

# PHASE II HIGHWAY CORRIDOR STRATEGY DESCRIPTIONS

PHASE II TECHNICAL MEMORANDUM

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*Prepared for:*

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of Transportation

Maine Turnpike Authority



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## INTRODUCTION

This document summarizes the potential highway corridor improvements – called *strategies* – that are being tested and evaluated for Phase II of the Central York County Connections Study (CYCCS). Phase II Highway Strategies are a *starting point* in the development and consideration of candidate improvements for the study; they are not recommendations, nor are they the only strategies that will be studied. Phase II strategies are conceptual in nature, and not yet detailed, specific proposals. Strategies considered later in the study during Phase III, as well as those ultimately recommended by the study, may differ considerably from the initial strategies currently under evaluation in Phase II. Specific aspects of these initially proposed strategies may be dropped, carried forward or combined in different ways, depending on the results of the analyses conducted during Phase II.

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](http://www.connectingyorkcounty.org).

One question that is central to the CYCCS is how transportation accessibility relates to economic development. To better understand this relationship, the study team must consider intensive changes to the highway network that could possibly result in substantial improvements in accessibility (measured as travel times between destinations). Early study of these strategies will also allow the team to develop information regarding potential impacts associated with large-scale changes in highway infrastructure and determine whether such intensive changes merit further consideration as the study progresses.

Phase II strategies will be evaluated based on several Measures of Effectiveness (MOEs), such as economic benefit, travel times and delay, environmental impacts, and costs. A complete, current list of MOEs is available at the study website under the “News and Updates” section. The results of this evaluation and other ongoing tasks will inform selection and further development of strategies in the next phase of the study.

## OVERVIEW OF STUDY PHASES AND OTHER ACTIVITIES

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.

While study phases do overlap, the process is generally sequential at the level defined above. The overarching purpose of the Phase II work is to develop information about the range of strategies that could be considered for implementation in the study area, which consists of ten communities in York County. The development and assessment of candidate highway strategies is one of several concurrent efforts. Other approaches to address transportation needs in the region, such as improvements to public transit and other modes of transportation, Transportation System Management (TSM), and Travel Demand Management (TDM) are also being investigated. Additionally, other smaller scale highway improvements that could address localized congestion and safety issues are being considered separately as well. These include actions such as adding turning lanes, adding passing lanes, providing paved shoulders and/or implementing access management. This more comprehensive range of strategies will be evaluated in detail during Phase III of the study.

## PHASE II HIGHWAY STRATEGIES

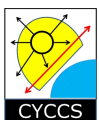
The highway strategies under consideration in Phase II are conceptual representations. Corridor alignments, interchange locations and other defining features are only approximately defined at this point and should not be construed as specific, finalized choices. Should any of these strategies advance for further study, specific alignments would be further defined in Phase III and in subsequent studies. Nonetheless, natural, cultural and built environment features have been considered in developing Phase II strategy alignments to verify that alignment opportunities appear possible.

In general, the strategies presented are capital-intensive, major improvements. Phase II (and subsequent Phase III) evaluations may identify aspects of particular strategies that are not achievable, and as a result strategies may be modified or eliminated as the study progresses. Additionally, the Phase II evaluations may indicate that less intensive variations could perform similarly with fewer impacts and lower costs, which could also lead to the introduction of new or modified strategies for consideration in Phase III. In keeping with Maine's Sensible Transportation Planning Act (STPA), these less capital-intensive approaches will ultimately be given priority consideration as potential solutions to the needs identified for the study during Phase III.

The Phase II strategies incorporate ideas and insights from the study Steering Committee and Advisory Committee (January 19, 2011 and March 31, 2011 meetings), as well as discussions with the public at the study's initial public meeting held January 20, 2011. This process generated 18 original strategies initially, which have been refined and combined to form the 12 described in this memorandum.

### KEY CORRIDORS

The study team is considering strategies within three general corridors that link the Sanford region of central York County to the major highway corridors along Maine's coast (the Maine Turnpike/I-95 and Route 1), which provide access to neighboring coastal communities, the Portland metropolitan area to the east, and the metropolitan centers of New Hampshire and Massachusetts (by way of I-95) to the southwest. The three corridors studied, depicted in Figure 1, are:



- *Biddeford Corridor*: This corridor connects Sanford, Alfred, Lyman, Arundel and Biddeford, and also provides access to the Portland metro area by way of the Maine Turnpike. Route 111/202 is the primary highway serving this corridor today.
- *Kennebunk/Wells Corridor*: This corridor is the most direct connection to the Maine Turnpike and US Route 1, and links Sanford and neighboring towns to York County's coastal communities. The Maine Turnpike provides access north to the Portland metro area and south to the Portsmouth, NH and Boston metro areas. Route 99 and Route 109 are also located in the Kennebunk/Wells corridor.
- *North Berwick/Ogunquit Corridor*: This corridor links Sanford to North Berwick and communities of southeastern New Hampshire (Dover, Durham, Portsmouth), and eventually the Boston metro area by way of Route 4, the Spaulding Turnpike (New Hampshire) and I-95 through New Hampshire and Massachusetts. Direct highway connections between Sanford and Ogunquit do not exist today, but are among the strategies studied during Phase II of the CYCCS.

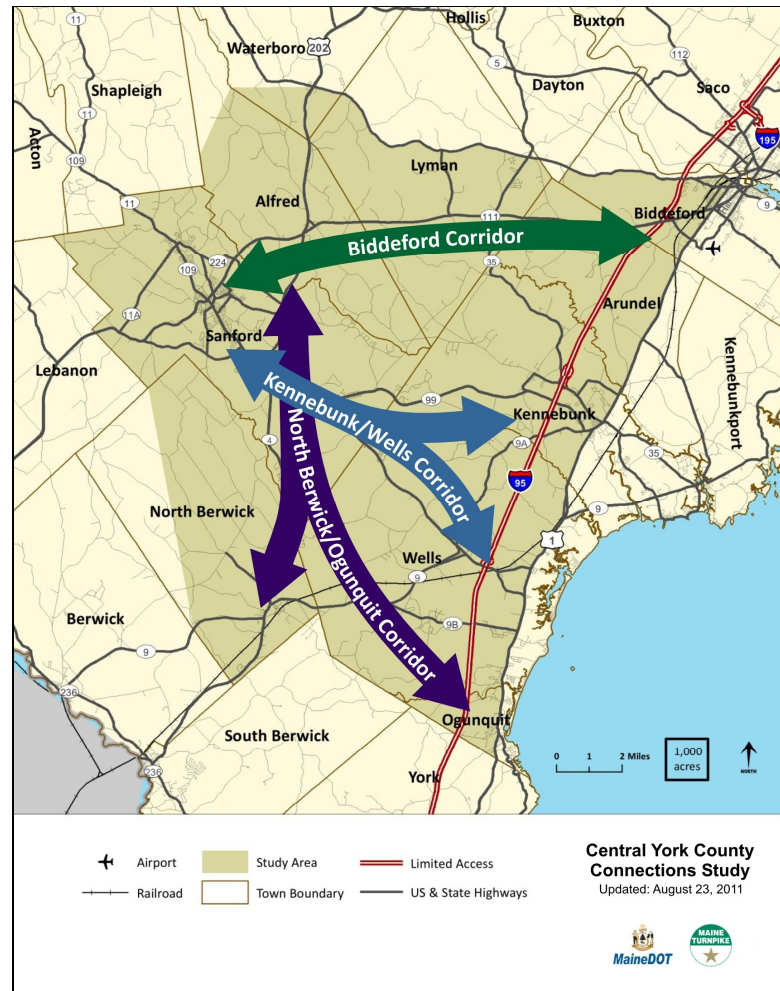


Figure 1: Strategy B-1, Upgrade Route 111/202

An additional major regional corridor, US Route 202, runs west of the study area through Lebanon, connecting to the Spaulding Turnpike in Rochester, New Hampshire. The corridor generally operates well today. This corridor was added to the study area in accordance with LD 1064 passed by the 125th Maine State Legislature to include "the area west of Sanford along the United States Route 202 corridor to the New Hampshire border." The Southern Maine Regional Planning Commission (SMRPC) has been tasked with investigating means of preserving capacity and maintaining safe operations on this corridor over the long term. SMRPC is working with the Town of Lebanon on access management and related land use actions, as well as studying the potential need for improvements to signalized intersections in

Lebanon. SMRPC is also working with the City of Rochester, NH and the Strafford County Regional Planning Commission to discuss current and future plans for development along U.S. 202 between the Maine border and the Spaulding Turnpike (NH Route 16). SMRPC will report their findings to MaineDOT and Maine Turnpike Authority (MTA) for further consideration.

### *RANGE OF IMPROVEMENTS CONSIDERED*

Three basic types of candidate regional improvements are considered during the Phase II analysis of highway strategies, as described below. These are large-scale, regional improvements and reflect options for increasing capacity and reducing travel times within the corridors. They do not represent the full range of options that will ultimately be considered by the study.

#### Upgrade Existing Corridors

These strategies focus on those possible actions that could improve travel speeds or capacity on existing highways (which can be measured by the study's travel model). Additional strategies aimed at addressing specific high crash locations, intersection congestion, and local circulation will be introduced in Phase III.

#### New At-Grade Highways

These strategies involve the construction of new highway segments to improve circulation and/or provide improved access to the Maine Turnpike and US Route 1. These are highways with at-grade intersections (i.e. – with traffic signals, stop signs on side streets, or similar traffic controls at crossroads) that would have a high degree of access management. Some may be designated limited access highways, on which priority is given to through traffic, but a few at-grade intersections and possibly some private driveway connections would be allowed.

#### New Controlled Access Expressways

These strategies are high speed, multi-lane divided highways linking central York County to the Maine Turnpike and to US Route 1. Access to the highway is provided by grade-separated interchanges at key junctions only. These strategies also include other related highway and street improvements necessary to effectively connect to the existing highway network.

A fourth category – Local Connections – provides the study team with information regarding specific issues of a more local nature. Strategy B-2 investigates potential additional highway connections from Route 111 to other roads to reduce the concentration of traffic on Route 111. Strategy B-4 investigates a bypass around Sanford to provide routes for through trips that bypass slower routes through downtown Sanford. Strategy K-1 investigates providing an improved connection between Route 99 and Route 35 in Kennebunk to improve access between these two corridors and also provide a more direct link from Route 99 to exit 25 on the Maine Turnpike.

Table 1 summarizes the corridor and type of improvement associated with each of the Phase II strategies.



Table 1: Primary Improvement Types Associated with Phase II Strategies

		Regional Corridors			Local Connections
		Upgrade Existing Highways	New At-Grade Highways	New Controlled-Access Highways <sup>1</sup>	
Biddeford Corridor	B-1: Upgrade Rte 111/202	✓			
	B-2: New Biddeford Highway Connections				✓
	B-3: Upgrade Route 111/202 with Additional Maine Turnpike Access and Biddeford New Highway Connections	✓			
	B-4: Southern Sanford Bypass				✓
	B-5: Biddeford Expressway (South)			✓	
	B-6: Biddeford Expressway (North)			✓	
Kennebunk/Wells Corridor	K-1 Rte 99 – Rte 35 Connection				✓
	K-2 Upgrade Rte 109	✓			
	K-3 Kennebunk Expressway			✓	
North Berwick/Ogunquit Corridor	NB-1: Upgrade Rte 4 and New North Berwick Bypass	✓			
	NB-2: Upgrade Rte 4 and New North Berwick – Maine Turnpike/Ogunquit Highway		✓		
	NB-3: Ogunquit Expressway			✓	

<sup>1</sup> Controlled Access Highway improvement strategies also include related surface street improvements needed to provide access to the new corridor.



*BIDDEFORD CORRIDOR STRATEGIES*

## Strategy B-1: Upgrade Route 111/202

Strategy B-1 (Figure 2) represents a major expansion of the existing Route 111/202 corridor between Sanford and Biddeford. The existing two-lane highway would be widened east of Route 224 to four travel lanes with left turn lanes provided at intersections as needed.

Posted Speed	<ul style="list-style-type: none"> <li>• 55 mph except approaching intersection zones at Routes 4/202 and Route 35 (45 mph), and the existing four-lane section in Biddeford (35 mph).</li> </ul>
Description	<ul style="list-style-type: none"> <li>• Widen Routes 111/202 to four lanes between Route 224 in Sanford and the existing four-lane cross section in Biddeford (which remains unchanged for this strategy).</li> <li>• Access management and improvements to improve the efficiency of intersection between Route 224 and Route 109 in Sanford (these locally-focused strategies will be studied in greater detail in Phase III).</li> <li>• Realignment as necessary to achieve the minimum stopping sight distance necessary to allow higher posted speed limits.</li> <li>• Provide left turn lanes at intersections as needed.</li> </ul>
Access Control	<ul style="list-style-type: none"> <li>• Strategy would include a higher degree of access management than exists along the corridor today to consolidate and reduce driveways and cross streets, but the corridor would continue to provide access to adjacent properties.</li> </ul>



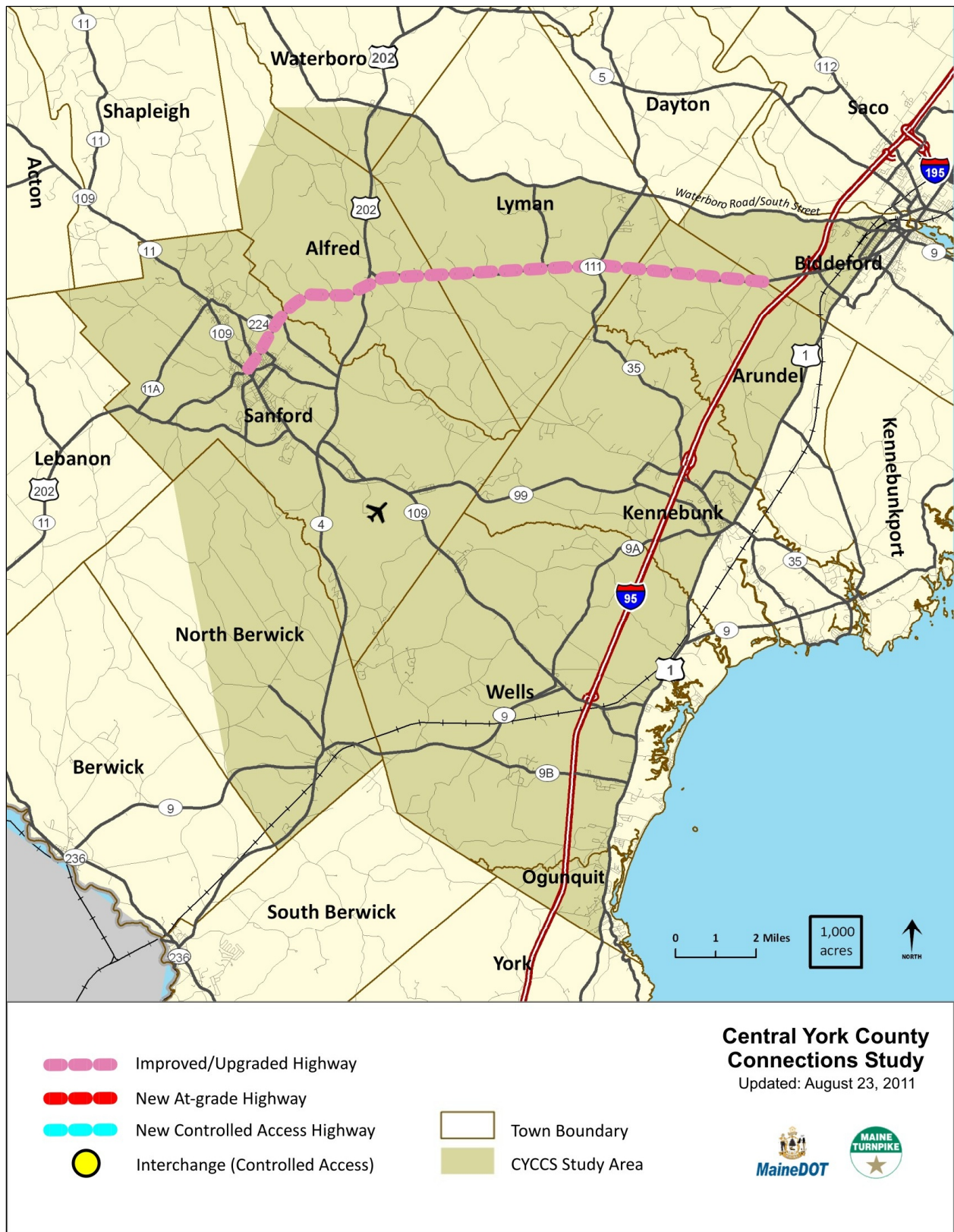


Figure 2: Strategy B-1, Upgrade Route 111/202

### Strategy B-2: Biddeford New Highway Connections

Strategy B-2 (Figure 3) is a locally-focused improvement involving construction of new roads in Biddeford connecting Route 111 south to US Route 1 (west of Biddeford Spur) and north to South Street (Waterboro Road). These connections are intended to provide additional routes to access Route 111 and the commercial areas adjacent to the corridor, potentially alleviating congestion near exit 32 of the Maine Turnpike. A high degree of access management would be maintained on these new corridors.

Posted Speed	<ul style="list-style-type: none"> <li>Typically 35 mph.</li> </ul>
Description	<ul style="list-style-type: none"> <li>Constructs new roadways connecting Route 111 to US Route 1 (west of Biddeford Spur) and to South Street (Waterboro Road).</li> <li>Typically one travel lane in each direction with left turn lanes at intersections.</li> </ul>
Access Control	<ul style="list-style-type: none"> <li>A high degree of access control is presumed for these new connecting roads in Biddeford.</li> </ul>



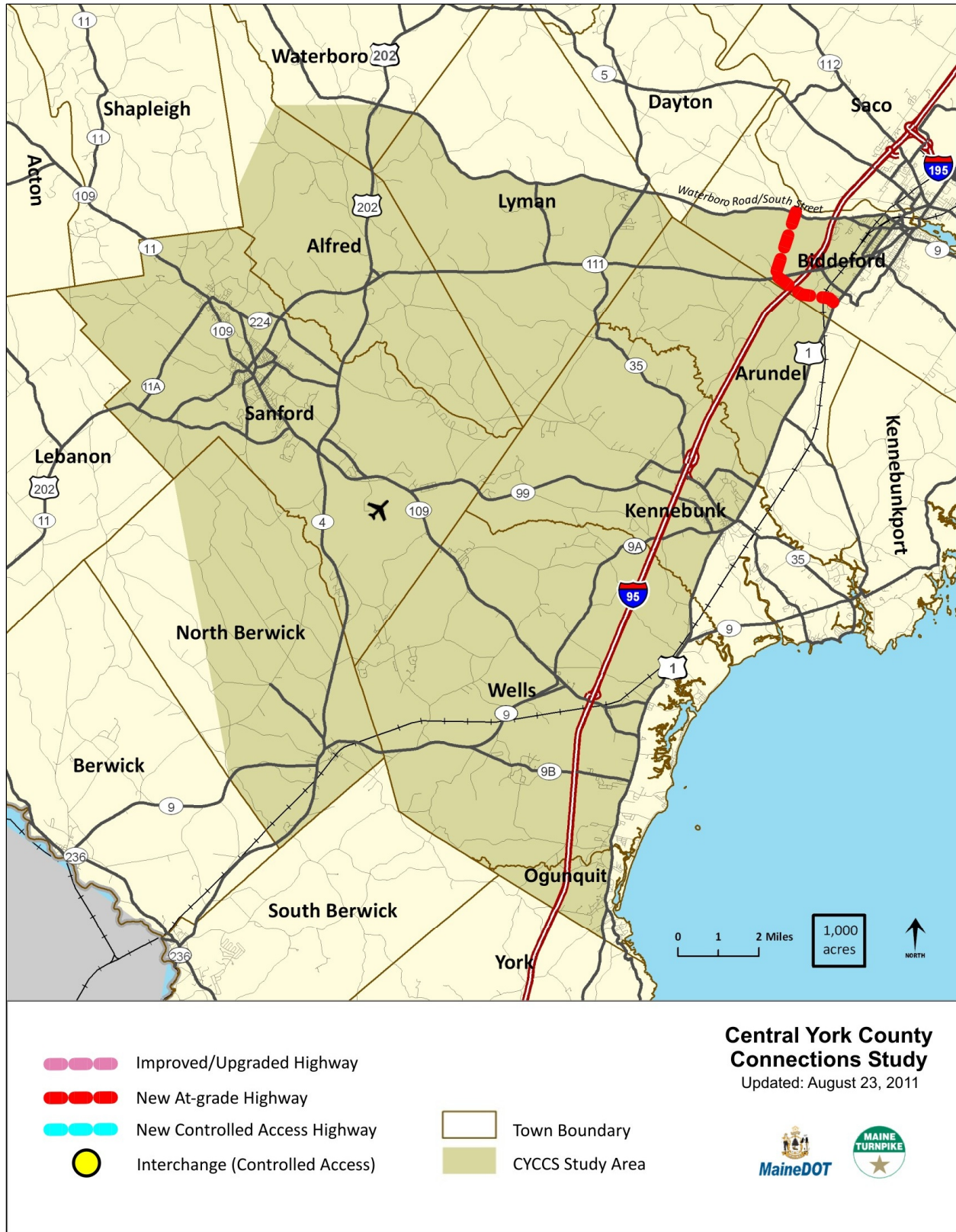
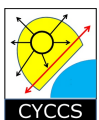


Figure 3: Strategy B-2, Biddeford New Highway Connections

**Strategy B-3: Upgrade Route 111/202 with Additional Maine Turnpike Access and Biddeford New Highway Connections**

Strategy B-3 ( Figure 4) modifies the Maine Turnpike exit 32 interchange to provide access to Route 111 on the west side of the Maine Turnpike by way of a new, limited access connection, which would separate traffic destined for Route 111 from that heading toward central Biddeford or US Route 1. The improvements proposed for Strategy B-2 (new highway connections) and Strategy B-1 (Route 111/202 upgrade) are also elements of Strategy B-3.

Posted Speed	<ul style="list-style-type: none"> <li>• 55 mph on Route 111/202 except approaching intersection zones at Routes 4/202 and Route 35 (45 mph), and the existing four-lane section in Biddeford (35 mph).</li> <li>• Typically 35 mph on new connector roadways linking Route 111 to other highways in Biddeford.</li> </ul>
Description	<ul style="list-style-type: none"> <li>• Route 111/202 Upgrade:             <ul style="list-style-type: none"> <li>• Upgrades described for Strategy B-1.</li> </ul> </li> <li>• New Highways and Interchange Expansion:             <ul style="list-style-type: none"> <li>• Reconstruct exit 32 Maine Turnpike Interchange and provide a new highway segment west of Route 111 that connects Route 111 directly to the interchange.</li> <li>• Local connections described under Strategy B-2.</li> </ul> </li> </ul>
Access Control	<ul style="list-style-type: none"> <li>• The Route 111 upgrade would require a higher degree of access management than exists along the corridor today to consolidate and reduce driveways and cross streets, but the corridor would continue to provide access to adjacent properties.</li> <li>• A high degree of access management is presumed on the new connector roads in Biddeford.</li> </ul>



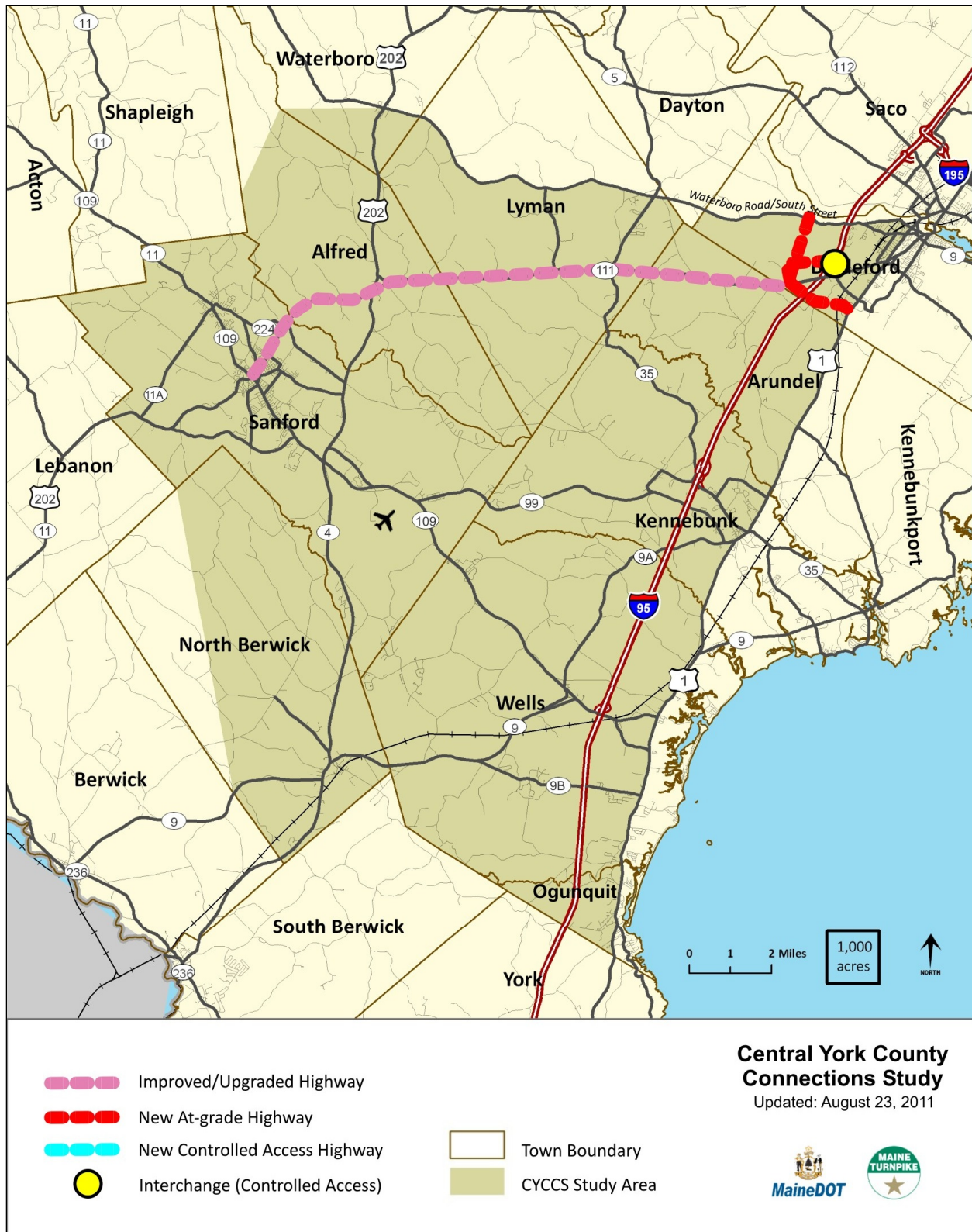


Figure 4: Strategy B-3, Upgrade Route 111/202 with Additional Maine Turnpike Access and Biddeford New Highway Connections

Strategy B-4: Southern Sanford Bypass

Strategy B-4 (Figure 5) constructs a new two-lane roadway connecting Route 202 (west of Sanford), Route 109 in South Sanford, and Route 4 near the Alfred/Sanford town line. The roadway would have a high degree of access control, possibly to the extent of prohibiting access except at major cross streets (limited access). This strategy would allow through traffic to avoid the most capacity constrained and slowest segments of Route 202 and Route 109 in downtown Sanford. As with all other Phase II highway strategies being considered, the alignment shown is conceptual only. Further route development analysis would be conducted to determine how to best avoid developed areas if this strategy advances to Phase III.

Posted Speed	<ul style="list-style-type: none"> <li>• 35 – 45 mph.</li> </ul>
Description	<ul style="list-style-type: none"> <li>• New two-lane highway connecting Route 202 to Route 109 and Route 4 south of downtown Sanford.</li> <li>• Typically one travel lane in each direction with left turn lanes at major intersections as needed (e.g. - Route 202, Route 109, Route 4).</li> </ul>
Access Control	<ul style="list-style-type: none"> <li>• Access to abutting properties may be allowed, but a high degree of access control is presumed.</li> </ul>



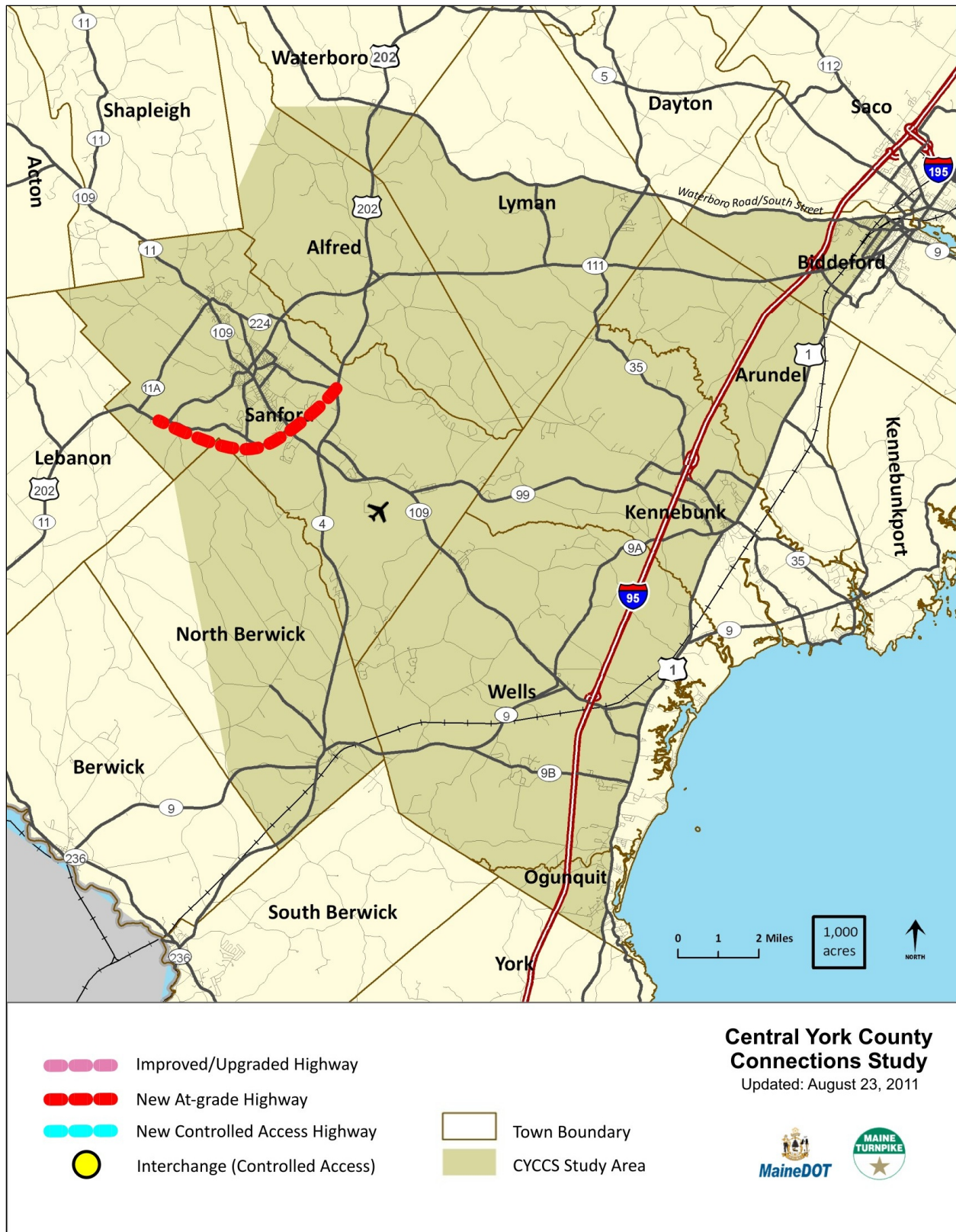


Figure 5: Strategy B-4, Southern Sanford Bypass

### Strategy B-5: Biddeford Expressway (South)

Strategy B-5 (Figure 6) is a new controlled access highway from Route 4 (south of Alfred) to the Maine Turnpike (south of Biddeford exit 32), with additional connections to Route 35, Route 111 and Route 1. This strategy also includes a new ring-road connector system to distribute traffic to the street network in Sanford (including connections to Route 111/202, Route 224 and Route 109).

Posted Speed	<ul style="list-style-type: none"> <li>• 65 mph on the controlled access highway.</li> <li>• Typically 35 mph on new connector roadways.</li> </ul>
Description	<p><i>Expressway</i></p> <ul style="list-style-type: none"> <li>• New controlled access, four-lane divided highway with median (two lanes in each direction).</li> </ul> <p><i>Interchange Locations</i></p> <ul style="list-style-type: none"> <li>• Maine Turnpike south of exit 32 (Biddeford), with connection to Route 111 and US Route 1 (vicinity of Arundel/Biddeford town line).</li> <li>• Route 35 (vicinity of Arundel/Lyman/Kennebunk town line).</li> <li>• Route 4 (vicinity of Alfred/Sanford town line).</li> </ul> <p><i>Other Highway and Street Improvements</i></p> <ul style="list-style-type: none"> <li>• Sanford ring-road connector consisting of: <ul style="list-style-type: none"> <li>• New limited access, at-grade highway connecting Route 109 with the new interchange at Route 4.</li> <li>• New limited access, at-grade highway connecting Routes 111 and 224 with the new interchange at Route 4.</li> <li>• Improved connection to High Street.</li> </ul> </li> <li>• New at-grade highway connections (limited access or with a high degree of access control) from new interchange to Route 111 and US Route 1 in Biddeford.</li> </ul>
Access Control	<ul style="list-style-type: none"> <li>• Controlled access on expressway (access by ramps and interchanges only; no access to abutting properties).</li> <li>• A high degree of access control for new connector highways is presumed.</li> </ul>





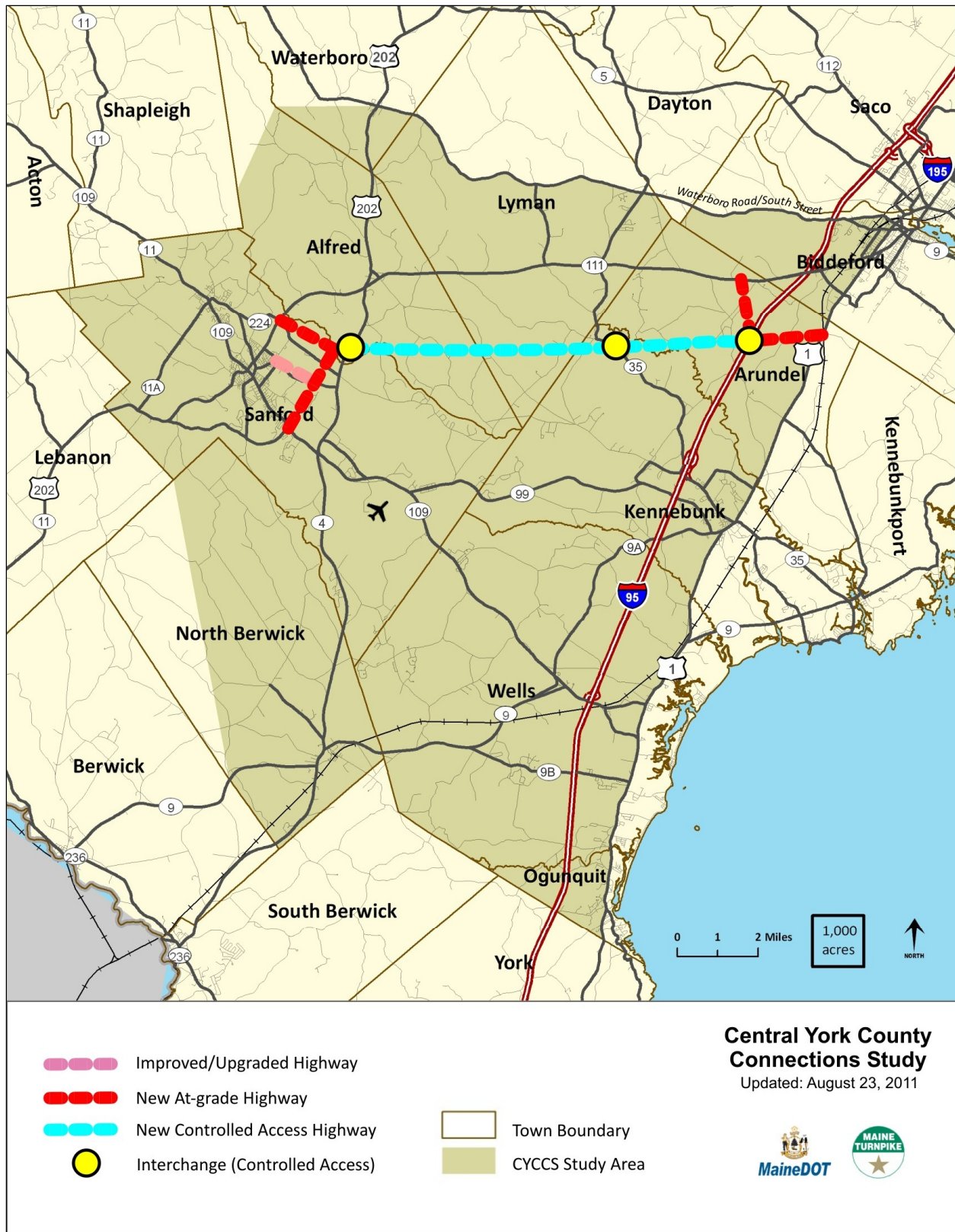


Figure 6: Strategy B-5, Biddeford Expressway (South)

### Strategy B-6: Biddeford Expressway (North)

Strategy B-6 (Figure 7) is similar to Strategy B-5, but extends further to the west to provide a bypass around Sanford. Strategy B-6 also follows a more northerly route and provides additional connections to the regional highway network. This strategy was included in response to comments by the CYCCS Steering Committee that the team should look at a more northerly alignment that extends west of Sanford.

<b>Posted Speed</b>	<ul style="list-style-type: none"> <li>• 65 mph on the controlled access highway.</li> <li>• Typically 35 mph on new connector roadways.</li> </ul>
<b>Description</b> <i>Expressway</i>	<p><i>Expressway</i></p> <ul style="list-style-type: none"> <li>• New controlled access, four-lane divided highway with median (two lanes in each direction).</li> </ul> <p><i>Interchange Locations</i></p> <ul style="list-style-type: none"> <li>• Maine Turnpike north of exit 32 (Biddeford).</li> <li>• West of the Maine Turnpike (with connections to Route 111 in Biddeford and US Route 1 in the vicinity of the Arundel/Biddeford town line).</li> <li>• Route 35 (north of Route 111).</li> <li>• Route 4/US Route 202 (north of Alfred town center).</li> <li>• Routes 11/109 (north of Springvale).</li> <li>• Route 202 (vicinity of Lebanon/Sanford town line).</li> </ul> <p><i>Other Highway and Street Improvements</i></p> <ul style="list-style-type: none"> <li>• New highway connection (limited access or with a high degree of access control) from new interchange to Route 111 and US Route 1 in Biddeford.</li> </ul>
<b>Access Control</b>	<ul style="list-style-type: none"> <li>• Controlled access on expressway (access by ramps and interchanges only; no access to abutting properties).</li> <li>• A high degree of access control for new connector highways is presumed.</li> </ul>

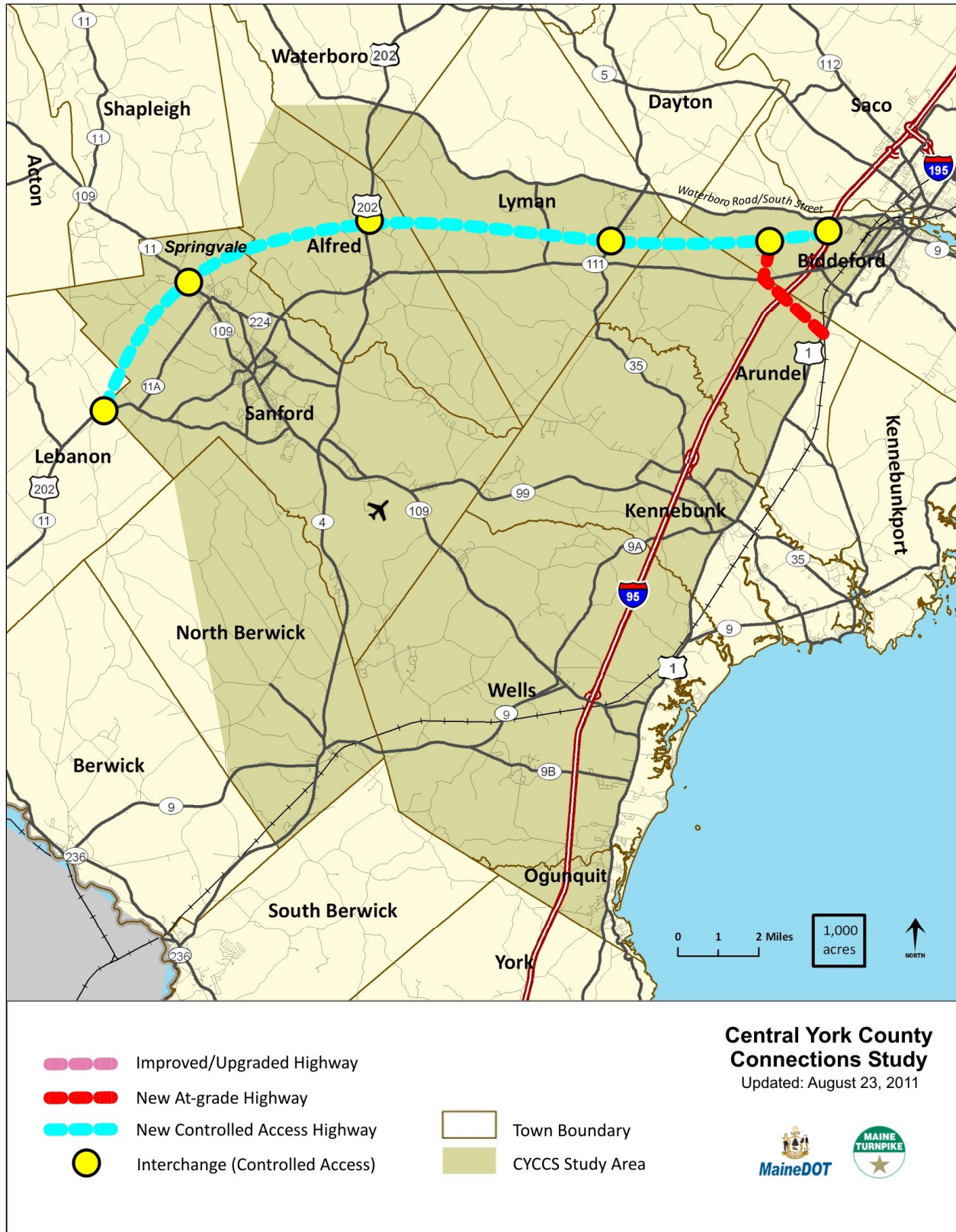


Figure 7: Strategy B-6, Biddeford Expressway (North)



*KENNEBUNK/WELLS CORRIDOR STRATEGIES*

## Strategy K-1: Route 99 – Route 35 Connection

Strategy K-1 (Figure 8) is a new, more direct two-lane highway connection linking Route 99, Alfred Road, Route 35 and exit 25 of the Maine Turnpike in Kennebunk. This strategy would involve constructing a new bridge over the Mousam River just north of the Maine Turnpike. This connection would serve as a more direct, higher capacity alternative to the existing Mill Street connection between Route 99 and Alfred Street. Improvements to Route 99 itself are not proposed for evaluation during Phase II, as traffic volumes and congestion are light and travel speeds are generally free-flow conditions (traffic travels at the posted speed) on the highway today. Route 99 improvements to address safety or other issues identified through the Phase II study process may be considered during Phase III.

Posted Speed	<ul style="list-style-type: none"> <li>• 35 mph.</li> </ul>
Description	<ul style="list-style-type: none"> <li>• New two-lane highway connection across the Mousam River linking Route 99, Alfred Road, Route 35 and exit 25 (southbound).</li> </ul>
Access Control	<ul style="list-style-type: none"> <li>• Access to abutting properties may be allowed, but a high degree of access control is presumed.</li> </ul>



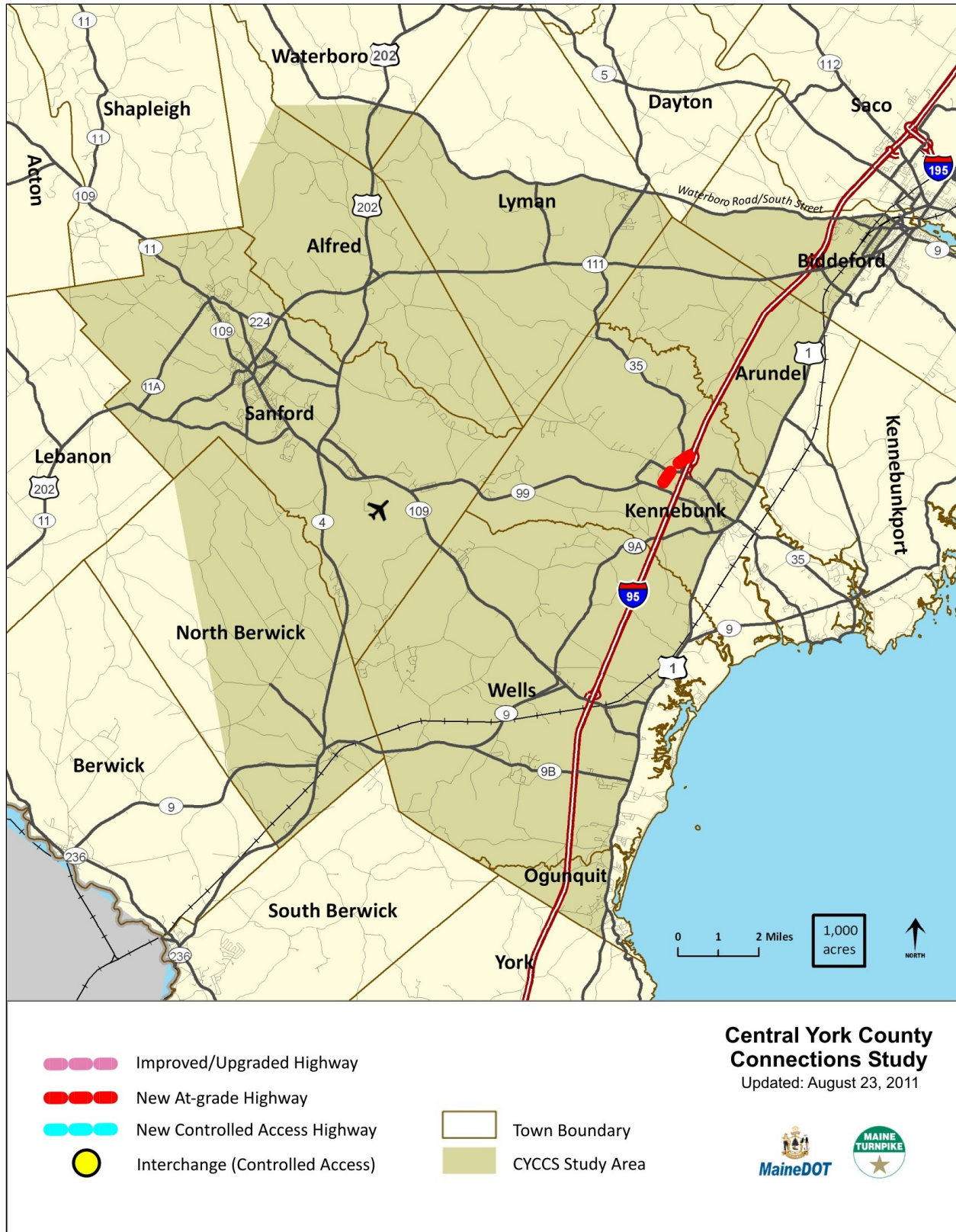


Figure 8: Strategy K-1, Route 99 – Route 35 Connection

### Strategy K-2: Upgrade Route 109

Strategy K-2 (Figure 9) represents a major expansion of the existing Route 109 corridor between South Sanford and Wells. In order to achieve a 55 mph posted speed limit as proposed, some new bypass segments would be needed in developed areas in the vicinity of the Sanford/Wells town line, including the Highpine neighborhood. The extent and location of these have not been determined for the Phase II analysis, and would need further study should this strategy proceed to Phase III.

Posted Speed	<ul style="list-style-type: none"> <li>• Maintain existing speed limit north of Route 99 (35 – 45 mph).</li> <li>• 55 mph south of Route 99.</li> </ul>
Description	<ul style="list-style-type: none"> <li>• Widen Route 109 to four-lanes plus a left turn lane north of the Route 99 intersection in Sanford.</li> <li>• Between Route 99 and Bragdon Road (Wells), widen and realign the roadway and implement access control as necessary to maintain a 55 mph posted speed limit.</li> <li>• Bypass segments would be needed around the more developed areas that abut the highway (such as High Pine), but the extent of these are unknown at this time.</li> <li>• Add one passing lane in each direction in Wells south of the Sanford-Wells town line.</li> <li>• No additional improvements to Route 109 south of Bragdon Road are proposed (this section is currently being reconstructed by MaineDOT).</li> </ul>
Access Control	<ul style="list-style-type: none"> <li>• Increased access management on Route 109, but access to abutting properties continues to be provided.</li> <li>• Limited access on new bypass segments (restricting or limiting access to abutting properties).</li> </ul>



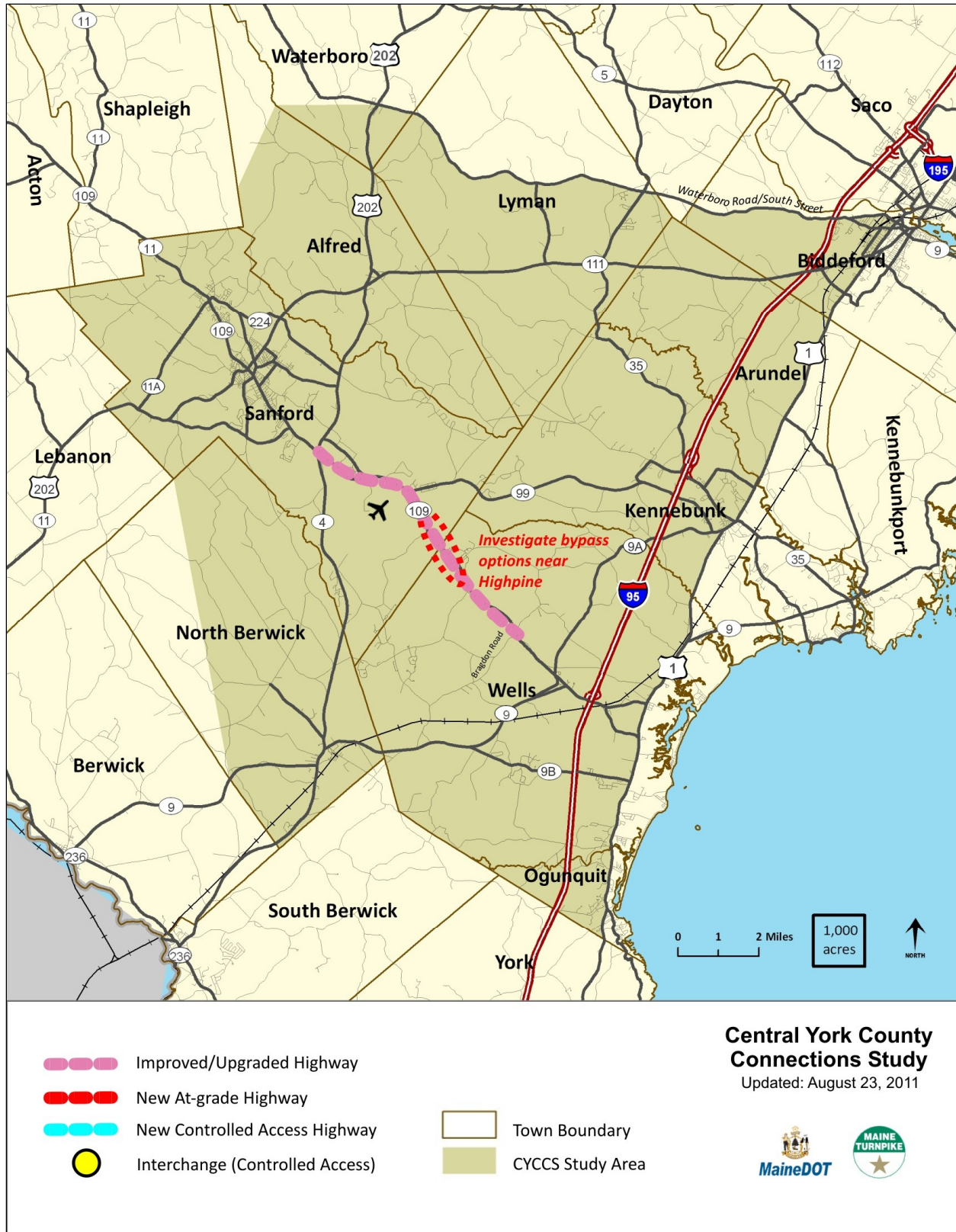


Figure 9: Strategy K-2, Upgrade Route 109

### Strategy K-3: Kennebunk Expressway

Strategy K-3 (Figure 10) is a new controlled access highway from Route 4 (near School Street in Sanford) to the Maine Turnpike (south of the Kennebunk exit 25), with interchanges providing access to US Route 1 (south of Kennebunk), Route 9A, Route 99 (east of Route 109) and Route 4 (east of Route 109 near School Street) and a new ring-road connector system to distribute traffic to the street network in Sanford (including connections to Route 111/202, Route 224 and Route 109).

Posted Speed	<ul style="list-style-type: none"> <li>65 mph</li> </ul>
Description <i>Expressway</i>	<p><i>Expressway</i></p> <ul style="list-style-type: none"> <li>Construct controlled access, four-lane divided highway with median.</li> </ul> <p><i>Interchange Locations</i></p> <ul style="list-style-type: none"> <li>Maine Turnpike south of exit 25 (Kennebunk), with connection to Route 9A.</li> <li>Route 99 (east of Route 109).</li> <li>Route 4 (near School Street).</li> </ul> <p><i>Other Highway and Street Improvements</i></p> <ul style="list-style-type: none"> <li>New at-grade, limited access highway connecting new Maine Turnpike interchange to US Route 1 south of Kennebunk.</li> <li>Sanford ring-road connector consisting of:             <ul style="list-style-type: none"> <li>New at-grade highway from new interchange at Route 4 to Route 109.</li> <li>New at-grade highway from new interchange at Route 4 to Routes 111/224.</li> </ul> </li> <li>Improved connection to High Street.</li> </ul>
Access Control	<ul style="list-style-type: none"> <li>Controlled access on expressway (access by ramps and interchanges only; no access to abutting properties).</li> <li>A high degree of access control for new connector highways is presumed.</li> </ul>





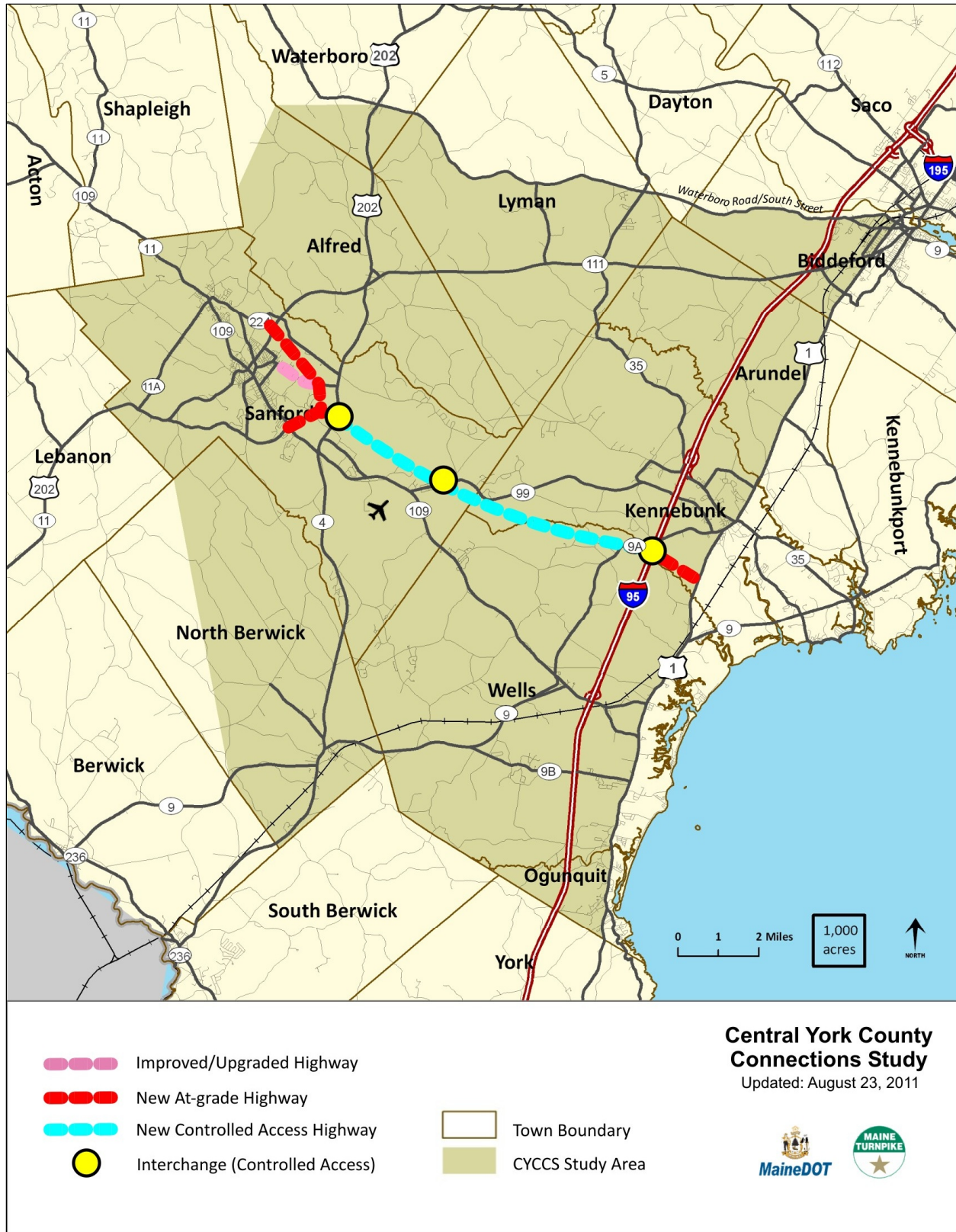


Figure 10: Strategy K-3, Kennebunk Expressway

*NORTH BERWICK/OGUNQUIT CORRIDOR STRATEGIES*

## Strategy NB-1: Upgrade Route 4 and New North Berwick Bypass

Strategy NB-1 (Figure 11) represents a moderate reconfiguration of the existing Route 4 corridor between Alfred and North Berwick to achieve a 55 mph posted speed along most of the corridor and provide passing opportunities. The strategy includes a new bypass around the town center of North Berwick. No improvements are considered beyond the study area (e.g. – in South Berwick or beyond).

Posted Speed	<ul style="list-style-type: none"> <li>• 55 mph on upgraded Route 4, except approaching intersection zones at Route 111 in Alfred, Grammar Road in Sanford, and Route 109 in Sanford (slow to 35 mph).</li> <li>• 35 mph to 45 mph on North Berwick bypass.</li> </ul>
Description	<ul style="list-style-type: none"> <li>• Maintain two-lane section, adding left turn lanes at cross streets.</li> <li>• Realign and implement access management to achieve posted speed limit of 55 mph.</li> <li>• Add passing lanes in each direction north of Grammar Rd (in Alfred) and south of the Sanford Airport.</li> <li>• Construct a new two-lane, limited-access bypass on Route 4 around the North Berwick Town Center.</li> </ul>
Access Control	<ul style="list-style-type: none"> <li>• Limited access on new bypass (restricting or limiting access to abutting properties).</li> <li>• Increased access management on Route 4, but access to abutting properties continues to be provided.</li> </ul>



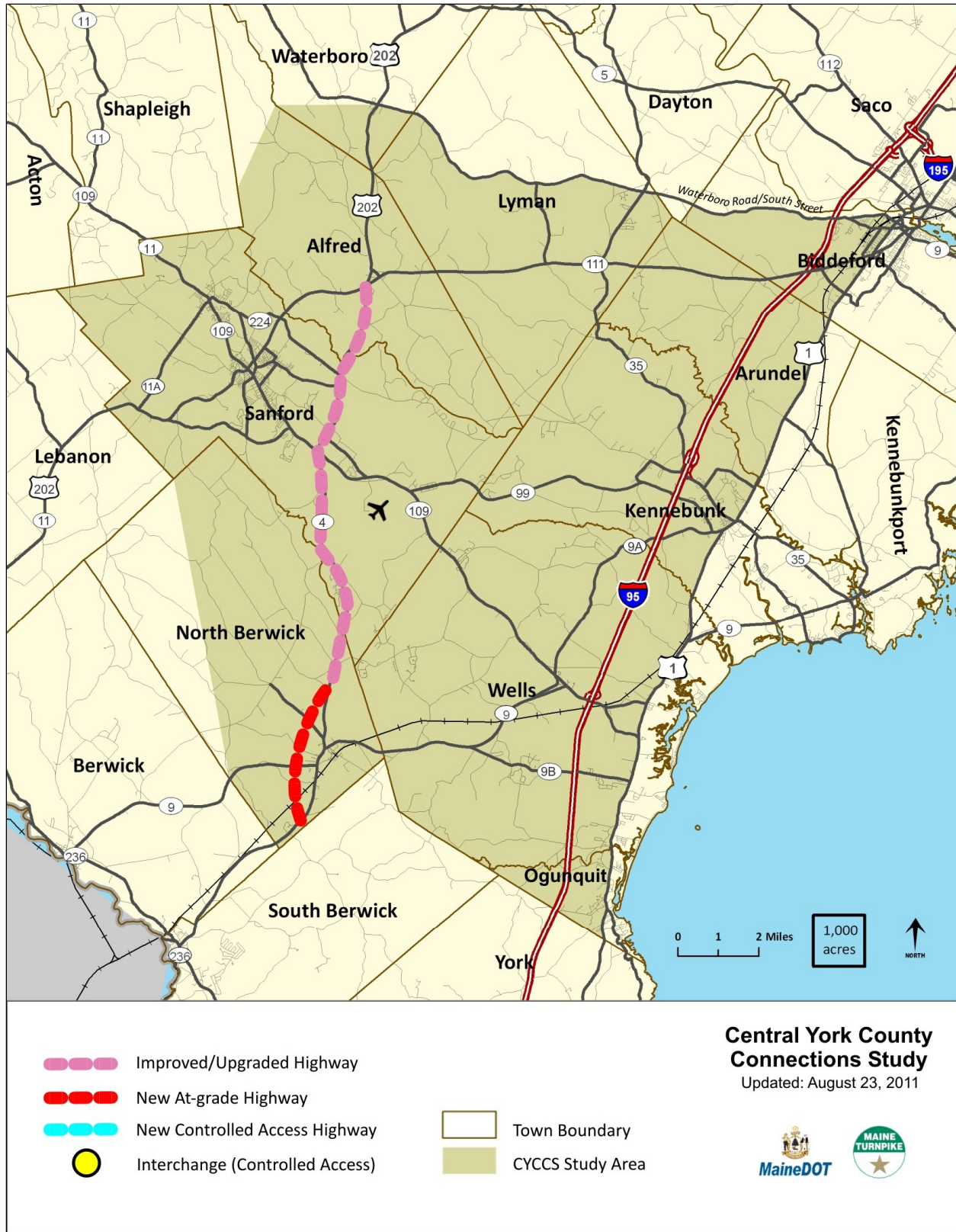


Figure 11: Strategy NB-1, Upgrade Route 4 and New North Berwick Bypass

Strategy NB-2: Upgrade Route 4 and New North Berwick – Maine Turnpike/Ogunquit Highway  
 Strategy NB-2 (Figure 12) involves construction of a new Maine Turnpike Interchange in Ogunquit (presumed near Berwick Road), which would connect to a new two-lane, at-grade highway leading to Route 9 and Route 4 in North Berwick as well as to Route 1 in Ogunquit. The new connector highway would have a high degree of access management, and could possibly be designated a limited access facility. This strategy also includes the upgrades to Route 4 described for Strategy NB-1, other than the North Berwick Bypass.

Posted Speed	<ul style="list-style-type: none"> <li>• 55 mph, except approaching intersections at Route 111 in Alfred, Grammar Road in Sanford, and Route 109 in Sanford (slow to 35 mph).</li> </ul>
Description	<ul style="list-style-type: none"> <li>• Route 4 Upgrade described for Strategy NB-1 (except for the North Berwick Bypass).</li> <li>• Construct new two-lane, limited-access highway between Route 4 (North Berwick) and Route 1 (Ogunquit).</li> <li>• Construct new interchange connecting the Maine Turnpike with new North Berwick – Ogunquit highway.</li> </ul>
Access Control	<ul style="list-style-type: none"> <li>• Limited access on new highway (restricting or limiting access to abutting properties).</li> <li>• Increased access management on Route 4, but access to abutting properties continues to be provided.</li> </ul>



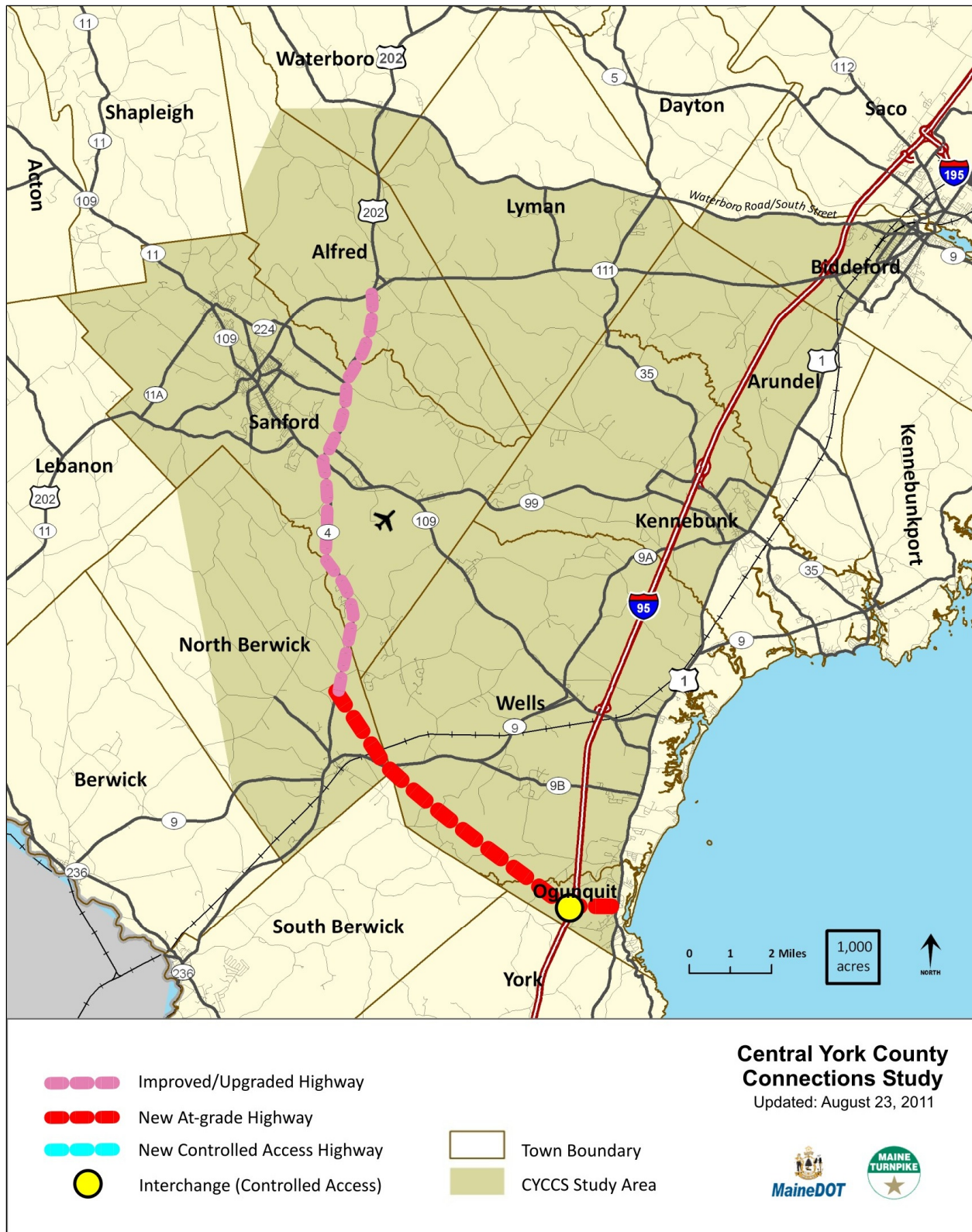


Figure 12: Strategy NB-2, Upgrade Route 4 and New North Berwick – Maine Turnpike/Ogunquit Highway

### Strategy NB-3: Ogunquit Expressway

Strategy NB-3 (Figure 13) is a new controlled access highway from the vicinity of Routes 11/202 (west of Sanford) to the Maine Turnpike (near the Berwick Road in Ogunquit). Access would be provided by interchanges at the Maine Turnpike (with a new highway connection to US Route 1 north of the Ogunquit village center), Route 9, Route 4 near the Sanford Airport (with a new highway connection to Route 109) and in western Sanford near Route 11/202.

Posted Speed	<ul style="list-style-type: none"> <li>• 65 mph.</li> </ul>
Description	<p><i>Expressway</i></p> <ul style="list-style-type: none"> <li>• Construct new controlled access, four-lane divided highway with median (two lanes in each direction).</li> </ul> <p><i>Interchange Locations</i></p> <ul style="list-style-type: none"> <li>• Maine Turnpike near the Berwick Road (Ogunquit), with connection to Route 1.</li> <li>• Route 9 (east of North Berwick).</li> <li>• Route 4 with connecting street providing access to Route 109 near the Sanford Airport.</li> <li>• Route 11/202 with connecting streets providing access to Route 109 by way of Twombly Road or other local streets in Sanford.</li> </ul> <p><i>Other Highway and Street Improvements</i></p> <ul style="list-style-type: none"> <li>• New at-grade highways connecting the new Maine Turnpike Interchange to Berwick Road and to US Route 1 north of Ogunquit town center.</li> <li>• New at-grade highway connecting new interchange at Route 4 to Route 109 south of the Sanford Airport.</li> <li>• New at-grade highway connecting new Sanford interchange to Routes 11/202 west of Route 109.</li> <li>• New street connection between the new Sanford interchange and the existing street network in Sanford (likely via Twombly Road) to provide access to the greater downtown area and Route 109.</li> </ul>
Access Control	<ul style="list-style-type: none"> <li>• Controlled access on expressway (access by ramps and interchanges only; no access to abutting properties).</li> <li>• A high degree of access control for new connector highways is presumed.</li> </ul>



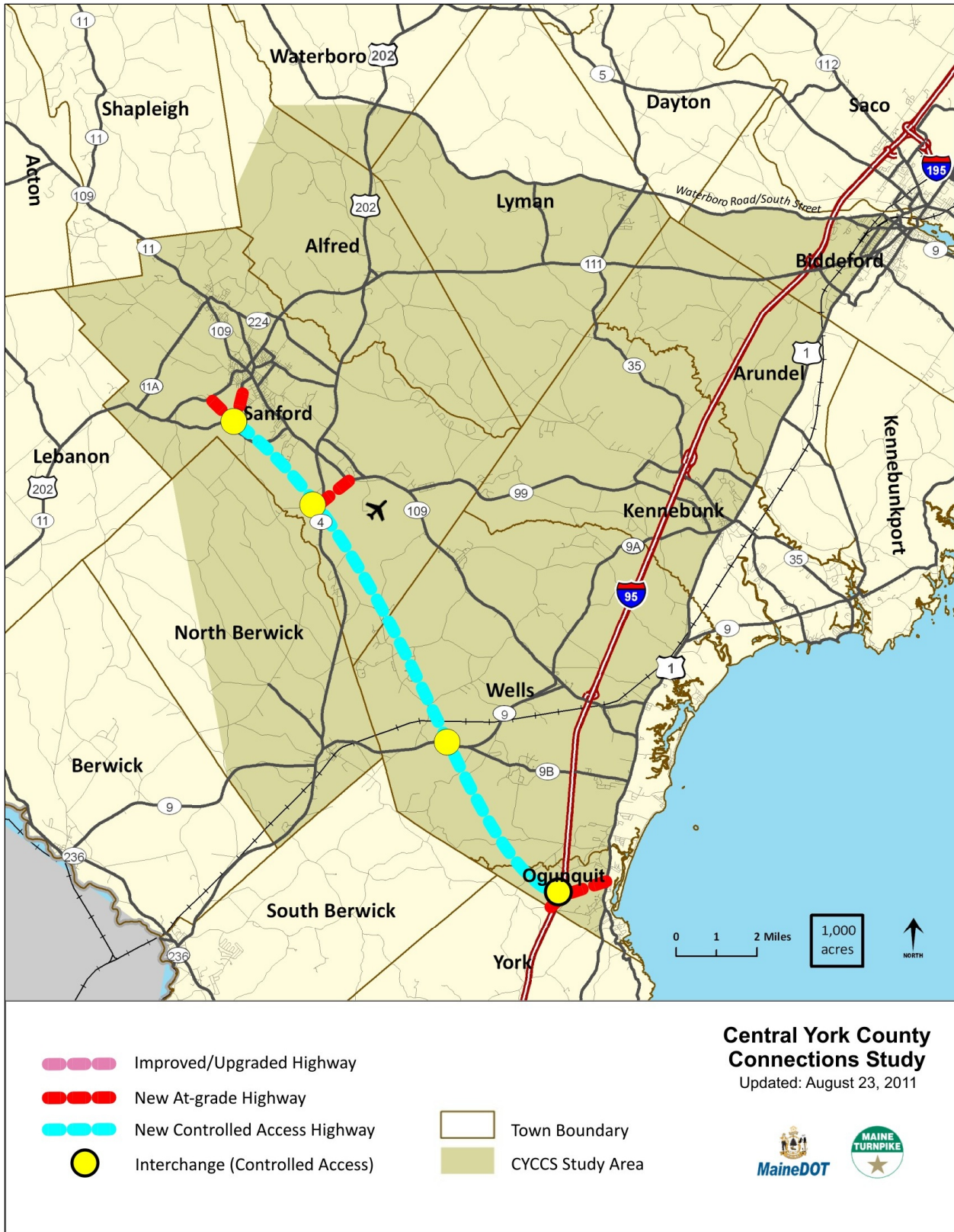


Figure 13: Strategy NB-3, Ogunquit Expressway







## APPENDIX A: DEFINITIONS

**Access Management:** The regulation and management of vehicular access to highways or other major roadways by adjacent properties.

**At-grade Highway:** A highway that generally travels level with adjacent land (on nearly so) and intersects with cross streets by way of at-grade intersections. Adjacent properties typically access at-grade highways directly by way of driveways, unless prohibited through strict access management regulations.

**At-grade Intersection:** A junction of two or more roadways that intersect at the same grade (or elevation), often with a traffic signal, stop signs, or roundabout controlling traffic movements.

**Connector (or Highway Connector):** A road connecting a highway with one or more other highways or major roads.

**Controlled Access Highway or Controlled Access Expressway:** A highway that emphasizes the high speed, uninterrupted flow of traffic, with access being provided only by on-ramps and off-ramps at interchange locations.

**Limited Access Highway:** A highway that emphasizes the movement of traffic and heavily regulates access to abutting properties, but still typically includes at-grade intersections with cross streets.

**Transportation Demand Management (TDM):** Programs and actions designed to improve travel choices and preserve transportation system capacity through reducing travel demand. Examples include carpool and vanpool ridematching programs, park-and-ride lots, flexible work schedules and incentives to commute by transit, walking or biking.

**Transportation Systems Management (TSM):** Actions aimed at improving transportation system efficiency, safety and capacity through better management of existing transportation infrastructure. Examples include upgrading traffic signal systems, real-time travel information, and targeted traffic enforcement.