

EXECUTIVE SUMMARY

STUDY HISTORY

Transportation congestion between the City of Portland and communities to the west of the City has been evaluated in numerous studies dating back to the 1970s. More recently, a study undertaken by the Portland Area Comprehensive Transportation System (PACTS) in the 1990s followed by the Gorham Bypass Study and the Finding of No Significant Impact¹ led to the 2007 construction of a portion of a recommended bypass around the Gorham Village area connecting Route 25 west of Gorham Village with Route 114 south of Gorham Village. This portion of the Gorham Bypass was opened to traffic on December 5, 2008.

While this portion of the Gorham Bypass addressed sizable congestion in Gorham, a more regional solution to growing congestion and safety concerns was still required. The communities of Gorham, Westbrook, Scarborough, and South Portland signed a joint resolution in 2007 asking for a study to assess the feasibility of a new Turnpike Spur that would connect the new Gorham Bypass to the Maine Turnpike. This was followed by a resolution by the 123rd Legislature (LD 1720) directing the Maine Department of Transportation (MaineDOT) and the Maine Turnpike Authority (MTA) to conduct “a study of existing highway infrastructure and future capacity needs west of Route 1 in York and Cumberland counties, including the greater Gorham and Sanford Areas. The purpose of this study is to develop a series of recommendations to enhance, expand, and preserve highway connections between Route 1 and the Maine Turnpike and communities in western Cumberland County and York County.”

The Gorham East-West Corridor Feasibility Study (Study) only undertakes the Cumberland County and the greater Gorham analysis; a separate study will focus on the York County and the Sanford area. This Study is required to follow Maine’s Sensible Transportation Policy Act (STPA) which requires the analysis of alternative modes of transportation prior to increasing highway capacity. Satisfying the requirements of STPA also allows MaineDOT and MTA to develop incentives for communities that adopt land use plans that reduce reliance on the state highway system.

This Study was thus initiated. It focused on the effects that land use has on transportation and developed a coordinated land use-transit-highway improvement strategy to reduce future demand on the regional transportation network. This report summarizes the approach and process undertaken and identifies the land use, transit and highway improvement recommendations to be advanced for future consideration in subsequent study phases.

¹ Gorham Bypass Study Environmental Assessment report was completed in June 2003 and the Finding of No Significant Impact was signed on October 21, 2005.

STUDY AREA

The Study Area for the Gorham East-West Corridor Feasibility Study is illustrated in Figure ES-1. The communities of Gorham, Scarborough, South Portland and Westbrook comprise the core study area, with the Regional Study Area encompassing a subset of the PACTS Model Area.

There are two major east-west routes in the Study Area: State Route 22 and State Route 25. Route 25 connects Portland to Westbrook, Gorham, Standish, Cornish and central New Hampshire. Route 22 connects Portland, South Portland, South Gorham, and Buxton. Route 22 also feeds into State Route 4, U.S. Route 202, which then connects into Hollis, Waterboro, and Sanford as well as southern New Hampshire. Both routes are important to the Cumberland County economy and serve regional as well as local travel.

PUBLIC OUTREACH

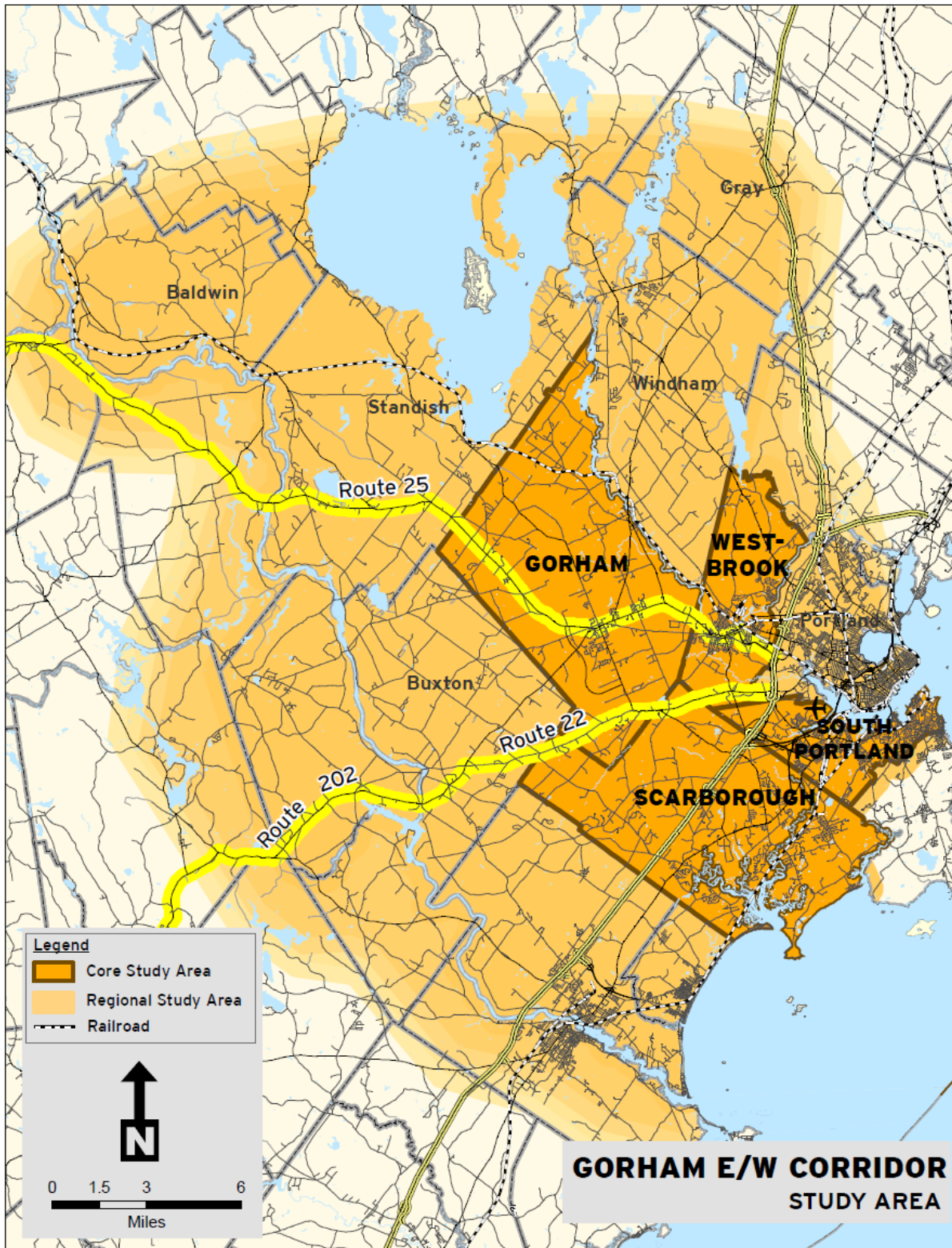
The Study's public outreach process communicated the purpose of the Study and provided details regarding the analysis of the land use, transit and roadway scenarios. The outreach process provided the public and stakeholders with the opportunity to provide opinions and input as the study progressed through the development of the various scenarios. A study website, ongoing media coverage and multiple meetings within the study communities allowed direct and easy input to study decisions and processes. Detailed minutes were reported from every meeting, noting committee and public comments.

Two committees, the Steering Committee and the Advisory Committee, provided input and feedback at regular intervals during the study process. The Steering Committee generally met on a monthly basis throughout the study. Working as a collaborative unit, the Steering Committee was integral to this study's groundbreaking work by its growing support of the need for land use change in order to affect long-term transportation benefits. The Advisory Committee, which met at key points throughout the study, was comprised of a group of representatives of various interest groups to reflect the diverse points of view of stakeholders throughout the Study Area. Their input and feedback provided the Study Team a clear picture of the range of viewpoints to be considered, and was a valuable counterpoint to the four core municipality-based viewpoints of the Steering Committee.

STUDY PURPOSE AND NEED

The first step in the study was to establish a study purpose and need statement. The purpose and need of a study is essential in establishing a basis for the development of the range of reasonable alternatives to be considered and assists with the identification of preferred alternatives. Working with the study Steering and Advisory Committees and the public, the study's purpose and need statement was developed to reflect the needs and desires of study area stakeholders.

Figure ES-1
Study Area



Study Purpose

The purpose of the Gorham East-West Corridor Feasibility Study is to identify and evaluate a range of potential solutions to area transportation and land use needs, resulting in the identification of prudent, reasonable, feasible and fiscally responsible transportation and land uses strategies in accordance with STPA, Maine's Growth Management Act, and the Federal National Environmental Policy Act (NEPA).

Study Need

The need for the Study is based on present and projected future transportation and land use deficiencies and opportunities. Key transportation corridors in the Study Area currently follow State Routes 4, 22, 25, 112, 114, Gorham Bypass, Route 112, U.S. Routes 1 and 202 and Interstate Routes 95 and 295. Needs for the Study are focused on transportation and land use deficiencies and opportunities, and economic sustainability and opportunities. The deficiencies and potential opportunities noted included:

Transportation Deficiencies

- Increasing congestion reduces mobility along certain key transportation corridors in the Study Area;
- Increasing congestion on certain key transportation corridors in the Study Area results in through-traffic detouring onto local and neighborhood roadways;
- There is a potential for increase in crash frequencies and High Crash Locations;
- Inadequate or deficient roadways do not meet current safety and design guidelines; and
- Inadequate facilities exist for pedestrian, bicycle and alternative transportation modes, resulting in limited transportation choices.

Land Use Deficiencies and Opportunities

- Congestion and other transportation deficiencies threaten neighborhoods and their quality of life;
- Ensure recommended policies and ordinances do not compromise transportation safety;
- Recommend policies or ordinances that plan and provide for compact, walkable, bikeable, transit-supportive communities;
- Recommend policies and ordinances that support all transportation modes and create hubs for modal connections;
- Discourage the unplanned loss of open space, including agricultural, rural and unfragmented wildlife habitat; and
- Encourage coordinated and complementary zoning.

Economic Sustainability and Opportunity - Support local and regional economic growth and stability, tourism and recreational opportunities.

EVALUATION CRITERIA

The Study Team, with input from the Steering and Advisory Committees, developed performance evaluation criteria that were identified as “Measures of Effectiveness” (MOE). The MOEs were based on the deficiencies and opportunities identified in the Purpose and Need Statement.

The following identifies the five major categories of performance measurement and the MOEs within each category.

Traffic and Safety - Roadway and Intersection Level of Service (LOS); Vehicle Miles Traveled (VMT); Vehicle Hours Traveled (VHT); Crash Summary; Traffic Volumes; Corridor Delays; Fuel Used; Vehicle Emissions; and Average Commuting Time and Distance.

Mode Choice - Number of Modal Trips during peak travel hour; Transit Potential; and How People Travel, i.e. modal split.

Accessibility and Livability - Percent of Households within Critical Emergency Medical Service (EMS) Response Time and Distance; Job Accessibility; Retail Accessibility; Number of Accessible Jobs; Number of Accessible Households; Jobs / Acre; Households / Acre; and Population / Acre.

Land Use - Acres of Land Consumed; Job / Housing Ratio; Viewsheds; Habitat Fragmentation; and Open Space / Rural Land Impacts.

Other - Order of Magnitude Cost for each Strategy; and Resource Impacts (natural, physical and historic).

GROWTH PROJECTIONS

All of the forecasted growth in population, jobs and new dwelling units for the year 2035 was developed by Professor Charles Colgan, PhD of the University of Southern Maine, Muskie School of Public Service.

The Study Area is within Maine’s largest metropolitan area. For the last century, the overall pattern of settlement in the United States, including Maine, has been described as a two-part “centralization-decentralization.” That is, there has been a continuous migration of population into metropolitan areas (*centralization*) as people leave job-depleted rural regions and move to metropolitan areas where there are more economic opportunities. Then, within metropolitan areas, there has been a migration outward from the core communities into the suburbs and exurbs, typically within 30-45 minutes travel time of the job centers (*decentralization*).

Both parts of the pattern are important to the Study. The *centralization* of Maine’s population into metropolitan areas would continue to help drive economic and population growth in southern Maine. The amount of ongoing *decentralization* to the suburban and rural territories

around the core communities would continue to shape transportation and other demands on the region and its communities.

Study Area communities were divided to better define future growth as follows:

- Urban Communities: Portland, South Portland, Westbrook.
- Inner Suburbs: Cape Elizabeth, Cumberland, Falmouth, Freeport, Gorham, Scarborough, Windham, Yarmouth.
- Outer Suburbs: Buxton, Gray, Hollis, New Gloucester, North Yarmouth, Pownal, Raymond, Standish, plus the rural southwestern portion of Brunswick.
- Rest of PACTS Model Area: Arundel, Biddeford, Dayton, Durham, Kennebunkport, Lyman, Old Orchard Beach (OOB), Saco.

For context, the total number of new jobs projected for the Urban Communities, Inner Suburbs and Outer Suburbs identified above from 2009 to 2035 is about 25,000; and of new dwelling units, just under 35,000. See Table ES-1.

Table ES-1
Study Area Growth

	Year 2009	Estimated Growth	Year 2035
Population	238,200	64,500	302,700
Housing (Dwelling Units)	113,000	34,900	147,900
Jobs	158,700	24,900	183,600

ALTERNATIVE LAND USE SCENARIO

Two land use workshops were held with a broad range of municipal and planning representatives from Study Area communities to brainstorm innovative concepts for managing the region’s future land use development. Besides the historic “Low Density” or “Trends Scenario” growth pattern, four other development forms were identified at the first workshop. They were:

- The Modified Low Density Form, essentially the Low Density pattern with limited compact development areas;
- The Urban Preservation Form, which would allow urban communities to retain 2008 shares of jobs, population and housing units;
- The Community Centered Corridor Form, which would direct most new commercial growth and a share of new residential units into planned centers interspersed along or near transportation corridors; and

- The Transit-Oriented Corridor Form, which would provide denser urban, neighborhood and town-scale development within planned growth centers.

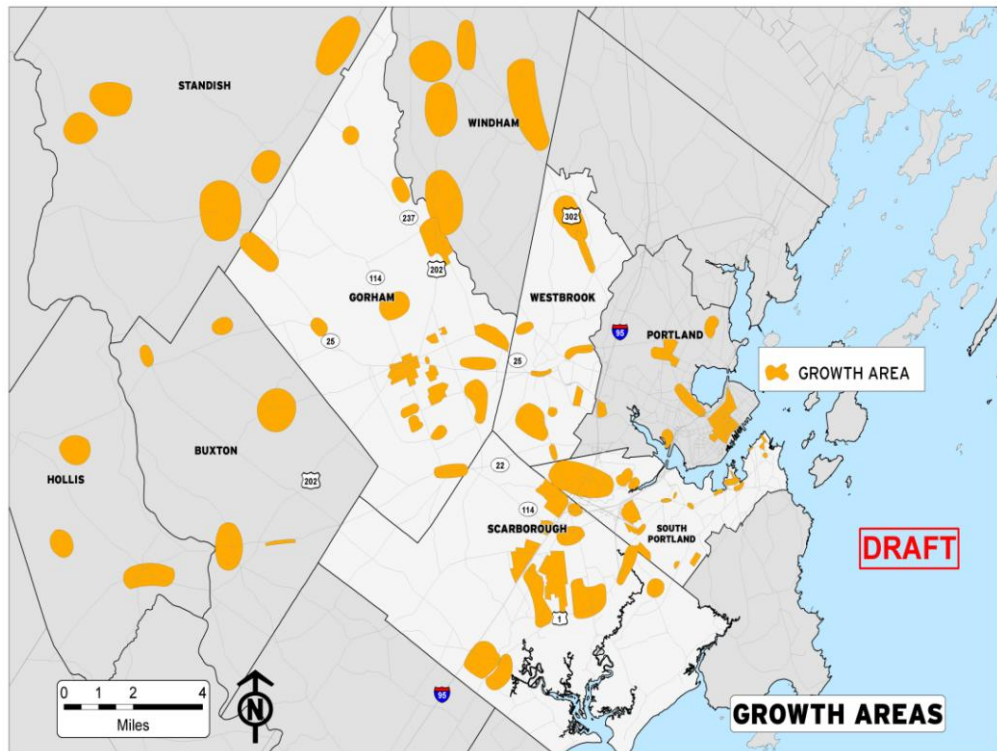
Out of the two land use workshops came a fifth form that is a hybrid of some of the original ones considered. This came to be known as the Urban and Rural Form. This hybrid form is described below and was tested as part of this Study.

Urban and Rural Form

The Urban and Rural Form combines characteristics from the Urban Preservation, Community-Centered Corridor and Transit-Oriented Corridor (TOC) forms described above. As in the Urban Preservation Form, the core urban communities of Portland, South Portland and Westbrook retain their high shares of regional employment and reverse a long-term trend toward loss shares of the region's

population and housing units. It would also take some of the housing pressure off the fast-growing inner suburbs. But as in the TOC form, the inner suburban communities also retain a significant proportion of jobs, population and housing units, much of which

Figure ES-2
Urban and Rural Form Proposed Growth Areas



would be organized into dense TOC-like nodes and/or town centers that include open space and public land use (Figure ES-2). These TOCs exist with the specific goal of enabling and taking advantage of transit opportunities over the long term.

Each municipality developed the growth areas shown in Figure ES-2 and these growth areas are subject to change by each community.

Table ES-2 depicts the projected shift in jobs, population and housing from the Low Density or Trends Scenario to the proposed Urban and Rural Growth Form.

Table ES-2
Distribution of Job, Population and Housing Growth

	Targeted Shares of Regional Job Growth		
	Urban Communities	Inner Suburbs	Outer Suburbs
2009 Share	65% (103,600)	29% (45,500)	6% (9,600)
2009-2035 Trends Growth	66%± (+16,500)	30%± (+7,400)	4%± (+1,000)
2009-2035 Urban and Rural Growth Form	65%± (+16,200)	30%± (+7,400)	5%± (+1,300)
	Targeted Shares of Regional Population Growth		
2009 Share	42% (99,800)	38% (91,700)	20% (46,700)
2009-2035 Trends Growth	5%± (+3,500)	61%± (+39,400)	34%± (+21,600)
2009-2035 Urban and Rural Growth Form	34%± (+21,900)	49%± (+31,800)	17%± (+10,800)
	Targeted Shares of Regional Housing Growth		
2009 Share	45% (51,200)	36% (40,700)	19% (21,100)
2009-2035 Trends Growth	9.5%± (+3,300)	52%± (+18,200)	38.5%± (+13,400)
2009-2035 Urban and Rural Growth Form	35%± (+12,200)	45%± (+15,700)	20%± (+7,000)

TRANSIT SCENARIO

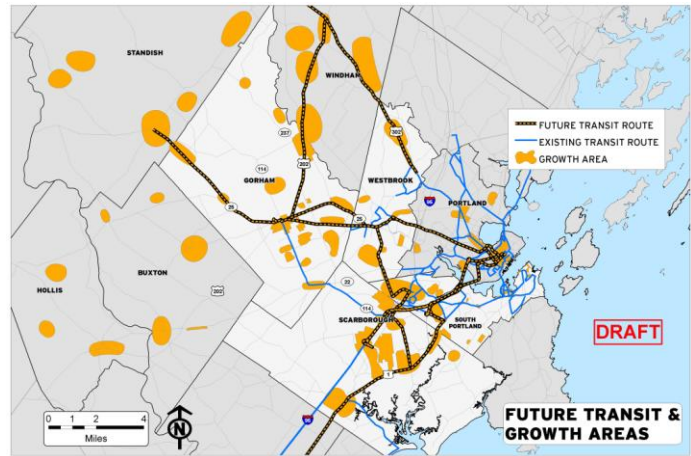
An optimized transit scenario (bus and passenger rail) was then developed to support the Urban and Rural land development pattern and to satisfy STPA requirements to encourage non-highway modes of transportation in order to preserve highway capacity (Figure ES-3). A transit workshop with transit professionals including operators, advocacy groups, regional and local planners was convened in April of 2010 to develop the assumptions to be included in the Urban and Rural optimized transit scenario model as well as to identify the routes and transit modes deemed to be most feasible.

Modeling runs of the 2035 Full Transit Scenario demonstrated improved transit shifts compared to the Urban and Rural Scenario, both within the four core communities and the Study Area as a

whole, and also significant improvements compared to the 2035 Low Density growth pattern (Trends) Scenario.

Figure ES-3
Future Transit Routes

On average the four core communities potentially realize a 31 percent increase in transit ridership (263 riders) from the Urban and Rural scenario and 90 percent increase (525 riders) over the Trends Scenario in the PM peak hour while the Study Area increases by 24 percent (512 riders) from the Urban and Rural Scenario and by 57 percent (960 riders) from the Trends Scenario in the PM peak hour.



ROADWAY SCENARIOS

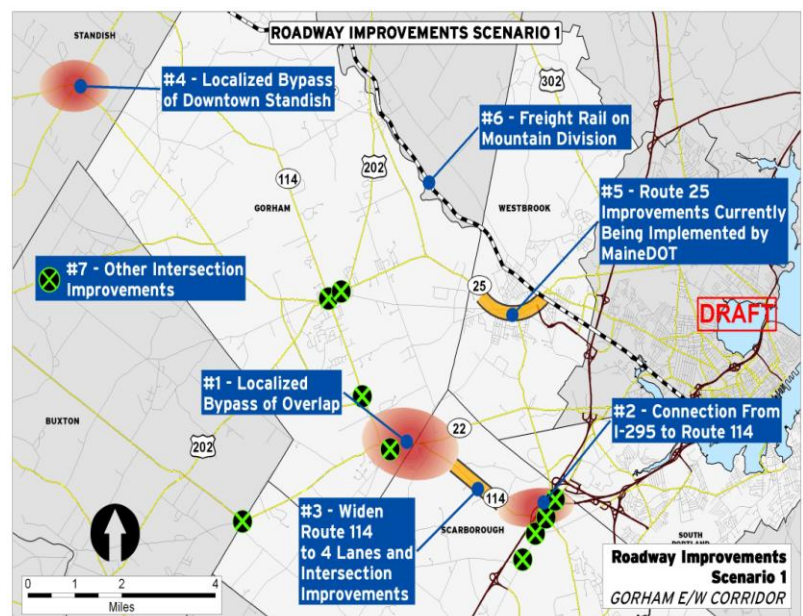
Roadway improvement scenarios were developed by the Study Team for addressing the documented congestion and safety problem locations remaining in the Study Area after implementation of the Urban and Rural land use form and the Full Transit Scenario.

The Study Team developed and tested two roadway improvement scenarios (Scenario 1 and Scenario 2) that looked at three levels of transportation upgrades: 1) traffic management by making localized improvements, 2) adding capacity to existing roadways by increasing the number of lanes and 3) adding new roadway capacity by building new roadways on new location.

Figure ES-4
Roadway Improvement Scenario 1

The focus of **Roadway Improvement Scenario 1** (Figure ES-4) was to address mobility, congestion and safety issues within the Study Area by *primarily adding capacity along existing roadways or through the use of localized bypasses or connections*. Assumed roadway improvements for Roadway Improvement Scenario #1 are:

1. Gorham/Scarborough:



Localized two-lane bypass of the Overlap (Routes 22/114).

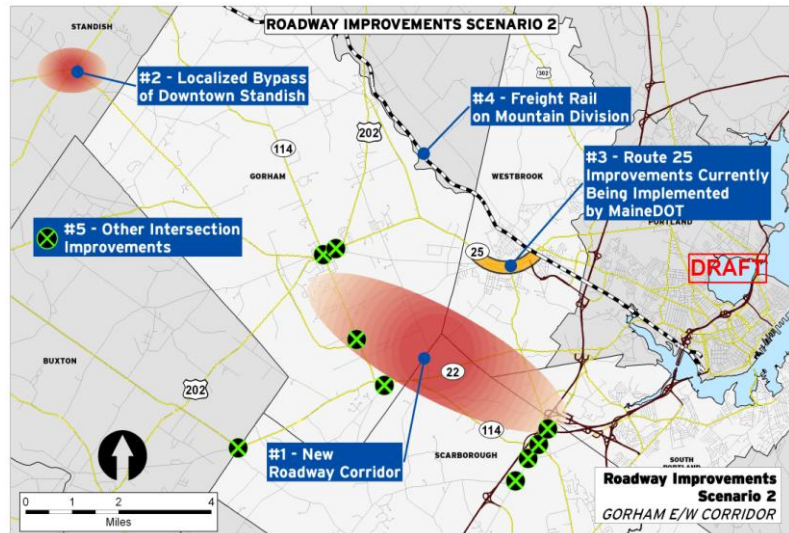
2. Scarborough: Localized, non-tolled two-lane bypass of Payne Road.
3. Scarborough: Widening of Route 114 (Gorham Road) from two-lanes to four-lanes beginning at the eastern end of the bypass described in Number 1 above and extending to the western end of the localized bypass of Payne Road described in Number 2 above.
4. Standish: Localized two-lane bypass of downtown Standish.
5. Westbrook: Additional turning lanes at intersections along Route 25 (William Clarke Drive) as identified in the 2010 MaineDOT contract plans.
6. Freight Rail: Upgrade of the Mountain Division rail line to connect freight rail from Portland to Standish.
7. Local intersection improvements as required to achieve LOS E or better at Study Area intersections.

The focus of **Roadway Improvement Scenario 2** (Figure ES-5) was to address mobility, congestion and safety issues within the Study Area by *primarily adding new capacity along new roadways*. Assumed roadway improvements for Roadway Improvement Scenario 2 are:

1. Gorham/Scarborough/Westbrook/South Portland: New roadway corridor beginning at a point near/at Exit 44/45 of the Maine Turnpike and extending west to a location near/at the southern end of the existing Gorham Bypass.

Figure ES-5
Roadway Improvement Scenario 2

2. Standish: Localized two-lane bypass of downtown Standish.
3. Westbrook: Additional turning lanes at intersections along Route 25 (William Clarke Drive) as identified in the 2010 MaineDOT contract plans.
4. Freight Rail: Upgrade of the Mountain Division rail line to accommodate freight rail from Portland to Standish.



5. Local intersection improvements as required to achieve LOS E or better at Study Area intersections.

The estimated cost of each Roadway Improvement Scenario in 2010 dollars including planning, design, and construction engineering costs are; Roadway Scenario 1 - \$85,850,000 and Roadway Scenario 2 - \$110,062,500. Right-of-way, environmental impacts, and wetland mitigation costs are not included in either cost estimate.

STUDY RECOMMENDATIONS

The following coordinated land use, transit and roadway improvement strategies are recommended for creating a regional approach to minimize the future need of adding highway capacity by providing more efficient land use choices, expanding public transit services and maximizing the efficiency and improving the safety of the existing roadway transportation system. It is important to note that all three categories of strategies – land use, transit and roadway improvement – work together to provide the desired results. Coordinated implementation of all three strategies is integral to the study recommendations.

Land Use Recommendations

This Study recommends that communities begin to take specific actions towards achieving the Urban and Rural land use pattern. A key outcome of the study's land use recommendations is to help relieve growing roadway demand over the next 25 years on major east-west commuting routes that serve the area west of Portland. These recommendations are an integral part of implementing companion study recommendations for transportation improvements. Transportation (road and transit) solutions alone would not be sufficient to manage the traffic congestion that would occur in this region. In order to support future regional growth and economic viability, municipalities must adopt future land use patterns that support a more efficient way for residents to travel to jobs and services. Only in this way can the public investment in existing and new transportation infrastructure be protected. These actions would build on land use measures already evolving in Gorham, Scarborough, South Portland, Westbrook, and other communities such as Standish and Portland.

This recommendation asks the Greater Portland Council of Governments (in cooperation with Southern Maine Regional Planning Commission) to facilitate a coordinated level of regional land use planning and implementation. Additionally, inter-regional opportunities, such as a regional transfer of development rights between participating municipalities to encourage implementation of the Urban and Rural Land Use model, are also recommended.

Transit Recommendations

The Optimized Full Transit Scenario identified in this study identifies expansions to existing service as well as new service and modal connection opportunities. There are a number of

policy, infrastructure and service improvements that can be implemented in the short term to facilitate growth in transit ridership. Additionally, new service opportunities would likely result if significant increases in employment and population densities occur at each end of existing transit lines and around intermediate stops along proposed transit routes. This Study recommends that the most promising transit elements from the Optimized Full Transit Scenario should be evaluated in greater detail to determine their viability, priority, and funding opportunities. The opportunities to expand and increase public transit service in the Study Area, based on the above assumptions, are significant. The recommendations for expansion and improvements fall into two distinct categories: 1st and 2nd tiers.

The intent of the 1st tier recommendations is to evaluate the potential for enhancing existing transit services through improved coordination among the various transit service providers, potentially decreasing headways by adding buses and potentially expanding service to meet needs of areas deemed ready for transit or on the outskirts of existing service. Additionally, reviews of certain transit policies, both at the local and state levels, should be conducted to identify potential funding partnerships and sources of funding, as well as consideration for an over-arching entity that could potentially attract new funding and/or coordinate services between providers.

The 2nd tier recommendations would commence after Urban and Rural land use areas have been identified and codified at the municipal level. Tier 2 actions would focus on the expansion of transit routes and services to meet the needs of these areas, and also on changes in public policy, funding and operations that would take more time to evolve, such as potential transit-oriented tax increment funding and other funding incentives.

The planning level cost estimate to implement the Optimized Full Transit Scenario in 2010 dollars is \$153,500,000.

Roadway Improvement Recommendations

The two Roadway Improvement Scenarios identified in the study should be elevated to the next level of evaluation with the intent of identifying a preferred alternative. One roadway improvement scenario would focus on enhancements to the existing roadway system for increasing capacity, such as widening existing roadways, while the second roadway improvement scenario would have greater emphasis on adding east-west capacity via the construction of a new roadway on new location.

Based on the findings of the analysis and evaluation of the two Roadway Improvement Scenarios, the following conclusions were reached:

- Both Scenarios would address mobility and congestion issues that were documented under the 2035 Trends Scenario;

- VHT would be sizably reduced as compared to the 2035 Trends Scenario for the four core communities and the full Study Area;
- VMT would nominally increase compared to the 2035 Trends Scenario for Roadway Improvement Scenario 2, and would be slightly reduced for Roadway Improvement Scenario 1;
- Fuel consumption would be sizably reduced as compared to the 2035 Trends Scenario; and
- Resource and property constraints would be similar for each of the two Roadway Improvement Scenarios.

As a result of the study analyses and evaluation of both Roadway Improvement Scenarios, it is recommended that both Scenarios be carried forward for further evaluation under Phase II for detailed evaluation under the NEPA process and the United States Army Corps of Engineers *Highway Methodology Process* for identifying a preferred roadway improvement scenario that incorporates the future land use and transit initiatives.

Other Recommendations

In order to ensure future highway capacity is protected, as mandated by STPA, the land use, transit and roadway recommendations described in this report must be conducted in a coordinated manner. Otherwise, a new highway or transit services could be built, but without land use management practices in place, new unmanaged land development could render those improvements futile. In addition to the specific land use, transit, and roadway recommendations identified above, this Study also recommends entering into a Memorandum of Understanding (MOU) with participating Study Area communities. This MOU would serve as the starting point for communities to work together with MaineDOT, MTA, PACTS and other regional stakeholders towards implementation of the entire Phase II Transportation and Land Use Action Plan. A draft MOU is included in the report for illustrative purposes and would be refined with all partners prior to signing. The invited municipalities are the four core communities – Gorham, Scarborough, South Portland and Westbrook – along with Portland, Standish, Buxton, Hollis and Windham. The four core communities and at least two other communities must agree to sign the MOU in order for Phase II of the study to begin.

Following signature of this MOU by MaineDOT, MTA and at least six communities, a comprehensive set of Phase II tasks would begin to move towards implementation of the identified land use, transit, and roadway recommendations.

NEXT STEPS

Prior to beginning Phase II, more work must be done to further develop the partnership between all potential parties. It is important to recognize participation in Phase II and subsequent work would be entirely voluntary. Participating municipalities within the study area, regional and metropolitan planning entities, MTA, MaineDOT and others must all agree to take on certain policy and funding-related responsibilities. As such, the MOU must be developed with all parties at the table and agreeable to the final MOU. It is therefore recommended that an Interim Phase be initiated for the purposes of developing the MOU to outline the specific tasks to be undertaken, their timelines and the roles and responsibilities of each participant, as well as to refine the tasks to be undertaken in Phase II. This work is expected to be completed by October 2011.