

PUBLIC TRANSPORTATION, TRAVEL
DEMAND MANAGEMENT (TDM) AND
TRANSPORTATION SYSTEMS
MANAGEMENT (TSM):

*Role in Connecting Central York County and
Possible Opportunities for Enhancement*

PHASE II TECHNICAL MEMORANDUM

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Prepared for:

Maine Department
of Transportation



Maine Turnpike Authority



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INTRODUCTION

The Central York County Connections Study (CYCCS) is developing strategies to improve connectivity between central York County and the major transportation corridors along the coast (the Maine Turnpike and Route 1). The study is guided by a Purpose and Need Statement, which articulates that the study is to identify transportation and related land use strategies that enhance economic development opportunities and preserve and improve the regional transportation system. Additional information on the study, including the full Purpose and Need Statement, is available at the project website: www.connectingyorkcounty.org.

The CYCCS Study Area includes all or some of the following ten communities (Figure 1):

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

Alfred, Lyman, North Berwick, Sanford and Waterboro are located in York County's interior and are not directly served by the Maine Turnpike or Route 1. Access to these municipalities is instead provided by Route 35, Route 99, Route 109 and Route 111. In addition, US Route 202 and Routes 4 and 9 link central York County communities to New Hampshire to the west. Arundel, Biddeford, Kennebunk, Ogunquit and Wells are located along the coast and linked by Route 1. Access to the Maine Turnpike is provided in Biddeford, Kennebunk and Wells.

The CYCCS is organized into four primary study phases:

- I. Organization and Background Information.
- II. Initial Investigations and Analyses.
- III. Detailed Strategy Development and Assessment.
- IV. Study Documentation.

Phases I and II involve organizing available existing conditions information and performing initial strategy development and testing. Subsequent refinement and more detailed investigation of specific strategies will occur during Phase III. This memo is part of a series of tasks in Phase II of the CYCCS that begin to identify potential strategies for consideration by the study. This document identifies the types of public transportation (e.g., bus, van and passenger rail), travel demand management (TDM), and transportation systems management (TSM) strategies in place today and summarizes potential enhancement or expansion opportunities that could be considered by the study. This effort is a starting point for consideration of more specific, tailored strategies during Phase III of the study. Other Phase II strategy development activities are documented in the *Potential Land Use and Access Management Strategies Technical Memorandum* (Document II-2a) and *Phase II Highway Corridor Strategy Descriptions Technical Memorandum* (Document II-4).

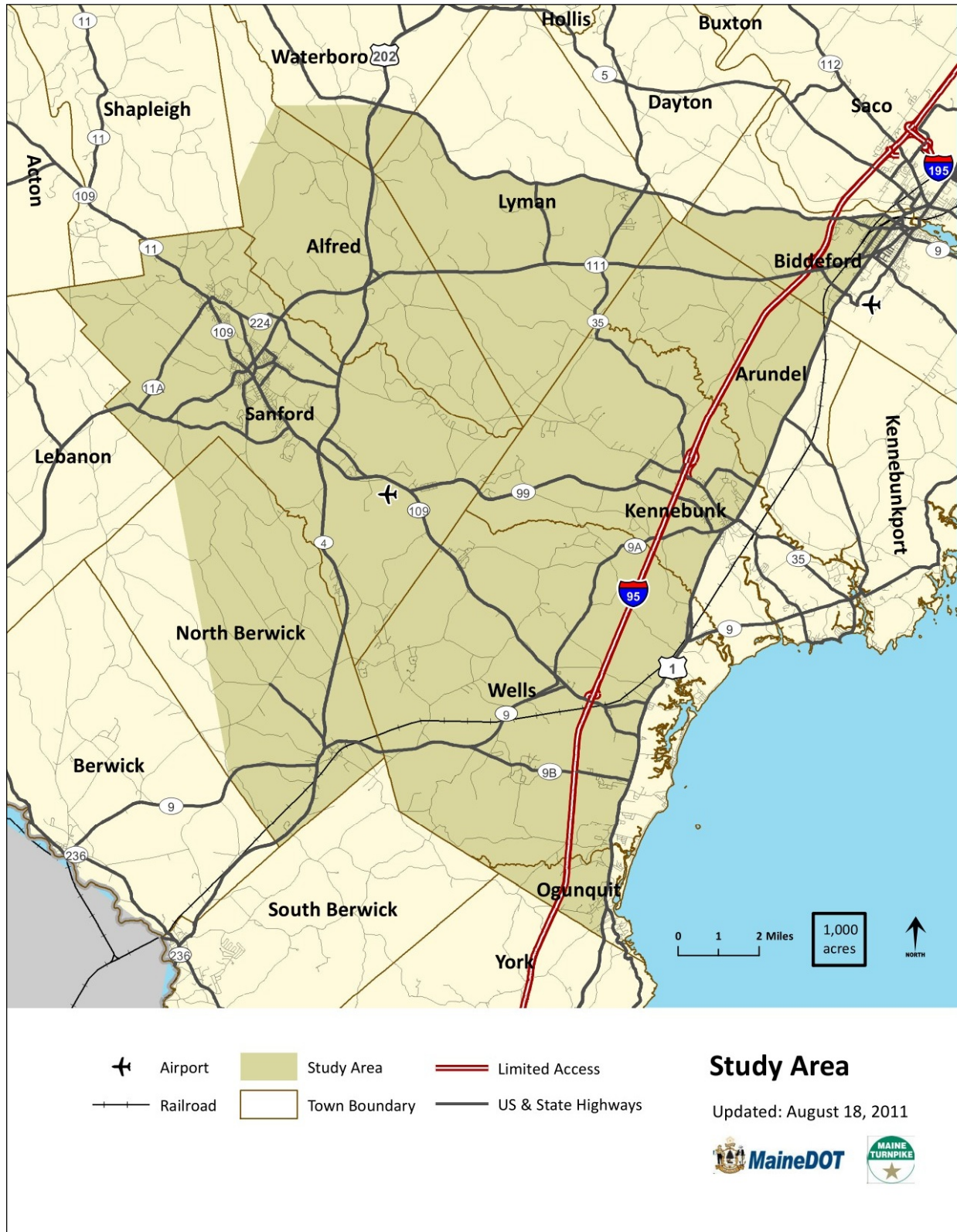
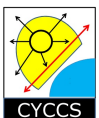


Figure 1: CYCCS Study Area



BACKGROUND

Three types of strategies are described in this document.

- Public transportation strategies, which involve improving and/or expanding bus or rail services in the study area. These include strategies to expand service to new areas, increase the frequency of service, improve the operating characteristics of services or improve access to services.
- TDM strategies, which involve strengthening programs that are designed to encourage use of alternatives to single occupant vehicle (SOV) travel (i.e., driving alone). These can include actions such as improving information available to travelers about carpooling or developing programs that provide commuters with incentives to travel by non-SOV modes.
- TSM strategies, which “get the most” out of the existing transportation system by improving operating efficiency. Improved traffic signal operations, programs to more quickly clear crashes and obstructions and highway traveler information systems are examples of TSM strategies.

These are somewhat general definitions, and oftentimes specific strategies are associated with more than one of these categories.

These strategies share the common objective of providing travel accessibility and managing the transportation system without expanding highway capacity. Instead, their focus is on reducing the number of vehicle trips made and/or improving the efficiency of the transportation system. TDM and TSM strategies are also typically lower cost and have fewer adverse impacts than capacity expansion options. Public transportation and TDM strategies provide travel choices other than driving alone. These are particularly important options for those who cannot or choose not to drive or do not have access to a personal automobile.

PUBLIC TRANSPORTATION

Existing public transportation services in the CYCCS study area include bus and van programs operated by the York County Community Action Corporation (YCCAC) and bus services operated by ShuttleBus, which operate locally in the Biddeford area and connect Biddeford to Portland. In addition, intercity passenger rail service is provided by Amtrak’s Downeaster service, which travels between Boston and Portland and has stops in Wells and just east of the study area in Saco. Figure 2 provides an overview of the transit and other public transportation services available in the study area.

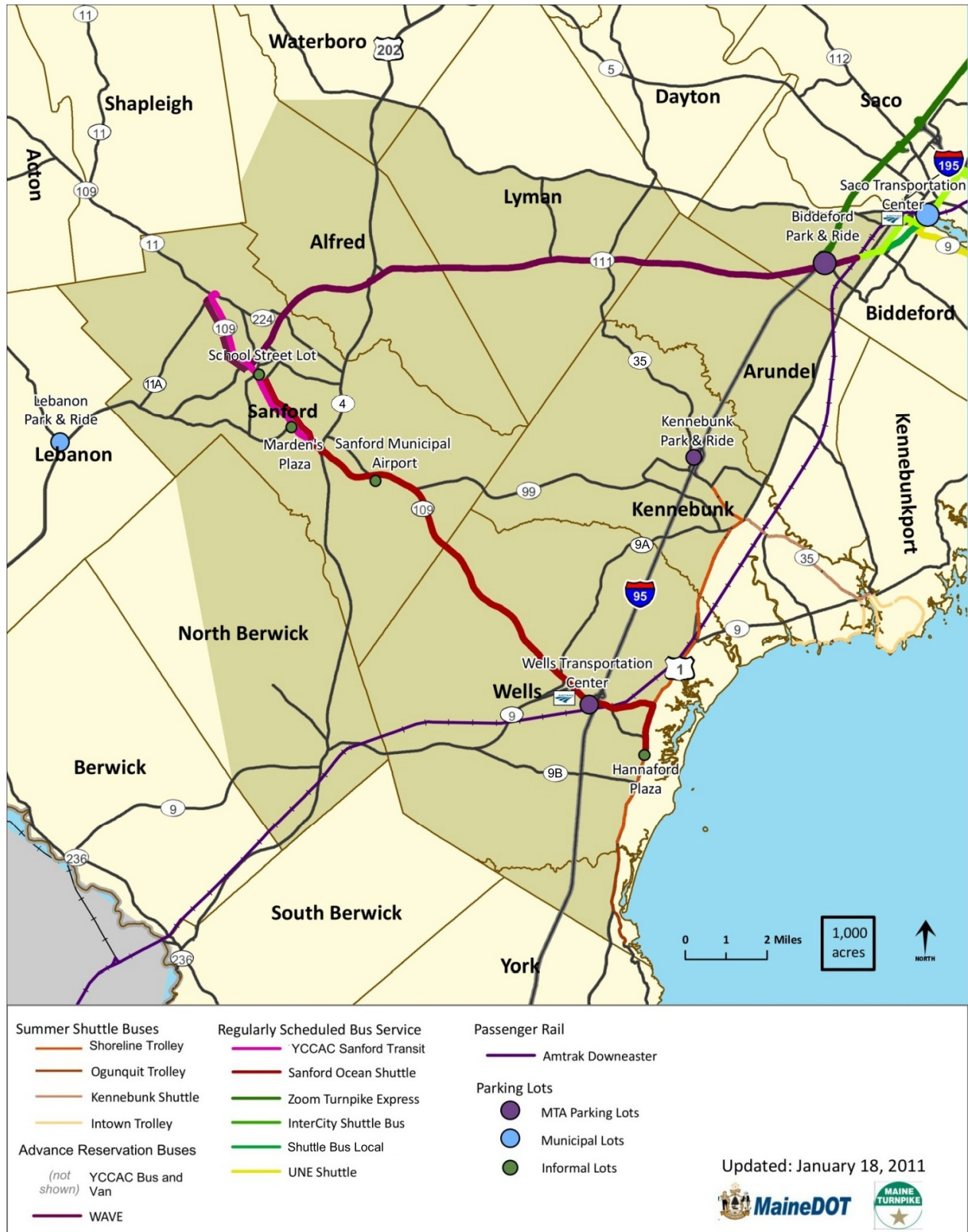


Figure 2: Public Transportation in the CYCCS Study Area



BUS AND VAN SERVICES

YORK COUNTY COMMUNITY ACTION CORPORATION (YCCAC)

York County Community Action Corporation (YCCAC) is a non-profit organization that provides a broad range of social services in York County. YCCAC operates several public transportation services within the CYCCS study area. The Sanford Ocean Shuttle and WAVE services are the primary routes connecting central York County with the coastal region. YCCAC services include:

Sanford Ocean Shuttle: The Sanford Ocean Shuttle is part of the Shoreline Explorer Service (described below) that operates daily between Sanford and Wells. The service operates year-round on a fixed route that generally follows the Route 109 corridor. Seven trips are scheduled on weekdays from Sanford to Wells, with service starting at 6:00 AM. Six return trips from Wells operate until 7:00 PM (last departure). The Sanford Ocean Shuttle serves the Wells Transportation Center and is scheduled to meet most Amtrak Downeaster trains and also connects to Sanford Transit at the Shaw's Shopping Center in Sanford (South of Marden's Plaza in Figure 2). During summer months, Sanford Ocean Shuttle riders may also connect to the Shoreline Trolley (described below) at Hannaford's in Wells. Fares are \$3 one-way and \$5 round-trip, with a variety of passes, discounts and transfers available.

WAVE: The Wheels to Access Vocation and Education (WAVE) service is a daily service that requires a reservation 24 hours in advance. The WAVE operates between Sanford and Wells (6:00 AM to 9:00 PM) and Sanford and Biddeford (7:00 AM to 10:00 PM), providing access to major shopping areas, employment centers, schools, and medical facilities. Fares are \$3 one-way and \$5 round-trip, with a variety of passes, discounts and transfers available.

Sanford Transit: Local bus service in Sanford – including Springvale and South Sanford – is provided by the YCCAC's Sanford Transit service (also known as "My Bus"). Sanford Transit operates generally along the Route 109 corridor and can be flagged down anywhere along the route (provided it is safe to do so). Service runs at one hour intervals weekdays between 8:00 AM and 3:00 PM. Fares are \$0.50 for the general public, and \$0.25 for children under 8, the elderly or those with disabilities.

YCCAC Bus and Van Program: YCCAC operates a reservation-based system aimed primarily at serving medical and shopping trips. This service operates throughout York County on a rotating schedule. Fares are based on the type of trip and the patron's ability to pay.

Shoreline Explorer Shuttles: YCCAC operates several shuttle services in coastal communities. These operate during summer months only (typically June through Labor Day), except for the Sanford Ocean Shuttle described previously. Summer shuttles that operate within some portion of the CYCCS study area are:

- The Shoreline Trolley, which links Ogunquit, Wells and Kennebunk with transfers to the Ogunquit Trolley, Sanford Ocean Shuttle and Kennebunk Trolley.
- The Ogunquit Trolley, which operates in Ogunquit, connecting to the Shoreline Trolley and the York Trolley (operated by the York Trolley Company).

- The Kennebunk Trolley, which operates in Kennebunk, connecting to the Shoreline Trolley and Intown Trolley at the Lower Village near Kennebunk Beach.

Other connecting shuttles outside of the study area are the Intown Trolley in Kennebunkport and Kennebunk (primarily a sightseeing service) and the York Trolley connecting Wells to York.

Hours of operation, frequency and fares vary by service. The trolleys provide a valuable service to tourists and locals in summer months by providing transportation options along the crowded Route 1 corridor during the peak season.

SHUTTLEBUS

ShuttleBus operates three bus services serving Biddeford. The Zoom Turnpike Express is a commuter service operating on the Maine Turnpike between Biddeford and Portland. Five round-trips operate during the morning commute, as well as the afternoon commutes. The one-way fare is \$5 and free transfers to other ShuttleBus and Portland area bus routes are allowed. 10-ride and monthly fares are also available.

The Intercity Shuttle also connects Biddeford with Portland, making intermediate stops in Saco, Old Orchard Beach, Scarborough and South Portland. The Intercity Shuttle operates during commute periods on weekdays and with limited service on weekends (five trips per day with fewer stops). Fares vary by distance. A third service, Tri-city Shuttle, provides bus service within Biddeford, Saco and Old Orchard Beach.

AMTRAK DOWNEASTER PASSENGER RAIL

Amtrak's Downeaster passenger rail service operates five roundtrips daily between Portland and Boston with intermediate stops in Old Orchard Beach (summer only), Saco, and Wells, Maine; Dover, Durham, and Exeter, New Hampshire; and Haverhill and Woburn, Massachusetts. In 2012, service will be extended east of Portland to Freeport and Brunswick.

During weekdays, the first southbound train (from Portland to Boston) departs the Wells Transportation Center at 6:24 AM and the last southbound train departs at 8:34 PM. The first northbound train (Boston to Portland) departs Wells at 10:49 AM and the last at 12:44 AM. Weekend schedules are similar.

The Wells Transportation Center includes an indoor station building and covered platforms. It has 186 general purpose parking spaces, 7 handicapped spaces and 6 large spaces for oversize vehicles and buses. In 2010, the station accommodated 48,473 passenger boardings and alightings (17 percent of Amtrak passengers boarding or alighting in Maine).¹ Just east of the study area, the Saco Transportation Center includes an indoor station building and 192 parking spaces. Saco had 40,922 boardings and alightings in 2010 (14 percent of Maine Amtrak passengers).¹

¹ Amtrak Fact Sheet Fiscal Year 2010, State of Maine.



POTENTIAL PUBLIC TRANSPORTATION ENHANCEMENT OPPORTUNITIES

Bus and shuttle services in central York County are largely focused on providing mobility options for those who cannot drive, do not have access to a personal automobile, or are a specific niche market such as tourists. These types of services are likely to remain the cornerstone of public transportation in York County in the future.

The overarching purpose of the CYCCS is to improve transportation connections between central York County and the transportation networks along the coast. In that context, enhancement or expansion of transit services linking the Sanford region to the coastal communities or even directly to major destinations outside of the study area would be in keeping with the study's purpose. Options for doing so could include the following:

- Increase service frequencies on the Sanford Ocean Shuttle and WAVE to provide more convenient service between Sanford and Wells (Ocean Shuttle and WAVE) and Biddeford (WAVE). An analysis of existing and potential ridership would be necessary to determine if expansion is warranted and which time periods should be served (e.g., commute periods, midday, etc.). Expanding service on either route would require adding additional vehicles and drivers.
- Extend service hours on the Sanford Ocean Shuttle by adding an additional evening roundtrip.
- Extend service hours on Sanford Transit to improve its viability as a local commute option in the evening (current service stops at 3:00 PM).
- Expand WAVE service (or implement a new service) to new areas. YCCAC has identified Sanford – Kennebunk, Sanford – North Berwick, and Biddeford – Wells as travel markets of interest that are not linked by transit service today.
- Extend Zoom Turnpike Express service to Sanford. This would create a viable bus commute option between Sanford and the Portland Metropolitan area. Service could be extended via Route 111 with an intermediate stop in Alfred. Alternatively, service by way of Route 99 (through Kennebunk) could be considered.
- Establish scheduled service between Sanford and Kittery/Portsmouth. This could operate through Wells and the Maine Turnpike or through North Berwick on Route 4.
- Work with shopping centers and large retailers to allow bus stops on site near building entrances.

Amtrak's Downeaster service provides a valuable regional and interstate transportation option for York County. To leverage the benefits of this service, bus and shuttle services in the region could be reorganized to emphasize connections at the Saco Transportation Center and Wells Transportation Center. This would involve consideration of both routing and schedule to integrate services and allow transfers with short wait time. YCCAC's Sanford Ocean Shuttle and Shoreline Trolley already do so in Wells. Further, every effort should be made to ensure that all Downeaster service continues to stop in Wells and Saco.

Infrastructure improvements can also improve the quality of public transportation services by improving access, rider comfort/convenience and operating efficiency. Possible infrastructure improvements for consideration could include:

- Establish programs to improve sidewalks, crosswalks and other pedestrian accommodations in areas served by transit. These improvements incorporate features to allow for universal access consistent with Americans with Disabilities (ADA) guidelines.
- Provide bike racks or other accommodation for bicycles on buses to extend the range of bus users.
- Build covered shelters for bus stops that serve inbound riders or transfers. Bus stops that primarily serve only return trips do not require shelters, since patrons do not wait for buses at these stops.
- Upgrade equipment to improve rider comfort, expand capacity (where necessary), and reduce maintenance costs.
- Develop Park & Ride lots and transportation centers, such as the recently announced Sanford Transportation Center (see discussion under "Transportation Centers and Park & Ride Lots" in the following section).

TRAVEL DEMAND MANAGEMENT (TDM)

GO MAINE PROGRAM

Maine's comprehensive travel demand management program, GO MAINE, is sponsored by MaineDOT and the Maine Turnpike Authority (MTA) and is administered by the Greater Portland Council of Governments. GO MAINE works throughout the state to reduce travel demand on the roadways by working with employers and the public to provide the following services:

- Carpool information and ride-matching services are provided through the internet at the GO MAINE website (<http://www.gomaine.org/carpools>) and Facebook, as well as through outreach programs including fairs, conferences and employer outreach;
- Ride-Matching System including technology that accesses Google Earth, enables travel alerts and allows for automatic matching services;
- Emergency Ride Home Guarantee Program available for registered commuters;
- Information and service links to more than 40 local and regional bus, ferry and rail services including commercial shuttles;
- Information on Park & Ride lot locations;
- Information provided by email to registered commuters on relevant media releases and commuter e-news (for example, travel alerts for major construction disruptions);
- Bike commute education and outreach program; and
- Expansion of communication tools including Facebook and Twitter to communicate the programs to the public.



TRANSPORTATION CENTERS AND PARK & RIDE LOTS

There are three publically owned Park & Ride facilities within the CYCCS study area (Table 1 and Figure 2); all are operated by the MTA. The Wells Transportation Center, owned by the Town of Wells, provides parking for Amtrak service, YCCAC bus and shuttle service, and carpoolers. The parking lot closest to the train station is designated for Amtrak users, while a second lot is identified as commuter parking and is the official MTA Park & Ride lot. The Kennebunk Park & Ride lot (exit 25) is not serviced by public transportation and is intended for ridershare (carpool) use. The Biddeford Park & Ride (exit 32) is served by the ShuttleBus ZOOM Turnpike Express service and is also available for ridershare use. The MTA's 2007 System Update reports 28 percent average occupancy at the Wells Transportation Center (commuter lot portion only, not including Amtrak parking area), 40 percent occupancy at Kennebunk, and 76 percent at Biddeford. The Biddeford lot is identified as approaching capacity.

Other publically owned Park & Ride lots outside of the study area but in central York County include the Town of Lebanon's lot off of US Route 202 (approximately 50 parking spaces) and MaineDOT's two small lots in Shapleigh. East of the CYCCS study area in Saco, the Saco Transportation Center provides parking for Amtrak riders, and MaineDOT's Park & Ride lot on Industrial Road off of I-195 is another major commuter lot in the Biddeford/Saco area.

Table 1 – Public Park & Ride Lots in CYCCS Study Area

Town/ Name	Location	Parking Capacity	Services	Amenities
Biddeford Biddeford P&R	Route 111 at Maine Turnpike Exit 32	155 general purpose 6 handicap	<ul style="list-style-type: none"> ShuttleBus ZOOM Turnpike Express 	Lighting Shelter Benches
Kennebunk Kennebunk P&R	Route 35 at Maine Turnpike Exit 25 (southbound)	52 general purpose	<ul style="list-style-type: none"> None (Carpool lot) 	Lighting
Wells Wells Transportation Center	Maine Turnpike Exit 19	94 commuter lot 4 commuter lot handicap 91 Amtrak lot 4 Amtrak lot handicap 6 RV/bus	<ul style="list-style-type: none"> Amtrak Downeaster YCCAC Sanford Ocean Shuttle YCCAC Shoreline Explorer 	Bike rack Lighting Shelter Benches

The Federal Transit Administration (FTA) recently awarded a \$1.2 million grant to establish a transportation center in Sanford. The center will be linked to a Park & Ride lot and serve as a hub for bus services in Sanford. Amenities including indoor waiting areas, restrooms and bicycle parking will be provided. It is envisioned that the center will serve as a centerpiece for redevelopment of the Mid-town/Mill Yard area over time. This project will address a long standing need to improve access to transit in the Sanford area.

In addition to public Park & Ride lots, there are shopping centers, schools, and other locations in the study area that are used informally as Park & Ride lots. YCCAC schedules and maps indicate that the School Street parking lot, Marden's Plaza, the Sanford Regional Airport in Sanford and the Hannaford Plaza in Wells are used as parking locations.

MaineDOT's Long Range Plan (July 2010) identifies a need for a Park & Ride in Sanford. The plan notes that Sanford is Maine's seventh largest city and is connected by a number of highway corridors, yet does not have a public Park & Ride lot available to motorists. With the recent award of an FTA grant to construct the Sanford Transportation Center (described previously), this issue will be addressed.

POTENTIAL OPPORTUNITIES TO ENHANCE TDM PROGRAMS

GO MAINE is a well-established means of providing TDM services throughout the state and in the CYCCS study area. Expanded implementation of TDM programs could potentially help address CYCCS goals primarily by expanding travel options for central York County residents and workers. More aggressive implementation of TDM would likely involve dedicating additional funding to expand the existing GO MAINE programs described previously.

Specifically targeting travel information and incentives to central York County travelers is a potential means of expanding these programs in a manner supportive of the CYCCS's goal of improving accessibility to central York County. This could involve packaging and branding existing GO MAINE, YCCAC, and ShuttleBus programs and travel information under a unique program name, including a website specific to York County. A targeted TDM program would allow program elements to be tailored to the local community as well as enable residents and employees to more easily find travel information related to their needs.

Other ideas for possible consideration that could address access to central York County are:

- Expand or implement additional fare subsidy programs. YCCAC already implements an income-based fare structure for some services. Additional fare subsidy programs could be considered that target commuters to or from central York County.
- Develop a network of small Park & Ride lots using existing parking lots that have excess capacity during commute periods. Church parking lots are often used for such programs.
- Expand employer-implemented TDM efforts to encourage flextime, telecommuting, carpooling and vanpooling. This could be accomplished by requiring or providing incentives for more employers to register to work with GO MAINE.

ROLE OF TOWN PLANNING IN REDUCING TRAVEL DEMAND

The adoption of smart growth principals in land use planning by towns would over time also help manage travel demand and increase travel choice by concentrating development in a manner that encourages people to walk, bicycle or use transit more often. In addition to reducing automobile trips, smart growth planning can help create healthier communities with well-defined neighborhoods that are



supported by sustainable transportation investments. Smart growth can also be a means of preserving rural character and improving the vibrancy of town centers.

Towns would be responsible for determining which smart growth principals are appropriate for their community. Generally, these could include revisions to development standards, zoning regulations and comprehensive plan policies, such as the following:

- Allow mixed-use development in town centers and other targeted areas.
- Emphasize establishment of walkable communities by planning for and requiring during development the establishment of well-connected pedestrian facilities (including sidewalks, crosswalks, and trail systems). Review development standards for impediments to walkability and refine as necessary.
- Plan land uses in coordination with transportation to concentrate growth in areas that are best served by transit services and are walkable.
- Adopt “Complete Streets” policies and design standards that consider the needs of a broad range of roadway users of all ages and abilities (e.g., pedestrians, autos, bikes, elderly and school children) when planning and designing roads. The National Complete Streets Coalition provides information and resources regarding at their website:
<http://www.completestreets.org/>
- Prioritize improving existing infrastructure in developed areas over developing new infrastructure in undeveloped areas.

Towns can also directly implement smart growth principles through projects such as streetscape improvements to improve walkability and the character of town centers and other targeted growth areas or smaller scale roads projects to improve circulation within towns.

TRANSPORTATION SYSTEMS MANAGEMENT (TSM)

Several projects implemented in recent years could be considered TSM improvements in that their focus has been on improving the efficiency of existing infrastructure through relatively small-scale improvements. These include:

- Addition of turn lanes at major intersections on Route 111 (at Route 202/4 in Alfred and Route 35 in Lyman).
- Construction of the roundabout at Route 109/Route 4 in South Sanford.
- Installation of supplemental, side mounted traffic signal heads on Route 111 to improve visibility when sunlight obscures overhead signals.

The MaineDOT 2006 State of the System Report describes the on-going efforts of MaineDOT to advance the use of Intelligent Transportation Systems (ITS) technologies to improve system efficiency and performance. As funding allows, the MaineDOT is investing in technologies to enhance:

- Traffic management through signal coordination, traffic counts, speed signs and parking management.
- Travel information including variable message signs, parking information, weather information and a 511 system.
- Public transit management, including multimodal transit information, real-time transit data, fixed route scheduling and fare management.
- Safety measures through collision avoidance, infrastructure safety and security monitoring.
- Commercial vehicle operations including weigh in motion and commercial vehicle enforcement.

POTENTIAL TSM ENHANCEMENTS

Many of the ITS elements described in MaineDOT's State of the System report could have applicability to the CYCCS study area.

TRAFFIC MANAGEMENT

Improving the operating efficiency of traffic control systems can reduce delay and recurrent congestion as well as improve safety. A range of options are available:

- Improve signal timing by upgrading signal controller equipment, add vehicle detection equipment to allow for actuated signal control, and interconnect signals along highway corridors to improve coordination and perform periodic retiming of traffic signals.
- In some cases, removing signals may be warranted due to changes in traffic patterns (either over time or as the result of a new improvement). In other cases, replacement with a different traffic control approach, such as a roundabout, may be appropriate.
- Implementation of regular signal inspection and maintenance programs, including procedures for immediately rectifying signal malfunctions.

Enhanced system performance monitoring could be considered for highway corridors in the study area. Deployment of ITS architecture, such as vehicle detectors and video cameras, can allow staff at a centralized traffic operations center to monitor highway corridors and disseminate real-time information regarding travel conditions and incidents. Such a system can support communications between emergency responders and improve response times. Monitoring would also provide data for traveler information systems described in the follow section.

To improve incident response time and reduce the effects of such incidents on corridor traffic flow, Emergency Service Patrols could be established to assist drivers with breakdowns, tire changes, or reporting more serious incidents to emergency responders. These are typically implemented only on major, congested corridors, and therefore may not have potential applicability in the CYCCS study area unless warranted by conditions in the future. Another strategy to reduce non-recurring delay associated with an incident would be to increase coordination with local emergency responders through the Concept of Operations Plan (CONOPS), which provides guidance to public safety officials in responding



to incidents. This can be accomplished by integrating communication systems of emergency responders with MaineDOT's system to permit two-way sharing of information.

TRAVEL INFORMATION

Increased implementation of driver information systems – for example, Variable Message Signs (VMS) – could provide drivers with real-time information regarding incidents, weather, congestion and alternate routes. One possibility would be to station VMS signs approaching exits 19 (Wells) and 32 (Biddeford) to provide Turnpike travelers with information regarding the condition of routes into the Sanford area. These could also convey travel time information for alternative routes (e.g., between Biddeford and Sanford via Route 111 compared to Route 99). Another possible use for VMS signs is to provide travelers with information regarding parking availability at Park & Ride lots and transportation centers.

VMS can also be deployed to provide information to public transportation users, such as the status of trains and buses at key stations or the availability of parking at Park & Ride lots.

SAFETY AND OPERATIONS MEASURES

In addition to the system monitoring programs described previously, many smaller-scale infrastructure improvements may be considered to improve the safety and operating efficiency of existing infrastructure:

- Intersection improvements, such as revising channelization, adding left or right turn lanes or correcting alignment in cases where centerlines are not matched across both sides of an intersection.
- Improvement of sharp horizontal and vertical curves.
- Improvement of narrow lanes and shoulders.
- Striping, signage and lighting improvements.
- Access management, described in detail in *Potential Land Use and Access Management Strategies Technical Memorandum* (Document II-2a).