

# **EXECUTIVE SUMMARY OF THE CYCCS WORK SCOPE**

October 8, 2002

This Executive Summary is designed to give the reader an overview of the PB team's approach to this Study. It is organized around five sections:

1. An overall understanding of the key issues in the Study, which informs the work scope
2. A review of the major planning tools and models that will be used in the Study
3. A review of the public outreach components of the Study
4. An overview of the study's four phases and tasks
5. Information on team makeup and responsibilities

## **1. UNDERSTANDING OF THE KEY ISSUES IN THIS STUDY**

The work scope for the Central York County Connections Study integrates transportation and land use decision making into recommendations that will result in more effective connections between Central York County communities of Alfred, Arundel, Biddeford, Kennebunk, North Berwick, Ogunquit, Sanford, Waterboro, Wells and Lyman, and the larger transportation network.

The work scope responds directly to the legislative resolve to "develop a series of recommendations to enhance, expand and preserve highway connections between Route 1 and the Maine Turnpike and the communities in Western York County". But this study is about more than improving coordination of land use and transportation decisions and establishing a smooth process for different agencies and local governments to work together. The need for such improved connections is rooted in concern about the future quality of life for the growing number of people who will live in this region.

### **Study area issues and questions**

Potential negative consequences resulting from increasing travel demands and/or the characteristics of existing transportation infrastructure may include:

- Competition for available capacity and conflicts (access vs. travel time) between local traffic and regional/through trips.
- Increasing congestion and corresponding safety issues on major roads.
- Longer commute times to jobs and fewer economic opportunities for local residents.
- Decreased competitiveness for businesses and employers located in the study area.
- An intensification of the jobs-housing imbalances in Central York County and all the implications of such imbalances on local governments and their fiscal sustainability.

A key aspect of the study has to do with improved economic development prospects, particularly for greater Sanford. Framing the purpose of this study in this fashion raises a number of serious questions:

- Can improved access to Sanford and nearby areas make a meaningful economic difference to the prospects of this inland service center and its surrounding communities?
- In the long run, are potential economic benefits best achieved through improved access to the Portland area, to the New Hampshire-Northeast Massachusetts markets or to both?

- Can capacity preservation on existing routes serve these purposes, are incremental improvements sufficient, or are larger scale improvements needed?
- How do proposed improvements affect traffic conditions elsewhere, in particular at existing connections to the Turnpike?
- How much will managing land use along the routes contribute to achieving these purposes?
- Finally, does supporting economic development potential also support transportation capacity preservation by creating a better jobs-housing balance in the study area?

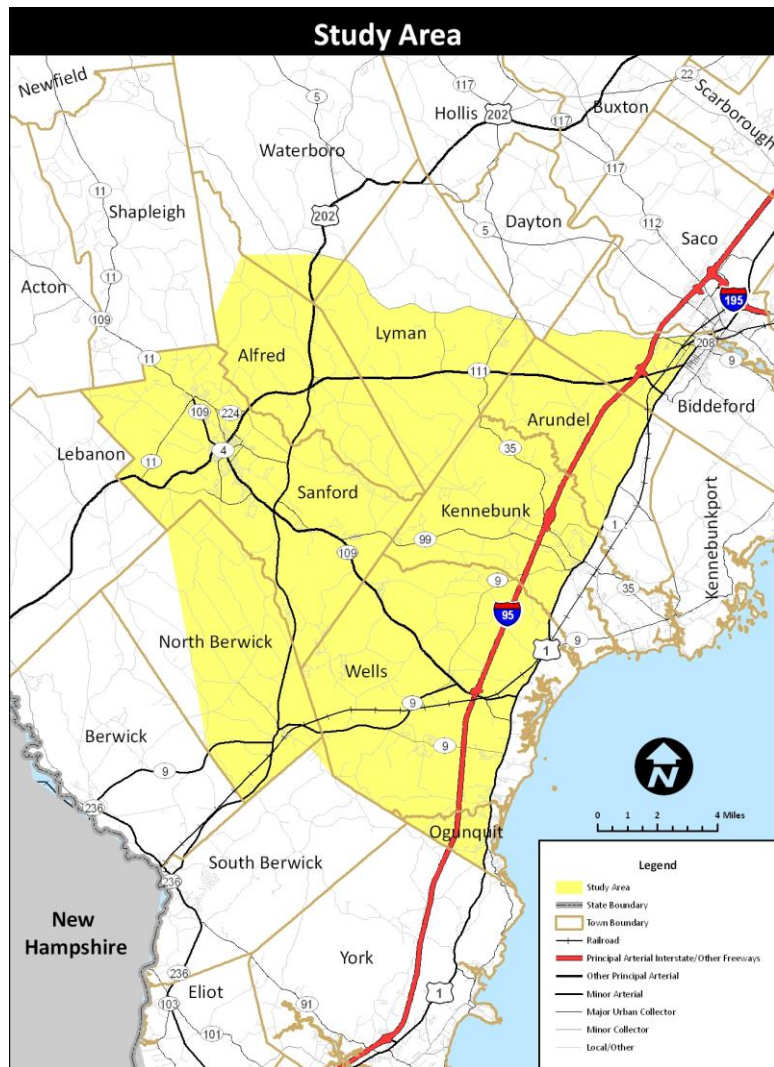
### Study area context and employment linkages

Portions of ten communities comprise the study area (Exhibit 1), which includes:

- The entire Town of Sanford
- Those areas of Ogunquit, Wells, Kennebunk and Arundel northwest of Rte 1.
- Much of North Berwick, Alfred, and Lyman.
- Portions of western Biddeford along Rte 111 and southern Waterboro along US 202

The study will focus on connections between central York County and the Maine Turnpike, with Route 1 forming a southeastern border of the analysis area. Traffic considerations along Rte 1 itself will not be a subject of the study, other than to assess whether proposed improvements elsewhere have the potential to increase or decrease traffic levels on Rte 1.

**Exhibit 1: Study Area**



Central York County is in one of Maine’s fastest growing areas. But not all of the towns in the study area are sharing equally in this growth, nor are some of them especially eager to do so. Five towns in the study area (Wells, North Berwick, Alfred, Arundel, and Waterboro) have adopted growth caps ranging from 39 to 75+ units per year, the other five (Sanford, Kennebunk, Biddeford, Lyman and Ogunquit) have not.

The prospect of increasing development poses obvious mobility and safety threats and is a key consideration in this study. The 2003 Report on the Rte. 111/202 Corridor, the 2005 Report on the Rte. 236 Corridor and the 2004 Report on the Rte. 109 corridor all analyzed local plans, ordinances and access management provisions and made significant recommendations for changes. A key early task in this study is assessing progress on these fronts -- or the lack thereof.

The feasibility study must be grounded in sound growth projections. The Study Area includes parts of three contiguous Labor Market Areas (LMAs):

- Part of the York County portion of the Portland-South Portland-Biddeford LMA;
- A large section of the York LMA; and,
- Sanford, the core of the Sanford LMA.

Together, these are among the most dynamic LMAs in Maine. Socio-economic projections will take all these LMAs into account. The role of socio-economic projections in this study, however, will go well beyond providing numbers to feed a travel model. A critical question for this central York County subregion is whether better accessibility from the Turnpike could also reward the subregion with more jobs, an understandable goal of local municipalities. Added highway capacity alone is never a sufficient impetus - and not always a necessary one -for economic growth. It is also important to analyze the kinds of jobs that might migrate to central York County (e.g., the infotech/biotech jobs now mostly 20 or more miles away) and the kind of labor force needed to fill them and to determine the degree improved accessibility will attract different types of economic development. The range of answers to these questions will help bracket the range of plausible options that can be imagined.

Improving connections between the Central York County subregion and the Turnpike will potentially make longer commutes than now take place more feasible for residents and for employees of study area businesses. The study will therefore also evaluate the benefits and drawbacks of this longer reach. Consequently, the modeling and analysis of traffic in the study area must include an understanding of the pull of employment in New Hampshire and Northern Massachusetts. Documenting the directional draw of such commuting to various points of the compass is critical to identify which corridors are the most promising and most important to target for capacity preservation and/or enhancement.

### ***Land use issues***

The strategies that emerge from this feasibility study will incorporate and balance a potentially complex and sometimes competing mix of objectives articulated by the communities, governing state laws, and the public. If, for example, the high-end, desired job growth is a plausible but very long term outcome within a particular corridor, the challenge will be to prevent the premature development for retail or residential uses of key parcels in highly accessible locations. The appropriate planning and zoning for such parcels will therefore be an important focus of the land use recommendations of this study. But such planning and zoning will need to recognize that improved accessibility to facilitate jobs coming to central York County can also attract considerably more residential growth along the local and state roads. Tough choices will stem from dealing with the induced growth that improved accessibility often generates.

In general, the Study will center land use considerations around (a) performance standards that will allow the existing pattern to perform better vis a vis the transportation system and (b) creating better opportunities for transportation choice within and between certain existing nodes of development, such as Sanford downtown and multimodal centers in the Route 1/I-95 corridor.

## **2. REVIEW OF PLANNING TOOLS AND MODELS TO BE USED IN THE STUDY**

The work scope involves the application of several different models in the execution of the work. These models are

- A travel demand model that simulates future travel patterns and volumes
- PRISM – an economic impact model
- A web-based outreach tool – WEBOT – that uses products from the previous two tools to allow the public to select improvement projects and view their potential impacts
- Traffic operations models - that allow intersection analysis using travel demand model outputs

### **The Travel Demand Model**

A travel demand model will be developed to estimate changes in traffic volumes and travel patterns that result from year 2035 changes in population and employment, as well as potential changes associated with candidate transportation strategies and potential land use changes. Travel models simulate travel patterns by dividing the study area into small zones (Travel Analysis Zones or TAZs), and generating trips from these zones, based on their land uses. The model then distributes the trips generated across a transportation network of roads so that trips generated (e.g. from home) are balanced with trips attracted (e.g. at the work place, shopping, leisure, etc.). The trips are then distributed from TAZ to TAZ to specific routes. The model's output (reported in traffic volumes on specific roads) is calibrated against actual traffic counts in a current year to ensure that key parameters of the simulation are correct and that projections will be valid. The model can also estimate several measures of travel performance, such as the amount of travel (measured as vehicle-miles of travel, or VMT) and travel times.

### **PRISM**

PRISM (PB Regional Impact Scenario Model) incorporates both benefit-cost and regional economic impact modeling frameworks to evaluate the effects of transportation sector investments on the regional economy. It is an easy-to-use, flexible, and transparent model that is able to plug into and interface with the outputs of a travel demand model. It enables users to:

- Create long-term strategic capital plans that highlight viable future transportation infrastructure projects.
- Rank or prioritize a set of planned infrastructure projects in the short- or medium-term, depending on the desired outcomes (e.g. the expected rate of return, environmental benefits, new jobs created, or economic output).
- Determine the economic feasibility or economic impact of current, planned, or potential transportation projects at the local, regional, or state level.

All economic data underlying the PRISM application will be customized and calibrated to the local conditions of York County based on the latest available data.

### **WEBOT**

This Web-Based Outreach Tool (WEBOT) will integrate land use, travel demand model results, and PRISM to provide another layer of modeling focused on the economic impacts that will accrue from changes in land use and transportation infrastructure. This close coupling of travel demand, land use, and economic modeling will give the planning team and the public a truly integrated picture of the impacts of each alternative.

As it is being used, WEBOT automatically creates a website and keeps it current with the state of the study. This site is used to capture data (including maps and images), background information, public and/or stakeholder input, analysis, and results of the planning process. The tool also gathers user zip code and solicits attitudinal data from the web players and thus doubles as a substantial public survey. It will be accessible from the study website.

### **Traffic Operations Models**

Traffic operations models allow a finer-grained assessment of traffic conditions at key intersections or road segments. These models estimate travel delay, level-of-service and queuing (length of back-up at an intersection) using information about roadway configurations, operation of traffic signals and other traffic control devices, and estimated traffic volumes derived from the travel demand model and observed traffic counts. Key intersections will be modeled in Trafficware, Inc's *Synchro* traffic analysis software. Some locations warrant analysis using traffic simulation, which discretely models each individual vehicle. Segments with coordinated signal systems, closely spaced intersections, or features not replicable in traffic operations models are candidates for simulation. *SimTraffic*, an extension of *Synchro*, will be applied in these cases.

### **3. PUBLIC OUTREACH COMPONENTS OF THE STUDY**

The public outreach process for the CYCCS is detailed in the Public Involvement Plan (PIP). Each of the four study phases incorporates stakeholder discussion and public outreach that goes beyond the usual reliance on public meetings to convey intentions, solicit comments and present outcomes. The work scope includes many opportunities for all stakeholders to weigh in on transportation options and to understand the impacts that existing, currently planned or possibly amended land use patterns will have on regional transportation capacity. The public process approach will also enable the consultant team, the Maine Department of Transportation (MaineDOT) and the Maine Turnpike Authority (MTA) to understand the capabilities and willingness of local communities to better align transportation and land use decisions – an understanding essential to the open communications and good will that is essential to the success of this study.

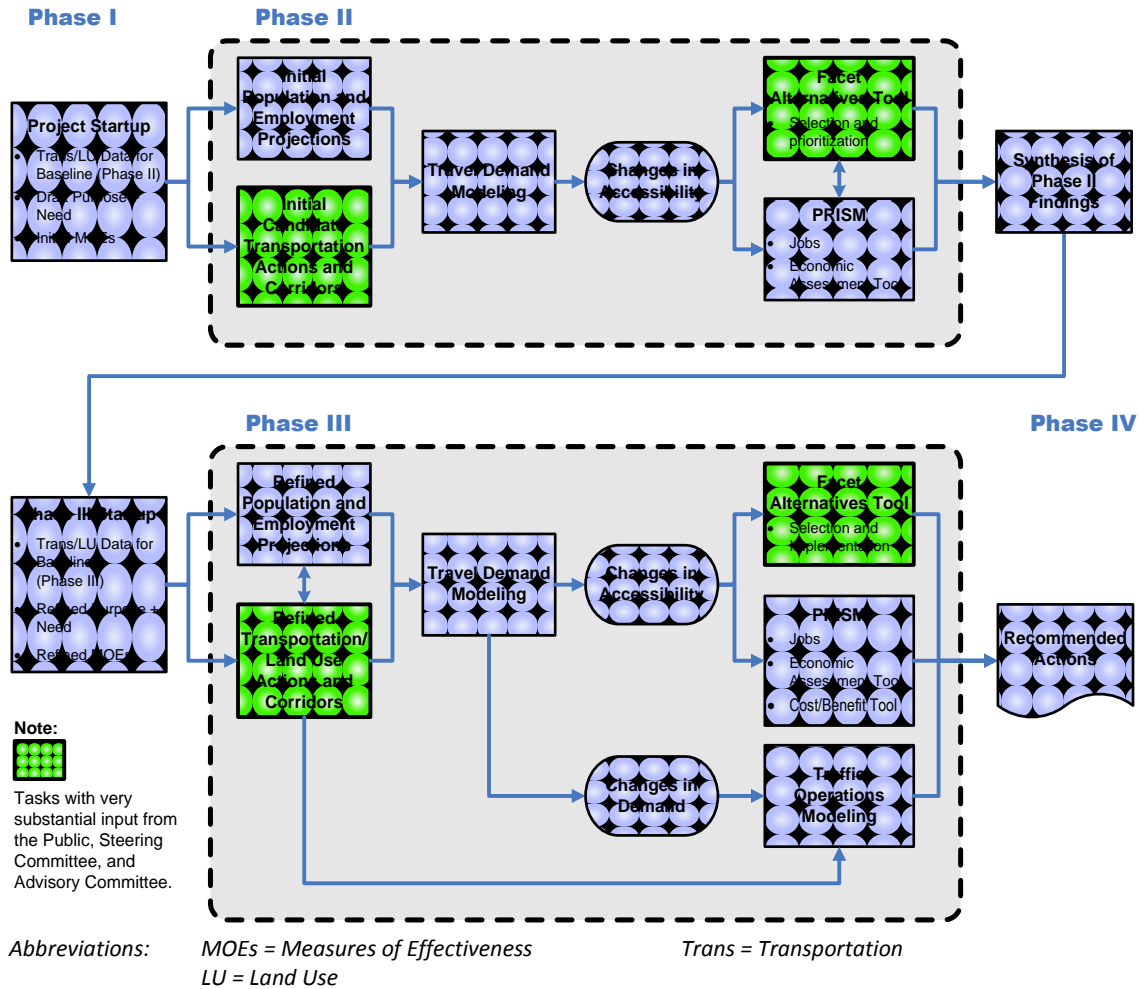
Developing a first draft Purpose and Need Statement will be the initial opportunity for stakeholders in each community to identify what is important to them as well as underscore the need for regional transportation planning.

### **4. OVERVIEW OF STUDY PHASES AND TASKS**

#### **Structure of the technical approach**

The work scope for this study is organized as four distinct phases. In each phase, our work scope balances transportation, economic development and land use needs. Each phase ends with a major outcome for the study that becomes the starting point for the next phase.

**Exhibit 2: Study Process**



**Phase I: Initiate Study**

This phase of the work includes submission of an overall project management plan, initial startup meetings and tours; and data and map collection for a number of items such as land use; current travel patterns and traffic volumes; and environmental, historic and cultural resources. A good deal of Phase I centers on setting up the various analytical models to be used in the study. This Phase also includes the development of a multi-faceted public outreach strategy that will help the committees and the public to develop a commonly held purpose for the study. This will take place via iterative meetings with the Steering Committee, Advisory Committee and the public.

The tasks in this and other phases are coordinated with the outreach meetings and these are referenced with the appropriate tasks as needed.

**Phase II: Initial Development and Evaluation of Alternatives**

Following agreement on the criteria, Phase II establishes present-day and future baseline conditions as based on trends for residential and commercial land use growth, existing and future traffic conditions and areas of mobility and/or safety concerns. Phase II then moves to the identification of a large number of potential corridor options drawn from prior studies, analysis by the study team and public input.

Because having an agreed upon set of evaluation criteria (also called indicators and Measures Of Effectiveness or MOEs) is key to the ultimate credibility and acceptability of the study, the work scope for this phase places this task ahead of the development of alternatives. The criteria will cover indicators like travel speeds, accessibility of jobs and housing, and potential impacts on local land use, environmental conditions, and historic and cultural resources. Land use actions that will minimize capacity expansion will be a focus of this phase as will multimodal strategies.

Once an array of alternatives is developed, the feasibility of these alternatives will be tested for how well they perform against the evaluation criteria. From among this pool of alternatives, the five or so most promising alternatives will be recommended for more detailed refinement and analysis in Phase III.

WEBOT will be deployed to maximize public response. Meetings and work sessions on the outcomes of Phase II will enable the various committees and the public to review and comment on the study team recommendations.

Phase II concludes with (1) identification of zoning and land use recommendations that ensure consistency across municipal borders or could prolong preservation of the existing transportation system and (2) selection of the most plausible corridors for further analysis in Phase III.

### ***Phase III: Detailed Screening and Evaluation of Alternatives***

Phase III subjects the remaining, most plausible transportation alternatives from Phase II to a more detailed and more rigorous technical analysis. Phase III also details and analyzes a variety of potential land use and access management changes or adjustments that can help protect or enhance the network efficiency benefits of these transportation improvements. These improvements can also further advance local land use and economic development goals, or eliminate or mitigate adverse land use or resource impacts.

The more rigorous Phase III analysis stems in large part from a significant increase in the number of Measures of Effectiveness (MOEs) used to document benefit and impacts of the proposed alternatives. Because the alternatives will be more carefully defined and more precisely detailed, a more locally focused analysis of potential impacts than in Phase II will be possible. A number of these MOEs will represent an expansion of the Phase II outcomes of the travel demand modeling. Other important tests will include expanded use of the PRISM model. WEBOT will also be refined and expanded for public input.

Comparing the impacts of the transportation alternatives with or without any accompanying land use or access management adjustments will indicate where such measures can avoid or mitigate any adverse impacts or the need for exploring additional actions. The State's Sensible Transportation Planning Act (STPA) requires that studies like this first examine non-capacity increasing measures to achieve project goals (like Transportation Systems management techniques or land use-related measures).

Phase III concludes with **prioritized recommendations** for the future transportation network and accompanying land use or access management actions.

### **PHASE IV: FINALIZATION**

Phase IV will document the work of Phases I, II and III and the reasons for the prioritized recommendations. The main focus of Phase IV is production of the Final Report as an accurate summary and the primary public record of the study process and its final outcomes.

## 5. TEAM MAKEUP AND RESPONSIBILITIES

Figure 1 shows the organization of the team and responsibilities for conducting study tasks. MaineDOT and the Maine Turnpike Authority (MTA) are administering and funding the study, with participation from the Federal Highway Administration (FHWA) and Southern Maine Regional Planning Commission (SMRPC). Public participation will be ongoing, including regular input from the study Steering and Advisory Committees, outreach to elected officials, multiple public meetings and an accessible and interactive website.

**Figure 1: Study Team and Responsibilities**

