

POTENTIAL LAND USE AND ACCESS MANAGEMENT STRATEGIES

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 (I-95) and U.S. 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 U.S. 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 U.S. Route 1. Access to these municipalities is instead provided by Route 35, Route 99, Route 109 and Route 111. In addition, U.S. 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 U.S. 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 Phase II tasks that begin to identify potential strategies for consideration by the study. Other Phase II strategy development activities are documented in the *Phase II Highway Corridor Strategy Descriptions Technical Memorandum* (Document II-4a) and *Range of Multimodal, Travel Demand Management (TDM) and Transportation Systems Management (TSM) Strategies* (Document II-2b). This document focuses on identifying potential land use and access management strategies for consideration by the study.

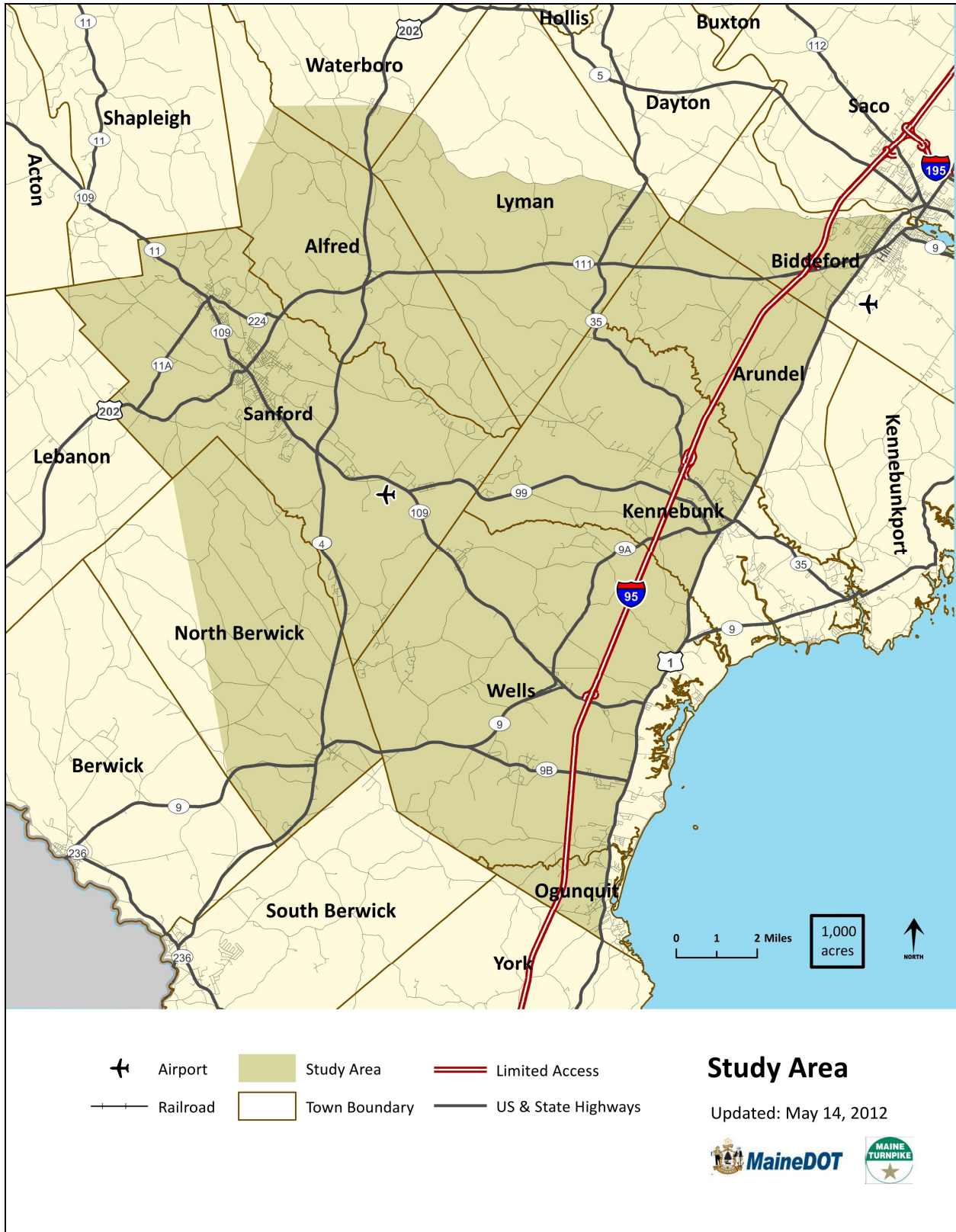


Figure 1: CYCCS Study Area



ROLE OF LAND USE AND ACCESS MANAGEMENT IN MANAGING THE TRANSPORTATION SYSTEM

Highways are principal transportation routes that accommodate many different types of trips, among them longer distance trips between towns and other distant destinations. Because they are the primary corridors for longer distance auto and truck travel, highways are often designed to move traffic quickly. Nonetheless, many highways (with the exception of Interstate Highways, the Maine Turnpike, and other fully access-controlled routes) also provide access to abutting parcels to various degrees. Therefore, maintaining the efficiency and safety of highways is in part related to existing and proposed land use activity along those highways and how access to such activity is managed.

The frequency, location and configuration of access points (i.e., driveways or entrance roads) influence many aspects of a highway's performance and character. Access points, particularly those requiring left turns, can disrupt traffic flow and increase the potential for crashes. In densely developed areas with frequent access points, trips entering or exiting the highway can worsen congestion and increase crashes. In less developed areas where posted speeds are high, occasional turning vehicles can be unexpected and crashes can be more severe. Management of how access is provided can address these safety and congestion issues, and also help communities preserve rural or historic character where appropriate to do so.

While the MaineDOT administers an access management program outside a municipality's urban compact area, ultimate responsibility and authority for the implementation of land use and access management in Maine lies primarily with the municipalities. This document identifies a menu of general land use and access management techniques that may be appropriate for consideration by municipalities along major highways in the study area. These techniques could also be applied to other roadways the towns deem important for mobility. The applicability of techniques is not universal, and appropriate contexts for their use are described. MaineDOT's *Sensible Transportation Handbook*¹ is a good reference source for solutions to transportation/land use challenges.

Land use and access management strategies having potential applicability in the CYCCS study area are described below. This is a starting point for further consideration of access management and land use techniques, in conjunction with other candidate strategies in Phase III of the study.

TYPES OF LAND USE AND ACCESS MANAGEMENT STRATEGIES

The approaches described in this memo are organized into four categories based on their primary objective as listed below.

- A. Approaches that reduce the number of vehicle trips generated along highways.
 - i. Limit intensity of development abutting highways.
 - ii. Transfer development rights.

¹ <http://www.maine.gov/mdot/planning-documents/stpa/sensibleTrans-handbook.html>

- iii. Limit the use of land fronting highways to those that generate low levels of peak hour traffic volumes.
 - iv. Incorporate site features that support ridesharing and transit use.
- B. Approaches that encourage access from roads other than the highway.
 - i. Require access from streets other than the abutting highway.
 - ii. Require wider frontages on highways than on other roadways.
- C. Approaches to improve street interconnectivity and local traffic circulation.
 - i. Include future connections on Official Map or Major Thoroughfare Plan.
 - ii. Use rear lot access drives and/or backage roads.
 - iii. Encourage interconnected parking lots on adjacent parcels.
 - iv. Require off-highway frontage for new subdivision lots.
 - v. Extend subdivision streets to abutting parcels.
- D. Approaches that manage the frequency and operation of access points.
 - i. Encourage shared access for abutting lots.
 - ii. Minimize the number of driveways per parcel on highway frontage.
 - iii. Promote right turn only driveways.
 - iv. Require access plans for large developments.

These approaches are further described below.

A. APPROACHES THAT REDUCE THE NUMBER OF VEHICLE TRIPS GENERATED ALONG HIGHWAYS

This set of techniques looks at approaches for reducing or limiting the growth in vehicle trips entering the highway specifically by managing the intensity and/or type of new development for parcels that abut the highway corridor. They are most appropriate in rural, less developed areas or other locations where highways function predominately in the role of high-speed, high-capacity routes (rather than balancing access and mobility needs), particularly where future intensification of development is allowed by local plans and zoning. In these locations, managing future development along the highway corridor can help maintain the efficient and safe operation of the highway, and can further help to the rural characteristics of the corridor where desired.

i. Limit intensity of development abutting highways

Stretches of undeveloped land along highways create the potential for strip development and the attendant turning movements. Zoning the land along the highway for low density residential development (e.g., one dwelling unit per five acre lot), agricultural, and other less intensive uses can help limit the growth of development along the highway and limit the introduction of driveways. Such actions are best accompanied by identification of locations elsewhere in the community where denser growth can better be accommodated. Figure 2 shows generalized zoning in the study area. In order to truly preserve access throughout a highway, it will be important to ensure that the communities along the roadway have similar visions for the corridor and have reduced potential zoning conflicts between the communities.



ii. Transfer development rights

Transfer of development rights (TDR) is a mechanism by which development allowed by current zoning in one area may instead be transferred or “added” to what could be developed at another location identified by the community as better suited for development. In consideration for this transfer of rights, the original land must remain undeveloped. Often, a density bonus is included that allows development to occur more intensely on another property than would otherwise be allowed. For example, if a parcel was zoned to allow 10 units, the municipality could allow 12 units to be transferred to another parcel elsewhere in the community.

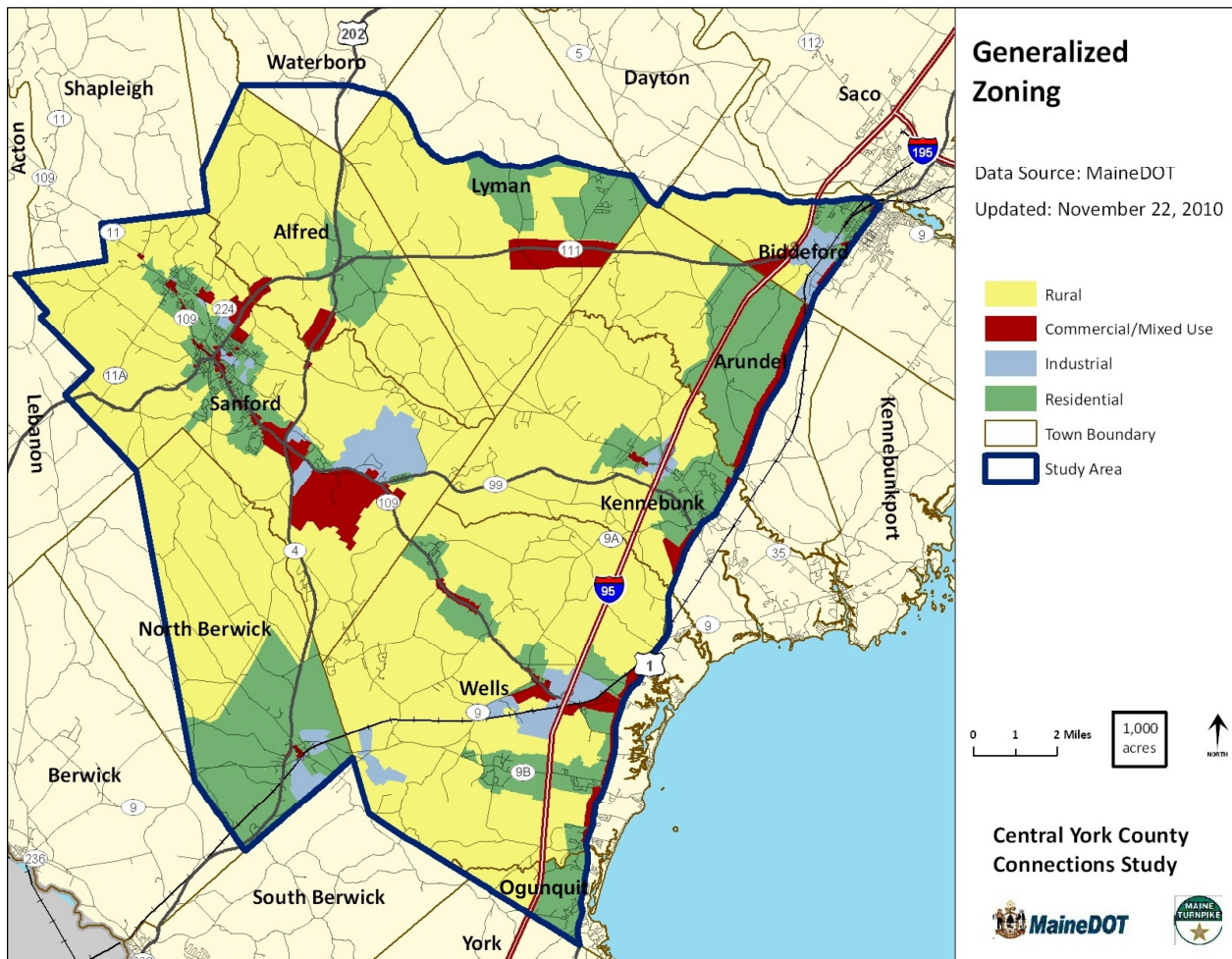


Figure 2: Generalized Zoning

TDR is a relatively sophisticated approach that requires initial planning and ongoing administration, but may be appropriate for locations where, for instance, a community wishes to discourage development along an undeveloped rural highway and encourage it in the town center. Advantages of TDR are that land owners do not “lose” development rights and communities can target specific locations for more intensive development, which can preserve rural areas.

A transfer of development rights program can be voluntary (typically with incentives) or mandatory. There are over 150 such programs across the United States, including the Land for Maine's Future program.

iii. Limit the use of land fronting highways to those that generate low levels of peak hour traffic volumes

Certain types of uses generate high volumes of peak hour traffic (e.g., schools and drive-through restaurants). Limiting uses on parcels abutting the highway to those that generate less traffic can reduce the number of turning movements that need to be accommodated by the highway. This can be accomplished by allowing only uses that generate lower volumes of peak hour traffic, limiting the allowed density or intensity of allowed uses and establishing standards for maximum peak hour trip generation per acre or land parcel.

iv. Incorporate site features that support ridesharing and transit use

Encouraging people to use means of transportation other than single-occupant automobiles can reduce the number of trips generated by new development. These can include techniques such as providing preferential parking for carpoolers, incorporating site design requirements that result in convenient and comfortable pedestrian, bicycle and transit access or participation in regional travel demand management (TDM) programs. These techniques are discussed in more detail in the *Range of Multimodal, Travel Demand Management (TDM) and Transportation Systems Management (TSM) Strategies* technical memorandum.

B. APPROACHES THAT ENCOURAGE ACCESS FROM ROADS OTHER THAN THE HIGHWAY

The impact of new development along a highway is in part related to how trips generated by that development access the highway. The following approaches suggest ways to manage new trips by requiring access be provided from other streets.

i. Require access from streets other than the abutting highway

Development requirements established in subdivision and site plan regulations can stipulate that access be provided from side streets or other accessible collector streets when a parcel has access frontage to both a highway and another street. Regulations can be applied when a lot is subdivided or as part of site review requirements for development.

ii. Require wider frontages on highways than on other roadways

A less direct means of encouraging access from streets other than a highway is to establish wider frontage requirements for lots that front highways than those that front other streets. For example, zoning or subdivision regulations could require 250 or 300 feet of highway frontage, but only 100 or 125 feet on a street other than a highway.



C. APPROACHES TO IMPROVE STREET INTERCONNECTIVITY AND LOCAL TRAFFIC CIRCULATION

Several methods to improve local traffic circulation and increase interconnectivity can be applied during the development process to divert local traffic away from primary highways. These methods can also help ensure that the street system develops sufficiently to accommodate growth.

i. Include future connections on Official Map or Major Thoroughfare Plan

An Official Map or Major Thoroughfare Plan is an official document that identifies the location of future roads. These future roads are needed to increase the capacity of the road network, provide for local traffic circulation or provide appropriate coordinated access to developable land. Typically, a community's Comprehensive Plan identifies areas where future roads are needed to accommodate future traffic. The Official Map or Major Thoroughfare Plan then identifies the potential location and functional classification for the new roads. Often general corridors are identified, rather than specific rights-of-way, to provide for flexibility in the actual layout and design of the roadway. An Official Map typically designates the design standards for the future roads. However, these standards may be placed in the subdivision regulations. The community's development regulations then require that access to properties be accomplished in a manner that reflects the Official Map, including the reservation or dedication of the corridor for future road construction or the construction of the road segment by individual subdivisions or developments subject to site plan review.

The Official Map or Major Thoroughfare Plan establishes a comprehensive approach to developing interconnected street networks to accommodate new traffic resulting from development. This approach requires the community invest in up-front planning to identify where new roads will be needed and engage in ongoing efforts to coordinate and ensure implementation as development occurs. In most areas, some preliminary work to identify and minimize the impacts to resources such as wetlands is necessary as well.

The Official Map or Major Thoroughfare Plan approach relies on segments of the right-of-way being protected and/or the road constructed on a piece-by-piece basis as individual parcels are developed. Therefore, to be successful the technique needs to be applied in those situations where there are a reasonable number of individual parcels and an expectation that development will occur within a reasonable period so that the individual segments or pieces can be connected to create the new road.

Within the CYCCS study area, there may be areas where the construction of a new road(s) could facilitate desired development while preserving capacity on major highways. Application of an Official Map or Major Thoroughfare Plan could be a powerful means of establishing, protecting and building these roads.

ii. Use rear lot or mid-lot access drives and/or backage roads

Rear or mid-lot (for very deep lots) access drives and backage roads accommodate entering and exiting at the back of parcels that front highways and direct this traffic to side streets or major intersections that provide access to the fronting highway.

iii. Encourage interconnected parking lots on adjacent parcels

Development regulations can require complementary uses along a highway to have interconnected parking lots. This can reduce the amount of traffic traveling on the highway because patrons can move from business to business (or multi-unit residential complex to business) without having to use the fronting highway.

iv. Require off-highway frontage for new subdivision lots

Subdivision regulations can specify that parcels created during the subdivision process have frontage on roads (existing or newly constructed) other than an adjacent highway corridor. For example, developments over a certain number of lots may be required to provide a public road.

v. Extend subdivision streets to abutting parcels

Subdivisions are often developed with dead end streets or cul-de-sacs. This limits interconnectivity of the street system over time. Development regulations can require that provisions be made for extending the street right-of-way to the boundary of the subdivision to allow for the future extension of the street into adjacent parcels. Similarly, provisions can be added to require connections to streets in adjacent parcels that have previously been extended to the subdivision boundary. Over time, this approach will result in an interconnected street network that reduces trips on the highway and a network that has more coordinated access points.

D. APPROACHES THAT MANAGE THE FREQUENCY AND OPERATION OF ACCESS POINTS

These approaches focus on regulations pertaining to access points (e.g., driveways) from parcels abutting highways.

i. Encourage shared access for abutting lots

Where feasible, requiring or offering development incentives for establishing a shared driveway or private access road for abutting lots can reduce the number of access points required. Shared driveways require an easement to establish access rights for all parcels.

ii. Minimize the number of driveways per parcel on highway frontage

Subdivision and site plan regulations can specify the number and spacing of driveways or new streets allowed per parcel. Many regulations tie the maximum number of driveways to the length of frontage along the highway (for example, not more than one curb cut for every 500 feet of frontage). These requirements typically also establish a minimum distance from a new driveway to an existing driveway or intersection. Minimum stopping distances for various posted speed limits can also be used to manage the frequency of driveways and entering side streets.

iii. Promote right turn only driveways

Left turns are typically more disruptive to traffic flow and inherently involve greater safety risks than right turns due to conflicts with opposing traffic. Restricting new driveways to right turns only (often termed "right in – right out") does not necessarily reduce the number of driveways, but instead reduces or eliminates left turns. This approach must be coordinated with the design of the highway to allow vehicles to reverse direction through left turn lanes, jug handles, or driving around the block to access



uses on the far side of the highway. A physical barrier to prevent left turns such as a raised center median is also often constructed.

Require access plans for large developments

In cases where a subdivision or large commercial development will occur in phases, development regulations stipulating approval of an access plan for the full, ultimate build out of the site can help ensure that access is provided in a coordinated manner. Alternatively, setting standards for how many units or square feet can be built with only one entrance point can serve a similar purpose.

In Phase III, the study team will identify the strategies that may be most appropriate for selected roadways in the study area.