, Parsons, Brinckerhoff, Quade & Douglas, Inc.
Ruth Fitzgerald, Fitzgerald & Halliday, Inc.

SPECIAL TRANSPORTATION NEEDS TASK FORCE

Members
Mike Baker, NYSDOT Transit Division
Marty Buff, Cerebral Palsy Center for the Disabled
Greg Cuda, Saratoga Association for Retarded Citizens
Nancy De Lissio, Schenectady County Office for the Aging
Debra Hamilton, Committee for Accessible Transportation
Paul Kulls, Upstate Transit
Carey Roessel, CDTA Planning
Paul Tazbir, Rensselaer County Office for the Aging
Theodore Thompson, NYSDOT Region 1
Michael Volkman, Capital District Center for Independence

Staff Support
Deborah J. Stacey

INFRASTRUCTURE TASK FORCE

Members
Frank Ambrosio, Greiner, Inc.
Andrew S. Bell, Bell Engineering
Issac Brown, Albany City
Doug Burgey, NYSDOT Planning
Richard Carlson, NYSDOT Region 1
Dave Clements, NYSDOT Region 1
Joel Cochrane, Saratoga County Public Works Department
Todd Gifford, Guilderland Highway Department
Robert Hansen, NYSDOT Region 1
Ed Kearny, Gorman Brothers, Inc.
Pete Kelly, NYSDOT Region 1
Donald J. King, HMA Contracting
Michael Mastropietro, Rensselaer County Highway Department
Michael Ortale, NYSDOT Region 1
John O'Sullivan, NYS Asphalt Pavement Association, Represented by Malcolm D. Graham

CDTC Staff Support
John P. Poorman
Glenn Posca

GOODS MOVEMENT TASK FORCE

Members
Larry E. Bascom, Quandt's Wholesale Distributors
Carl Belke/John Denison, CP Rail System
Roger Bergeron, B & M Corporation
Richard Carlson/Ted Thompson, NYSDOT, Region 1
Bill Carswell, Caroline Freight Carriers Corp.
Chungchin Chen, Capital District Regional Planning Commission
William (Dick) Corp, New York State Thruway Authority
Dennison P. Cotrell/John Lemmerman, Freight Transport Division, NYSDOT
Patrick Czajkowski, United Parcel Service
Steve Iachetta, Albany County Airport
Gus Lapham, Hudson Valley Automobile Club
Jeff Lipnicky, Town of Bethlehem
Thomas Magliocca, Port of Albany
John J. Marcy, Stott & Davis Motor Express, Inc.
Daniel McCormack, New York State Motor Truck Association
John T. Newman, Konski Engineers, P.C.
Allen Roberts, New Penn Motor Express, Inc.
Einar (Sy) Syvertson, Center for Economic Growth
Tom Valentine, Team Air Express
John Whitmer, Signature Flight Support
Carol Yupco/Mary Phillips, Conrail

Staff Support
Kristina Younger
Kathy Ophardt
Hal Johnson

EXPRESSWAY MANAGEMENT TASK FORCE

Members
Lt. Steven Cumoletti, New York State Police, Division Headquarters
Sgt. Dennis Jones, New York State Police, Troop G Headquarters
Jeff Marko, NYSDOT, Region 1
Jan Meilhede, Traffic and Safety, NYSDOT, Region 1
Bill Murray, Murray Enterprises, Inc.
Dennis O' Malley, Transportation Concepts
Paul Poirier, Albany Division, New York State Thruway Authority
David Plouff, CVS Samaritan
Jack Reilly, Capital District Transportation Authority
Rick Zabinski, NYSDOT Policy and Public Transportation

Staff Support
Christopher R. O'Neill
Stephen A. Allocco

ARTERIAL CORRIDOR MANAGEMENT TASK FORCE

Members
Jim Conroy, Center for Economic Growth
Kevin Corcoran, Planning, Town of Glenville
Jim Davis, NYSDOT Transit Division
Fred Doeing, Albany County Engineer
Larry Gordon, Saratoga County Planning Board
George Holland, Town of Colonie Planning Board
Bill Jonas, Colonie Coalition of Neighborhood Associations
Mark Kennedy, NYSDOT Traffic and Safety, Region 1
Chris Lavin, East Greenbush Police
Jeff Lipnicky, Town of Bethlehem
Jeff Marko, NYSDOT Region 1
Robert Mitchell, Engineering and Planning, Town of Colonie
Brad Oswald, NYSDOT Urban Planning Bureau
Jack Reilly / Bertil Schou, CDTA Planning
Diane Sturman, Planning, Town of Niskayuna

Staff Support
David P. Jukins, P.E.
Anne Benware
Kathy Ophardt
Hal Johnson

BICYCLE AND PEDESTRIAN ISSUES TASK FORCE

Members
Bradley Birge, City of Saratoga Springs
Helene Brecker, Saratoga County Heritage Trail Committee
Bob Bump, Mohawk-Hudson Cycling Club
Denise Cashmere, Schenectady County Planning
John DiMura, New York State Thruway Authority
Emily H. Goodman, New York Bicycling Coalition
Marc Hiller, Mohawk-Hudson Cycling Club
Bob Kirker, Town of Wilton Highway Committee
Jerry Mueller, Green City Transportation Council
Tom Nattel, Albany Peace and Energy Council
Katrina Neugebauer, Troy Architectural Program
Don Odell, Albany County Planning Department
Jeff Olson, NYSDOT Bicycle and Pedestrian Program
Don Robertson, NYSDOT Region 1 Bicycle and Pedestrian Program
Paul Russell, Town of Colonie Environmental Conservation
Joann Ryan, City of Albany Planning
David Schmidt, City of Schenectady Planning
Bertil Schou, CDTA Planning
S. Thyagarvan, NYS Division for Youth
Ivan Vamos, New York Bicycling Coalition
Maggie Vinciguerra, Hudson River Valley Greenway Communities Council
Russell Ziemba, Rensselaer County Environmental Action

Staff Support
Stephen A. Allocco

URBAN ISSUES TASK FORCE

Members
Geoffrey Bornemann, City of Saratoga Springs Planning
Joe Fama, Troy Architectural Program
Bruce Hidley, City of Watervliet
Milton Mitchell, Public Works, City of Schenectady
Bob Pasciullo, Rensselaer Planning and Community Development
Joann Ryan, City of Albany Planning
Tom Savrine/Doug Burgey, NYSDOT Urban Planning Bureau
Bertil Schou, CDTA Planning
L. Boyd Stewart, President, Urban League of the Albany Area
Richard Wengraf
Charles Valenti, Cohoes Community Development
Mark Yolles, Council of Albany Neighborhood Associations

Staff Support
Kristina E. Younger

DEVELOPING AN EFFECTIVE CONGESTION MANAGEMENT SYSTEM

REPORT 2

DALLAS/FORT WORTH, TEXAS

NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS

February 28, 1996

TABLE OF CONTENTS

LIST OF EXHIBITS

I. INTRODUCTION

STUDY BACKGROUND

In October of 1994, the Federal Highway Administration (FHWA) contracted with the North Central Texas Council of Governments (NCTCOG) to document, in report form, aspects of the Dallas-Fort Worth Regional Congestion Management System (CMS). NCTCOG was asked to describe the cooperative efforts among local governments and between private agencies which are necessary for incorporating CMS into the planning and programming of transportation improvements. In particular, the focus of the study is the participants and procedures which facilitate institutional cooperation between local governments and industry involved in the process.

This effort will be integrated with similar studies from the Capital District Transportation Committee (Albany, NY), the Metropolitan Washington Council of Governments (Washington, DC), and the Puget Sound Regional Council (Seattle, WA). The other agencies are being asked to address a variety of CMS issues, including:

- How the CMS addresses multimodal issues,
- Incorporation of public participation in priority setting of projects,
- Data formatting and data integration with the Intermodal Management System (IMS) and Public Transportation Management System (PTMS),
- Development of regional performance measures, and
- Potential of Intelligent Transportation System (ITS) to support data monitoring requirements.

Report 1 of this series provided an overview of the transportation challenges in the Dallas-Fort Worth Metropolitan Area and how this region is attempting to integrate the congestion management system into all aspects of transportation decision making. The focus of Report 1 was on the public and public/private partnerships being established in the region, and on communication between the Metropolitan Planning Organization and these partners. Report 2 highlights four examples of communication and transportation decision making: Major Investment Studies (transportation planning); the Regional Corridor Management Program and the Dallas Area Rapid Transit CMS Funding Initiative (transportation programming); and the Partners in Mobility Initiative (transportation advocacy). Each of these efforts is an arena where a congestion management approach is being used to address transportation challenges in the Dallas-Fort Worth area. The regional congestion management system, in turn, is part of the larger vision of transportation in the region -- the regional transportation plan.

II. INTEGRATING THE CONGESTION MANAGEMENT SYSTEM INTO THE REGIONAL TRANSPORTATION PLAN

THE MOBILITY 2010 PLAN UPDATE

The Mobility 2010 Plan Update serves as a guide for the expenditure of state and federal transportation funds through the year 2010 for the Dallas-Fort Worth Metropolitan Area. The plan includes the federally required Regional Congestion Management System. This plan was adopted in October 1993 by the Regional Transportation Council and endorsed by the Executive Board of the North Central Texas Council of Governments, together serving as the Metropolitan Planning Organization for the Dallas-Fort Worth Metropolitan Area. The plan represents a system of transportation improvements needed to maintain mobility in the Dallas-Fort Worth Metropolitan Area over the next two decades.

The Mobility 2010 Plan Update responds to the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) financial constraint requirement by examining both transportation needs and available revenue. It focuses on cost-effective regional transportation system improvements, transportation management strategies aimed at reducing single-occupant peak-period travel and an aggressive financial program to generate the revenue needed to implement this plan.

The Plan Update affirms the need for cooperative development and implementation of the regional transportation system. Emphasis is placed on management of the system as a means of reducing demand and improving system efficiency and effectiveness. Transportation system funding strategies address the expansion of existing funding programs as well as the need to seek out and evaluate additional revenue sources. The plan calls for $15.2 billion in

transportation system improvements in seven program categories (See Exhibit II-1.) The plan focused initially on congestion mitigation strategies, followed by bikeway and pedestrian facilities, high occupancy vehicle lanes, rail facilities, and eventually toll roads prior to recommending additional freeway system capacity. Emphasis of the plan development process was on the identification of revenue sources and levels to meet system needs.

EXHIBIT II-1

MOBILITY 2010 PLAN UPDATE FINANCIALLY CONSTRAINED RECOMMENDATIONS

Mode/Program	Cost (Billions $, 1993)
Congestion Management System	$1.0
HOV System	$1.2
Rail Facilities	$2.1
Freeways/Tollroads	$6.7
Arterial Streets	$2.1
Bicycle, Pedestrian and Other Transportation Enhancements	$0.3
Roadway/Transit Maintenance, Rehabilitation, Operations, Safety	$1.8
Total	$15.2

CONGESTION MANAGEMENT SYSTEM

Congestion management is an integral element of the regional transportation plan. It serves as a guide for implementing both near-term and long-range regional transportation improvements. The Congestion Management System (CMS) identifies where congestion occurs or is likely to occur, evaluates strategies for mitigating congestion and develops a plan for implementation of the most cost-effective strategies. The CMS was developed for the entire Metropolitan Area. Using current and projected congestion levels, the region was

divided into two focus areas. While CMS strategies will be implemented across the entire area, the congested area has been targeted for more intensive data collection and monitoring efforts as part of the ongoing Congestion Management System.

The performance of the current and future transportation system was measured in conjunction with the plan development process. A variety of quantifiable system performance measures were used to identify the extent and duration of traffic congestion. Candidate strategies were assessed for their effectiveness and feasibility of implementation in the region. Each of the strategies was either adopted for implementation, identified as needing further consideration, or not adopted. A number of regional congestion mitigation strategies are recommended for implementation. These are relatively low-cost measures designed to manage the transportation system and reduce travel demand. This program includes operational management and travel demand reduction strategies determined to be the most cost-effective for this region. Total program cost for the Congestion Management element of the plan is approximately $1 billion. This is in addition to the HOV, rail, and bicycle/pedestrian recommendations, which total $3.6 billion.

The adopted congestion mitigation strategies include traffic signal and intersection improvements aimed at reducing delay on arterial streets. Freeway bottleneck removal combined with deployment of incident detection and response systems, including motorist assistance and accident removal are proposed to maintain traffic flow on the limited-access highway system. Travel demand management strategies such as employer trip reduction programs and vanpools are also included, as shown in Exhibit II-2.

EXHIBIT II-2

CONGESTION MITIGATION STRATEGIES

Recommended Strategies	Scope of Program	Capital Costs	Annual Operating Costs
Transportation System Management[1]			
Traffic Signal Improvements	5,600 locations	$280 million	
Intersection Improvements/Freeway Bottleneck Removal	1,700 locations	$130 million	
Incident Detection/Response[2]			
Surveillance and Response	160 miles	$128 million	$ 8 million
Motorist Assistance Program	170 miles		$10 million
Travel Demand Management			
Employer Trip Reduction Program	All employers with over 100 employees		$ 1 million
Vanpool Program	1,000 vanpools		$ 4 million
Park-N-Ride Facilities	20 facilities	$ 80 million	
TOTAL		$618 million	

1 - Including Intelligent Transportation System Elements
2 - Includes Freeway, Arterial and Frontage System Integration

The aggregate effect of these strategies will be a reduction in single occupant vehicle travel, due in large part to vanpool programs, park-and-ride facilities, and employer trip reduction programs. Projected speed increases will likely occur as a result of the transportation system management strategies. Average speeds are expected to increase nearly 2 percent systemwide due to intersection improvements and traffic signal upgrades, while traffic control delay on the arterial street system will decrease by over 25 percent. The total effect of the congestion management strategies is an anticipated reduction in vehicle hours of travel of 4.8 percent. This reduction reflects savings in travel time and energy use as well as vehicle emission reductions. Total annual benefits are estimated to be at $740 million per year.

The implementation of congestion management strategies needs to involve the public sector, private sector, and public/private partnerships. Transportation policies need to be developed to strengthen land use/transportation decision making processes and guide investment toward cost-effective solutions. The Mobility 2010 Plan Update emphasizes that we can no longer afford to build our way out of our traffic congestion problem. While the construction of new facilities will take place, we must also find effective, practical solutions to address the air quality and traffic congestion challenges that confront us.

These challenges were presented to policy and technical committee members at 23 meetings during the plan update process. In addition, three workshops were conducted. Exhibit II-3 summarizes the public involvement process activities related to development of the Mobility 2010 Plan Update, of which the Congestion Management System was a part. In addition to these meetings, a series of staff presentations were provided to local governments, planning agencies, and interested parties to receive comments and reach consensus on the Plan Update.

EXHIBIT II-3

PLAN UPDATE - PUBLIC INVOLVEMENT PROCESS

DATE	ACTIVITY	PURPOSE
February 26, 1993	STTC Meeting	Introductory Session
March 11, 1993	RTC Meeting	Introductory Session
March 26, 1993	STTC Meeting	Status Report
April 23, 1993	STTC Meeting	Status Report
May 13, 1993	RTC Meeting	Status Report
May 14, 1993	STTC Meeting	Status Report
May 21, 1993	STTC/TDM Meeting	Summarize Plan Update Process
May 28, 1993	RTC Meeting	Summarize Plan Update Process
June 10, 1993	STTC/TDM Meeting	Plan Goals/Objectives
June 17, 1993	RTC Meeting	Plan Goals/Objectives
July 23, 1993	Public Meeting	Summarize Plan Update Process
July 26, 1993	Public Meeting	Summarize Plan Update Process
July 30, 1993	STTC Workshop	Plan Update Technical Findings
August 20, 1993	RTC Meeting	Status Report on Plan Update
August 27, 1993	STTC Meeting	Status Report on Plan Update
September 9, 1993	RTC Workshop	Present Draft Plan
September 17, 1993	STTC/TDM Workshop	Finalize Draft Plan
September 23, 1993	STTC/TDM Meeting	Plan Update
September 23, 1993	Executive Board Meeting	Briefing on Plan Update
October 8, 1993	STTC/TDM Meeting	Approval of Plan Update
October 11, 1993	RTC Public Meeting	Present Draft Plan for Comments
October 12, 1993	RTC Public Meeting	Present Draft Plan for Comments
October 14, 1993	RTC Meeting	Approval of the Plan
October 25, 1993	RTC Meeting	Air Quality Conformity Plan Update
October 26, 1993	DART Board Meeting	Briefing on Plan Update
October 28, 1993	Executive Board Meeting	Plan Endorsement

The North Central Texas Council of Governments (NCTCOG)

- **Regional Transportation Council (RTC)**
- **Surface Transportation Technical Committee (STTC)**
- **Travel Demand Management (TDM)**

III. INTEGRATING CMS INTO THE MAJOR INVESTMENT STUDY PLANNING PROCESS

As the Dallas-Fort Worth region seeks to integrate a management philosophy into all aspects of transportation planning and programming, it is intended that congestion management strategies be developed as a part of all major investment studies (MIS). The North Central Texas Council of Governments (NCTCOG) staff provides guidance and support to all MIS lead agencies, as they seek to incorporate transportation system management and travel demand reduction strategies on proposed facilities and in MIS corridors. The honest evaluation of all reasonable congestion management strategies is viewed as essential to progressive transportation planning in this region.

The Regional Transportation Council adopted the Mobility 2010: Congestion Management System in October 1993. As an element of the Regional Transportation Plan for North Central Texas, it serves as a long-range plan to guide the implementation of transportation improvements in the Dallas-Fort Worth region. As such, the congestion management system (CMS) makes an initial assessment of traffic congestion conditions and advances regional strategies to mitigate existing and future traffic congestion.

CORRIDOR-LEVEL ANALYSIS

These regional strategies were developed on a system planning level. A more detailed analysis in individual MIS corridors may yield opportunities for additional strategies, and greater (or lesser) impacts than those calculated in the regional Congestion Management System. The following paragraph, taken from Mobility 2010 Plan Update: Congestion Management System, calls for a greater detail of analysis in MIS studies than that which can be done on a regional level:

> The CMS will have a role in all Major Investment Studies which are conducted in the region. The congestion management program will conduct an analysis of expected benefits and costs for all transportation system management and travel demand management strategies to be considered in these corridors. This analysis will be done on an as-needed basis, and will become part of the Major Investment Study documentation. In this way, the regional strategies identified in the Congestion Management Plan will be applied on a corridor level. Additional congestion management strategies will then be evaluated for their application on the corridor or subarea level and pending results of the major investment study analyses will be considered for inclusion in the regional Congestion Management Plan.

As portrayed in Exhibit III-1, the development of CMS strategies in MIS corridor studies is conducted by first evaluating the effects of the adopted regional congestion management strategies in the corridor. This is done by:

1. Identifying the committed transportation system management and travel demand management strategies from the Transportation Improvement Program (TIP), the Regional Transportation Plan, and local government bond programs;
2. Quantifying the effects of the committed travel demand management strategies with regional travel model trip table adjustments; and
3. Quantifying the effects of the committed transportation system management strategies with regional travel model network speed and capacity adjustments. This CMS scenario becomes the Baseline for all the MIS alternatives.

Next, using this CMS Baseline, a Transportation System Management/Travel Demand Management-Only Alternative is developed which attempts to accommodate travel demand in the corridor without the major transportation investment. This is done using the following steps:

1. Conduct an inventory of the corridor's transportation systems and facilities;
2. Assess current and future corridor conditions;
3. Identify transportation deficiencies and problems in the corridor;

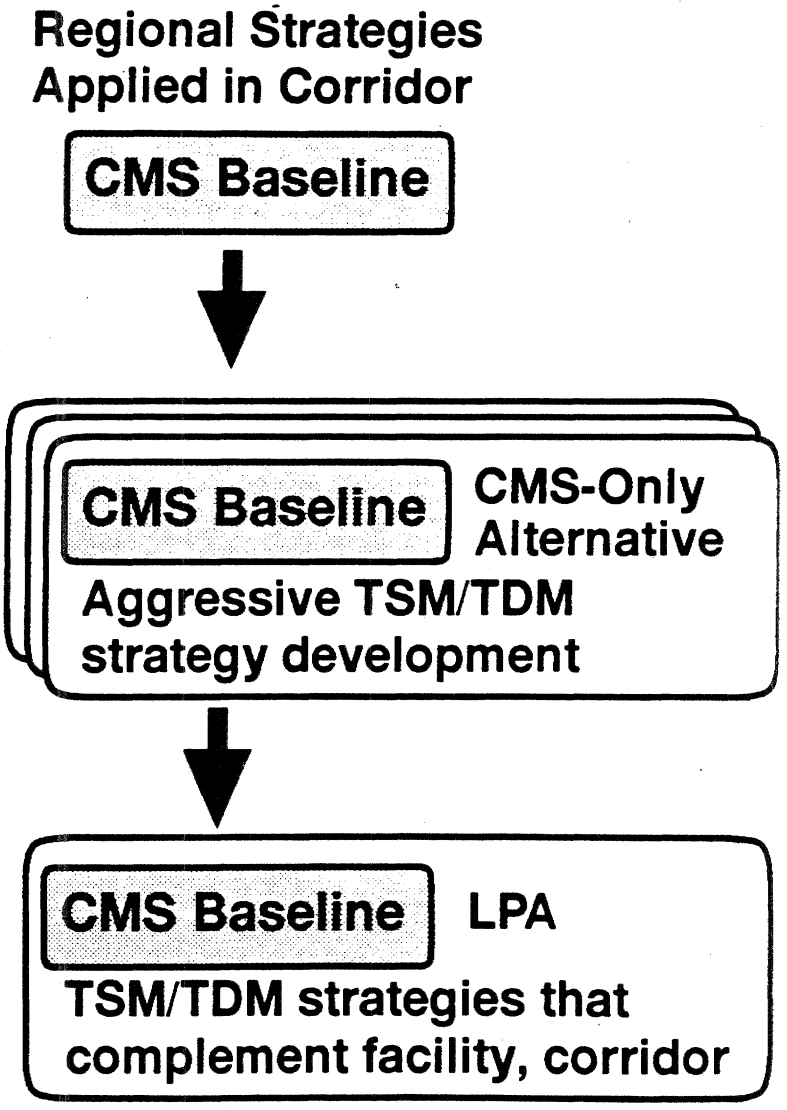
EXHIBIT III-1

CMS STRATEGY DEVELOPMENT IN MIS CORRIDOR STUDIES

Evaluate the effects of the adopted regional Congestion Management System strategies in the corridor. This CMS scenario becomes the baseline for the MIS alternatives.

Using the CMS baseline, develop a TSM/TDM-only alternative to accommodate travel demand in the corridor without the major transportation investment

Using the CMS baseline, develop congestion management strategies to complement the locally preferred alternative



4. Identify immediate-action strategies which can be implemented directly by individual agencies without needing evaluation;
5. Identify corridor-level Transportation System Management (TSM) and Travel Demand Management (TDM) strategies which address the problems and deficiencies in the subarea, and the specific actions which support those strategies; and
6. Conduct an evaluation of the actions to assess their impacts in the corridor, documenting the extent to which these actions can alleviate travel demand in the corridor.

Finally, using the CMS Baseline developed in the first step, congestion management strategies are developed which will complement the locally preferred alternative in the major investment study. This is done through the following tasks:

1. Identify problems and deficiencies in the corridor that are unique to the locally preferred alternative;
2. Review immediate-action strategies for their compatibility with the locally preferred alternative, and identify opportunities for staged implementation;
3. Identify TSM and TDM actions which address the problems and deficiencies in the corridor, and enhance the operation of the facility;
4. Conduct an evaluation of the locally preferred alternative (which includes the CMS complement);
5. Recommend a program of TSM and TDM strategies which can be incorporated into the facility and in the corridor. Identify implementation responsibilities and outline an implementation schedule.

Using the strategy described above, the following questions are addressed:

- What is the effect of the regional CMS strategies in the corridor?
- How much travel demand can be accommodated by TSM and TDM strategies?
- Is the major transportation investment really needed? Can it be scaled down?
- What is the most appropriate mix of transportation infrastructure and management strategies for this corridor?

MAJOR INVESTMENT STUDY RECOMMENDATIONS

As the Metropolitan Planning Organization (MPO), NCTCOG is involved in several ongoing major investment studies. These studies represent very different transportation challenges in the region and are varying in scope. Once the lead agency has completed a draft MIS, the recommendations must be endorsed by the lead agency in a manner similar to the way a draft environmental assessment or draft environmental impact statement is endorsed. Following lead agency endorsement, NCTCOG's Regional Transportation Council (RTC) must endorse the recommendations. The recommendations of the MIS must be the same as the recommendations in the regional transportation plan for each MIS corridor. If differences exist and the RTC endorses the results of the MIS, the plan is modified to reflect the results.

The operational management and travel demand reduction strategies identified in a major investment study are seen as commitments being made by the Dallas-Fort Worth region at two levels: project-level and program-level implementation. Program-level commitments are inventoried in the Regional Congestion Management System which was adopted by the Regional Transportation Council. They are included in the financially constrained Regional Transportation Plan, and future resources are earmarked for their implementation. The Congestion Management System element of the Plan carries an inventory of all MIS project

commitments, detailing type of strategy, implementation responsibilities and schedules, and expected costs. At the project implementation level, these projects are monitored so they can be added to the regional Transportation Improvement Program at the appropriate time with respect to the single-occupancy vehicle facility implementation.

CMS strategy development is critical to the successful integration of congestion management into the major investment study process. But, traditional evaluation tools and decision making systems, geared to supporting major capital investment decisions, are relied on perhaps too heavily to make decisions on the appropriate level of operational management and travel demand reduction strategies. And, the need for developing management strategies as part of a major investment study is not clearly understood by some individuals who may serve on MIS technical and policy groups. For these reasons, it is imperative that the MPO play an active role in educating strategy development committees on the need for an open debate of all reasonable congestion management strategies.

Several agencies and groups in the Dallas-Fort Worth region have been identified as possible strategy development resource groups in the MIS process. NCTCOG encourages all major investment study teams to call upon these groups and others to assist in problem identification, strategy development, and evaluation of alternatives. Exhibit III-2 lists just some of the agencies/groups identified to date.

EXHIBIT III-2

AGENCY/GROUP	POSSIBLE ROLE IN CMS STRATEGY DEVELOPMENT
Dallas and Fort Worth Area Traffic Management Teams	Identification of corridor congestion and safety problems; and development of strategies, especially relating to the interaction of freeway systems and arterial systems, and special events management.
Dallas Area Rapid Transit	Development of rail and bus transit strategies and employer-based trip reduction strategies, including carpool/vanpool.
Fort Worth Transportation Authority	Development of bus transit strategies and employer-based trip reduction strategies, including carpool/vanpool.
Local Governments	Identification of corridor congestion problems, and development of strategies, especially relating to arterial systems and the interaction of freeway systems and arterial systems.
NCTCOG Travel Demand Management Committee	Development of employer-based trip reduction strategies, carpool and vanpool programs, and establishment of Transportation Management Organizations.
NCTCOG Bicycle and Pedestrian Task Force	Problem identification, especially related to bicycle and pedestrian safety and system gaps; and development of public sector strategies and public/private partnering initiatives.
Texas Department of Transportation	Problem identification, especially related to the freeway system, and development of strategies, including incident detection and response, integration of freeway and arterial systems, and freeway bottleneck elimination.
Texas Transportation Institute	Problem identification, especially related to the freeway system, and development of strategies, including incident detection and response, integration of freeway and arterial systems, and freeway bottleneck elimination.

IV. INTEGRATING CMS INTO THE PROGRAMMING PROCESS

EXAMPLE 1 - REGIONAL CORRIDOR MANAGEMENT

One of the responsibilities of the congestion management system (CMS) is to develop and program projects which alleviate traffic congestion. Recently, the congestion management system was used in developing specific projects for inclusion in the Transportation Improvement Program. A Call for Projects yielded a number of capital and operational projects aimed at better management of existing freeway corridors in the region. Requests for Congestion Mitigation and Air Quality Program (CMAQ) and Surface Transportation Program/Metropolitan Mobility (STP-MM) funds were made for the following types of projects:

- Mobility Assistance Patrols (equipment and human resources);
- Freeway traffic surveillance infrastructure (cameras, vehicle detectors, fiber optic infrastructure); and
- Traffic management equipment (variable message signs, lane control signals, etc.).

Due to the nature of the region's competitive project evaluation process and project evaluation criteria[1], several issues arose:

- Because mobility projects were encouraged for submittal by any public or private agency in the region, some possible project overlap was identified.

---

[1]The evaluation of projects for inclusion in the Transportation Improvement Program centered on five criteria. The selection of criteria was based on a series of surveys that were conducted among transportation professionals and local elected officials in the Dallas-Fort Worth area, and focused on multimodal issues, mobility enhancement, and congestion mitigation/air quality considerations. Meetings were held to solicit public input on the final criteria, which were a) current cost-effectiveness, b) air quality/energy conservation, c) local cost participation, d) intermodal/multimodal/social mobility, and e) consistency with adopted Congestion Management Plan or adopted Transportation Control Measures.

- It was felt that some key freeway traffic surveillance infrastructure linkages were not funded.
- It was felt the region might benefit from a better balance of capital improvements and operational programs.

In order to address these issues, the Regional Transportation Council directed staff to review all the submitted projects and to develop them into a "regional corridor management" program. The work was carried out under the direction of policy and technical subcommittees. These subcommittees included local elected officials, representatives from both Texas Department of Transportation district offices in the region, and staff from local governments. Initial meetings with these groups served to clarify several issues, not only with respect to projects submitted for inclusion in the Transportation Improvement Program, but in the direction that should be taken to ensure a more coordinated, efficient, and regional approach to managing traffic on the region's major limited-access facilities. Many of these issues developed into criteria which were later used to influence the selection of additional projects.

An inventory was conducted of all existing and programmed freeway management projects and implementation plans from both districts were reviewed, as well as the recommendations from the regional congestion management system plan. Review of these implementation and planning efforts allowed the subcommittees to identify overlaps and gaps in system coverage. It also prompted a debate regarding specific corridor deficiencies and solutions. Additional data collection was conducted on the limited-access roadway system to identify major construction projects and narrow or nonexistent roadway shoulders. These locations were felt by the subcommittees to represent potential traffic backup problem areas, because a minor or major traffic incident could completely shut down traffic flow. These issues were debated at

the technical- and policy-level subcommittees and influenced the development of project selection criteria.

The following criteria was used to guide the development of project modifications and additional project selection. Each item represents a critical policy component of the regional corridor management effort.

1. **Implement the recommendations in the Congestion Management Plan by targeting incident detection and response technology and mobility assistance programs on congested corridors.**

- Does the project provide mobility assistance resources to those facilities that are expected to be congested in the peak hour of the day?
- Does the project provide incident detection and response resources to those facilities that are expected to be congested in the fourth highest hour of the day?

2. **Fill gaps in existing corridor management efforts by completing critical system linkages.**

- Does the project represent a physical communication link to existing systems?
- Does the project fill a geographic or functional gap in existing system coverage?

3. **Enhance the communication and information exchange between TxDOT districts and local transportation agencies.**

- Does the project provide a communication linkage between TxDOT districts? Does it strengthen or enhance an already existing communication linkage?

- Does the project provide a communication linkage between TxDOT and a local government traffic management center or transportation agency? Does it strengthen or enhance an already existing communication linkage?

4. **Leverage transportation resources by creating or enhancing public/private partnerships which will target the identification and mitigation of traffic congestion.**

- Does the project involve a commitment of resources by both public and private sector entities?
- Does the project create or enhance a public/private working relationship?

5. **Leverage transportation resources by targeting investment, where possible, to facilities undergoing reconstruction.**

- Is corridor management investment being added during the reconstruction of the target facility? Does the timing of the investment provide cost savings?
- Is a reconstruction project being targeted with mobility assistance resources to mitigate the negative impacts of reconstruction on traffic flow?

Candidate projects were reviewed by the technical and policy subcommittees before being presented to the full Surface Transportation Technical Committee for recommendation and the Regional Transportation Council for adoption into the Transportation Improvement Program. The following immediate-action corridor management projects were selected and included in the TIP:

Motorist Information Systems - to enhance existing systems with additional equipment for implementation in congested corridors and bottleneck locations. These projects include

stationary and portable variable message signs capable of displaying messages to motorists for advanced notice of accidents or traffic conditions, dynamic lane assignment to regulate lane use at signalized intersections in response to time of day changes in traffic demands, and highway advisory radio to advise motorists of upcoming traffic conditions. The total amount programmed for these projects, to supplement existing and previously programmed motorist information systems, was $1.34 million.

Major Incident Detection and Response - to enhance existing programs in the management of traffic congestion due to incidents and in speeding up accident investigation and clearance. These projects include a mobile incident vehicle, which is a mobile platform for equipment and systems required to provide motorist information and assist emergency personnel at, or near, an incident site. Computerized surveying equipment was included that will provide quicker information gathering, enhance safety, and provide more accurate information at an accident investigation scene. Also, variable message signs, to be mounted on the Mobility Assistance Patrol vehicles, will provide quick motorist information to support traffic management at an incident site. The total amount programmed for these projects, to supplement existing and previously programmed incident detection and response systems, was $560,000.

Mobility Assistance Patrol/Minor Incident Management - to enhance existing efforts by targeting additional resources during the peak period of congested freeways, freeways under construction, and freeways with inadequate roadway shoulders. These projects include additional trucks and personnel to add ten MAP teams for better system coverage. The total amount programmed to supplement existing MAP service was $900,000.

Immediate-Action Core Infrastructure - to enhance the management of transportation corridors which either completes system linkages, enhances information exchange, creates public/private partnerships, or targets investment to facilities undergoing reconstruction. These projects include over 20 miles of intelligent transportation system infrastructure, including fiber-optic cables, closed circuit television systems, variable message signs, and vehicle detection equipment. It also includes a first generation link between TxDOT districts and cities in congested corridors, which will link data phones, picture phones, and compressed video imagery. The prototype system will also provide pretrip planning and real time information to motorists via home/office PC. The total amount programmed for these projects, to supplement existing and previously programmed core infrastructure, was $3.63 million.

Programming these freeway traffic management projects required using a system management approach to consensus building. The identification of problems and the development of solutions involved the Metropolitan Planning Organization (MPO) staff and local and state transportation professionals. The regional corridor management effort offered an opportunity to develop a more coordinated "program approach" to project selection, targeting investment to very specific, critical system needs.

EXAMPLE 2 - DART CONGESTION MANAGEMENT SYSTEM FUNDING INITIATIVE

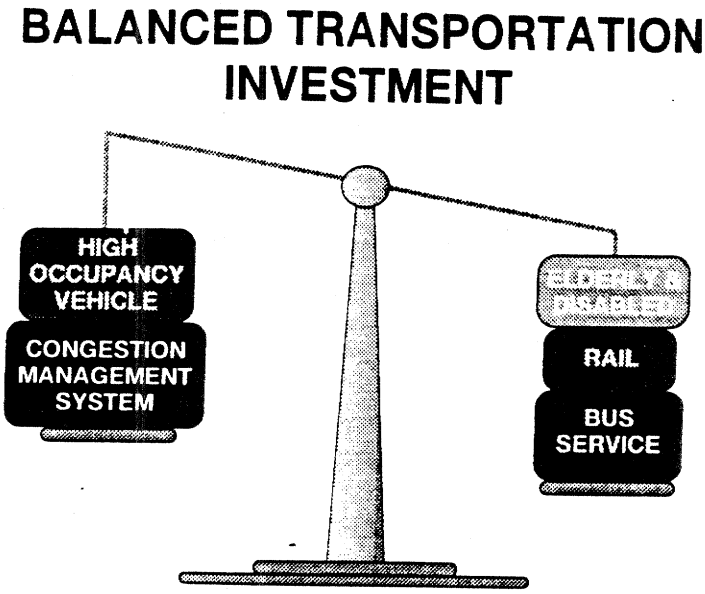
The Dallas Area Rapid Transit (DART) began operations in 1984 with 15 member cities in the Dallas area. Backed by funds from a one cent sales tax, DART began the planning and implementation of a light rail transit system (current plans call for a 53-mile system); high occupancy vehicle (HOV) lanes (currently planned as a 98-mile system); 18 miles of commuter rail service (which will eventually reach downtown Fort Worth and Dallas-Fort Worth International Airport); and bus, van, and rideshare services. As part of the Transit System

Plan, DART has instituted a Local Assistance Program (LAP) for the 11 member cities which will not receive light rail service by fiscal year 1997. In this program, cities can request funds which can be used on public transportation projects such as intersection and signalization improvements, construction of bus turnouts, and conducting traffic and transportation studies. The program, which has received approximately $13 million annually, enables DART to provide public transportation infrastructure to member cities who will not see the light rail benefits of their sales tax support in the early years of system implementation. The LAP program is structured so that the cities receive a proportional amount of funds based on the percentage each pays to DART in sales tax each year.

Several withdrawal elections have been held among the suburban cities since DART's inception in 1983. In total, nine cities scheduled elections, with two cities canceling their elections, two cities withdrawing from the system and six cities -- the most populous -- voting to remain with DART.[2] Currently, some suburban cities are again considering holding withdrawal elections, and DART is exploring ways to build support by enhancing the Local Assistance Program. DART and NCTCOG staffs have recently outlined a program to support DART in this effort, while furthering implementation of the regional Congestion Management System.

[2] DART Profile & Update, February 1991; Dallas Area Rapid Transit; Dallas, Texas

A study was undertaken which considered costs and benefits of the capital and operating investments associated with the various components of the DART system. It also looked at the benefits which are expected to accrue to each member city, by individual system components. These benefits were compared to each city's proportional share of DART's sales tax revenue, and these comparisons formed the basis for discussions by DART officials for a more appropriate level of funding for the LAP program. In the process, the name of the program was changed to the Local Assistance Program/Congestion Management System (LAP/CMS), to reflect the new focus of the program.



The new LAP/CMS program was approved by the DART Board in October 1995. Under the new program, funding for those cities in which light rail construction has not yet begun was increased to 15 percent of their sales tax contributions to DART. Historically, funding levels for the LAP program had been less than 5 percent of dedicated sales tax. The use of funds is limited to transit purposes as defined in DART's enabling legislation and in accordance with DART guidelines. A full range of transit projects and programs that will be supported are presented in Exhibit IV-1 for illustrative purposes. By linking CMS programming to the existing Local Assistance Program, DART and NCTCOG worked together to enhance the implementation of CMS strategies in the adopted Regional Transportation Plan.

EXHIBIT IV-1

PROPOSED USES OF CMS/LAP FUNDS[3]

TRANSIT RELATED STREET IMPROVEMENTS	TRANSIT SUPPORTIVE PROJECTS AND PROGRAMS
1. Roadway Improvements - Adding Capacity Road widening Adding storage to turn lanes Adding turn lanes Adding/deleting access points Adding bus priority lanes HOV lanes Final engineering and design **2. Grade Separations** **3. Matching Funds for Federal/State Programs** **4. Intersection Improvements** New signals Computerization of signals Traffic surveillance equipment **5. Cooperative Funding of Intercity Capacity Improvements** Signal progression Bus-only lanes Bus signal preemption Arterial street HOV lanes	**1. Additional Service** Nonproductive service (previously eliminated or not meeting warrants) **2. Transportation Services for the Elderly and/or Disabled** Emergency medical Shuttle services **3. ADA Compliance Items Related to the Provision of Transit Service** **4. Sidewalks Related to Providing Access to Transit Facilities or Services** **5. Bus Shelters** **6. Bus Benches** **7. Travel Demand Management** Transportation management association operating funds User subsidies for transit service Vanpool programs Rideshare promotion and incentives Alternative work schedule subsidies Employer trip reduction support Emergency ride home funding taxi/loaner car **8. Vans for Vanpool Programs** **9. Park-and-Ride Lots** **10. Mid-Block Bus Turnouts** **11. Incorporating Private Transit Services/Facilities Into DART** **12. Technical Assistance Program (TAP)**
Note: All projects will require Board approval. Additional projects not explicitly listed above but considered allowable under DART's enabling legislation may be proposed for DART consideration.	

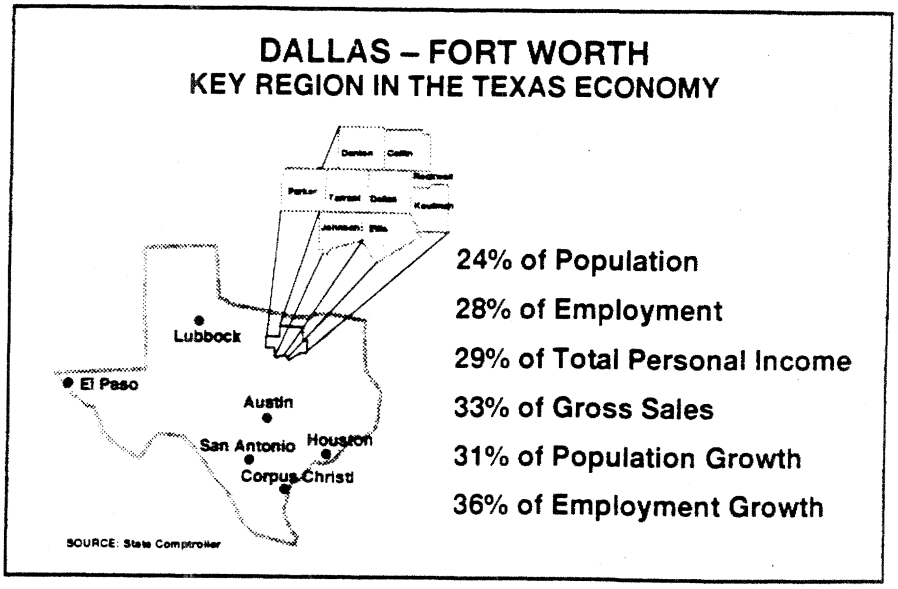
[3] DART Transit System Plan, Approved November 14, 1995; Dallas Area Rapid Transit; Dallas, Texas.

V. INTEGRATING CMS INTO TRANSPORTATION ADVOCACY

The Congestion Management System is charged with providing information on congestion conditions and trends to decision makers. In the North Central Texas region, transportation professionals are trying to broaden their understanding as to who those decision makers are, and to provide useful information which will enhance decision making. NCTCOG was recently asked to provide information to support a presentation to the Texas Transportation Commission, as members of the Dallas/Fort Worth area joined together to discuss a growing traffic congestion problem and to make a request for additional transportation funds.

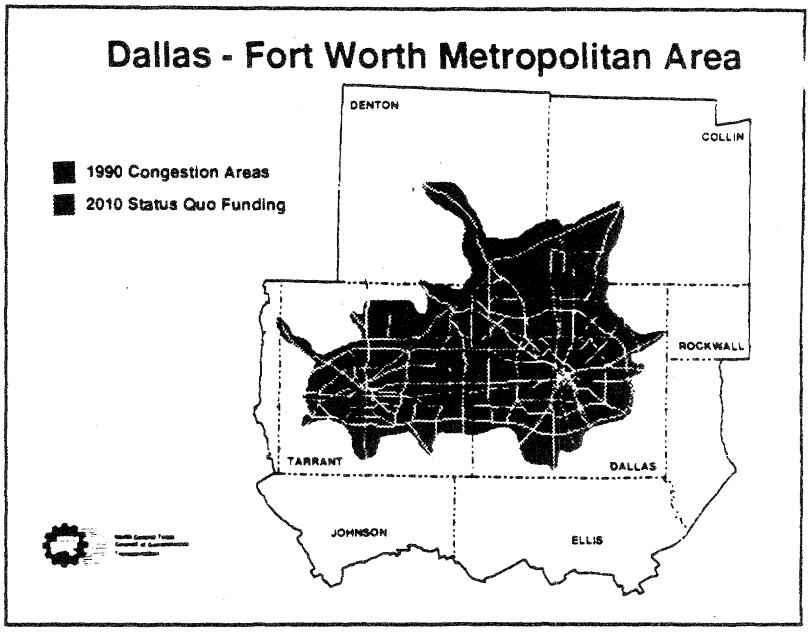
PARTNERS IN MOBILITY

In March 1995, more than 165 individuals -- State legislators, local elected officials, and business and civic leaders throughout North Central Texas -- came together in Austin, Texas for a presentation before the Texas Transportation Commission. They met to present a series of strategies aimed at improving Dallas-Fort Worth area mobility and air quality and to garner support for increased state and federal funding for the Metroplex. The following Partners in Mobility led the delegation:



- Area Chambers of Commerce
- Dallas Area Rapid Transit
- Dallas Regional Mobility Coalition
- Fort Worth Transportation Authority
- Local Governments
- North Central Texas Council of Governments/Regional Transportation Council
- North Texas Commission/North Texas Regional Transportation Task Force
- Texas Department of Transportation
- Texas Turnpike Authority

Information on current and projected congestion levels was presented along with pollution estimates for the region (the appendix contains an executive summary of the presentation.) Population, employment, and economic information was presented to the Commission in support of the coalition's request for increased funding levels. Specifically, local elected officials and business leaders requested that the Commission undertake the following actions:



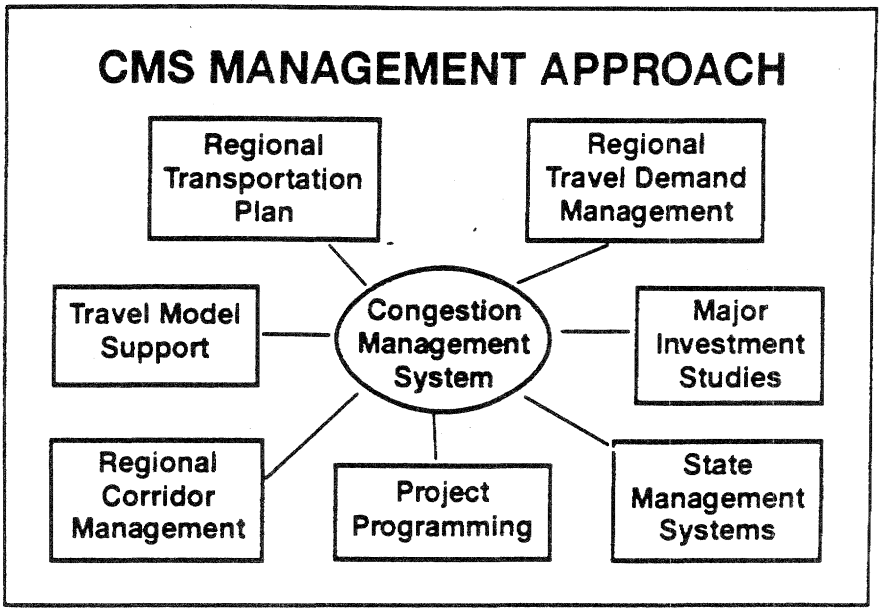
1. Assist with the funding and implementation of toll roads,
2. Support local government construction of off-system projects,
3. Remove Congestion Mitigation and Air Quality Program funds from the Texas Department of Transportation District letting caps,
4. Increase the TxDOT Dallas and Fort Worth Districts' annual obligation authority to address backlogged projects, and
5. Call upon Dallas-Fort Worth area leaders to assist TxDOT with influencing state legislative and congressional actions on transportation issues.

The 1996 work plan for the group includes several outreach/education campaign activities. Involvement with the Partners in Mobility group provides the MPO with an opportunity for communication that expands beyond the typical audience that could be reached. Continued involvement is seen as a mechanism for the advancement of congestion management system projects and funding advocacy.

VI. CONCLUSION

The congestion management system (CMS) in the Dallas-Fort Worth region is designed to impact transportation decision making in its various forms. Exhibit V-1 depicts graphically the philosophy undertaken in the region: The management of traffic congestion and the consideration of operational management and travel demand reduction strategies affects all planning and programming decisions.

EXHIBIT VI-1



Displayed are just some of the linkages NCTCOG has identified. The challenge which accompanies this approach is to establish linkages which add real value to transportation decision making without incurring overburdensome data collection and information dissemination costs.

A unique feature of the region's congestion management system is the two-pronged approach to strategy development. It parallels the regional transportation planning process in that the system-level analysis precedes the corridor-level analysis. This process enables the allocation of resources to congestion mitigation strategies over a long time frame. It also provides a mechanism for regional, system-level quantification of benefits. Then, through the major

investment study, an attempt is made to quantify the impact of CMS strategies in specific corridors which include the adopted regional strategies along with other corridor-specific solutions.

Operational management and travel demand reduction strategies developed in a major investment study are commitments being made by the region on two levels: project-level and program-level implementation. Program-level commitments are inventoried in the Regional Congestion Management System which was adopted by the Regional Transportation Council. These commitments will be included in the financially constrained Regional Transportation Plan, and future resources will be earmarked for their implementation. The Congestion Management System element of the plan maintains an inventory of all major investment study project commitments, detailing type of strategy, implementation responsibilities and schedules, and expected costs. At the project implementation level, these projects will be added to the regional Transportation Improvement Program, which provides for programming of these projects at the appropriate time.

The Partners in Mobility initiative represents a unique way to integrate the congestion management system into transportation advocacy. In this initiative, available data on system performance was used to increase funding and speed project implementation in the Dallas-Fort Worth urban area. The decision makers targeted in this instance were state policymakers. In other cases, it could be local governments, private sector representatives, or transportation providers. All these individuals and groups make decisions that affect transportation system infrastructure and operation. Information on system performance and transportation trends need to be tailored to the understanding and interests of each group.

Two programming efforts are described in this report: the regional corridor management program and the Dallas Area Rapid Transit CMS funding initiative. In these efforts, the development and programming of management strategies was recognized as the answer to very different problems. The development of a regional mindset to "try the management approach first" promises to increase the efficiency of our transportation systems. Operational management and travel demand reduction strategies are not always the best answer to a transportation problem, but consideration of these low cost solutions needs to take place in every instance.

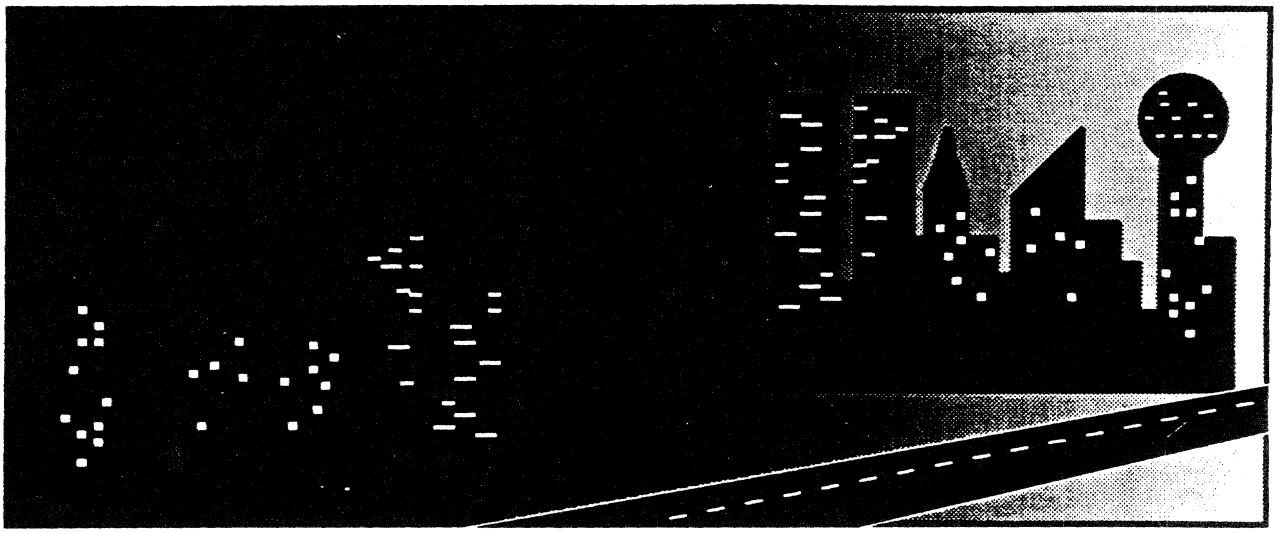
A fully integrated congestion management system has the potential to add real value to transportation decision making. System performance assessments and comparisons of benefit and costs need to occur across all modes of transportation. And, the effectiveness of all types of implemented transportation solutions needs to be assessed and made part of the resource allocation equation. As new tools are developed to assist in answering these questions, better management of transportation systems will result.

APPENDIX A

PARTNERS IN MOBILITY EXECUTIVE SUMMARY

PARTNERS IN MOBILITY

A PRESENTATION FROM THE DALLAS – FORT WORTH AREA



Executive Summary

Texas Transportation Commission

March 30, 1995

Mobility is a challenge which crosses jurisdictional boundaries. Solving the regional congestion problem is beyond the capability of any single entity. Regional mobility requires that public and private leaders collaborate in planning, advocacy, and implementation roles. Partnership is the right strategy.

More than 165 individuals — State legislators, local elected officials, and business and civic leaders throughout North Texas — came together in Austin for a March 29 reception and the March 30 presentation to the Texas Transportation Commission. Mobility is a high priority issue in the Dallas-Fort Worth area, and our leaders are united and committed to ensure that North Texas gets a fair share of State and federal transportation funding. Just as the region united and focused on efforts to construct Dallas/Fort Worth International Airport two decades ago, leaders from across the metropolitan area are collaborating to maintain and improve the region's surface transportation system.

Dallas-Fort Worth Area Partners in Mobility

- Chambers of Commerce
- Dallas Area Rapid Transit
- Dallas Regional Mobility Coalition
- Fort Worth Transportation Authority
- Local Governments
- North Central Texas Council of Governments/Regional Transportation Council
- North Texas Commission/North Texas Regional Transportation Task Force
- Texas Department of Transportation
- Texas Turnpike Authority

Texas Transportation Commission Presentation Committee

Policy Support

Ken Barr, Councilmember*
City of Fort Worth

Steve Bartlett, Mayor*
City of Dallas

Al Cornelius, County Judge
Ellis County

Mike Eastland, Executive Director
North Central Texas Council of Governments

Donna Halstead, Councilmember
City of Dallas

Ron Harris, County Judge
Collin County

Allan Howeth, Co-Chairman*
North Texas Regional Transportation Task Force

Jim Jackson, Commissioner*
Dallas County and Chairman of Regional Transportation Council

Lee Jackson, County Judge*
Dallas County

Joe Paul Jones
Fort Worth Chamber of Commerce

Bob Lane, Co-Chairman*
North Texas Regional Transportation Task Force

Jeff Moseley, County Judge
Denton County

Gary Slagel, Mayor
City of Richardson

Dean Vanderbilt, President
North Texas Commission

Tom Vandergriff, County Judge*
Tarrant County

Staff Support

Wes Heald, District Engineer
TxDOT, Fort Worth District

James Huffman, District Engineer
TxDOT, Dallas District

David Griffin, Executive Director
Dallas Regional Mobility Coalition

Vic Suhm
North Texas Commission

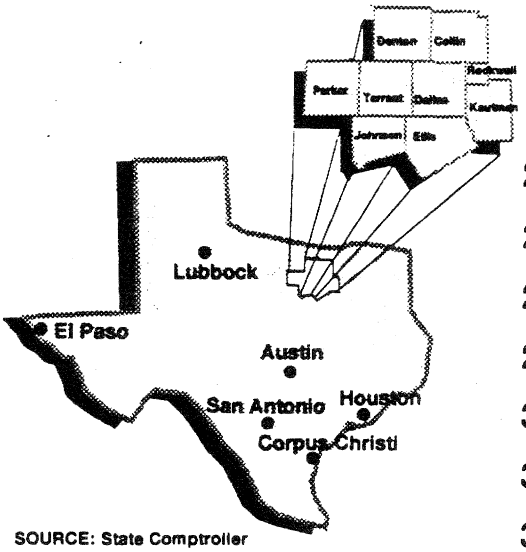
Donna Parker, Vice President & Chief Administrative Officer
Fort Worth Chamber of Commerce

Michael Morris, Director of Transportation
North Central Texas Council of Governments

Dan Kessler, Assistant Director of Transportation
North Central Texas Council of Governments

** Speakers at March 30, 1995 presentation.*

DALLAS – FORT WORTH
STATE'S LARGEST REGIONAL ECONOMY



24% of Population

28% of Employment

29% of Total Personal Income

29% of State Gross Product*

33% of Gross Sales

31% of Population Growth

36% of Employment Growth

SOURCE: State Comptroller

*SOURCE: Perryman Consultants, Inc.

DALLAS – FORT WORTH
A LEADER IN 1994 JOB GROWTH

CMSA	NEW JOBS
Atlanta	96,800
Dallas-Fort Worth	74,500
Chicago	70,800
Phoenix	69,100
Detroit	68,200
Minneapolis	52,500
Tampa	52,500
Boston	40,400
Houston	37,100
Orlando	36,400
Salt Lake City	33,200
Austin	27,600
San Antonio	21,900

SOURCE: Bureau of Labor Statistics

Mobility is essential to the region's quality of life and economic vitality. Without adequate transportation funding to ensure mobility, North Texas will not be able to sustain economic growth. This reality needs to be of serious concern to the State as well as the region. The Dallas-Fort Worth area is the largest regional economy in the State, comprising approximately 30 percent of the Texas economy. In addition, the Dallas-Fort Worth region ranks second nationally in new job creation, producing over 74,000 new jobs in 1994.

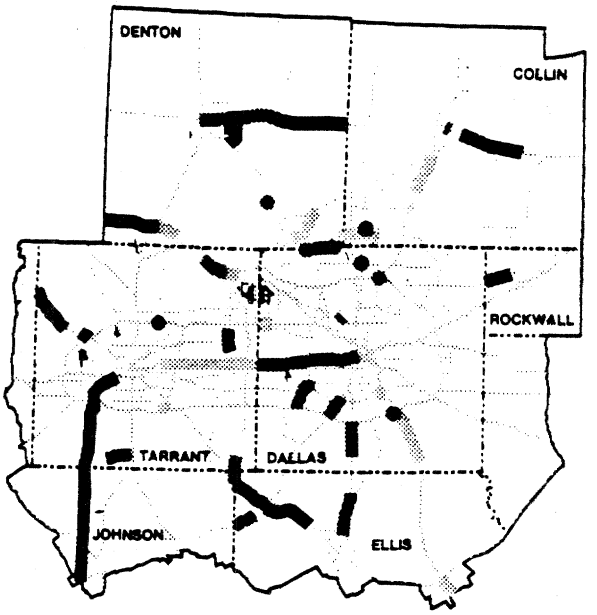
Elected officials and business leaders from the Dallas-Fort Worth region are requesting 30 percent of the funds allocated annually by the Texas Transportation Commission; otherwise, increasing roadway congestion is going to adversely and seriously impact the economic vitality of Texas.

PARTNERS IN MOBILITY

Allowing local governments to design and construct off-system projects will facilitate congestion relief by expediting project implementation. Similarly, removing CMAQ funding from the letting caps of the TxDOT Districts will facilitate project implementation by avoiding unnecessary funding competition between CMAQ projects and other needed transportation improvements.

TxDOT Dallas and Fort Worth Projected Backlogged Mobility Projects

Costs (millions)	Dallas	Fort Worth
FY96	$ 317	$ 45
FY97	$ 508	$ 45
FY98	$ 203	$ 478
TOTAL	$ 1,028	$ 568



North Central Texas Council of Governments Transportation

Projections by the Dallas and Fort Worth TxDOT Districts indicate that the list of backlogged mobility projects in the region will total $1.6 billion for fiscal years 1996-98. These are needed projects ready for construction, but for which no available funding has been identified. Resources must be allocated to implement these projects, in order to reverse the trend of increasing roadway congestion. In recognition of this need and its importance to the economic vitality of the State and region, the Commission is urged to allocate 30 percent of its annual funding to North Texas. Based on a total of $1.7 billion available statewide, this request translates into $306 million to the TxDOT Dallas District and $204 million to the TxDOT Fort Worth District. This share is proportional to the region's contribution to the State economy.

Leaders throughout the Dallas-Fort Worth area communicate routinely with State legislators and members of congress regarding issues of importance to the region. The Dallas-Fort Worth area and TxDOT have many interests in common relative to transportation funding. In the spirit of partnership, Dallas-Fort Worth area leaders pledge to assist TxDOT by working with the State legislature and the United States Congress to expand transportation resources and to pursue common interests.

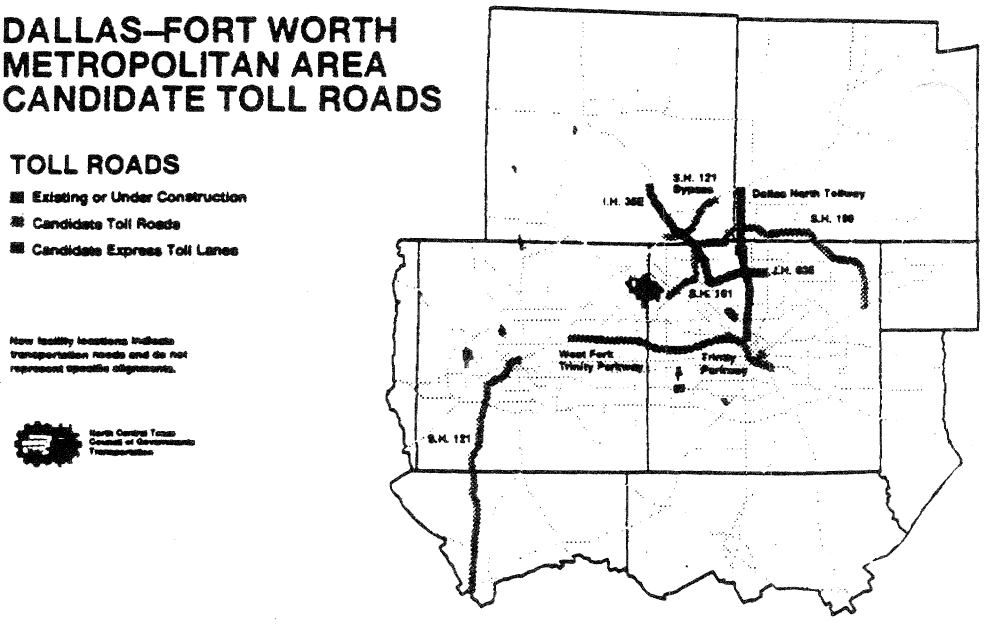
PARTNERS IN MOBILITY

With cooperation and support from the Texas Transportation Commission, we can reverse our rising roadway congestion trend. Local elected officials and business leaders of the Dallas-Fort Worth region are requesting that the Commission undertake 5 specific actions.

- ◇ Assist with the funding and implementation of toll roads,
- ◇ Support local government construction of off-system projects,
- ◇ Remove Congestion Mitigation and Air Quality Program (CMAQ) funds from the TxDOT District letting caps,
- ◇ Increase the TxDOT Dallas and Fort Worth Districts' annual obligation authority to address backlogged projects, and
- ◇ Call upon Dallas-Fort Worth area leaders to assist TxDOT with influencing State legislative and congressional actions on transportation issues.

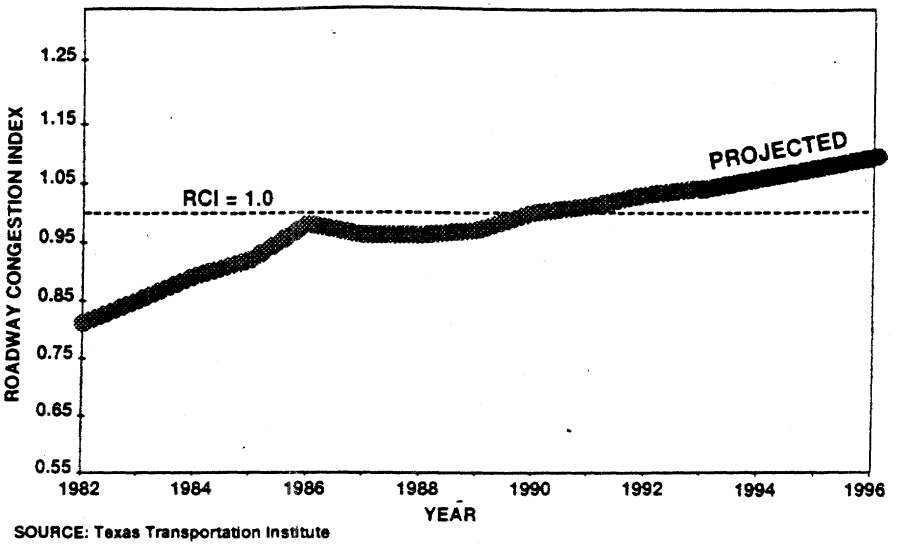
Today toll road funding is a necessary component of transportation financing, because current revenue levels cannot meet the demand for increased roadway capacity. Bond financing supported by toll revenues will significantly expedite construction of much needed projects such as S.H. 190 and the S.H. 121 Extension (Southwest Freeway). However, this action will require that TxDOT assist with funding of these projects on a timely basis and view toll road funding as a supplement rather than a replacement for traditional transportation allocations.

DALLAS–FORT WORTH METROPOLITAN AREA CANDIDATE TOLL ROADS



Roadway congestion in the Dallas-Fort Worth area increased 28 percent between 1982 and 1993 and is projected to increase another 7 percent by 1996. The area has a congestion index above 1.0 and rising, which indicates serious delays on the roadway system.

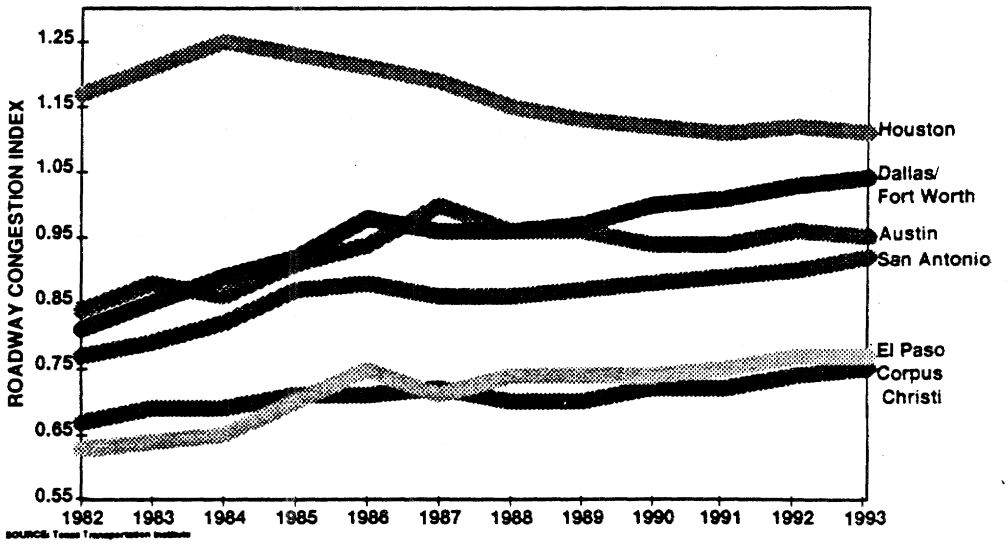
DALLAS-FORT WORTH URBAN AREA ROADWAY CONGESTION INDEX, 1982 TO 1996



SOURCE: Texas Transportation Institute

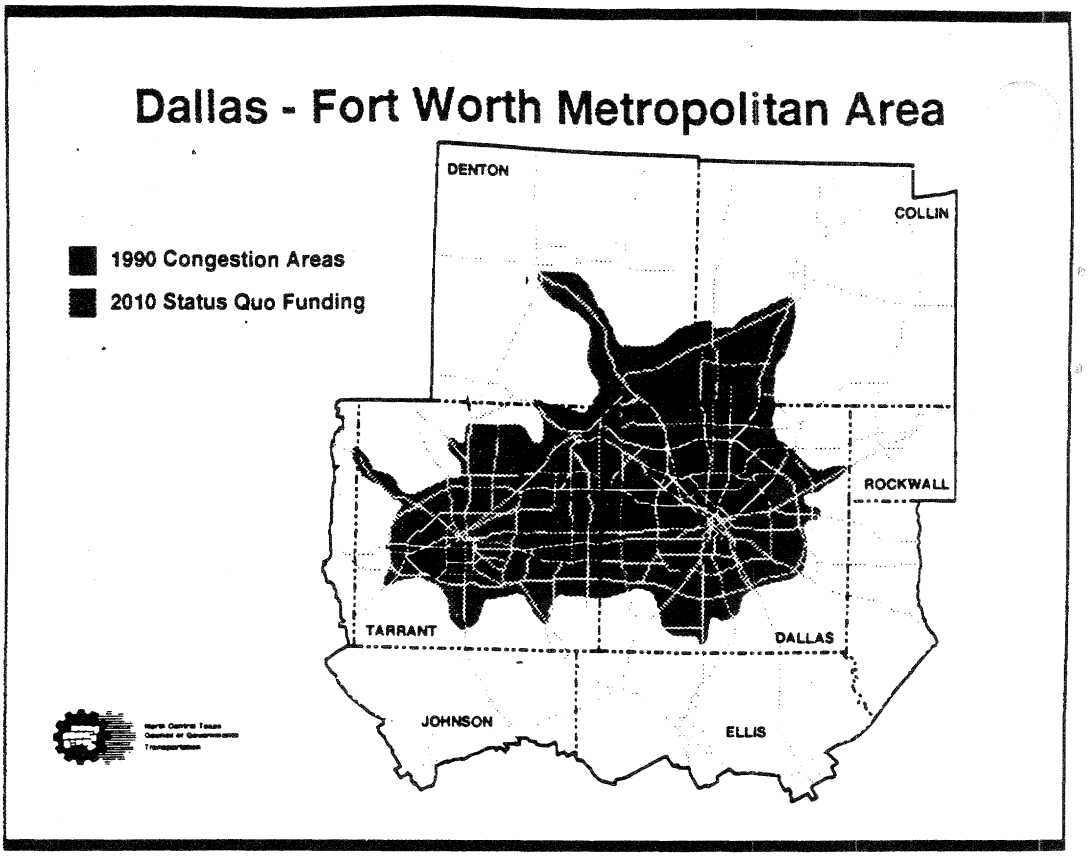
Only two areas in Texas have a congestion index above 1.0. While Dallas-Fort Worth area congestion is rising, Houston's declined 11 percent during the 1982-1993 time frame.

ROADWAY CONGESTION INDEX BY METROPOLITAN AREA

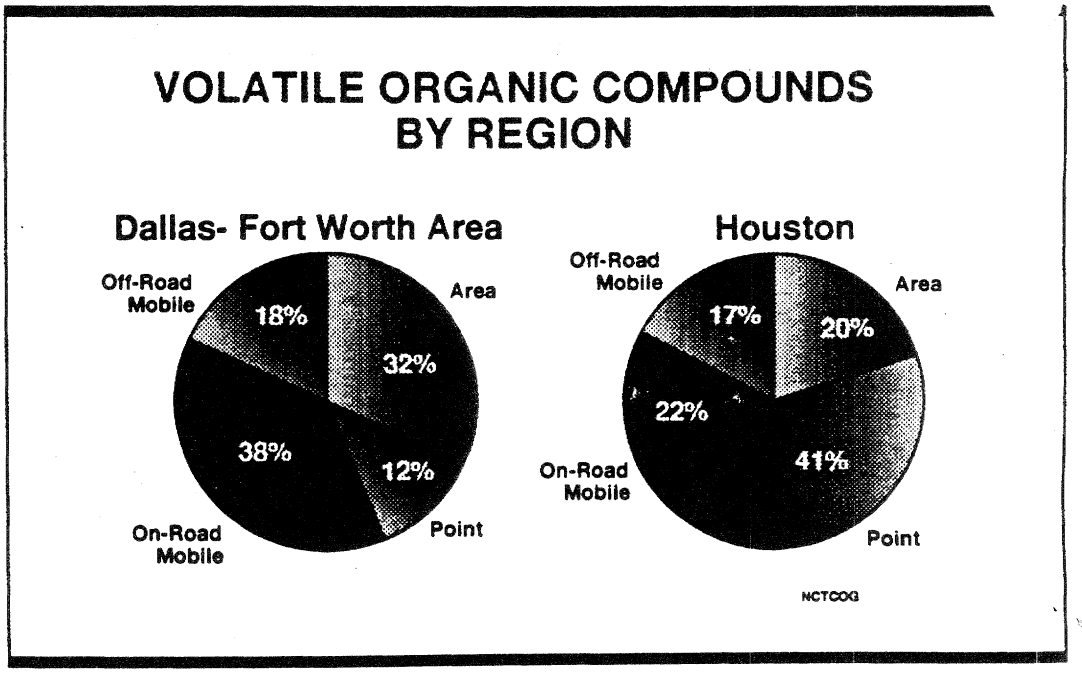


PARTNERS IN MOBILITY

The goal of the ***Mobility 2010 Plan Update: The Regional Transportation Plan for North Central Texas*** is to improve mobility. The Plan outlines numerous strategies, programs, and projects to accomplish this goal; but significantly increased funding levels will be required to fully implement the Plan. Roadway congestion will expand in the region if only status quo funding is available to implement the Plan.



Roadway congestion also contributes more to air pollution in the Dallas-Fort Worth area than in other Texas nonattainment areas because cars and trucks cause a greater share of the pollution in North Texas. Failure to comply with federal air quality standards by 1996 has serious implications. The federal government can impose sanctions which would adversely impact both the Dallas-Fort Worth area and the State economy if the region does not follow through on its air quality commitments. This is added incentive for the Dallas-Fort Worth area and the Texas Department of Transportation (TxDOT) to increase the commitment to reducing North Texas roadway congestion.



The "Partners in Mobility" presentation to the Texas Transportation Commission by Dallas-Fort Worth leaders on March 30, 1995 was widely endorsed by elected officials and organizations throughout the region, including State legislators from North Texas. Transportation Commissioners were furnished with copies of letters or resolutions from the following elected officials and organizations.

- City of Arlington Mayor
- Azle Chamber of Commerce
- Burleson Area Chamber of Commerce
- City of Carrollton Mayor
- Coppell Chamber of Commerce
- City of Dallas Mayor
- Greater Dallas Chamber of Commerce
- North Dallas Chamber of Commerce
- Dallas County Judge
- City of Denton Mayor
- Denton County
- Denton Chamber of Commerce
- City of DeSoto Mayor
- DeSoto Chamber of Commerce
- Dublin Chamber of Commerce
- City of Duncanville Mayor
- Ellis County Judge
- Farmersville Chamber of Commerce
- Town of Flower Mound
- City of Fort Worth Mayor
- Fort Worth Chamber of Commerce
- Fort Worth Hispanic Chamber of Commerce
- French-American Chamber of Commerce, Dallas-Fort Worth
- Frisco Economic Development Corporation
- City of Garland Mayor
- City of Grand Prairie
- Grand Prairie Chamber of Commerce
- City of Hurst Mayor
- City of Irving
- Irving Chamber of Commerce
- Johnson County Judge
- Kerens Chamber of Commerce
- Lake Tawakoni Area Chamber of Commerce
- Lewisville Chamber of Commerce
- North Richland Hills Mayor
- Plano Economic Development Board
- Red Oak Area Chamber of Commerce
- Richardson Chamber of Commerce
- Roanoke-Trophy Club-Westlake Chamber of Commerce
- Rowlett Chamber of Commerce
- Runaway Bay Chamber of Commerce
- Sanger Area Chamber of Commerce
- Springtown Chamber of Commerce
- Weatherford/Parker County Joint Economic Development Cooperative