



Planning and Development Services Department
Commissioner's Office
Fax Number 905-895-3482

MEMORANDUM

TO: Planning and Economic Development Committee

FROM: Bryan Tuckey, Commissioner of Planning and Development Services

DATE: June 7, 2007

RE: **Ontario's High Occupancy Vehicle Lane Network**

On May 24, 2007, the Province released a report entitled "Ontario's High Occupancy Vehicle Lane Network Plan for the 400-Series Highways in the Greater Golden Horseshoe" (copy attached). This report has been posted on the Provincial Environmental Bill of Rights for a commenting period that ends on June 23, 2007.

The release of this report indicates a strong direction from the Province to proceed with the implementation of High Occupancy Vehicle (HOV) lanes on many of the 400-series highways in the GTA. The existing HOV lane on Highway 404 has been very successful and this report builds on that success. Specifically in York Region, the following HOV lanes are recommended:

- Hwy 404 – Hwy 401 to Hwy 7, southbound (existing)
- Hwy 404 – Hwy 401 to Hwy 7, northbound (2007)
- Hwy 400 – Major Mackenzie Drive to King Road (2007-2011)
- Hwy 427 – Hwy 409 to Steeles Ave (2007-2011)
- Hwy 400 – King Rd to Hwy 9 (2011-2016)
- Hwy 404 – Extend northerly from Hwy 7 (northerly limit to be determined, but indicated in the Newmarket/Aurora area) (2011-2016)
- Hwy 400 – Hwy 9 to Barrie (2017+)
- Hwy 404 – Continue northerly extension beyond Newmarket/Aurora (2017+)

Regional staff have reviewed the Provincial HOV network plan and have the following comments:

- The plan is well thought out and represents a very positive move by the Province to both improve the overall freeway capacity as well as to implement it in a sustainable manner by planning for HOV lanes, which make more effective use of the infrastructure by promoting carpooling.

- The Province should be requested to provide a detailed implementation schedule as well as to advance the implementation as much as possible.
- The plan only includes HOV lanes on sections of highway that can be widened to accommodate the new lane. For those sections of highway that cannot be widened, the report recommends that MTO will study converting existing lanes to HOV usage over the longer term. However, Regional staff recommend that MTO examine the feasibility of HOV lane conversion on these sections of freeway in the shorter term. Although it is recognized that there may be some public resistance to “taking away” an existing freeway lane for HOV usage, there are other benefits including a much lower capital cost, and making other planned HOV lanes part of a more extensive network. This is particularly true on Highway 400, where the current network plan only recommends the HOV lanes from Major Mackenzie Drive northward. These lanes would be of much more benefit if they were extended from Major Mackenzie Drive to Highway 401.
- The report indicates that the MTO will work with municipalities to identify ways to integrate the highway HOV lane network with local transportation plans. This integration needs to happen as soon as possible as York Region currently has a number of Environmental Assessment studies underway that are looking at the potential of HOV lanes.
- The report also indicates that MTO is finalizing a carpool lots opportunity study. This is another important part that is required to support the HOV network. MTO should be encouraged to finalize this supporting study as soon as possible, along with an identification of an implementation plan.
- The plan only identifies HOV lanes on Highway 427 from Highway 409 to Steeles Avenue. MTO should plan to implement HOV lanes from Steeles Avenue to Highway 7 and further north on the planned Highway 427 extension.
- The MTO should work closely with the GTTA on the planning and implementation of the HOV network and supporting facilities.

These comments will provide the basis for the Region's submission to the Ministry of Transportation and the Ministry of the Environment prior to the June 23rd deadline for comments.

BT\PM\gr

Ontario's High Occupancy Vehicle Lane Network

Plan for the 400-Series Highways
in the Greater Golden Horseshoe

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INTRODUCTION

Tackling Congestion in the Greater Golden Horseshoe

The Greater Golden Horseshoe (GGH)¹ is the economic engine of Canada and one of the fastest growing urban regions in North America. Within the next 25 years, the population in the Greater Golden Horseshoe is expected to increase by more than 3.8 million people. Population and economic growth, as well as our increased reliance on highways to move goods, are putting tremendous pressure on our existing transportation system. Commute times are getting longer and many highways are now experiencing congestion outside of the morning and afternoon rush hour periods.

It is not possible to build our way out of congestion. There is just not enough space. We can, however, make better use of our highways by managing how they are used. Giving people better alternatives to driving alone is one of the most effective ways to tackle congestion now and to provide a transportation system that is more sustainable in the future.

The Province has a vision for managing traffic congestion on our highways as the Greater Golden Horseshoe continues to grow. This is essential as we work to build stronger, more prosperous communities.

To achieve this vision, the Province has developed a plan to manage traffic congestion in the Greater Golden Horseshoe by adding high occupancy vehicle (HOV) lanes to many of our highways to get people and goods to their destinations safely and in less time.

HOV lanes mean:

- Shorter commute times so that people spend less time on the highway and more time with their family and friends
- A more efficient highway system that provides commuters with more travel choices
- More reliable and convenient bus service
- Decreased car emissions – travelling at fuel-efficient speeds minimizes emissions associated with stop-and-go traffic
- Less lost work productivity due to traffic delays

HOV lanes support both carpooling and municipal and cross-regional transit such as GO Transit, since all buses are eligible to use HOV lanes. HOV lanes can provide a congestion-free bus route, allowing operators to provide faster, more reliable service.

This plan offers a vital network to support regional transit service and the development of a regional transportation plan in the GTA. The ministry will work with the Greater Toronto Transportation Authority as it creates a transportation plan for the GTA and co-ordinates municipal and transit agency interests.

¹ The Greater Golden Horseshoe stretches from Fort Erie through the Niagara Peninsula, around Lake Ontario, across the Greater Toronto Area to Peterborough and north to Collingwood.

Making the Most of Our Transportation System

One of the keys to managing congestion is using highways as efficiently as possible. The Province is taking steps to encourage public transit use and carpooling, both of which move substantially more people per vehicle than single-occupant vehicles. These are effective ways to ease congestion, particularly during peak traffic periods.

The Province has identified several effective ways that could be used to tackle congestion and encourage public transit use and carpooling, including:

- High occupancy vehicle lanes that allow highways to carry more people in fewer vehicles because they are reserved for vehicles carrying more than one person. They encourage carpooling and transit use by providing a faster, more reliable alternative to driving a car alone
- Dedicated busways and reserved lanes only for buses that further enhance the attractiveness of using transit and allow our roadways to carry even more people
- Bus bypass shoulders, which are highway shoulders that have been widened and strengthened so GO Transit buses and local transit buses can use them when roads are congested
- Traffic signal priority for transit vehicles at intersections and highway ramps

HOV lanes are a critical part of the Province's transportation strategy because of their ability to increase the efficiency of Ontario's transportation system. HOV lanes have proven to be a successful strategy in many North American cities for moving more people and increasing the efficiency of the transportation network. An HOV lane has the ability to move as many people as four general-purpose lanes.

In December 2005, to encourage carpooling and transit use, the Government of Ontario opened the first freeway HOV lanes in the province on portions of Highways 403 and 404. The result is that transit use has increased on routes that utilize HOV lanes and users are experiencing less frustration from traffic congestion. Recent monitoring on the HOV lanes reveals that all commuters, even those in the general purpose lanes, are saving time compared to their travel time prior to HOV lanes opening.

Some observers have asked: Why not build another general purpose lane instead of a high occupancy vehicle lane? The Province of Ontario is looking at long-term, more sustainable solutions to tackle congestion. Widening a highway with another general purpose lane would relieve congestion for a short period of time, but widening with an HOV lane has the potential to accommodate increased travel demand for much longer, as more people use transit or carpool.

THE PROVINCE'S HOV LANE NETWORK PLAN

The Province's Vision for the Greater Golden Horseshoe

The *Growth Plan for the Greater Golden Horseshoe* provides the framework for an integrated transportation network across the Greater Golden Horseshoe that offers viable travel choices. This network will allow for efficient travel both within and between urban growth centres throughout the region.

Working together with other levels of government, transit operators and the private sector to realize this vision, the Ministry of Transportation will plan for the development of a network of over 450 kilometres of new HOV lanes. The benefits of HOV travel will encourage many of those travellers who currently drive alone to switch to carpooling or riding transit. Transit ridership along these major highway corridors will increase as cross-regional bus trips become faster and more reliable.

As traffic volumes increase, the number of single occupant vehicles in the general purpose lanes will be better managed; trucks and other commercial vehicles will be able to move more efficiently along the highway. Travel time savings and travel time reliability will improve for all users.

HOV lanes will help to ease congestion now and will accommodate increasing demand on our highways in the future. As more people choose alternatives to driving alone, congestion will be better managed and the province's investments in transportation infrastructure will be maximized.

HOV Lane Objectives

Existing and future provincial highway HOV facilities will:

- Enable more efficient movement of people, goods and vehicles by increasing the number of persons per vehicle along congested highway corridors
- Encourage carpooling and transit use by providing travel time savings and a more reliable trip time for high occupancy vehicle users
- Include programs that support HOV and transit objectives, such as carpool and transit parking lots

Developing the HOV Lane Network

To plan for the future HOV lane network, the Ministry of Transportation conducted a study to determine the potential travel demand for HOV lanes on each 400-series highway in the Greater Golden Horseshoe. Projected demand was based on forecasts of future population, employment and land use.

Several criteria were used to select the HOV lanes proposed in this plan. Highways that had the potential of achieving a minimum volume of 500 vehicles per lane per peak commuting hour were recommended for consideration of adding HOV lanes. This number is a widely used standard in other North American cities with HOV lanes. It represents the minimum HOV lane traffic volume that would be acceptable to other highway users. Lower volumes often lead to the perception that an HOV lane is "empty" or underused. The Ministry of Transportation's

assessment concluded that most existing 400-series highways in the Greater Golden Horseshoe will have sufficient future demand to support HOV lanes. Other factors used to select HOV lane locations and the timeframes for constructing them include their potential for use by transit vehicles and the opportunity to build HOV lanes in conjunction with other highway projects.

Building an HOV lane network across the Greater Golden Horseshoe will extend over 25 years and will result in a connected system of HOV lanes supported by infrastructure and programs that enhance their benefits.

Implementing the HOV Lane Network

The following maps illustrate a plan to create an HOV lane network in phases across the Greater Golden Horseshoe. The phasing of new HOV lanes in each corridor takes into account the effectiveness of each segment as a stand-alone HOV lane. The effectiveness of the lanes will be further enhanced as lanes are lengthened and linked, and as the network grows. The Network Plan recognizes that lanes can be added more easily in some corridors than others, and that the need for HOV lanes is greater in some corridors. This plan would allow for the Greater Golden Horseshoe region to enjoy the benefits of HOV lanes as quickly as possible.

The exact timing of the individual HOV lane corridors listed in the plan will depend on a number of factors, including:

- Changes in traffic patterns
- Changes in population and employment growth
- Outcomes of environmental assessments
- Need for property acquisition
- Design and construction requirements
- Funding

In some cases, an HOV project will be tied to other highway projects, such as rehabilitation work, which may change in scope and timing. This also means that some HOV lanes could be added earlier than indicated in the proposed plan. All HOV projects are subject to environmental assessments and detailed engineering design. The Province will consult with municipalities, transit providers and the general public throughout all planning and environmental studies.

Opportunities and Challenges

Most of the HOV lanes shown in the plan will involve constructing new highway lanes. However, space constraints in some areas will present a challenge, including sections of Highways 400, 401 and 427 and the QEW that pass through heavily urbanized areas. Over the long term, once the HOV lane network is more fully developed, MTO will study the possibility of converting existing lanes in these areas to HOV lanes. Conversion in these areas will be considered when there is high demand for HOV lanes and/or when the converted lane would link two other HOV lanes together or would extend an HOV lane. Before any conversion is done, however, the effects on safety, goods movement and cost must be carefully examined.

One of the greatest challenges in establishing an HOV lane network will be to provide smooth HOV connections at highway interchanges. During the design of HOV lanes, the Ministry of Transportation will examine the opportunity for direct connections between HOV lanes at all highway-to-highway interchanges. Continuous highway-to-highway ramps for HOV lane users would allow HOV drivers to move more easily from one highway to another. These ramps would be similar to the existing interchange between the Highway 404 southbound HOV lane and Highway 401 westbound, where HOV traffic merges directly onto the Highway 401 collector lanes separately from general traffic.

The Ministry of Transportation will work with municipalities to identify ways to integrate highway HOV lane network with local transportation plans. We will assess the possibilities for connections with municipal HOV lanes on arterial roads as well as with transit stations and corridors.

To support the HOV lane network, the ministry is exploring opportunities to significantly expand the number of carpool parking lots and parking spaces available where they are most needed by carpoolers. The ministry currently maintains 50 carpool parking lots with more than 5,000 parking spaces in the Greater Golden Horseshoe. The lots are conveniently located at highway interchanges and allow carpool riders to leave their cars free of charge when they join their carpools. Several lots also serve as transit stops where transit riders can park their cars free for the day.

The ministry is finalizing a carpool lots opportunity study, an extensive analysis of short- and long-term needs for carpool parking, with special attention to needs near highways that have, or are planned to have, HOV lanes. The study identifies short-, medium- and long-term plans for expanding existing lots and building new ones. The Ministry of Transportation also regularly surveys existing lots and notes other areas where informal carpool parking is taking place to assess the need for more carpool parking.

The Ministry of Transportation will also continue to work with GO Transit and other transit providers to locate bus stops close to interchanges of highways with HOV lanes. This presents an opportunity to create transit/carpool hubs where various transit services can connect and where carpool and transit riders can park. This kind of integration and flexibility can increase the appeal of both transit and carpooling.

ONTARIO HOV LANE POLICY

The following policies and operating standards will be applied when constructing and operating HOV lanes on 400-series highways:

- Provisions for HOV lanes will be considered in the planning for any new highway corridors
- HOV lanes will be constructed as new lanes when it is feasible, so the overall highway capacity for all vehicles is increased
- HOV lanes will be designed to ensure the highest safety standard possible; this will include wide shoulders and buffers separating the HOV lane from the adjacent regular lane and consideration of designated entry/exit points
- Passenger vehicles, small trucks, taxis and motorcycles with two or more occupants will be permitted to use the lanes, in order to meet the primary goal of moving more people in fewer vehicles
- All buses will be permitted to use the HOV lanes at all times, regardless of the number of occupants to ensure reliable and on-time bus service and to allow them to return to the beginning of their routes more quickly and consistently
- All emergency vehicles will be permitted to use the lanes when responding to an incident
- Larger trucks will not be permitted for safety reasons, as well as to ensure a consistent flow of traffic in the HOV lane
- The HOV requirement will be in effect 24 hours a day, seven days a week, to address congestion that occurs outside of peak commuting hours and to further encourage carpooling and transit use for all types of trips

In developing these policies, the Province reviewed the experiences of many other jurisdictions and developed policies and standards that best maintain a safe environment, allow for efficient operations, and make HOV rules easy to understand and enforce. Ontario's HOV lanes are and will continue to be designed to a very high safety standard.

A key element of the HOV program will be the ongoing evaluation of the HOV Lane Network Plan and HOV lane performance. To accurately evaluate the effectiveness of its HOV lane policies, the Ministry of Transportation will monitor the use of the HOV lanes, as well as the travel time savings, violation rates and reliability of trip times.

Changes to the existing HOV lane operating policies will depend on traffic demands, physical constraints, operational circumstances, and planning goals of the highway corridors that are being evaluated.

The Province is committed to promoting use of HOV lanes through public education and reporting on HOV lane performance and benefits.

THE HOV LANE NETWORK IN THE GREATER GOLDEN HORSESHOE

The following maps illustrate a strategy for adding HOV lanes to the 400-series highways in the Greater Golden Horseshoe over the next 25 years. It is a plan for building an HOV network that allows for more efficient travel for all vehicles on some of the most heavily used and congested highways in our major urban areas. There is potential for over 450 kilometres of new HOV lanes to be created.

Figure 1 shows the existing HOV lanes on Highways 403 and 404 and the next additions to the network in the Greater Golden Horseshoe. Funding for these projects has been confirmed, and these projects are identified in the Province's Southern Ontario Highways Program. These projects include the HOV lanes currently under construction on northbound Highway 404. The HOV lanes on Highway 400 are currently being designed and construction will begin in 2008. On the Queen Elizabeth Way (QEW), construction is already underway to widen bridges in preparation for the addition of HOV lanes. MTO will also study how to include HOV lanes on Highway 427 and will consider transit options.

Figure 2 proposes a vision for "growing the corridors" by building on the established network of HOV lanes. This involves extending the HOV lanes on Highways 400 and 404 farther north and adding lanes to other key corridors such as Highway 401 in Peel Region.

Figure 3 shows the proposed strategy for "creating the network". This longer-term vision includes adding HOV lanes on other important highway corridors. Most importantly, it provides opportunities to connect these new lanes with those already constructed to form an integrated network of HOV lanes across the region.

This plan represents a vision for establishing a full network of HOV lanes in the Greater Golden Horseshoe by 2031. This extensive network of HOV lanes would provide a tremendous incentive for commuters to carpool or take transit. As commuters travel more efficiently, the result will be a very significant impact on traffic congestion. Constructing this network by 2031 will require funding beyond the amount typically budgeted for highway construction in the Greater Golden Horseshoe.

Figure 1. Near-Term HOV Lane Projects (2007-2011)



Existing HOV Lanes

Hwy 403 - Hwy 407 to Hwy 401 [14 km each way]

Hwy 404 - Hwy 401 to Hwy 7, southbound [11 km]

- Existing HOV Lanes
- Near-Term HOV Lanes
- Provincial Highways
- Other Highways
- Urban Growth Centres
- Greenbelt Area

New HOV Lanes for the Near-Term (2007-2011)*

Hwy 404 - Sheppard Ave to Hwy 7, northbound [7 km]

QEW - Guelph Line to Trafalgar Rd [15 km each way]

Hwy 400 - Major Mackenzie Rd to King Rd [8 km each way]

Hwy 427 - Hwy 409 to Hwy 407/Steeles Ave [7 km each way]

* Note: Precise timing, location, and length of HOV lane corridors will be determined by a number of factors, including environmental approvals, construction phasing and funding.

Figure 2. Growing the Corridors

Medium-Term HOV Lane Priorities (2011-2016)



New HOV Lanes Proposed for the Medium-Term (2011-2016)*

Hwy 400 - King Rd to Hwy 9 [12 km each way]

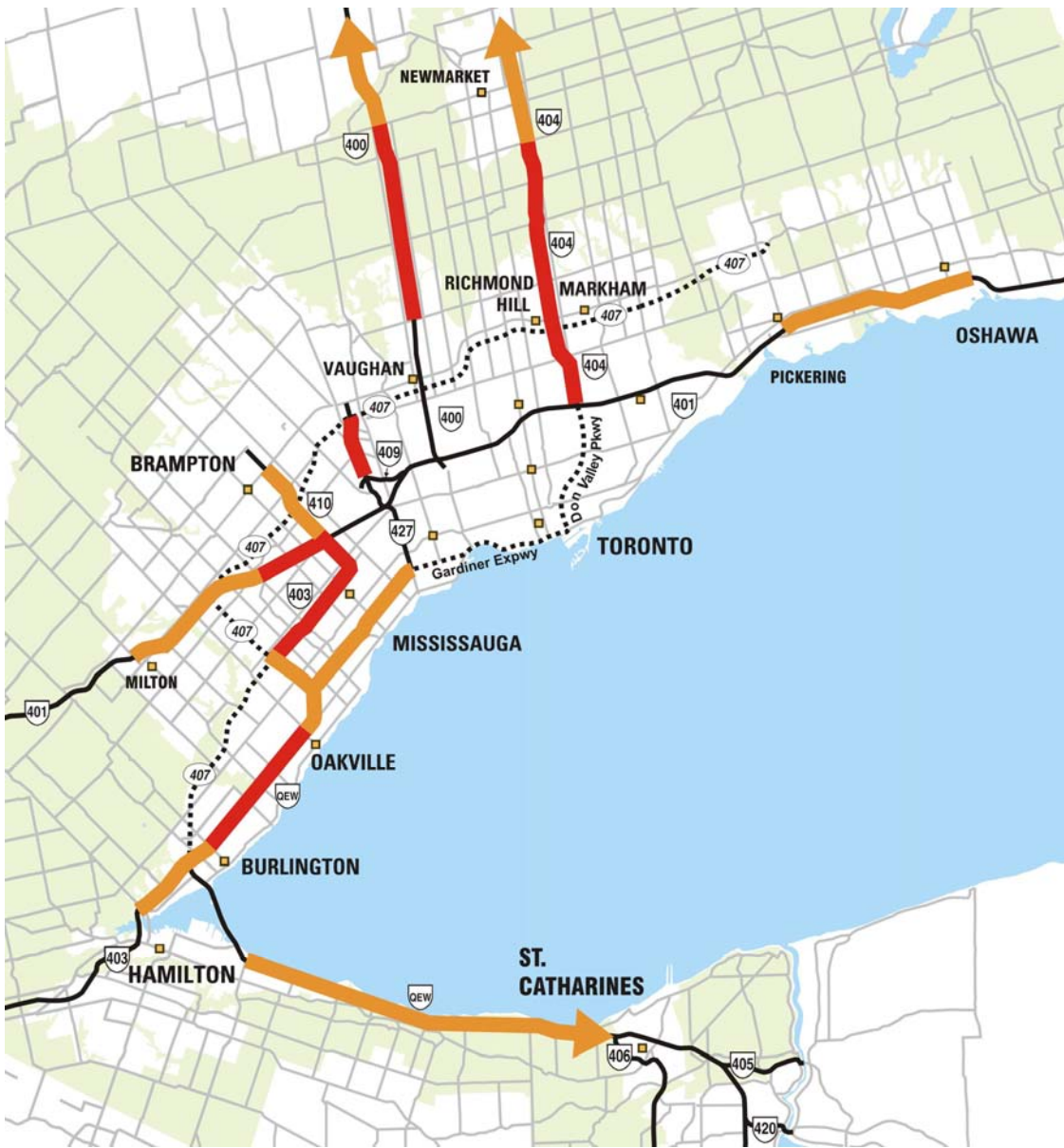
Hwy 401 - Credit River to Hwy 410 [7 km each way]

Hwy 404 - Extend northerly from Hwy 7 [to be determined]

- Near-Term HOV Lanes
- Proposed Medium-Term HOV Lanes
- Provincial Highways
- Other Highways
- Urban Growth Centres
- Greenbelt Area

* Note: Precise timing, location, and length of HOV lane corridors will be determined by a number of factors, including environmental approvals, construction phasing and funding.

Figure 3. Creating the Network Longer-Term HOV Additions (2017+)



New HOV Lanes Proposed for the Long-Term (2017+)*

QEW - Trafalgar Rd to Hwy 427 [20 km each way]
- Centennial Pkwy to Hwy 406 [40 km each way]

Hwy 400 - Hwy 9 to Barrie [to be determined]

Hwy 403 - QEW to Hwy 407 [5 km each way]
- Hwy 6 to Hwy 403/407/QEW [6 km each way]

Hwy 404 - Continue northerly expansion [to be determined]

Hwy 410 - Hwy 401 to Queen Street (Brampton) [10 km each way]

Hwy 401 - Regional Rd 25 (Halton) to Credit River [18 km each way]
- Brock Rd (Pickering) to Bloor/Harmony (Oshawa) [20 km each way]

Near/Proposed Medium-Term HOV Lanes

Proposed Long-Term HOV Lanes

Provincial Highways

Other Highways

Urban Growth Centres

Greenbelt Area

* Note: Precise timing, location, and length of HOV lane corridors will be determined by a number of factors, including environmental approvals, construction phasing and funding.

CONCLUSION

The *Growth Plan for the Greater Golden Horseshoe* lays the foundation for future economic and social prosperity and a more sustainable transportation system. It envisions a transit-focused, multimodal transportation system as essential in managing growth and congestion. The Province's primary strategy to meet the transportation needs of tomorrow is a strong commitment to planning and investing in transit and HOV lanes

The HOV Lane Network Plan would put in place more than 450 kilometres of HOV lanes on some of the Greater Golden Horseshoe's most congested urban highways. Implementing this plan will result in a more efficient and safer transportation system that contributes to improved accessibility, more travel options, better integration of transportation and land use planning, energy conservation, protection of natural resources, and the lessening of the impacts of travel on air quality.

This extensive highway HOV lane system will maximize use of our public infrastructure investments, help manage congestion, make our cross-regional transit systems more effective, and make movement of goods through the region more efficient.