ADOPTED DECEMBER 17, 2013

BATH ROAD MASTER PLAN

prepared for: **Town of Wiscasset**

Existing

Recommended

prepared by:

T·Y·LIN INTERNATIONAL

in association with:

MRLD Landscape Architecture + Urbanism

Kevin Hooper Associates

Planning Decisions

Plan was developed through funding provided by the Maine Department of Transportation and the Town of Wiscasset

Bath Road Master Plan

Wiscasset, Maine

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Executive Summary

The Wiscasset Bath Road Master Plan (Plan) seeks to maximize development opportunities along Bath Road through the strategic coordination of traffic infrastructure improvements, land use policies and design standards while maintaining or improving the mobility and safety of U.S. Route 1. By planning for growth, Bath Road will increase safety, reduce congestion and enhance the visual character. Ultimately, this Master Plan is intended to help Wiscasset (the Town) shape a future for Bath Road and surrounding areas that reflects the needs and values of the community and preserves the Midcoast Region's most important arterial highway.

The Plan covers the areas adjacent to U.S. Route 1 (Bath Road) from the Woolwich-Wiscasset town line to the northerly intersection of Flood Avenue and Bath Road. Refer to ***Figure ES-1*** for a map of the Plan area.

The goals of the Plan are to:

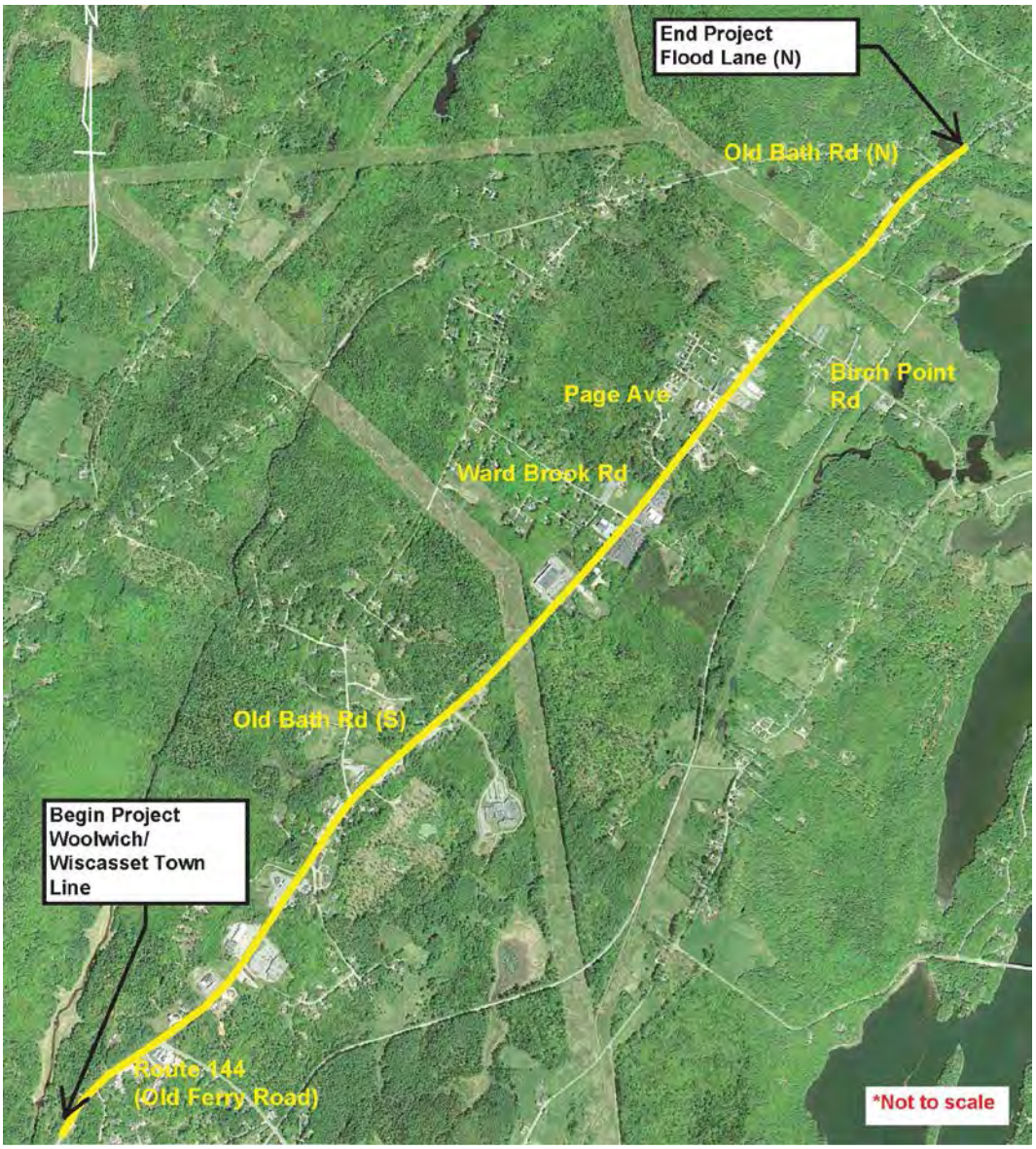
1. Identify traffic improvements within the highway and on adjacent, developed and developable properties to meet the needs of existing and future development, while maintaining or improving the highway's mobility, safety and capacity;
2. Provide concept plans and street networks demonstrating the potential for development adjacent to the corridor that improves local pedestrian and vehicular circulation;
3. Develop a responsible plan for coordinated highway infrastructure improvements and transportation enhancements as well as practical financing strategies needed to implement the plan;
4. Provide design standards for corridor preservation;
5. Identify transportation-related land use strategies incorporating best management practices to facilitate corridor preservation consistent with Wiscasset's Comprehensive Plan; and
6. Balance the needs of residents with those travelling through Wiscasset.

Town Staff, MaineDOT, the Lincoln County Planning Commission, the Bath Road Master Plan Steering Committee, area stakeholders and the community at large all have assisted in the development of this Plan.

The 2008 Comprehensive Plan identifies Bath Road for growth. However, development along Bath Road is occurring on a parcel-by-parcel basis with no overall community vision taking into account visual quality, the efficient use of adjacent lands, safety, and coordinated traffic improvements. As a result, the Town will likely experience haphazard development along Bath Road and lose opportunities to provide a more efficient traffic pattern and livable community.

It is a high priority of the 2008 Wiscasset Comprehensive Plan to create "different open space as well as business zones along Bath Road in order to leave some open space." The Comprehensive Plan further clarifies this by stating that planning policies and development standards should "not permit a continuous strip of development to emerge from the Woolwich line to the Village center. This would have negative effects on the Town's ability to grow as a tourist destination, as well as on the flow of traffic on U.S. Route One." Thus, a diversity of development options that are sensitive to the environment, safety and mobility are central to striking a good balance between growth and community character.

Figure ES-1 Study Area



The Plan is based on three guiding principles:

1. Context Sensitive Solutions (CSS)

The Plan is based on the Context Sensitive Solutions planning process (CSS). CSS is a response to the frustration that communities often experience with transportation planning by using a collaborative approach involving all stake holders. In particular, this frustration is with the long-term impacts and types of place that result when the movement of vehicles is favored to the exclusion of other modes of travel (such as pedestrians and bicycles). In the case of Bath Road, diverse mobility options are not the focus of the Plan, but instead on how the transportation infrastructure is sensitive to the context. By integrating land use with mobility, the whole is greater than the sum of the parts. Synergies are established allowing for responsible growth patterns that maximize investments in the Bath Road infrastructure improvements. The CSS approach mobilizes a community partnership around a place and working with goals and an implementation strategy leads to an articulated and attainable future.

2. Complete Streets

Bath Road is a regional arterial highway primarily serving vehicles, but it is also the coastal route for cyclists and as identified in the planning process there are areas where increased pedestrian infrastructure could encourage economic development and help differentiate Bath Road into a series of places, even if these places are linear in nature or nodes along the corridor. Specifically, shoulders (for bicycle use) are recommended for both sides of Bath Road. Sidewalks and other pedestrian amenities are recommended between Page Avenue and Birch Point Road.

New neighborhoods and street networks accessing backlands will accommodate local traffic, dispersing traffic and providing connectivity for all modes of travel. Neighborhoods should also include trail networks to link open space areas.

3. Location Efficient Design

Location efficient design incorporates the integration of best management mobility practices with coordinated development. Location efficient design is applied to new developments and retrofits of existing development to create street networks that maximize connectivity, new development frontage on backlands and ultimately guide vehicular movement to controlled access points on Bath Road. In terms of the proposed zoning for Bath Road, location efficient design is most applicable to the proposed Bath Road Mixed-Use and Bath Road Village Districts where there is a depth of developable land to the east and west of Bath Road. The third proposed District, the Bath Road Commercial District, has limited growth opportunities to the east and west due to existing residential neighborhoods and environmental constraints, thus the focus in this district is on access management versus creating a network of streets dispersing local traffic.

Master Plan Recommendations

The recommendations of this Plan are based on detailed review of existing traffic infrastructures, volumes and safety history, growth projections, the June, 2012 MaineDOT Bath Road Safety Audit, an analysis of existing land use patterns, a summary of the relevant goals, policies and standards of the Comprehensive Plan and the Zoning Ordinance as well as direct input from staff, the Steering Committee and the community.

The implementation of this plan through new traffic infrastructure improvements, ordinance amendments and development review will create a Bath Road that is a series of "places" rather than "zones" while improving the safety and capacity of Bath Road to support growth. Bath Road will always serve primarily as a major regional transportation corridor. Although it is a major transportation corridor, it does not need to evolve into "anywhere" USA. By responding to the specific needs of the community and addressing obstacles in a responsible manner, the corridor can reflect its context and, in turn, what is special about the Town of Wiscasset.

The Implementation of the Plan is divided into four basic categories:

1. Transportation
2. Zoning and Land Use
3. Design Standards
4. Finance

1. Transportation

Six types of transportation improvements are recommended:

1. Intersection Improvements along Bath Road
2. Bath Road Widening where needed to accommodate 5-foot shoulders, turning lanes and medians
3. New Connector Roads serving developable back lands and/or providing improved traffic circulation off Bath Road
4. Inter-parcel connections where practicable to minimize unnecessary traffic turns onto Bath Road for vehicles patronizing abutting business
5. Consolidating access points along Bath Road so as to improve safety and reduce through-traffic disruptions
6. Other Highway-Related Improvements

Implementation of the recommended highway improvements is based upon the timing of the needs and their causative factors. The recommended actions and their relative time line are summarized in the following **Table ES-1**. The timelines and associated major funding sources are defined as follows:

- Existing Deficiency – the need exists now and is related to current mobility and safety needs of Bath Road. Costs would be borne in the usual MaineDOT-municipal cost share formulas, depending on the type of work being conducted.
- General Future Growth – the needs will occur over time and are primarily due to regional traffic growth, not by developing properties in the Town of Wiscasset. The fund shares would be the same as above.
- Future Local Development – the needs will arise over time as a result of land use changes in Wiscasset within the Plan area. The costs of the needed improvements would be borne primarily by the developers and/or the Town of Wiscasset.

Table ES-1 Proposed Highway Improvements, Estimated Costs, Timelines and Fund Sources [1]

Location	Highway Improvement (Priority)	Estimated Cost [2]		
		Existing Deficiency	**General Future Growth**	**Future Local Development**
Bath Road at Route 144 [3]	Construct Left Turn Lane on SB Bath Road Approach *(Mid-Term)*	$35,000	n/a	n/a
	Provide Separate Left & Right Turn Lanes on Rte. 144 Approach *(Mid-Term)*	$100,000	n/a	n/a
	Install Traffic Signal when Warranted *(Long-Term)*	n/a	n/a	$245,000
	Create 4th Leg of Intersection for Back Land Development Access *(Long-Term)*	n/a	n/a	X
Bath Road at Old Bath Road (S)	Construct Left Turn Lane on NB Bath Road Approach *(Mid-Term)*	$35,000	n/a	n/a
	Widen SB Bath Road *Shoulder* or Provide Right Turn Lane *(Mid-Term)*	$110,000	n/a	n/a
	Construct Separate Left & Right Turn Lanes on Old Bath Road *(Long-Term)*	n/a	n/a	$120,000

Table ES-1 Proposed Highway Improvements, Estimated Costs, Timelines and Fund Sources				
Bath Road at Birch Point Road 3	Construct Left Turn Lane on SB Bath Road Approach *(Mid-Term)*	$50,000	n/a	n/a
	Construct Separate Left & Right Turn Lanes on Birch Point Road *(Long-Term)*	n/a	$50,000	n/a
	Install Traffic Signal when Warranted *(Long-Term)*	n/a	n/a	$245,000
	Create 4th Leg of Intersection for Back Land Development Access *(Long-Term)*	n/a	n/a	X
Bath Road - Add 3rd Lane	South of Route 144 to Shady Lane *(Long-Term)*	n/a	n/a	$120,000
	Route 144 to Wood Lane *(Long-Term)*	n/a	n/a	$30,000
	Ames True Value to Birch Point Road *(Long-Term)*	n/a	n/a	$260,000
Bath Road - Shoulder Widening (for Bicycle Access)4	NB and SB near Dunkin Donuts and Skillin Lane *(Mid-Term)*	$50,000	n/a	n/a
	NB & SB Intermittently Old Bath Road to Wood Lane *(Long-Term)*	n/a	n/a	$200,000
	NB & SB Intermittently Ames True Value to Wood Lane *(Long-Term)*	n/a	n/a	$200,000
	NB & SB Intermittently Ward Brook Road to Page Avenue *(Long-Term)*	n/a	n/a	$100,000
	NB & SB Oxhorn to New Old Bath Rd. turn lane *(Long-Term)*	$100,000	n/a	n/a
Bath Road - Driveway Turn Lanes	SB Right Turn Lane at McDonald's Restaurant *(Mid-Term)*	$185,000	n/a	n/a
	SB Right Turn Lane at Ames True Value *(Mid-Term)*	$120,000	n/a	n/a
Connector Roads	Rte. 144 to Old Bath Road (east side of Bath Road) *(Long-Term)*	n/a	n/a	$3,000,000
	Extend Rte. 144 west and north to connect to Old Bath Road *(Long-Term)*	n/a	n/a	$3,500,000
	Rte. 144 to south, vicinity of Shady Lane *(Long-Term)*	n/a	n/a	$1,000,000
	Extend Birch Point Road west to Old Bath Road *(Long-Term)*	n/a	n/a	$1,500,000
	Birch Point Rd. to Page Ave. *(Long Term)*	n/a	n/a	$1,000,000
	Close north intersection of Old Bath Road at Bath Road *(Long-Term)*	n/a	n/a	$1,500,000
Other Improvements	Upgrade Culvert at Ward Brook (Long-Term)	n/a	n/a	$65,000
	Upgrade Culvert north of Old Bath Road (S) *(Long-Term)*	n/a	n/a	$65,000
	Reconstruct Shoulders Where Used for Vehicle Travel *(Long-Term)*	*	n/a	n/a
	Sidewalks Between Page Avenue & Birch Point Road *(Long-Term)*	n/a	n/a	$744,000
	Crosswalk & Ped Warning Lights at Page Road *(Long-Term)*	n/a	n/a	$15,000

	Crosswalk at Birch Point Road when Signal is Installed *(Long-Term)*	n/a	n/a	$10,000
	Raised Islands Where No Impact to Traffic and Well-Lit and streetscape improvements*(Long-Term)*	n/a	n/a	$150,000
	Inter-parcel Connections *(Long-Term)*	n/a	n/a	X
	Access Management *(Long-Term)*	n/a	n/a	X
Totals		$785,000	$50,000	$14,069,000

1 - Refer to Appendix B for visual presentations of proposed highway improvements
2 - Planning-level estimates excluding Right-of-Way and extraordinary environmental permitting and utility extension costs.
3 - Traffic Movement Permit escrow account funds are available to help fund improvements if they are expended prior to December 2014.
4 - While the provision of marked and signed bicycle lanes are not specifically part of the details of the Master Plan, consideration of formalized bicycle lanes should be considered in the future.
X not estimated in this study
* accounted for in the 3 lane costs
Priority – *Mid-Term* 2 to 4 years; *Long-Term* 5 Years or Greater

2. Zoning

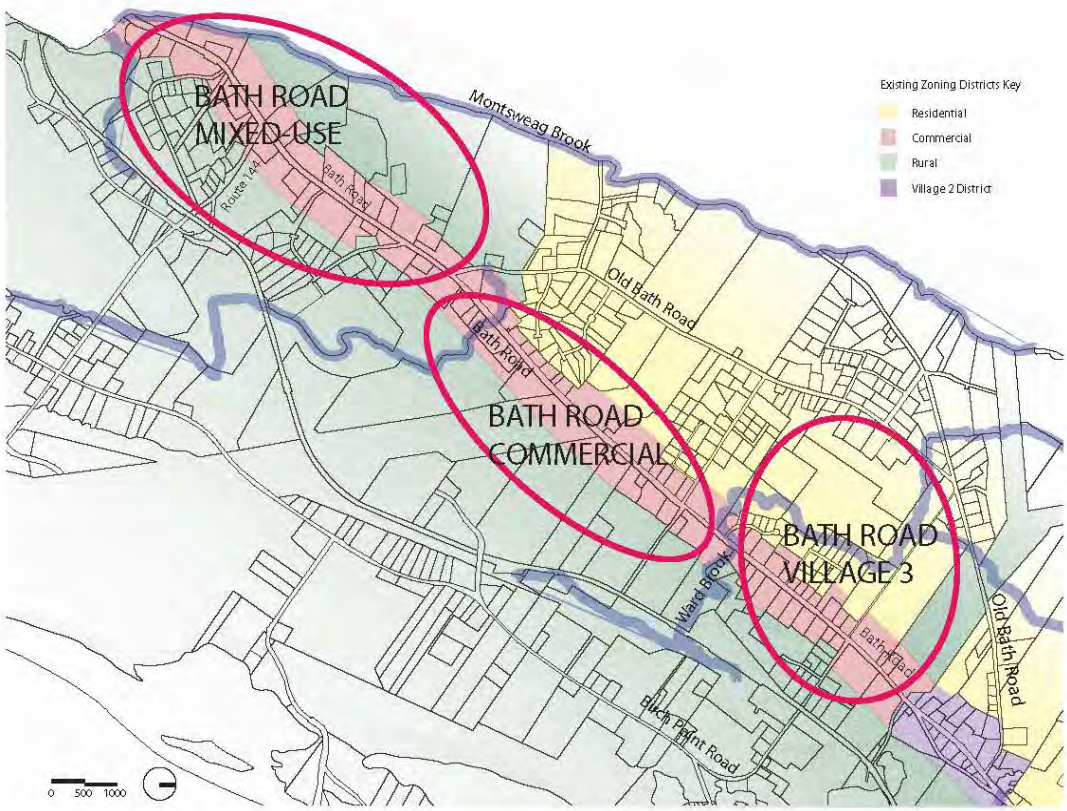
The Bath Road Master Plan area is currently zoned commercial from the Woolwich town line to the Village 2 District. It is recommended that this approximate 4-mile stretch of road be rezoned into three Districts to accommodate different types of growth, and to better integrate infrastructure improvements with the context and ultimately different thematic character areas along Bath Road in order to avoid a continuous strip of development as cautioned by the 2008 Comprehensive Plan. The three proposed Districts include the Bath Road Mixed-Use District, the Bath Road Commercial District and the Bath Road Village District 3. The Districts are defined in the paragraphs following and are illustrated in ***Figure ES-2.***

Proposed Bath Road Mixed-Use District

The Bath Road Mixed-Use District supports a range of residential, commercial and professional uses by utilizing an improved Route 144 intersection, new street networks accessing backlands and coordinated access management on Bath Road. Development to the west should at a minimum include the required buffer for Monstweag Brook, while development to the east should maintain the integrity of existing residential neighborhoods. Implementing the Bath Road highway infrastructure recommendations will improve the safety and viability of frontage development. By planning for traffic infrastructure and connectivity improvements, permitting could be expedited and cost sharing for area improvements should be more equitable than they are today.

Development fronting Bath Road must meet the MaineDOT and Town of Wiscasset standards for access management and Site Plan Review. The Town should develop higher standards for parking, landscaping, building placement, landscaping and connectivity in order to improve the character of the corridor. Creating new development frontage on new connector roads, providing a network for vehicular connectivity, and maximizing compatible uses are the primary goals for parcels to minimize direct access to Bath Road.

Figure ES-2 Proposed Zoning Districts



Proposed Bath Road Commercial District

The Bath Road Commercial District includes a range of economic development and redevelopment opportunities with a focus on professional and commercial uses. Transportation infrastructure improvements such as landscaped medians integrated with access management and site design standards will promote safe mobility, access and visual quality. By planning for transportation infrastructure improvements and access management, individual developments will be easier to permit and incremental parcel-by-parcel growth will not contribute to long-term congestion.

Of the three proposed Districts, the proposed Bath Road Commercial District is the most similar to the existing Commercial District. No land use changes or major infrastructure improvements are envisioned for this District, although it is recommended that a three lane cross-section should be provided on Bath Road the length of the proposed District. As with the proposed Mixed-Use District, direct access to Bath Road should be discouraged where other access opportunities exist, such as frontage or connector roads and shared access with abutting properties.

Proposed Bath Road Village 3 District

The Bath Road Village 3 District includes many small locally owned businesses. There is an opportunity to build on the history of the area and differentiate this District from the proposed Bath

Road Mixed-Use District and the Bath Road Commercial District through unique design standards and land uses. The District recommendations include a streetscape retrofit to Bath Road creating an area of local character that is pedestrian friendly by introducing sidewalks, crosswalks, streetscape elements, reduced or shared curb cuts and interconnected parcels. It should be noted that the construction of sidewalks/crosswalks is on an as needed basis and that these noted improvements will require a reduction in the regulatory speed limit as such may impact corridor mobility. It is anticipated that most pedestrians will cross Bath Road at the future Birch Point Road signal and this should minimize conflicts with vehicles and pedestrians. Existing buildings are already set closer to Bath Road than in the other proposed Bath Road Districts and redevelopment or infill buildings should be similarly located close to the streetscape in order to encourage pedestrian activity. Page Avenue and Birch Point Road intersections will guide traffic to common access points, providing connectivity to back lands and future street networks. Uses to the west and east of Bath Road should be compatible with existing residential uses and complement the commercial uses on Bath Road.

There is a diversity of uses from Ward Brook Road to Birch Point Road that would typically be considered incompatible in a "Village" setting, however, this area is meant to complement the historic downtown and act as a transitional zone The goal of the Bath Road Village 3 District is to encourage this diversity, but to limit the scale and intensity of uses in order to maintain the local character. This is a tight-knit area and parcels fronting on Bath Road should not include uses that require large parking lots.

The zoning and land use recommendations are summarized below in **Table ES-2**.

Table ES-2 Zoning and Land Use Policy Recommendations

Recommendation	How	Responsible Party	Timeframe	Implementation
Incorporate Bath Road Master Plan into Comprehensive Plan	Revise Comp Plan	Board of Selectman Planning Board Staff	Short-term	Town
Revise Zoning Map	Revise ordinance	Board of Selectman Planning Board Ordinance Review Committee Staff	Short-term	Town
Revise Land Use Table	Revise ordinance	Board of Selectman Planning Board Ordinance Review Committee Staff	Short-term	Town
Revise Site Plan Review and Subdivision Standards to Improve Safety and Visual Issues	Revise ordinance	Board of Selectman Planning Board Ordinance Review Committee Staff	Short-term	Town

Revise residential density standards for proposed Bath Road Mixed-Use and Bath Road Village Districts	Revise ordinance	Board of Selectman Planning Board Ordinance Review Committee Staff	Short-term	Town
Revise and cross-reference Road Ordinance with Subdivision and Site Plan Ordinance to promote connectivity.	Revise ordinance	Board of Selectman Planning Board Ordinance Review Committee Staff	Short-term	Town
Examine adoption of a complete streets policy	Adopt Policy/Ordinance	Board of Selectman Planning Board Ordinance Review Committee Staff	Short-term	Town
Adopt "connectivity" ordinance"	Revise ordinance	Board of Selectman Planning Board Ordinance Review Committee Staff	Short-term	Town
Prepare and adopt Access Management Master Plan for proposed Bath Road Commercial District	Master planning process	Consultant Board of Selectman Planning Board Staff	Short-term	Town
Consistently apply connectivity standards to maximize development potential and investments in traffic infrastructure.	Monitor growth	Town State Staff	Ongoing	Town
Implement "connectivity" ordinance	Monitor growth	Town State Staff	Ongoing	As development occurs

3. Design Standards

The site and subdivision design standards work in conjunction with the zoning and traffic transportation recommendations to guide and encourage a range of economic development opportunities, leading to a Bath Road that is comprised of functionally and visually distinct thematic zones. The recommendations include, but are not limited to landscaping, building placement, connectivity, parking, stormwater management, signage and scale of development. The design standards recommendations, as with the zoning and transportation recommendations, are meant to encourage the highest and best use for a particular area. In many cases, the standards build on the inherent qualities of a location with the goal of fostering this character in relationship to sustainable economic growth.

4. Finance

The funding sources for the various types of transportation improvements are described in the following paragraphs.

Improvements to address current safety and/or capacity problems

The responsibility for funding the improvements necessary to address current safety and/or capacity problems rests primarily with the MaineDOT and the Town of Wiscasset. The cost sharing arrangement for various types of improvements between the state and the Town are set forth in MaineDOT's Local Cost Sharing Policy (the policy is available at www.maine.gov/mdot/docs/lcspolicy16nov2010.pdf).

The MaineDOT should program these improvements into its long-term plans in accordance with statewide and local priorities. Realistically, the bulk of MaineDOT's highway and bridge capital funding is dedicated to maintaining the existing system via bridge investment, pavement preservation, and light capital paving. Even with the $100 million transportation bond approved by the Maine Legislature in August 2013 for voter referendum, MaineDOT estimates an annual capital funding shortfall for bridge and highway needs of $110 million. As a result, MaineDOT is encouraging increased municipal and private cost sharing. In the event that Wiscasset wants to accelerate funding for these capital projects, the Town could apply for a Municipal Partnership Initiative project. Under this initiative, state funding would be capped at $500,000 and the state share of the project costs generally would be 50% or less.

Since the Town will be required to share in the cost of these improvements regardless of the state funding approach, the Town should consider establishing a "reserve account" to be funded on an annual basis to begin accumulating the Town's match for these projects.

Improvements to address future capacity and/or safety issues caused by growth in background or through traffic using the corridor

The Master Plan identifies the future need for the widening of the Birch Point Road approach to the Bath Road intersection to create separate left and right turn lanes. If significant development occurs in the Birch Point Road traffic-shed (including redevelopment of Mason Station) this could trigger the need for this improvement and will move the project to the "developer" funded category. However, if significant development in this area does not occur, this improvement will still be needed if there is a growth in background traffic on Bath Road. Because of the uncertainty of the timing and cause for the need for this improvement, this improvement should be periodically re-evaluated if development in and adjacent to the corridor does not trigger the need for a developer-funded improvement. Alternatively, if traffic movement permit fees have been collected, they could be used to at least partially fund the improvements.

Improvements to address future capacity and/or safety issues caused by increased traffic generated by development in or adjacent to the corridor

Funding for transportation improvements needed due to local development should be borne by the developer(s) and/or Town. The following strategy is suggested to allow the Town (in conjunction with MaineDOT) to accumulate the funding to undertake intersection improvements as the needs arise:

- The Town should create a Bath Road Traffic Improvement Account to enable it to hold and accumulate funding from a variety of sources.

- The Town should review and revise the traffic impact requirements in the Site Plan Review Ordinance to allow developments subject to that ordinance to mitigate traffic impacts through the payment of an in-lieu-of fee.
- The Town should also review and revise its subdivision requirements to include traffic impact requirements similar to the Site Plan Review ordinance including the payment of in-lieu-of fees.
- As part of the review and approval of development projects subject to either site plan or subdivision review, the Town should require the applicant to make needed traffic improvements if warranted by the volume or type of traffic generated by the development provided that the project is not subject to the MaineDOT Traffic Movement Permit (TMP) system.
- As part of the review and approval of development projects subject to either site plan or subdivision review, the Town should require the payment of an in-lieu-of intersection improvement fee for developments that are not subject to the MaineDOT TMP system and are not required as part of the local approval to make off-site traffic improvements. This requirement should apply to all projects that increase the volume of traffic on Bath Road.

The following strategy is suggested to fund corridor improvements as the needs arise in the future:

- If a large-scale development is proposed that will have a substantial impact on Bath Road traffic, the Town should consider creating a Tax Increment Financing (TIF) District for that project and using a portion of the incremental property taxes from that development to fund overall Bath Road improvements in addition to improvements that may be required as part of a TMP.
- If the volume of traffic in the corridor begins to grow significantly in future years, the Town should explore the possibility of creating a regional impact fee in conjunction with MaineDOT and Lincoln County to pay for the local share of the future cost of these improvements. Under this system, all new development in the Route One corridor that results in additional traffic on Route One in Wiscasset would share in the cost of the necessary improvements to accommodate the increased traffic.

Improvements to create a Village environment between Page Avenue and Birch Point Road and improve the visual environment of the corridor

The Master Plan proposes some improvements intended to make the Bath Road corridor more visually appealing and to create more of a Village-like area in a portion of the corridor. Funding for the sidewalk and streetscape improvements could be done by the Town from the General Fund. Other possible approaches are:

- Create a Tax Increment Financing District
- Create a Special Assessment or Business Improvement District
- Seek Outside Grants

Status of Existing Traffic Movement Permits

The Town of Wiscasset currently is holding $100,000 in an escrow account, which is set to expire in December of 2014. The escrow was established to address Route 144 and Birch Point Road intersection needs. This money should therefore be directed to address the turning lane improvements noted previously in **Table ES-1**. No other TMP fees are available to the Town or MaineDOT at this time.

1.0 INTRODUCTION

The Bath Road Master Plan (Plan) encompasses the areas along U.S. Route 1 (Bath Road) from the Woolwich/Wiscasset town line to the northerly intersection of Flood Lane and Bath Road (See **ES-1**). The purpose of the Master Plan is to provide for continued development within the Plan area while maintaining or improving the mobility and safety of Bath Road, which is the Midcoast region's primary arterial highway. The goals of the Bath Road Master Plan are to:

1. Identify traffic improvements within the highway and on adjacent, developed and developable properties to meet the needs of existing and future development, while maintaining or improving the highway's mobility, safety and capacity;
2. Provide concept plans and street networks demonstrating the potential for development adjacent to the corridor that improves local pedestrian and vehicular circulation;
3. Develop a responsible plan for coordinated highway infrastructure improvements and transportation enhancements as well as practical financing strategies needed to implement the plan;
4. Provide design standards for corridor preservation;
5. Identify transportation-related land use strategies incorporating best management practices to facilitate corridor preservation consistent with Wiscasset's Comprehensive Plan; and
6. Balance the needs of residents with those travelling through Wiscasset.

This document presents the Plan and contains highway improvement, zoning and land use policy recommendations. The recommendations are based on reviews of pertinent municipal plans and ordinances and assessments of current and future conditions in the Plan area.

Acknowledgements

The Bath Road Master Plan was funded by the Maine Department of Transportation (MaineDOT), the Federal Highway Administration and the Town of Wiscasset. A Master Plan Study Team, comprised of representatives from MaineDOT, the Lincoln County Regional Planning Commission and the Town of Wiscasset developed the Master Plan Scope of Services and through a public process selected the consultant team consisting of T.Y. Lin International (TYLI) Team, comprised of TYLI, Planning Decisions (PD), Mitchell Rasor Landscape Design + Urbanism (MRLD), and Kevin Hooper Associates (KHA).

The Study Team and the Consultant Team worked with the Bath Road Master Plan Steering Committee to inform and help guide the development of this Plan.

The members of the Steering Committee are:

- Wayne Averil – Ames True Value
- Don Jones – Member of the former Town Transportation Committee
- Gary Crosby – Wiscasset Marketplace
- Al Cohen - Big Al's Super Values Odd Lot Outlet
- Heather Pitcher – Wiscasset Trading Post
- Peter West - Bicycle and Pedestrian representative
- Troy Cline - Police Chief
- Judith Colby - Selectman
- Ed Polewarczyk - Selectman
- Laurie Smith – Town Manager
- Misty Parker – Town Planner

- Gerry Audibert – Maine Department of Transportation
- Bob Faunce - Lincoln County Regional Planning Commission
- Tim Merry - Selectman

Disclaimer
The preparation of this document has been financed in part through a grant(s) from the Federal Highway Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 of Title 23, U.S. Code. Any opinions, findings and recommendations expressed in this document are solely those of the authors and do not necessarily reflect the views of the United States Government, the U.S. Department of Transportation or the Federal Highway Administration.

2.0 EXISTING CONDITIONS

2.1 Transportation Data

2.1.1 Existing Average Annual Daily Traffic Volumes

Traffic volume counts within the study area were collected in 2010 and 2012 by MaineDOT and TYLI. These counts were converted to Annual Average Daily Traffic (AADT) and presented in ***Figure 2-1***. The 2012 data was collected by TYLI. Older data is from MaineDOT. AADT represents a 24-hour volume at a specific location and includes vehicles in both directions. It basically represents an average volume for a 365 day period. AADT volumes in the study area are noted below:

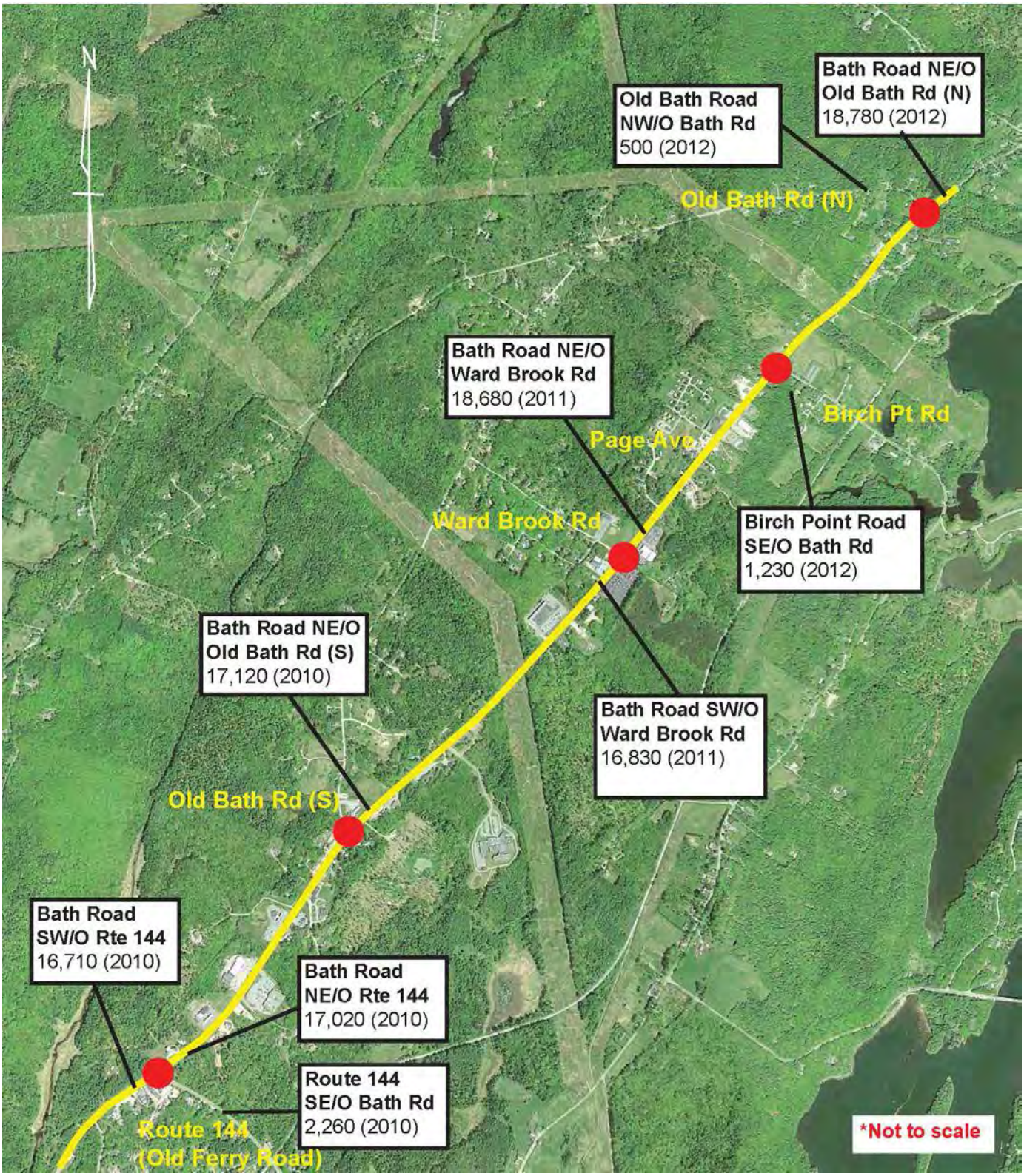
- Bath Road just south of Route 144 - 16,710 vehicles (2010)
- Bath Road just north of Route 144 - 17,020 vehicles (2010)
- Bath Road near Ward Brook - 16,830 vehicles (2011)
- Bath Road north of Old Bath Road (N) - 18,780 vehicles (2012)
- Route 144 - 2,260 vehicles (2010)
- Birch Point Road - 1,230 vehicles (2012)
- Old Bath Road (N) - 500 vehicles (2012)

Bath Road has an AADT of 18,780 vehicles, exceeding 20,000 vehicles per day during summer months. As a comparison, Route 1 in Brunswick carries 25,000 vehicles; Route 1 in Falmouth carries 15,000 vehicles, in Scarborough Route 1 carries 30,000 vehicles and in Camden Route 1 carries 6,900 vehicles. The Bath Road AADT of 18,780 vehicles generally can be accommodated on a two-lane facility with consideration given for intersection/driveway turn lanes and passing opportunities.

2.1.2 Hourly Traffic Volume Variation

The Maine Department of Transportation (MaineDOT) collected year-round traffic volumes on Bath Road (Route 1) southwest of Ward Brook at their permanent count station for the year 2011. ***Figure 2-2*** represents hourly volume distributions for the months of July and August as observed in 2011 and generally indicates the peak travel time in the corridor occurred from 10:00am to 6:00pm with the greatest peak between 3:00-6:00pm.

Figure 2-1 Existing Average Annual Daily Traffic Volumes



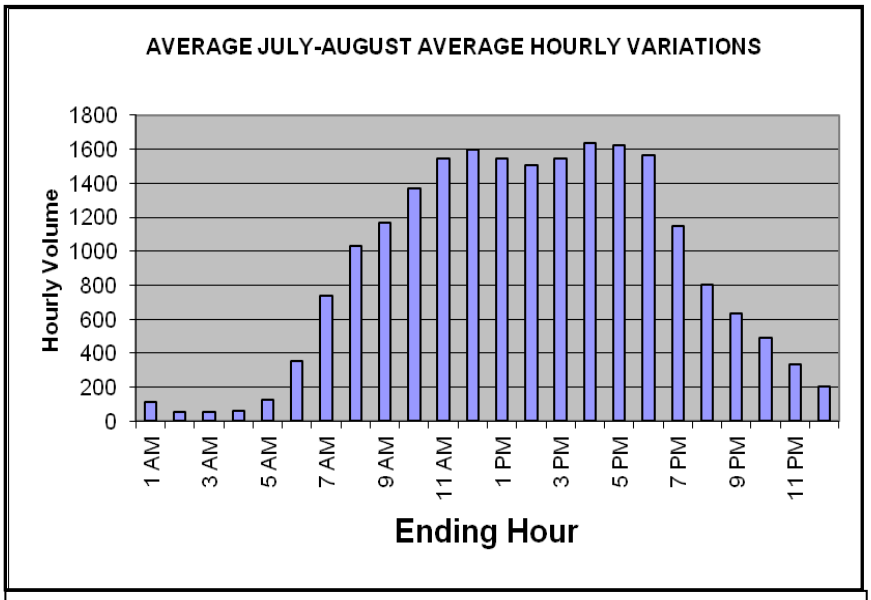


Figure 2-2 2011 Existing Hourly Traffic Volumes

2.1.3 Monthly Traffic Volume Variation

From information collected at the MaineDOT permanent count station on Bath Road, the 2011 monthly traffic volumes were graphed to determine peak seasonal traffic periods in the corridor during the year. See ***Figure 2-3.*** The months of July and August experience the highest traffic volumes during the year.

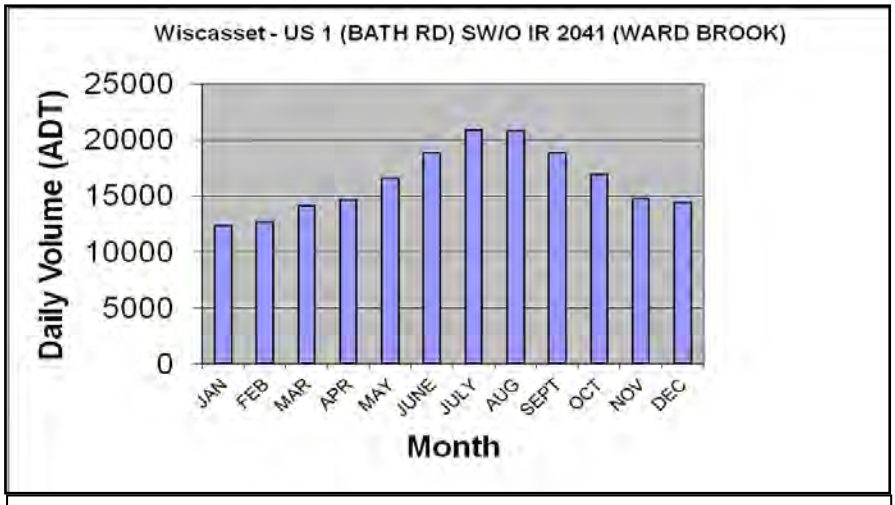


Figure 2-3 2011 Existing Monthly Traffic Volumes

2.1.4 Weekday Traffic Volume Variation

From information collected at the MaineDOT permanent count station on Bath Road, weekday volumes were reviewed to determine daily influence. ***Figure 2-4*** presents total two-way volumes, ***Figure 2-5*** illustrates northbound volumes, and ***Figure 2-6*** presents southbound volumes. The weekday variations for the entire year (blue) as well as the weekday variations for the months of July and August (red) are shown. As noted the peak day of the week is typically a Friday, both in total volumes and in northbound and southbound directions.

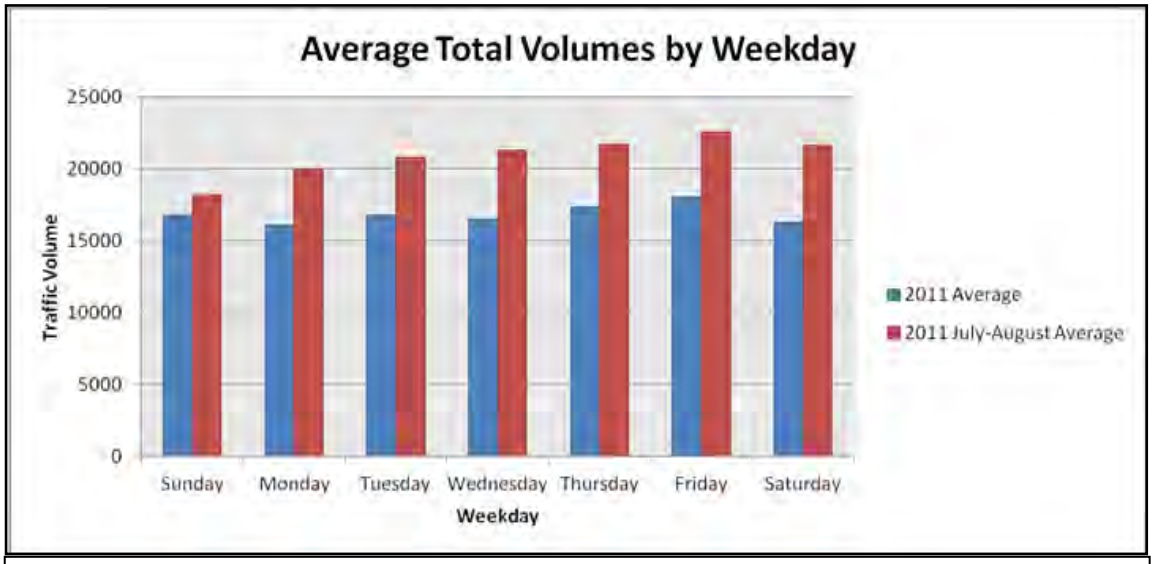


Figure 2-4 2011 Total Weekday Traffic Volumes

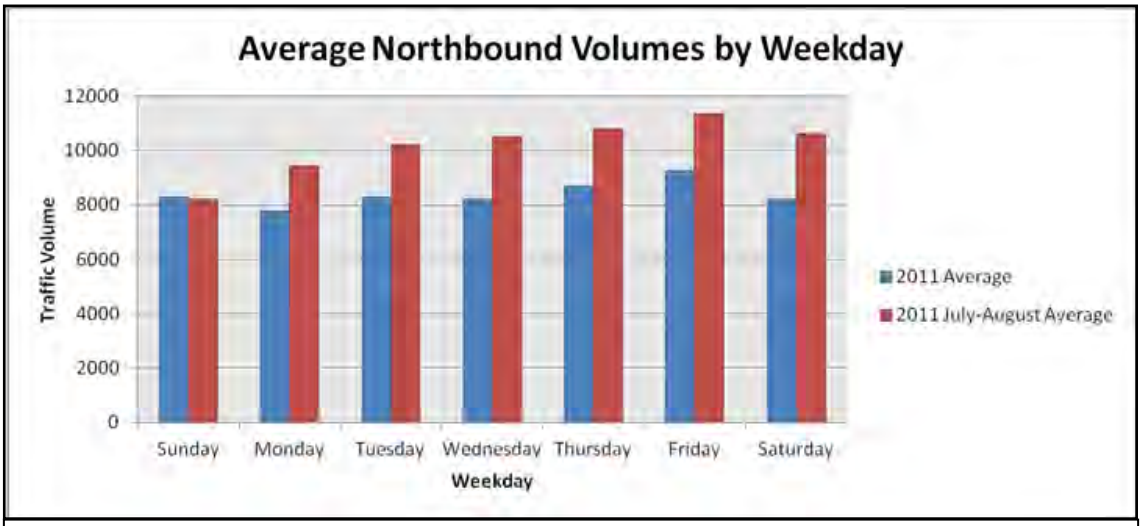


Figure 2-5 2011 Northbound Weekday Traffic Volumes

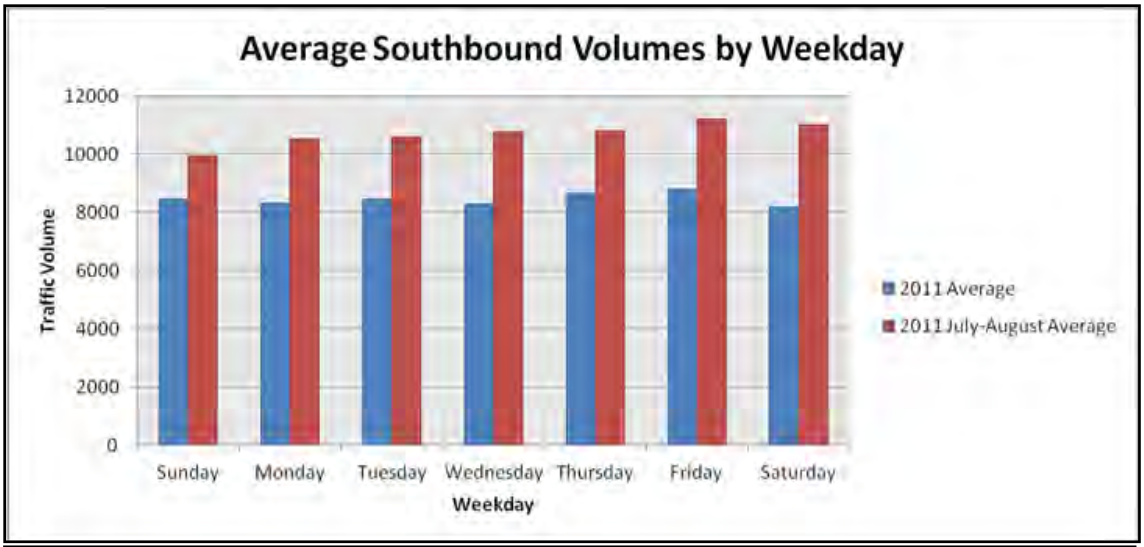


Figure 2-6 2011 Southbound Weekday Traffic Volumes

2.1.5 Intersection Turning Movement Volumes

In addition to the MaineDOT turning movement counts at Birch Point Road and Old Bath Road (N), three additional intersection turning movement counts were performed by TYLI at Old Bath Road (S), the main drive to Shaw's Supermarket/Shopping Center, and at Route 144. The counts were conducted between Tuesday August 28, 2012 and Thursday August 30, 2012 between 3:00pm and 6:00pm. PM peak hour volumes are available for those counts conducted by TYLI and AM, Mid-day, and PM Peak hour volume information is available for the two intersection counts conducted by MaineDOT. A summary of the dates and times of the intersection counts is noted in **Table 2-1**.

Table 2-1 Intersection Count Information

Location	Counter	Date	Duration
Bath Rd and Birch Point Road	MaineDOT	Wednesday 8/8/12	6am-6pm
Bath Rd and Old Bath Road (N)	MaineDOT	Wednesday 8/8/12	6am-6pm
Bath Rd and Old Bath Road (S)	TYLI	Thursday 8/30/12	3pm-6pm
Bath Rd and Shaw's/Shopping Ctr	TYLI	Wednesday 8/29/12	3pm-6pm
Bath Rd and Route 144	TYLI	Tuesday 8/28/12	3pm-6pm

MaineDOT conducted two 12-hour intersection turning movement counts at the intersections of Bath Road/Old Bath Road (N) and Bath Road/Birch Point Road. TYLI conducted PM Peak Hour intersection turning movement counts at the Bath Road and Old Bath Road (S), Bath Road and Shaw's/Shopping Center, and Bath Road and Route 144. The AM, midday and PM peak hours at the study intersections are noted in **Table 2-2.**

Table 2-2 Intersection Peak Hours			
Intersection	**AM Peak Hour**	**Mid-day Peak Hour**	**PM Peak Hour**
Birch Point Road	7:45 – 8:45	11:00-12:00	3:45-4:45
Old Bath Road (N)	10:15-11:15	12:30-1:30	3:15-4:15
Old Bath Road (S)	N/A	N/A	3:00-4:00
Shaw's/Shopping Center	N/A	N/A	3:15-4:15
Route 144	N/A	N/A	3:15-4:15

The total approach volume during the AM, Mid-day, and PM peak hours are in **Table 2-3**. As noted previously the highest traffic volumes along Bath Road occurred during the afternoon time period.

Table 2-3 Existing Peak Hour Traffic Volume Comparison			
	AM Peak Hour	*Mid-day Peak Hour*	*PM Peak Hour*
Bath Road/Birch Point Road			
Bath Road SB	778	876	839
Birch Point Road	52	53	38
Bath Road NB	569	849	993
Total	1399	1778	1870
Bath Road/Old Bath Road (N)			
Old Bath Road (N)	19	14	23
Bath Road Northbound	850	809	1032
Bath Road Southbound	945	783	858
Total	1814	1606	1913

Figure 2-7 presents the AM, Mid-Day and PM peak hour volumes for the study area intersections. No adjustment to the traffic volumes were incorporated because the counts were conducted during the peak summer period and generally represents Design Hour Volume conditions.

2.1.6 Vehicle Classification

Vehicle classification (types of vehicles) information was obtained from the MaineDOT intersection turning movement counts conducted at Old Bath Road (N) and Birch Point Road. **Table 2-4** presents the percent of trucks (single-unit and large semi-trailers) for noted study intersections. Approximately four percent of the traffic on Bath Road is trucks.

Figure 2-7 2012 Intersection Turning Movement Volumes

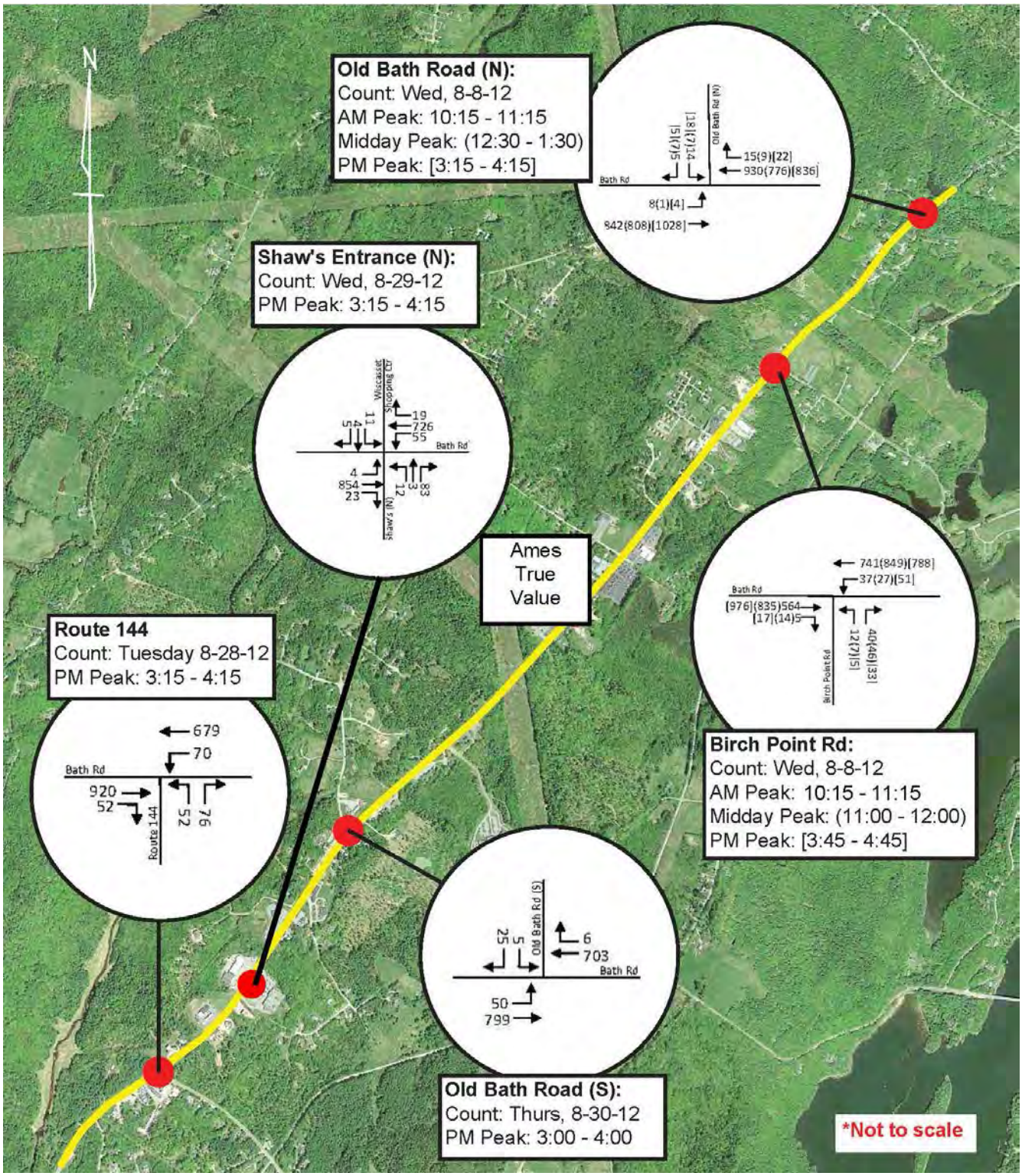


Table 2-4 Percent Trucks between 6:00AM – 6:00PM	
Bath Road and Old Bath Road (N)	
Old Bath Road	0%
Bath Road Northbound	4%
Bath Road Southbound	5%
Bath Road and Birch Point Road	
Birch Point Road	3%
Bath Road Northbound	4%
Bath Road Southbound	5%

2.1.7 Pedestrian Volumes

The study corridor does not provide any sidewalks or crosswalks. Very few pedestrians were observed in the corridor area during the conduct of the intersection turning movement counts. No pedestrians were observed at the Old Bath Road (N), Birch Point Road, Route 144 and Old Bath Road intersections. Five (5) pedestrians were counted at the Shaw's Supermarket intersection (a group of 3 pedestrians and another group of 2 pedestrians).

2.1.8 Bicycle Volumes

Minimal bicycle activity was observed during the intersection turning movement count time period. One bicyclist was counted at Birch Point Road intersection during the PM peak period and 4 bicyclists were counted at Old Bath Road (N). Three bicyclists were observed during the PM peak period and one during the morning time period.

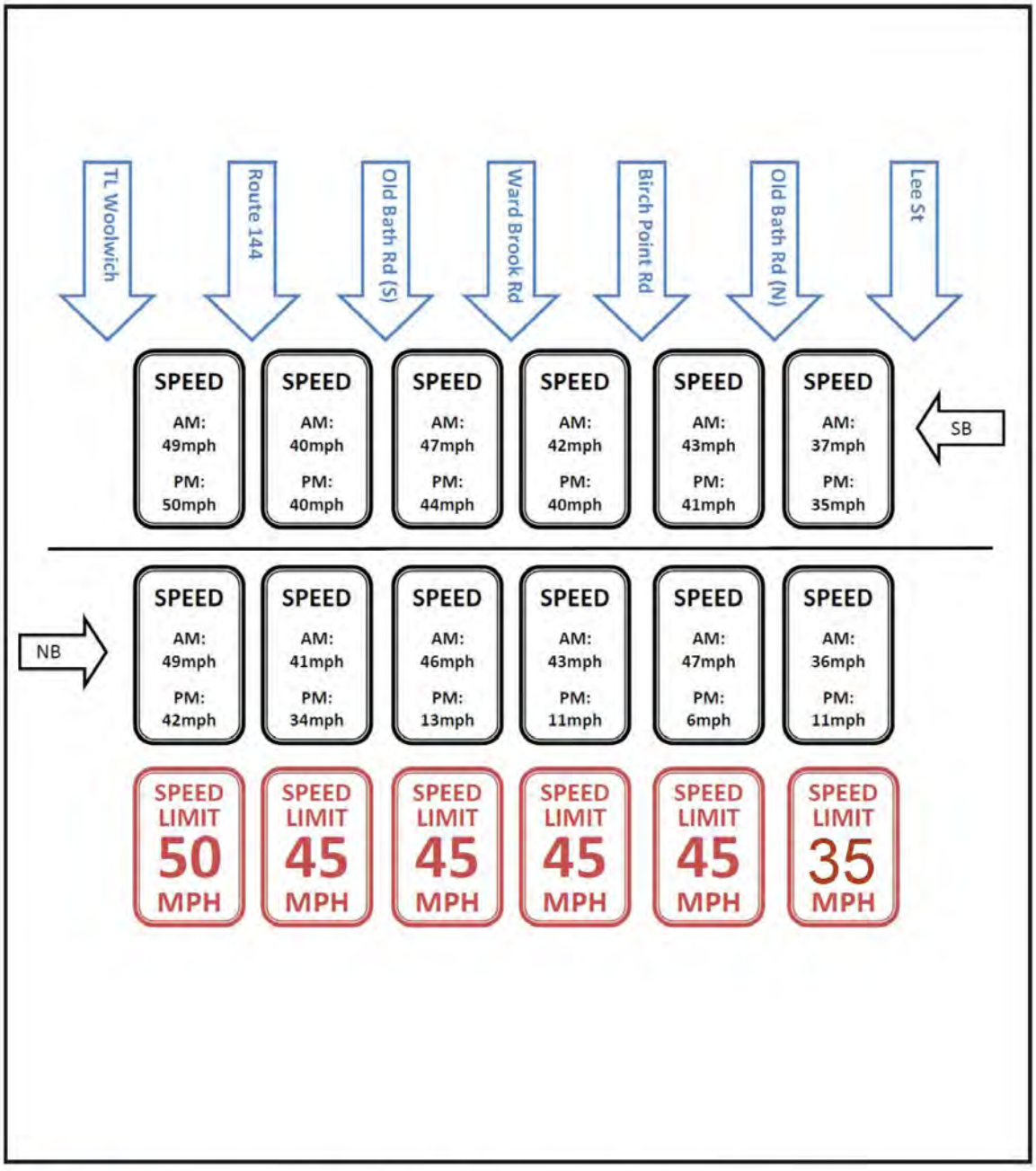
2.1.9 Speed Study

A speed study was conducted by MaineDOT on Friday, August 10, 2012. The day and time of day for the study were selected as being representative of peak summer traffic conditions. The study used a floating car survey method and consisted of driving along Bath Road noting travel times at various points along the corridor. There were 10 travel runs between 8:53 am and 5:39 pm in the northbound and southbound directions. ***Figure 2-8*** depicts the average speed during the AM and PM peak periods at various points along the corridor (as well as the posted speed limit). Key findings are summarized below.

- During the AM peak hour vehicle speeds closely matched the posted speed limit in both northbound and southbound directions. The only exception is that speeds north of Old Bath Road (N) were approximately 10 MPH above the posted speed limit of 25 MPH.

- During the PM peak hour, vehicle speeds closely matched the posted speed limit in the southbound direction, with the exception of north of Old Bath Road (N), where speeds were approximately 10 MPH above the posted speed limit. In the northbound direction, vehicle speeds were generally lower than the posted speed limit, particularly north of Old Bath Road (S), where speeds were around 10 MPH. These slow speeds were caused by traffic congestion in Wiscasset Village.

Figure 2-8 Average AM and PM Vehicle Speeds



TYLIN INTERNATIONAL
engineers | planners | scientists
MRLD
Landscape Architecture + Urbanism

Bath Road Master Plan
Wiscasset, Maine

Figure 2-8
Average AM and PM Vehicle Speeds

2.1.10 Crash History

Crash data was obtained from MaineDOT for the most recent available three-year (2009-2011) period for Bath Road between the Woolwich/Wiscasset Town Line and the northern Master Plan area limit of the project at Flood Lane (N). No locations (intersections or roadway segments) were identified as a High Crash Location per MaineDOT criteria (8 or more crashes and a Critical Rate Factor (CRF) greater than or equal to 1.0). The CRF is defined as the ratio of the crash rate at the location of interest compared to the statewide crash rate for similar urban-rural and highway classifications, adjusted to provide a 95% confidence level. The following notes locations with 3 or more intersection crashes and 10 or more road segment crashes:

- Bath Road/Route 144 – 6 Crashes (CRF=0.95)
- Bath Road/Beechnut Hill Road – 4 Crashes (CRF=0.88)
- Bath Road/Flood Avenue (N) – 3 Crashes (CRF=0.61)
- Bath Road/between Route 144 and Oxhorn Road – 15 Crashes (CRF=0.91)
- Bath Road/between Old Bath Road (S) and Beechnut Hill Road – (CRF= 0.88)

Figure 2-9 graphically illustrates intersection crash statistics in the corridor and ***Figure 2-10*** illustrates roadway segment crash statistics.

2.1.11 Existing Level of Service

The standard used to evaluate traffic operating conditions of the transportation system is referred to as the Level of Service (LOS). This is a qualitative assessment of the quantitative effect of factors such as speed, volume of traffic, geometric features, traffic interruptions, delays, and freedom to maneuver. LOS analysis was based upon procedures detailed in the 2010 Highway Capacity Manual, produced by the Transportation Research Board. One of the standard programs used in traffic modeling – Synchro (vs. 8) – was used to perform this analysis.

Level of Service provides a measurement of the delay experienced at an intersection as a result of traffic operations at that intersection. In general, there are six levels of service: Level of Service A through Level of Service F. The highest, Level of Service A, describes a condition of free-flow operations where the effects of incidents are easily absorbed. Level of Service B, describes a state in which maneuverability and speed limits are beginning to be restricted by other motorists although level of comfort is still high. In Level of Service C, experienced drivers are still comfortable but maneuverability is noticeably restricted. Level of Service D brings noticeable congestion and driver comfort levels decrease. In Level of Service E, roadway capacity is reached and disruptions are much more prevalent – driver comfort has declined. Finally, Level of Service F is the result of volumes greater than roadway capacity with congestion and possible stopped conditions. MaineDOT has determined that Levels of Service A-D are acceptable conditions for intersections.

Figure 2-9 2009–2011 Intersection Crash History

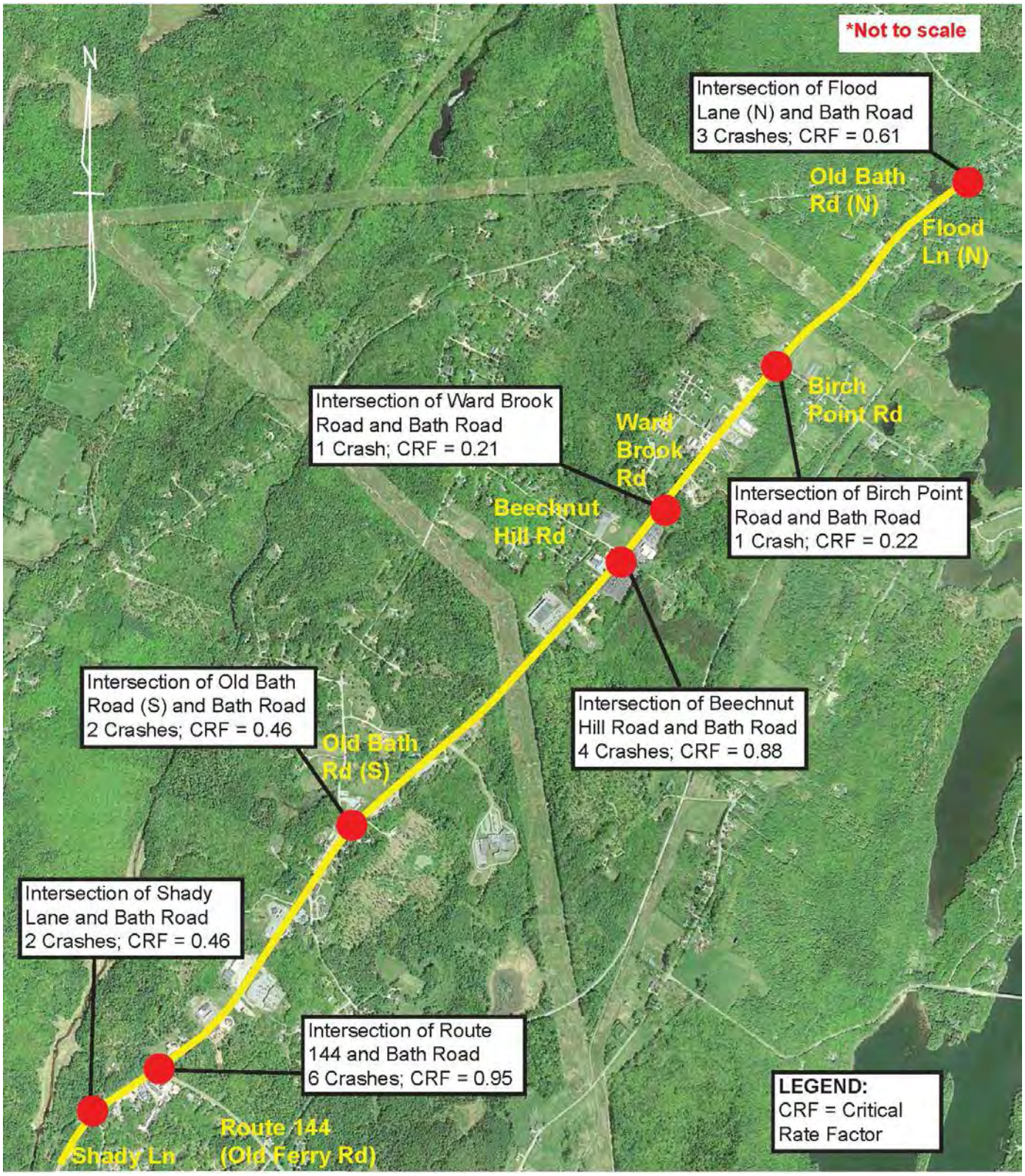
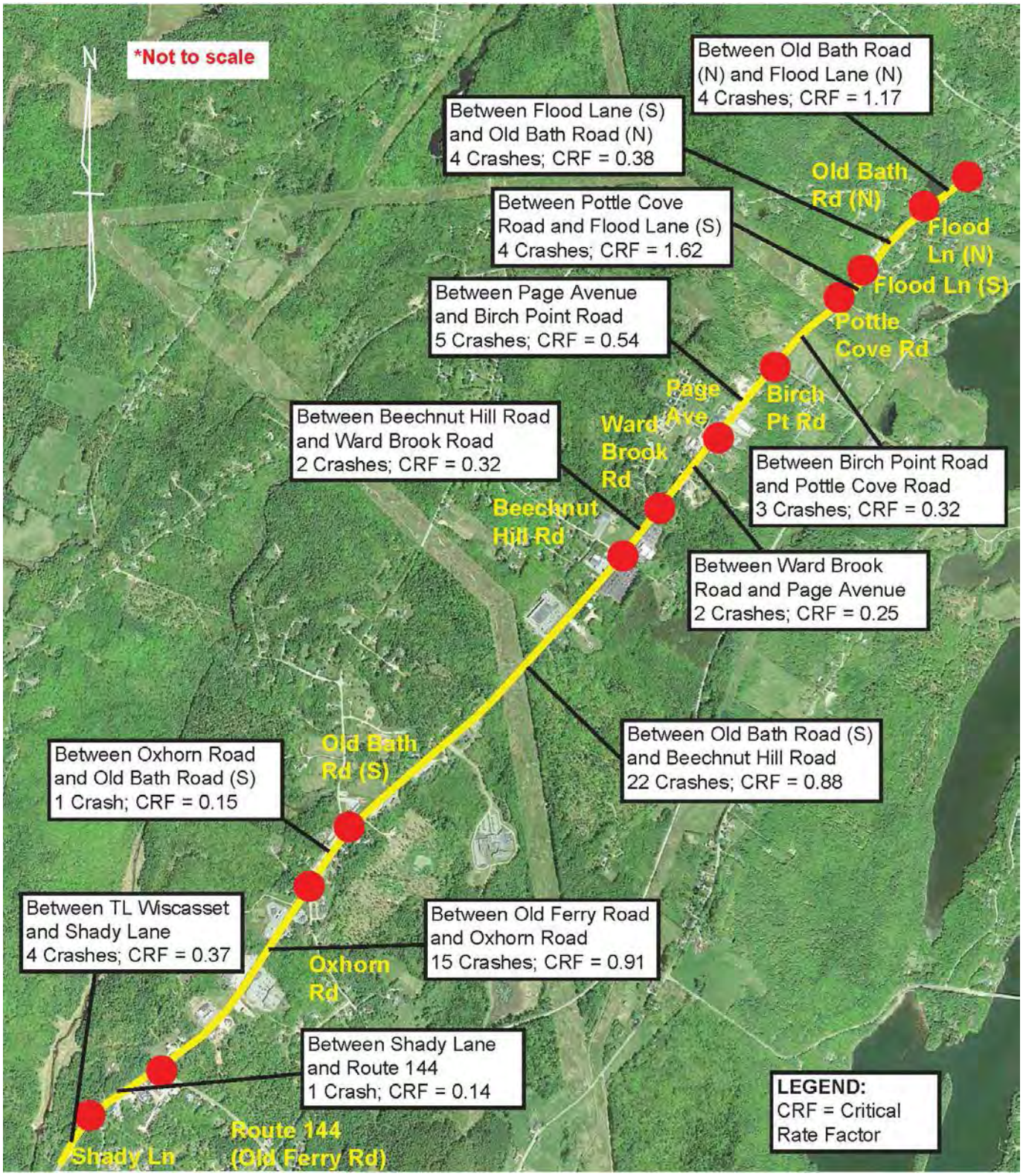


Figure 2-10 2009-2011 Roadway Segment Crash History



The measures of delay for each level of service rating for signalized and unsignalized intersections are found in **Table 2-5**.

Table 2-5 Level of Service Criteria for Intersections

Level of Service	Average Delay Per Vehicle (sec.)	
	Signalized	Unsignalized
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Tables 2-6 through 2-10 summarize each intersection and movement - providing the delay (in seconds) followed by the Level of Service (A-F) for each movement. An overall Level of Service for each intersection is also provided. The analysis was conducted for the weekday PM peak hour.

Key findings for each of the study intersections are summarized in the following tables. The analysis concludes that little vehicle delay occurs in both northbound and southbound directions but that traffic turning onto Bath Road has significant delays. It should be noted that traffic conditions on Bath Road are poor during peak summer time periods and those conditions are not represented in the analysis. The source of traffic congestion is generally not related to capacity issues at intersections within the study corridor, but from congestion spilling back from the Village.

Table 2-6 Existing PM Peak Hour – Capacity Analysis Bath Road @ Route 144

Movement	Level of Service	Delay (sec/veh)	95th% Queue (feet)
Route 144 Left/Right	F	136.8	189
Bath Road NB Thru/Right	A	0	0
Bath Road SB Left	B	10.9	9
Bath Road SB Thru	A	0	0
Overall	B	10.7	N/A

Table 2-7 Existing PM Peak Hour – Capacity Analysis Bath Road @ Shaw's/Shopping Center Plaza

Movement	Level of Service	Delay (sec/veh)	95th% Queue (feet)
Shopping Center Left/Thru/Right	F	151.7	55
Shaw's Left/Thru/Right	E	36.3	39
Bath Road NB Left/Thru/Right	A	0.2	0
Bath Road SB Left/Thru/Right	B	10.6	7
Overall	A	4.7	N/A

Table 2-8 Existing PM Peak Hour – Capacity Analysis Bath Road @ Old Bath Road (S)			
Movement	**Level of Service**	**Delay (sec/veh)**	**95th% Queue (feet)**
Old Bath Road Left/Right	D	28.0	22
Bath Road NB Left/Thru	A	2.3	6
Bath Road SB Thru/Right	A	0.0	0
Overall	A	1.9	N/A

Table 2-9 Existing PM Peak Hour – Capacity Analysis Bath Road @ Birch Point Road			
Movement	**Level of Service**	**Delay (sec/veh)**	**95th% Queue (feet)**
Birch Point Road Left/Right	E	36.2	31
Bath Road NB Thru/Right	A	0.0	0
Bath Road SB Thru/Left	A	2.5	7
Overall	A	1.9	N/A

Table 2-10 Existing PM Peak Hour – Capacity Analysis Bath Road @ Old Bath Road (N)			
Movement	**Level of Service**	**Delay (sec/veh)**	**95th% Queue (feet)**
Old Bath Road Left/Right	F	76.8	39
Bath Road NB Thru/Left	A	0.2	0
Bath Road SB Thru/Right	A	0.0	0
Overall	A	1.3	N/A

A two-lane segment analysis was performed according to HCM 2010 methods for the corridor and concluded that given the number of lanes, passing opportunities, and geometry Bath Road functions at an LOS of E. This level of service conclusion in based upon passing opportunities and travel speed and is not a function of roadway capacity. Field observations do not support this conclusion: the calculations show the road has plenty of capacity for this condition – 0.69 and the intersections have plenty of capacity along Bath Road. Therefore, it is concluded the corridor is operating acceptably under current conditions, from a capacity perspective.. As noted previously, traffic conditions on Bath Road are poor during peak summer time periods due to traffic delays in Wiscasset Village. Those conditions are not represented in the analysis.

2.1.12 Transportation Infrastructure Inventory

Sidewalks

There are no sidewalks along Bath Road in the study area.

Crosswalks

There are no marked crosswalks in the study area along Bath Road.

Bicycle Facilities

While there are no specific accommodations for bicyclists, shoulders in the corridor are paved and generally wide with pinch points by Monkey C Monkey Do and Ames True Value.

Regulatory Signage

Figure 2-11 and **Table 2-11** summarize regulatory signage within the study corridor. It should be noted that all distances are approximate and (N) or (S) refers to the northerly or southerly tie-in of Old Bath Road or Flood Avenue.

Figure 2-11 Existing Regulatory Signage

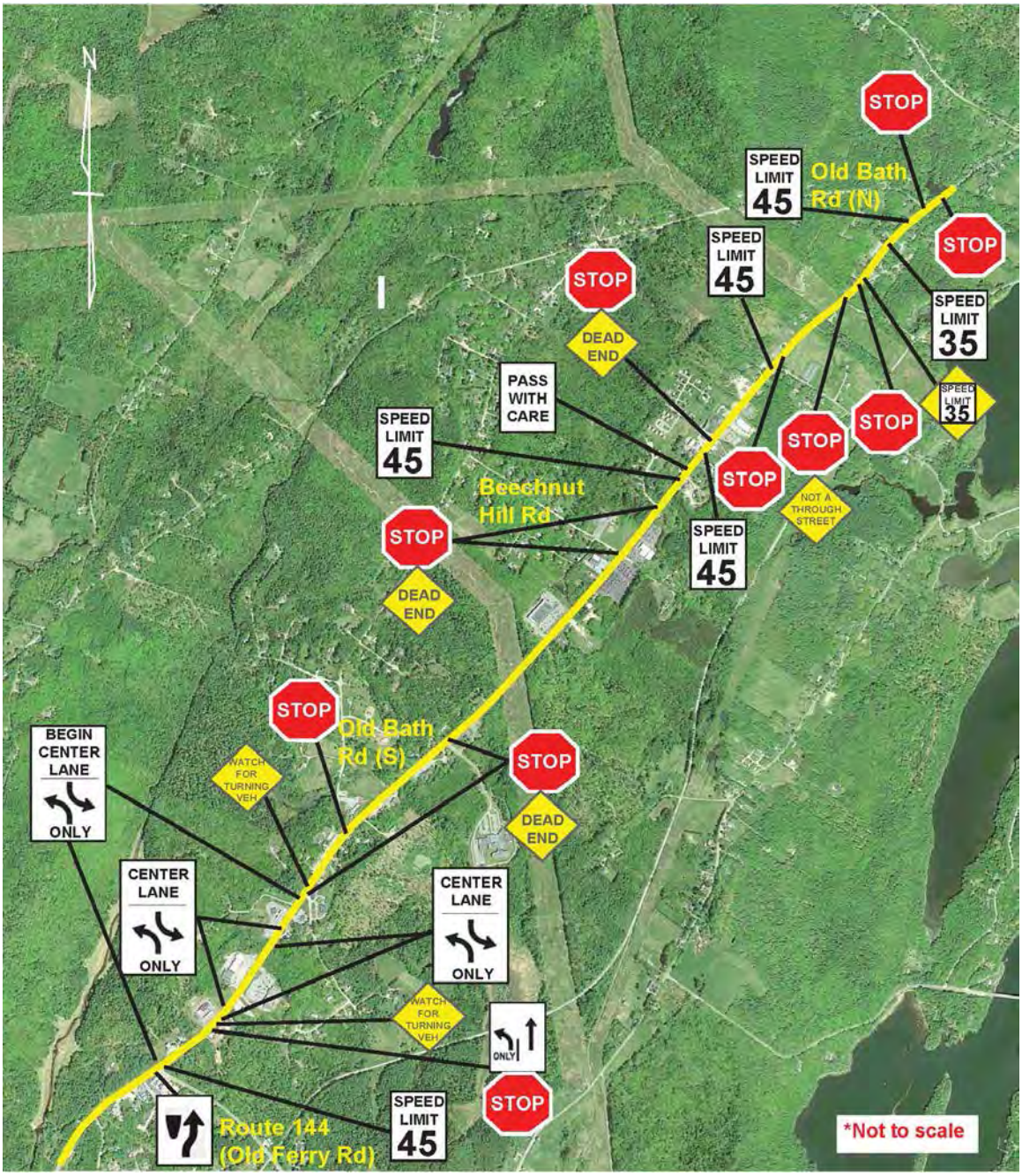


Table 2-11 Regulatory Signage Summary			
Sign Type	**Direction of Travel**	**Sign**	**Identifying Characteristics**
Speed Limit	Bath Road NB	Speed Limit 45 mph	360 ft north of Route 144
		Speed Limit 45 mph	375 ft north of Ward Brook Road
		Speed Limit 35 mph ahead (warning)	125 north of Flood Ave(S)
		Speed Limit 35 mph	600 ft north of Flood Ave (S)
		Speed Limit 45 mph	275 ft south of Birch Point Road
		Speed Limit 45 mph	450 ft north of Ward Brook Road
Keep Right	Route 144	Keep Right around median	At Route 144 Intersection with Rte 1
Lane Assign	Bath Road NB	Lane assignment	750 ft north of Route 144
Warning	Bath Road NB	Watch for turning traffic	800 ft north of Route 144
Lane Assign	Bath Road NB	Center two-way left turn lane only	1000 ft north of Route 1444
	Bath Road SB	Center two-way left turn lane only	1050 ft north of Route 1444
	Bath Road SB	End Center two-way left turn lane	850 ft south of Oxhorn Rd
	Bath Road NB	Begin Center two-way left turn lane	750 ft south of Oxhorn Rd
	Bath Road SB	Center two-way left turn lane only	425 ft south of Oxhorn Rd
	Bath Road NB	Center two-ways left turn lane only	375 ft south of Oxhorn Rd
	Bath Road SB	Begin Center two-way left turn	Across from Oxhorn Rd
Warning	Bath Road SB	Watch for Turning Traffic	100 ft north of Oxhorn Rd
Warning	Bath Road NB	Bus Ahead	1550 ft south of Beechnut Hill Rd
Stop	Ward Brook	Stop	Intersection of Rte 1 and Ward Brook
Warning	Ward Brook	Warning – Dead End	Intersection of Rte 1 and Ward Brook
Passing	Bath Road SB	Pass with Care	500 ft south of Page Ave
Warning	Page Ave	Warning – Dead End	Intersection of Page Ave and Bath Road
Stop	Flood Ln (S)	Stop/ dead End	Intersection of Flood Ave (S) and Bath Road
	Old Bath Rd (N)	Stop	Old Bath Rd (N) and Bath Road
	Flood Ln (S)	Stop	Flood Ln (S) and Bath Road
	Pottle Cove Rd	Stop	Pottle Cove Rd and Bath Road
	Birch Pt. Rd	Stop	Birch Point Rd and Bath Road
	Page Ave	Stop/Dead End	Page Ave and Bath Road
	Beechnut Hall Rd	Stop/Dead End	Beechnut Hall Rd and Bath Road

	Old Bath Rd (S)	Stop	Old Bath Rd (S) and Bath Road
	Wood Lane	Stop / Dead End	Wood Lane and Bath Road
	Oxhorn	Stop / Dead End	Oxhorn and Bath Road
Warning	Bath Road NB	Warning – Speed Limit 35 mph Ahead	100 ft north of Flood Ave (S)

Intersection Geometry Details(see Appendix A for visual representations of Bath)

The study corridor is approximately 3.6 miles long and is mostly a commercial corridor with one travel lane in each direction with occasional provision of a center-two-way left turn lane and passing zones. There are some residential homes towards the northerly end of the study area. Paved shoulders are provided and range from 6 feet to 10 feet, narrowing at the Monkey C Monkey Do on the northbound side and by the Ames True Value Hardware on both the northbound and southbound sides. The road is relatively flat with generally good sight distance.

Roughly 22% of the corridor allows for passing in either the northbound, southbound or both directions. Two southbound only passing zones are provided south of Birch Point Road (400 feet) and just north of Wiscasset Ford (800 feet). Four northbound only passing zones are provided north of Page Avenue (650 feet), north of Beechnut Hill Road (200 feet), south of Wiscasset Ford (475 feet) and north of Old Bath Road (S) (900 feet). There are two open passing sections north of Page Avenue (160 feet) between the northbound and southbound only passing zones and in front of Wiscasset Ford (490 feet).

In addition to passing lanes, about 9% of the corridor is striped for a center two-way left turn lane. There are three center two-way left turn lane locations; (1) in front of Ames True Value Hardware (700 feet); (2) in front of the Irving Convenience/Gas Station (700 feet); and (3) between McDonald's and the Wiscasset Marketplace (200 feet).

There are five dedicated left turn lanes in the corridor located onto Wood Lane, into Shaw's (northerly entrance), into the shopping center across from Shaw's (southerly entrance), into Simpson Seafood, and into McDonald's/Shell. Finally, there is a by-pass lane located at Route 144 for southbound travelers.

Shady Lane and Bath Road - This is a T-intersection. Shady Lane is approximately 20 feet wide and loops north to tie-in with Route 144. There is a stop sign at the end of the street and the street has a double yellow center line. No shoulders are marked. In this area Bath Road typically has 9 foot shoulders with 13 foot travel lanes separated by a double yellow center line.

Route 144 and Bath Road - This is a T-intersection with a stop/keep right island and sign located at the intersection. Route 144 is approximately 22 feet wide at the intersection with a center island and approximately a 31 foot lane entering Bath Road (allowing for separate right and left turn movements although not marked) and a 30 foot receiving lane. Southerly there are drives for Norm's Used Cars close to the intersection. At the intersection itself, Bath Road has separated through and left turn lanes allowing for cars turning left onto Route 144 without impeding through traffic. There is a double yellow center line located before and after the intersection with narrower shoulders on the southbound side of Bath Road.

Oxhorn Road and Bath Road - This is a T-intersection. Oxhorn Road is approximately 30 feet wide with separate left and right turning lanes. There is a stop sign/dead end sign at the end of the street. Bath Road width varies as the center two way left turn lane is developing in this section.

Skillin Lane and Bath Road - This is a T-intersection with a gravel road. It is approximately 24 feet wide with no striping. In this area, Bath Road typically has 10 foot shoulders with 13 foot travel lanes separated by a double yellow center line. A center two-way left turn lane begins at this intersection.

Old Bath Road (S) and Bath Road - This is a T-intersection with an acute angle. Old Bath Road (S) is a 26 foot wide road with a double yellow center line, no marked shoulders and approximately 16 foot wide lanes. There is a stop sign at the intersection. There is a close drive across from Old Bath Road (S) for the Wiscasset Motor Lodge and just south of the intersection the antiques store is located less than 50 feet from the intersection. Typically, north of the intersection Bath Road has 10 foot wide shoulders and 12 foot wide travel lanes. There is a double yellow center line as it approaches the intersection but just north there is a northbound only passing section. Bath Road south of the intersection typically has 10 foot shoulders with 12 foot travel lanes separated by a double yellow center line. This loops around with Old Bath Road (N).

Wood Lane and Bath Road -This is a T-intersection with guardrail opposing Wood Lane. Wood Lane has an overall width of 48 feet as it approaches the intersection. It is striped for a separate 12 foot left and right turn lane and a receiving lane. There are two residential drives on either side of the guardrail opposing Wood Lane and another on the same side just to the south within 50 feet of the intersection. Typically north of the intersection Bath Road has 8 foot shoulders in the southbound direction and 5 foot shoulders in the northbound direction. It has a 12 foot and 14 foot travel lane (southbound and northbound respectively) with a 12 foot lane for left turning movements. South of the intersection Bath Road has 10 foot shoulders and 12 foot travel lanes (southbound and northbound respectively) with a flush island.

Beechnut Hill Road and Bath Road - This is a 4-way intersection. The eastbound approach is a two-lane roadway with a double yellow center line, no marked shoulders, approximately 25 feet wide, and has a stop sign at the end. The westbound approach is a two-lane roadway with no striping. It is 25 feet wide and leads to Enterprise and Wiscasset Ford. Just north of this intersection Bath Road typically provides 10 foot shoulders with 12 foot travel lanes and includes passing for northbound vehicles only. Typically from the south, Bath Road has 10 foot shoulders with 12 foot travel lanes and a double yellow center line.

Ward Brook Road and Bath Road - This is a T-intersection, about 18 feet in width, with a stop sign at the end of Ward Brook Road. There is guardrail on either side of Ward Brook Road on the southbound side of traffic. In this location Bath Road typically has 10 foot shoulders and 12 foot travel lanes with passing for southbound vehicles only.

Page Avenue and Bath Road - This is a T-intersection with a drive located directly across the street. Page Avenue has a 21 foot width as it approaches the intersection and no striping. There is a stop sign/dead end at the intersection. Passing is allowed for northbound vehicles north of the intersection with 10 foot shoulders and 12 foot travel lanes. Just south of the intersection is a section of road with double yellow center lines, approximately 10 foot shoulders and 12 foot travel lanes.

Birch Point Road and Bath Road - This is a T-intersection. Birch Point Road is 20 feet wide as it approaches the intersection and is striped with a double yellow center lane line. There are no

shoulder markings. There is a stop sign at the intersection for traffic from Birch Point Road approaching the intersection. There is a small turn around across from Birch Point Road. In this location Bath Road is a two-lane road. Just north of the intersection, Bath Road typically has a double yellow line with 8 foot shoulders and a 12 foot travel lane. Just south of the intersection Bath Road has a passing section for southbound vehicles, a 7 foot shoulder on the southbound side and an 11 foot shoulder on the northbound side with 12 foot travel lanes. There is a very wide drive just south of Birch Point Road located approximately 20 feet from the intersection.

Soule Road and Bath Road -This is a T-intersection. Soule Road is not striped and is 14 feet wide with a stop sign/Not a Through Street sign at the intersection. In this location, Bath Road is a two-lane road with a double yellow center line. There are typically 9 foot shoulders and 12 foot travel lanes.

Flood Avenue (S) and Bath Road -This is a T-intersection. Flood Avenue is a 20 foot wide road at the approach without striping. There is a stop sign as traffic from Flood Avenue approaches the intersection. In this section, Bath Road is a two-lane road with a double yellow center line. There are typically 8 foot shoulders and 12 foot travel lanes. Wiscasset Wine Outlet's drive is on the southerly edge of Flood Avenue. Flood Avenue loops around to Flood Avenue (N).

Old Bath Road (N) and Bath Road - This is a T-intersection. Old Bath Road is a 30 foot wide road without striping. There is a stop sign as traffic from Old Bath Road approaches the intersection. Bath Road is a two-lane road with a double yellow center line. There are typically 9 foot shoulders and 12 foot travel lanes. There is a residence located close (approximately 65 feet) to the intersection. As with Flood Avenue, this road loops around to include a southerly entrance onto Bath Road.

Flood Avenue (N) and Bath Road - This is a T-intersection with guardrail opposing Flood Avenue along the southbound traffic and just north of Flood Avenue along northbound traffic. Flood Avenue approaches the intersection with a 55 foot width and no striping. Bath Road has approximately 7 foot shoulders and 12 foot travel ways at the intersection. It has a stop sign for traffic entering onto Bath Road and loops around to include a southerly entrance onto Bath Road.

Introduction to Access Management and Current Conditions

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 automobile 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 (like Bath Road), 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. Bath Road lies outside the urban compact area and therefore MaineDOT administers access permits.

Access Management is a set of techniques used to preserve highway capacity, manage highway congestion and reduce crashes. Examples include:

- Traffic signal spacing
- Driveway location, spacing, and design
- Use of service and frontage roads
- Land Use policies that control right-of-way access to highways

Specific benefits of Access Management include:

- Preserve integrity of the roadway system
- Improve safety and highway capacity
- Extend ***functional*** life of the roadways
- Preserve public investment in infrastructure
- Preserve private investment in properties
- Provide a more efficient (and predictable) motorist experience
- Improve "thru" times through a corridor
- Improve aesthetics (less pavement, more green)

Figures A-1 through A-12 in the Appendix illustrate existing access management deficiencies within the corridor. An assessment of existing driveway conditions was performed and consisted of reviewing: the number of driveways provided for each property; the width of driveways; the spacing of driveways; and how close driveways are to intersections (corner clearance). The purpose of access management is to provide vehicular access to land development in a manner that preserves the safety and efficiency of a transportation system. The following MaineDOT standards were used to assess conditions.

Minimum Entrance Spacing Standards

Posted Speed (MPH)	Entrance Separation (Feet)
25 or less	Not applicable
30	Not applicable
35	Not applicable
40	175
45	265
50	350
55 or more	525

Arterial Corner Clearance - The minimum corner clearance for entrances onto Arterial Highways (such as Bath Road) must be 125 feet.

Number of Entrances - Except for forestry management and farming activities, lots on Arterial Highways are limited to one two-way or two one-way entrances.

Entrance Width - If 30% or less of the traffic projected to use the proposed entrance will be larger vehicles, the width of a two-way entrance within the highway right of way must be between 22 and 30 feet inclusive. If more than 30% of the traffic projected to use the proposed entrance will be larger vehicles, the width of a two-way entrance within the highway right of way must be between 30 and 42 feet.

Key findings are summarized below.

- There are a few properties that have an excessive number of driveways including Irving, the Antiques business southwest of the Old Bath Road (S), and Ship's Chow Hall.
- Several driveways exceed width standards. Examples include the Miss Wiscasset Diner, the Wiscasset Trading Post, Avalon Antique Market, Wiscasset Glass, and Wiscasset Wine Outlet.
- There are several driveways that do not meet separation standards. An example is the distance between the Schooner Inn Motel driveway and Big Al's driveway.
- At many of the corridor intersections, adequate spacing to land development driveways is not provided. An example is the Wiscasset Wine Outlet driveway near the Flood Lane intersection.

2.1.13 MaineDOT Highway Priority and Customer Service Levels

MaineDOT has developed a process for prioritizing highway and bridge candidate projects for its capital work plans according to Highway Priority and Customer Service Levels (CSL). Bath Road is considered to be a Priority 1 Highway (the highest priority) and MaineDOT has provided CSL ratings regarding Safety, Condition, and Service. Facilities are rated on an A-F scale. ***Figures 2-12 through 2-14*** present the ratings for each of these categories with a summary noted below.

CSL/Service - The Service CSL includes consideration of Posted Road (spring), Posted Bridge (spring), and Congestion. See ***Figure 2-12***

- Bath Road is a C from TL to Old Bath Road (S) and a D north of Flood Avenue (N) to Route 27 (Gardiner Road).
- Route 144 and Birch Point Road are A.

CSL/Safety - The Safety CSL includes consideration of Crash History, Paved Roadway Width, Pavement Rutting, and Bridge Reliability. See ***Figure 2-13***

- Bath Road is an A.
- Route 144 is a C.
- Birch Point Road is a D (this portion is not a State or State-Aid Highway).

CSL/Condition - The Condition CSL includes consideration of Pavement Condition, Roadway Strength, Bridge Condition, and Ride Quality. See ***Figure 2-14***

- Bath Road from TL to Route 144 and from Old Bath Road (S) to Soule Road is an A.
- Bath Road from Route 144 to Old Bath Road (S) and from Soule Road to Flood Avenue (N) is a B.
- Birch Point Road is B and C.
- Route 144 is a C.

Figure 2-12 MaineDOT Customer Service Levels

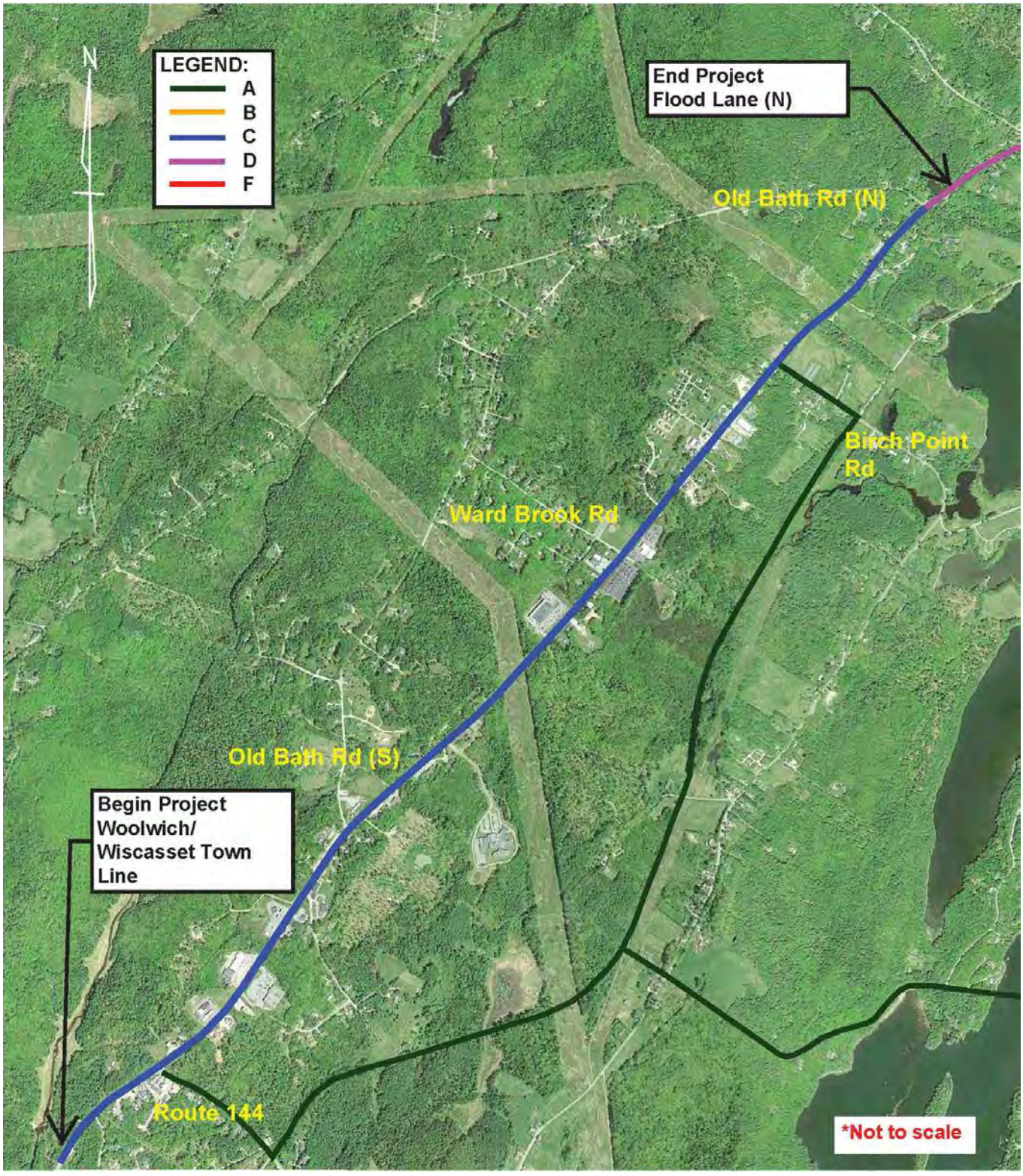


Figure 2-13 MaineDOT Customer Service Safety Levels

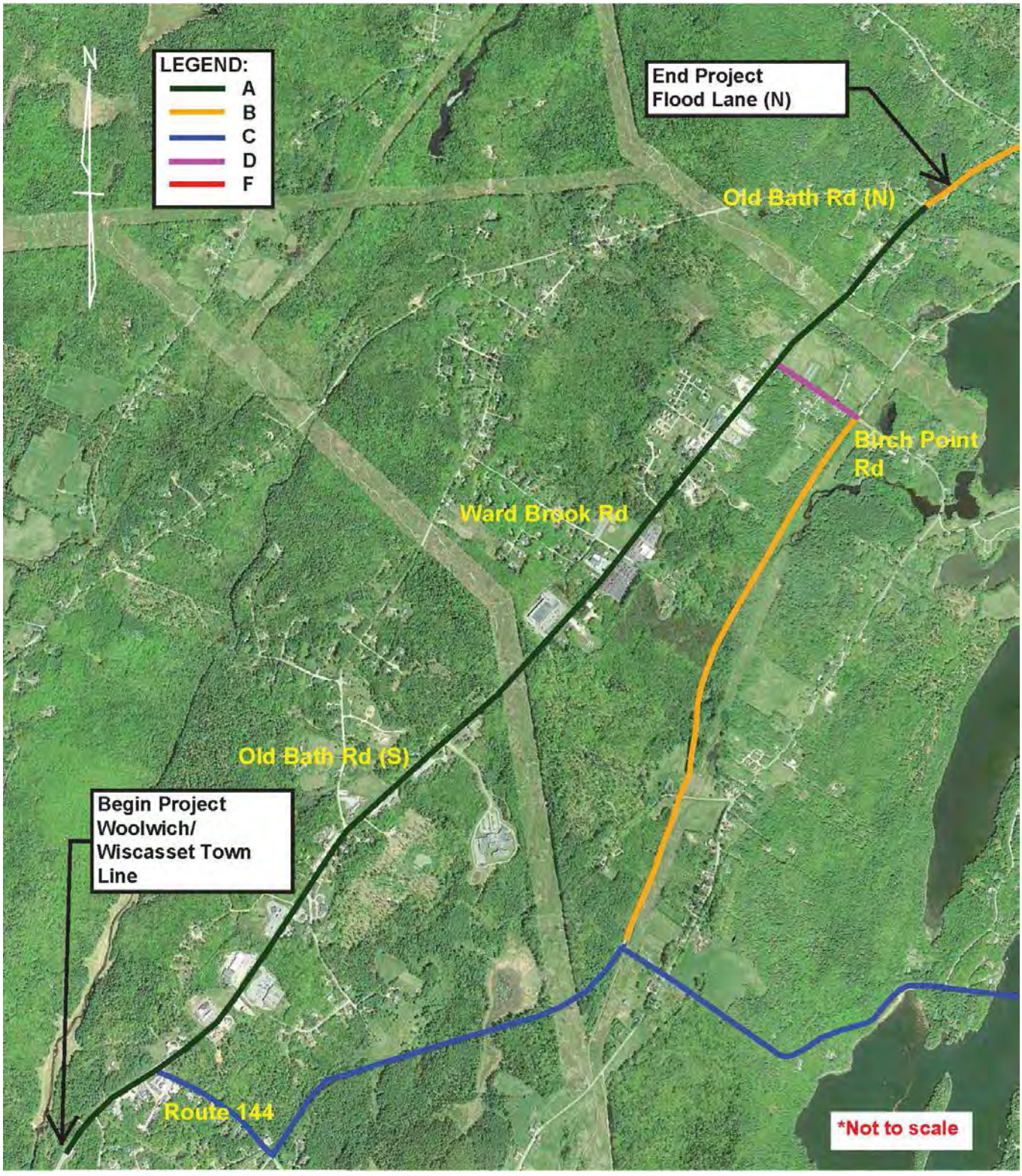
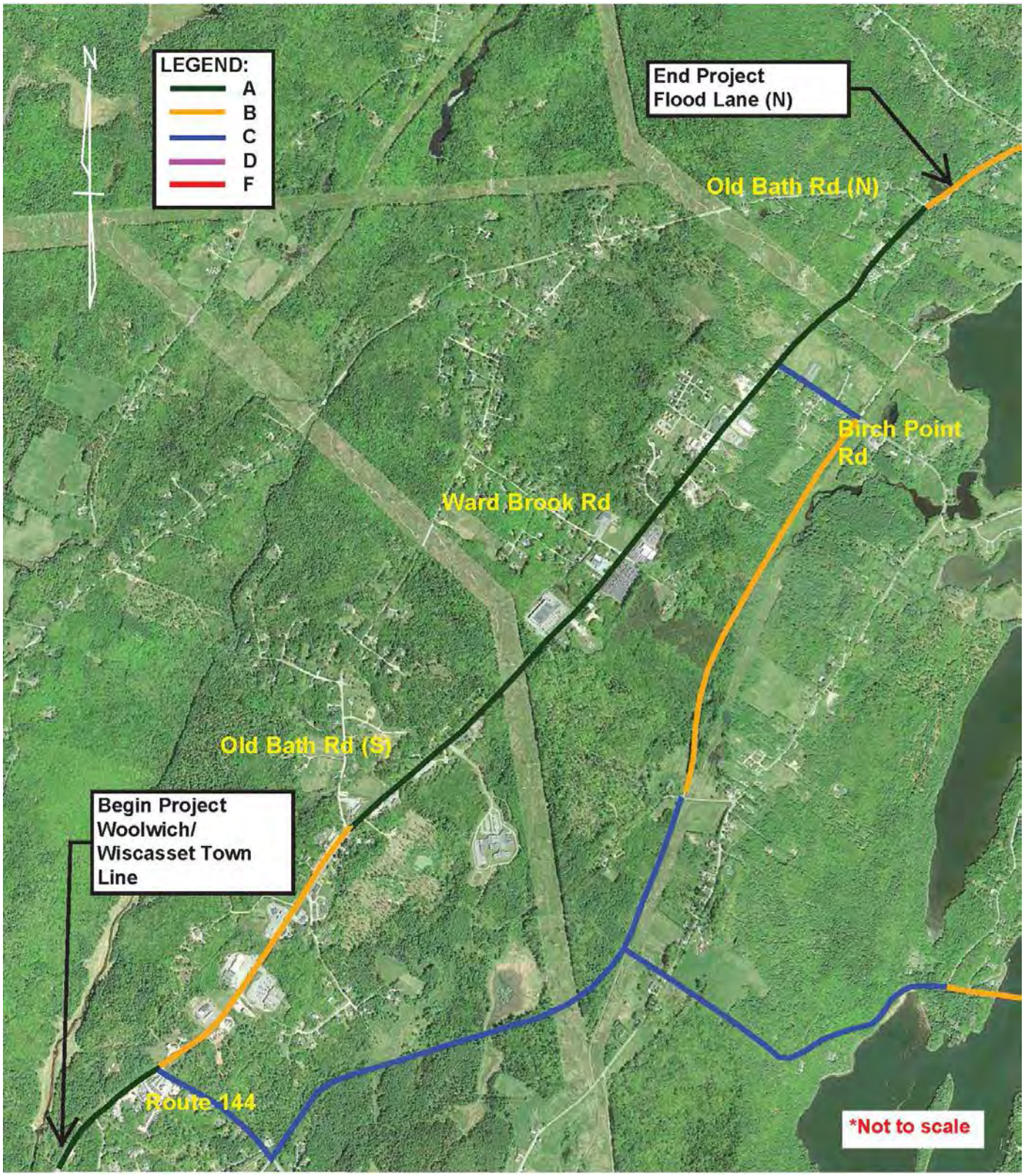


Figure 2-14 MaineDOT Customer Service Condition Levels



2.2 Planning Data

2.2.1 Zoning, Comprehensive Plan and the Land Use Ordinance Analysis

The 2008 Comprehensive Plan represents years of thoughtful work by the community to create a vision and set of goals for Wiscasset, including the Bath Road Commercial District. It is important that the community continually reference the Comprehensive Plan as a guiding document for all of Wiscasset, transcending short-term fixes. The Bath Road Master Plan is an opportunity to address the six goals noted earlier, helping to reconcile current standards and policies with the future of Bath Road as envisioned in the 2008 Comprehensive Plan. Preparing a Bath Road Master Plan was one of the implementation items indicated in the Comprehensive Plan.

The Town is actively implementing the recommendations of the 2008 Comprehensive Plan in terms of Zoning Districts and Standards – in addition to the recommendation to prepare a Bath Road Master Plan. There are a number of policies, strategies and goals from the Comprehensive Plan that are worth reviewing in regards to enacted and anticipated changes to standards influencing the efforts of the Bath Road Master Plan.

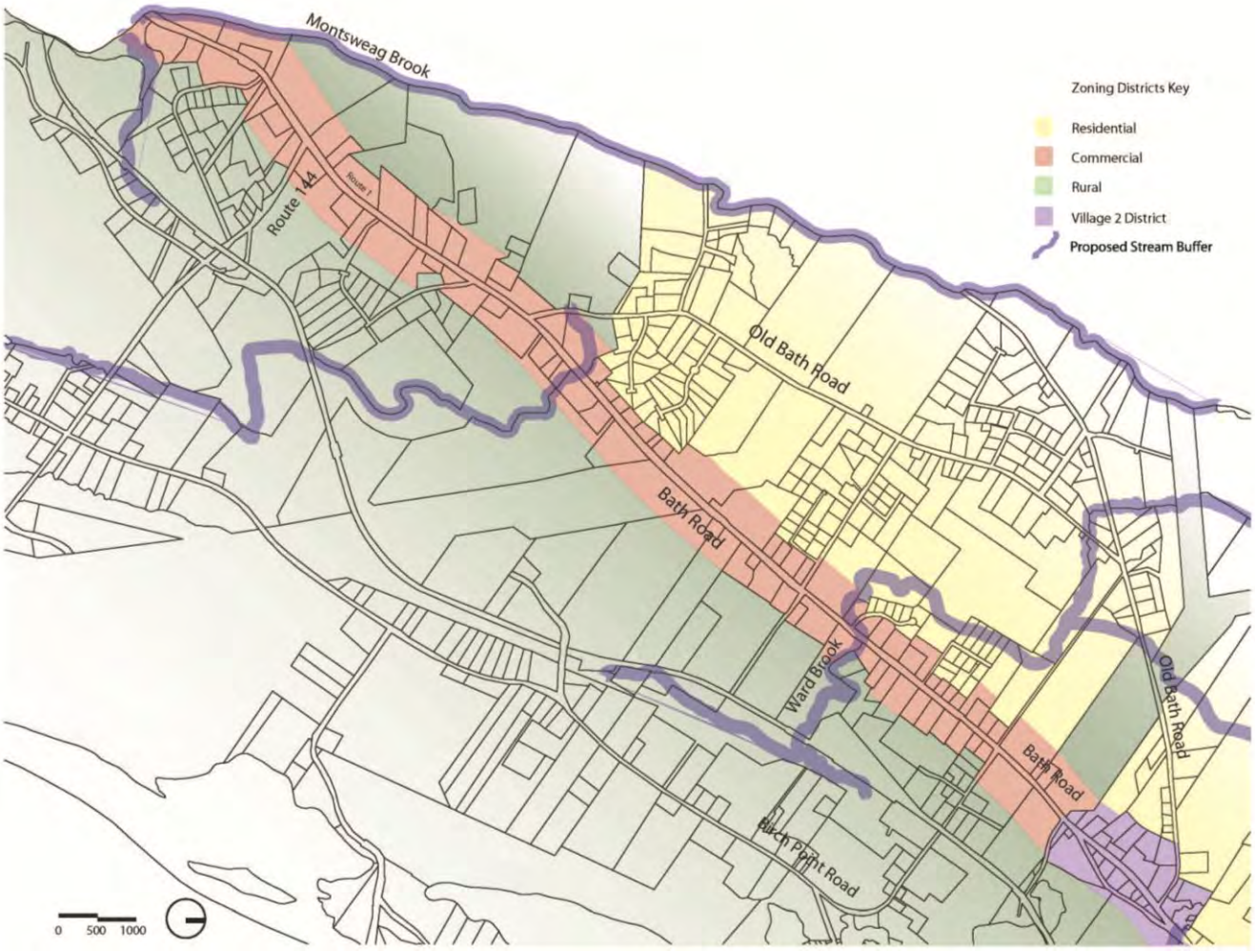
The study area is approximately four-miles in length beginning at the Woolwich line, extending to the northern intersection of Flood Avenue. Bath Road is zoned Commercial to a depth of 500'on both sides of the corridor from the Woolwich line north to the northern edge of the Mason Station transmission line right-of-way where the Village 2 District begins. There are certain parcels with frontage on Bath Road that extend beyond the Commercial District meriting additional analysis and review to best understand the most responsible potential for development and conservation along Bath Road.

There are a number of larger parcels along Bath Road that are divided between the Commercial District and other districts such as Rural and Residential. The Commercial District is measured from the centerline of Bath Road. See ***Figure 2-15***.

All uses in the Zoning Ordinance Land Use Matrix are allowed in the Rural District, while the Commercial District is more restrictive and the Village 2 District is even more restrictive. In Appendix E of the 2008 Comprehensive Plan, Survey Results, 56% of respondents stated that commercial development should occur on both sides of Bath Road. The decision to mirror the Commercial District on the eastern side of Bath Road creates consistency for properties fronting on Bath Road.

The 2008 Comprehensive Plan for the corridor recommends a slightly different policy for the Commercial District, which is currently linear and shallow as configured. While it is recognized that the corridor is suited for commercial development that is not appropriate for the Village 1 and Village 2 Districts, Goal C of the Comprehensive Plan recommends as a high priority the creation of "different open space as well as business zones along the Bath Road in order to leave some open space." The policy in the Comprehensive Plan regarding the pattern of development along Bath Road "is to not permit a continuous strip of development to emerge from the Woolwich line to the Village center. This would have negative effects on the Town's ability to grow as a tourist destination, as well as on the flow of traffic on U.S. Route One."

Figure 2-15 Existing Zoning



It should be noted that the recent adoption of the Village 2 District is a key step in meeting this policy of avoiding continuous development by creating a transitional zone between the Commercial Corridor (Growth District) and the historic Village. It should also be noted that the Comprehensive Plan specifically recommended that the Town enter into an agreement with MaineDOT to hire a consultant to prepare a Bath Road Master Plan. The Master Plan is intended to address a number of goals of the Comprehensive Plan including the stimulation of economic development along Bath Road and the reduction of uncoordinated traffic mitigation expenditures.

Appendix E of the Comprehensive Plan goes a step further beyond evaluating coordinated right-of-way mitigation. 72% of respondents were in favor of the development of frontage roads parallel to Route 1, suggesting that parcel interconnectivity was a politically viable solution for promoting economic development while helping to separate regional traffic from local traffic.

The goals of the Master Plan include the identification of potential “street networks” to further stimulate economic development by taking a holistic approach to mobility and land use, clarifying

the highest and best use for lands and integrating street connectivity, the creation of new districts along the current Commercial Corridor, promoting different scales and types of development and the protection of unique natural areas and scenic views.

Property owners and developers need consistency and efficiency in permitting. They can be helped by identifying adjacent synergies such as street networks, utilities, water, and wastewater. Sharing the cost of infrastructure investments through targeted funding sources such as grants, TIF incentives, impact fees – and ideally establishing complementary land uses that maximize the highest and best use of their properties will help stimulate economic development and streamline permitting.

Following are the fundamental standards for the Commercial District as noted in Town Ordinances:

1. Article VI Zoning, details allowable uses for the Commercial District
2. Article II Building Laws notes that all structures built or placed after August 19, 2003 shall be connected to town water and/or to town sewer if required. These standards do not apply to residences set more than 250' from the northwesterly side of Bath Road.
3. Article II, Building Laws, defines the required lot size and setbacks:
    a. Minimum Lot Size: One Acre
    b. Building Front Setback: 75'
    c. Parking Front Setback: 5'
    d. Building Side, Rear Setbacks: 10'

Currently, Article VIII Site Plan Review does not have extensive specific design standards for the Commercial District such as the required caliper of trees or the amount of allowable impervious surface (the Comprehensive Plan calls for a 20' front landscape and the current Site Plan standards require a 5' buffer with plantings no taller than four feet). There are specific requirements for Site Plan Review submittals, but as noted by the Comprehensive Plan, "the Zoning Ordinance is overly broad and fails to guide development appropriately and to protect the cultural and scenic values that make the town attractive to businesses and residents alike. Too often a lengthy, contentious process of a zone change is required to accommodate a particular business that may actually be desired by and be consistent with the Town's wishes." This policy has a high priority.
The Village 2 District, which acts as a transitional zone between the Commercial District and the Village, has been adopted with more specific standards and uses, and is also part of the historic overlay district as noted in Article VI, Section 9.

The area of the Village 2 District from the Mason Station right-of-way to the northern entrance to Flood Avenue is more residential in scale than the Commercial District. The standards adopted in Article VI Zoning, as noted above, relating to architectural style, use, and buffering will protect the residents in this area from existing and new permitted uses while improving the visual quality of this transitional area to the historic Village as development and redevelopment occurs. See ***Figure 2-16*** below.

Figure 2-16 View south of transitional Village 2 District *with commercial uses interspersed with residential uses; new standards require additional buffering*

Following are the fundamental standards for the Village 2 District as noted in Town Ordinances:

1. Article VI Zoning, details allowable uses for the Village 2 District.
2. Article VI Zoning, establishes specific buffering requirements between commercial and non-commercial uses.
3. Article II, Building Laws, defines the required lot size and setbacks:
    a. Minimum Lot Size: One Acre (20,000 sf. with public water and sewer)
    b. Road Setback: 10'
    c. Side, Rear Setbacks: 10'

The Comprehensive Plan called for gas stations to be a non-conforming use in the Village 2 District but in the current Land Use Matrix Convenience Store with Fuel Sales is not allowed.

Another Comprehensive Plan Zoning recommendation that influences the Master Plan is treatment of the four brooks over which Bath Road passes, the most significant being the Montsweag and Ward Brooks. Montsweag has the second largest watershed in the town and it is the southern entrance to Wiscasset, although it is difficult to see because of the road alignment, terrain, trees, and the travel speeds. At the time of writing the Natural Resource section of the current Comprehensive Plan, the Lower Montsweag Brook Dam had yet to be removed. Now that the dam has been removed, cold-water species are expected to move upstream. The Comprehensive Plan calls for adding all of Montsweag Brook to the Stream Protection District. This recommendation has been implemented as Montsweag Brook is currently zoned Shoreland Residential, Resource Protection, and Stream Protection. Additional analysis of the Montsweag zoning should be completed to ensure that the various overlay protection districts are consistent, avoiding repetition or gaps in the appropriate level of protection.

Ward Brook, which passes under Bath Road just north of Wiscasset Ford, was surveyed in 2006 by the Maine Department of Inland Fisheries and Wildlife and wild brook trout were identified. The Comprehensive Plan also calls for adding all of Ward Brook to the Stream Protection District.

75' is the minimum required setback for streams. The 2008 Comprehensive Plan recommends a 100' minimum setback for Montsweag and Ward Brooks. The 1989 Comprehensive Plan recommends a minimum 250' setback.

As will be discussed in the Sections on Character Areas, Visual Inventory, and Environmental Constraints, the role of the four brooks inform the analysis of Bath Road in different ways. The four brooks also play significant roles in defining character areas, visual inventory and environmental constraints, discussed later in this Section.

2.2.2 Character Areas

Character Areas can identify patterns of development representing different uses, economies, ages, and target markets. Corridors are typically one zoning district as is the case with the Bath Road Commercial District. This uniform zoning does not reflect the nuances of the corridor. It is possible to divide the monotony and linear feel of corridors by creating different districts along the corridor that build on existing character and provide a baseline understanding of how Character Area specific zoning, land uses, and standards can amplify the best qualities of these Character Areas, while remedying concerns. Character Areas also influence how adjacent lands might be zoned for compatibility and efficiency, such as the coordination of traffic improvements, the creation of

incentive districts, and the establishment of conceptual road networks to serve new complementary development or to create connectivity between compatible uses.

Defining Character Areas also makes it possible to target land for conservation by creating buffers of natural areas and establishing a rhythm of natural and built environments along Bath Road. In summary, the 2008 Comprehensive Plan specifically recommends that Bath Road should not evolve into a continuous strip of development and that measures should be taken to protect natural resources and concentrate development in appropriate locations.

Prior to reviewing any reports, Ordinances or the Comprehensive Plan, Bath Road was visually reviewed from the Woolwich line to the northern entrance of Flood Avenue. Working with a base aerial map, and ground truthing, the patterns of development, architectural styles, signage, land uses, the approximate history of development, visual quality, landscaping, natural features, terrain, and other aspects of Bath Road were mapped in generalized terms.

These preliminary observations also helped in identifying potential discrepancies and inconsistencies between the Comprehensive Plan policies, opinion surveys and the actual built environment.

Five Character Areas were identified. The locations and patterns of the Character Areas are indicated on ***Figure 2-17*** on the following page:

1. Traditional Roadside Development
2. New Development
3. Strip Development
4. Residential Development (although residential neighborhoods are not visible from Bath Road)
5. Residential Mixed Use Development

These areas were not identified for their visual quality but more for the overall pattern of development in terms of use, sense of place, and authenticity. Bath Road consists of predominately strip development, free standing commercial buildings / uses, and single-family homes. In creating ***Figure 2-17*** not only were often subtle patterns made apparent, but synergies between complementary uses, such as housing and commercial / retail uses, were identified.

The five identified Character Areas are not standardized terms for visual inventories. Rather they are specific to the review of existing conditions along Bath Road. A visual preference survey was not completed as part of this review.

For the purposes of the Bath Road Master Plan the five Character Areas are defined as:

1. **Traditional Roadside Development:** Traditional Roadside Development along the corridor represents local character, ownership and authenticity. Development does not include franchises and is not necessarily visually attractive or have a New England style, but is functional and at times ad hoc. Parking is typically located between the building and the road, but in some cases the buildings are close to the road. The parcels tend to have wide curb cuts that do not meet current regulations.
2. **New Development:** New Development includes development that is typically a franchise, less than fifteen years old, has standard signage that does not reflect the region, and has standard site design elements such as parking between the building and road and drive-thru service. New Development is typically not a reuse of an existing building or an existing site. In general, New

Development focuses on regional or pass thru traffic, however, the uses also serve local needs. New Development does not strive to be "authentic" or local, although the architecture may have design components such as pitched roofs and dormers that strive for a "New England Style". In general, New Development is clustered and is not located along stretches of Bath Road having a Traditional Roadside Development character.

3. **Strip Development:** Many areas of Bath Road might be defined as Strip Development. Strip Development is defined as areas that are visually cluttered due to the type and quality of signs, the incongruous architecture, parking between the building and road, low site and building maintenance, and an overall seasonal / tourist orientation. Overall, Strip Development is more closely aligned with Roadside Development than New Development.
4. **Residential Development:** Residential uses are scattered along Bath Road. They are not highly visible due to trees and other screening. Residential uses are typically not within clusters of Roadside Development, New Development or Strip Development. Residential subdivisions adjacent to Bath Road may have direct access to the corridor or may be adjacent, but they are not visible from the corridor. For the purposes of this study, Residential Development is typically a subdivision or clusters of subdivisions and not scattered homes.

Figure 2-17 Character Areas

5. **Residential Mixed Use:** Residential mixed uses are areas along Bath Road where development is residential in scale with the businesses in converted homes and home occupations. There are

typically no parking lots between the building and the road and the sites include mature vegetation.

Traditional Roadside Development

Traditional Roadside Development was identified in three locations. "Traditional" is not to be interpreted as having historic integrity such as a church on the Historic Register or even to be aesthetically pleasing. It is traditional in the sense that it represents a different era, is locally owned or appears so and has achieved a sense of the real or authentic. The three locations are:

1. The Miss Wiscasset Diner / Wiscasset Trading Post (***Figure 2-18***)
2. North of the Border and the Wiscasset Motor Lodge (***Figure 2-19***)
3. Grover's Tire to Birch Point Road and Huber's Market (***Figure 2-20***)

In contrast to traditional roadside development that is authentic, Maine Heritage Village is more thematic in nature, featuring iconic structures such as a lighthouse. This is an example of architecture as business sign. See ***Figure 2-21***.

Figure 2-18 The Miss Wiscasset Diner / Wiscasset Trading Post –authentic roadside

Figure 2-19 North of the Border –authentic roadside

Figure 2-20 Huber's Market – authentic roadside

Figure 2-21 Maine Heritage Village – thematic roadside versus authentic roadside

New Development

In contrast to "Traditional Roadside Development", "New Development" may or may not be attractive, but it is almost always franchise. This type of development tends to group together over time and includes such uses as gas, fast food, quick marts, and banks. These developments typically include drive thru windows. While they serve the local population, the primary focus is often on regional traffic. That statement is an over simplification though. A local resident can buy their groceries at Shaw's, cross the street to get gas, bank, and buy lunch. This person can then drive north on Bath Road and stop at Ames. These are all franchises and according to Appendix E of the Comprehensive Plan, 86% of the respondents favor encouraging new small retail and restaurant businesses on Bath Road. This area is located just north of the Route 144 / Bath Road intersection north to Oxhorn Road and Atlantic Motorcar. Uses include Shaw's, Irving, Shell / McDonald's / Lil' Mart / First Federal Savings (***Figure 2-22)***, Dunkin' Donuts, and Family Dollar Store.

Figure 2-22 Shell / McDonald's / Lil' Mart / First Federal Savings – new development

It is interesting to note that no franchise businesses have located in the "Traditional Roadside Development" area between Grover's Tire and Birch Point Road. The "New Development" is almost always on undeveloped sites, such as the parcel for sale just north of Shell. See ***Figure 2-23***.

Figure 2-23 New development site cleared for development

Strip Development

One might take any number of segments of Bath Road and call it Strip Development; however, for the sake of differentiating Strip Development from Roadside Development or New Development, Strip Development has more visual clutter due to signs, parking, a variety of nondescript architecture, inventory on display – and in the two primary locations mapped – the long expansive views that are typical of what has been described as the rolling hills character of Bath Road. See ***Figure 2-24***.

Figure 2-24 Strip development – expansive and cluttered views

Residential Development

While single-family homes are scattered along Bath Road – and typically not visible due to mature trees and screening – in studying the context of the development patterns it became evident that there are a number of residential neighborhoods that complement uses on Bath Road. ***Figure 2-25*** shows an apartment complex across the street from a single-family home subdivision off of Page Avenue. This residential development is a short walk from the "Traditional Roadside Development" area running from Grover's Tire to Birch Point Road.

Figure 2-25 Residential Development on Page Avenue – west of traditional development

Residential Mixed Use Development

Residential mixed uses are areas along Bath Road where development is residential in scale and many of the businesses are in converted homes or home occupations. There are typically no parking lots between the building and the road and the sites include mature vegetation.

As noted at the beginning of this section, no reports or Ordinances were reviewed prior to the on the ground development / character area mapping in order to allow experience of walking and driving the study area to create a direct impression of the built environment. Later, when the Character Area mapping was completed, this information was compared with zoning districts, Ordinance standards, the Comprehensive Plan and other documents to see if there are correlations with the policies or if development is happening in an ad hoc manner.

In the case of the area mapped Residential Mixed Use shown previously on ***Figure 2-17***, after reviewing the Comprehensive Plan and the most recent changes to the Zoning Map, there was a correlation between what was not only seen, but intuitively understood as a logical transition between the Commercial District and the Village. See ***Figure 2-26***. This is an example of how mapping patterns of development can help inform the process of zoning corridors to create context sensitive thematic zones.

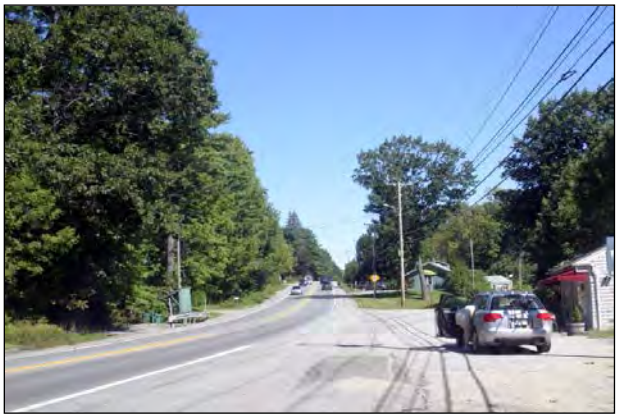


Figure 2-26 View north entering the Village 2 District transitional zone

According to the Comprehensive Plan, there are 199 lots fronting Bath Road totaling 440 acres. There are 12 undeveloped parcels larger than 10 acres for a total of 242 acres along Bath Road. This information combined with the other existing conditions analysis inform opportunities for responsible build-out scenarios and conservation areas.

2.2.3 Visual Inventory

A visual inventory looks less at patterns of land use or what is described as "Character Areas". Rather, it identifies generalized and specific visual elements along the corridor. The visual inventory conducted for the Master Plan is identified by two categories: (1) Objects and Edges and (2) Sight Lines and Focal Points.

Objects and Edges (See ***Figure 2-27***) are in a vehicle driver's near field of vision, such as signs, above ground utilities, and parcels where the inventory on display is the sign of the use, such as an auto dealership or a business where the inventory is placed outside. Edges were generally mapped as "Forested Edge", "Commercial Edge", "Field Edge", "Power Lines" and "Mixed Residential Edge". These categories may or may not relate to land for potential development, land with environmental constraints, industrial uses not visible from Bath Road, and land that recalls the tradition of farming.

Sight Lines and Focal Points (See ***Figure 2-28)*** defines the relationship between the rolling terrain (vertical alignment of the road), and the generally straight nature of the road (horizontal

alignment of the road) to distant and open views down the corridor from high point to high point or the focal points (developed or undeveloped) where there is a bend in the road.

Just as identifying Character Areas provides a baseline understanding of the nuances of the corridor, helping to inform potential new districts and uses that will divide the corridor into developed and undeveloped thematic areas, understanding Site Lines and Focal Points may also inform ways to divide Bath Road into distinct areas, avoiding continuous strip development as noted as a concern in the 2008 Comprehensive Plan.

Figure 2-27 Objects and Edges

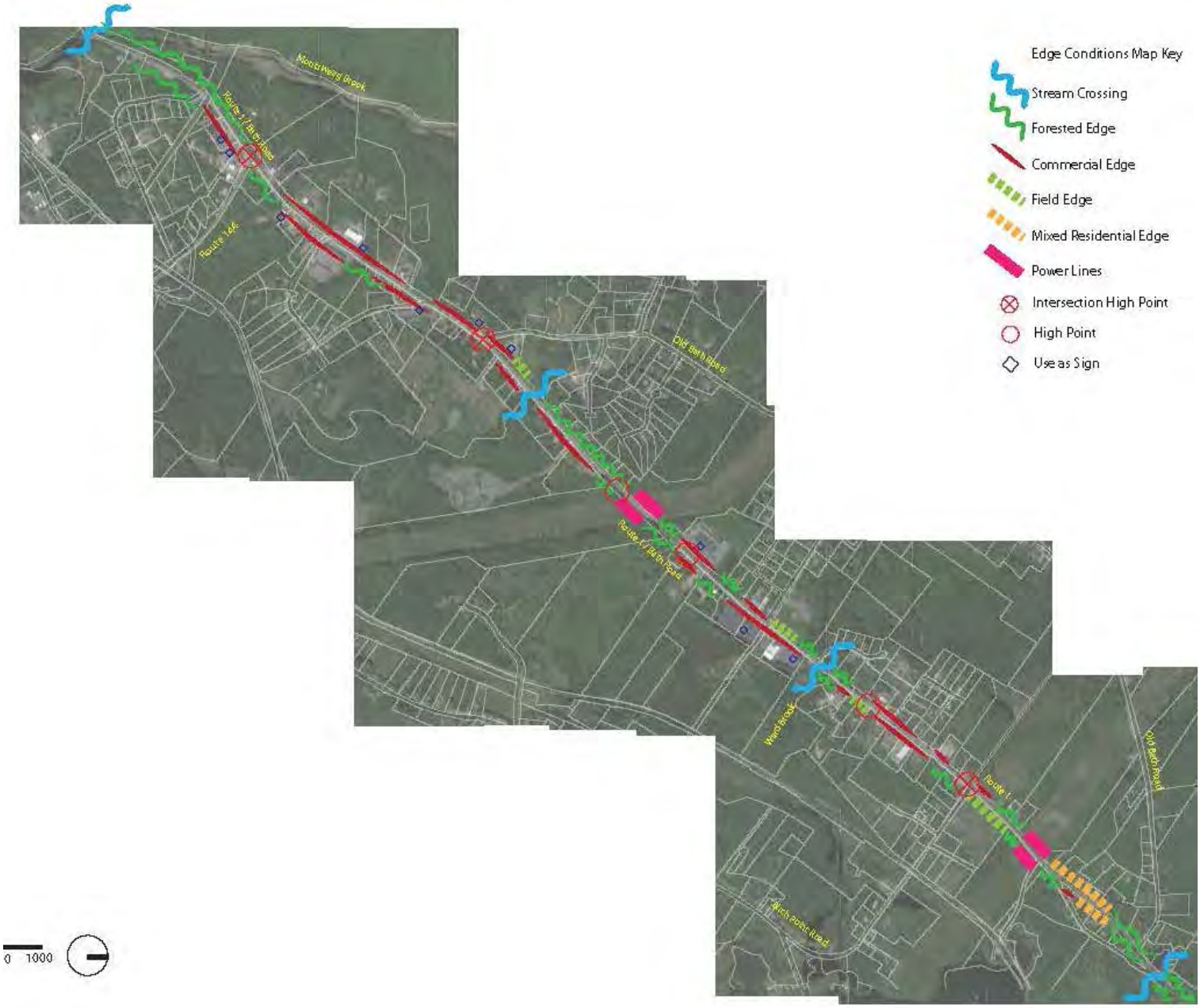
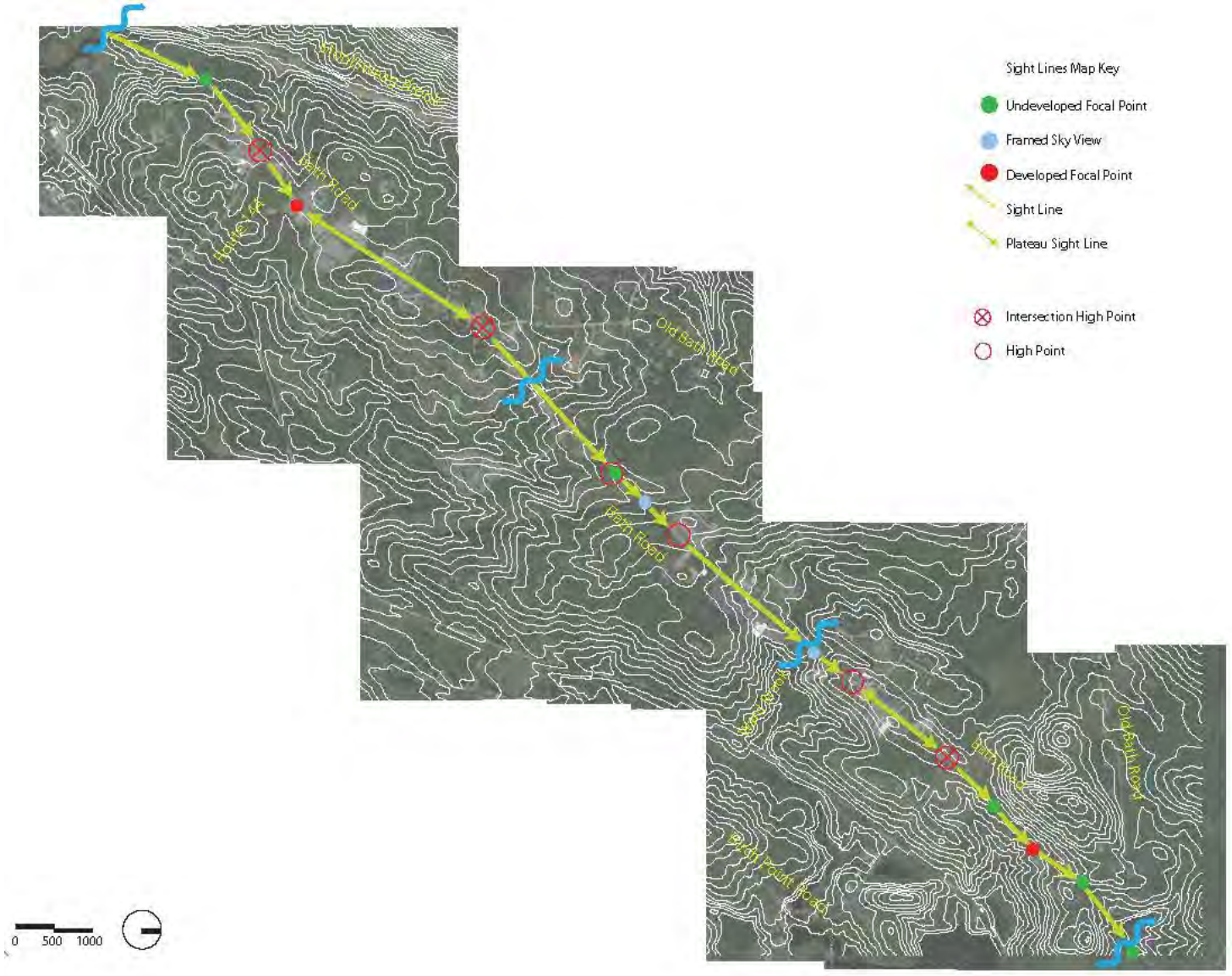


Figure 2-28 Sight Lines and Focal Points



In general, Bath Road includes a variety of land uses, building types, signage, and natural features. It is not a uniform development, but current zoning does not preclude a full build-out. Other issues such as market capacity and environmental constraints are the limiting factors, not policy. This is unlike the stretch of Route 1 in Woolwich, which has no development and remains rural in character because MaineDOT as policy purchased the frontage rights, creating a limited access corridor. See ***Figure 2-29***.

Figure 2-29 View north on Route 1 in Woolwich where
Maine DOT purchased frontage development rights.

Objects and Edges

The visual assessment of Bath Road points out the built environment. An example of site redevelopment is Norm's Truck Sales which was a burned out gas station that was originally repurposed as a restaurant and located directly across the street from a tidy, but highly visible gas station and quick mart. See ***Figures 2-30*** and ***2-31.*** Contrasts can be seen in a simple well-proportioned sign for a franchise chain (see ***Figure 2-32)***, located across the street from a business where the use is the sign. The inventory is the sign, creating a cluttered scene. See ***Figure 2-33.***

Figure 2-30 Redeveloped site meeting MaineDOT standards.

Figure 2-31 A well maintained, but highly visible gas station

Figure 2-32 A simple, legible, and well-proportioned sign

Figure 2-33 The inventory is the sign. A business trying to attract customers on a busy arterial

There are no dramatic views of mountains, fields, or harbors. Instead two basic edge conditions are identified: "forested / undeveloped" (***Figure 2-34***) and "commercial / developed" (***Figure 2-35***). The Maine Yankee and Mason Station transmission right-of-ways are also highly visible. These transmission lines are visible because of the scale of the towers, the width of the right-of-way, and because the towers and lines are set against the sky. See ***Figure 2-36***. Overhead utility lines set against a wooded edge blend better with the background. See ***Figure 2-37***.

Figure 2-34 Forested or undeveloped edge

Figure 2-35 A developed edge

Figure 2-36 The visual impact of the utility lines is increased because they are set against the sky.

Figure 2-37 Above ground utility lines are less visible
They are set against a dark background of green versus the sky making them less visible. Even the utility pole has the appearance of one of the adjacent trees.

In addition to the forested edge and the developed edge there are fields providing open vistas along the corridor such as the field at the corner of Birch Point Road. Even though a building has been placed in the field, it follows the terrain and provides a view of a field in the foreground and topography in the distance. Ideally, the structure would not be in the middle ground field of vision, but it is part of the horizon line and is painted a color as to better transition with the foreground and the distant hills rather than creating a strong dividing line on the horizon. See ***Figure 2-38***.

Figure 2-38 A field with a development that minimizes the visual impact
It uses color and building placement so as to better transition from the foreground to the background.

Sight Lines and Focal Points:

The objects and edges in the landscape are the most visually prominent aspects of the visual experience because they tend to be in the near field of vision. However, there is a subtler yet dramatic aspect of the visual inventory when one stops looking for "things" and begins to scan the landscape, looking along sight lines. In the Village of Wiscasset the short distance sight lines

coupled with quick changes in the horizontal alignments and near field focal points create a picturesque and dynamic setting. This is not the case on Bath Road.

Bath Road from the southern town line to the Village is comprised of long segmented sight lines that do not offer a quintessential "Maine" experience. This area is known for the gentle rolling terrain. The vertical and horizontal alignments of Bath Road are subtle. There are gentle curves creating distant "focal points" as previously shown in ***Figure 2-28***. In this sense, even though Bath Road is a high volume road with increasing development pressure, there are aspects such as the long vistas – typically from high-point to high-point overlooking the low point – which is most likely one of the four brooks – helping to create a rhythm over the course of four miles. See ***Figure 2-39,*** which is taken at the intersection of Old Bath Road looking north over an unnamed brook. ***Figure 2-28*** is a diagram of the relationship between the high points, brooks, sight lines, and focal points.

Figure 2-39 A sight line north from the intersection with Old Bath Road (S), *One of the three existing primary high point intersections along with Route 144 and Birch Point Road. Bath Road is a series a rolling hills with development potential at the high-point intersections*

Figure 2-28 shown previously, diagrams the experience one has traveling north on Bath Road as the southern approach to the Village. One of the most informative aspects of this diagram is that certain sight line focal points are already developed and certain focal points are undeveloped. In terms of making zoning "visible", the low points are brooks passing under Bath Road, which should eventually be zoned as Stream Protection Districts.

Less obvious to the eye, but another informative aspect of the diagram is that the three primary intersections, Route 144, the southern entrance to Old Bath Road, and Birch Point Road are located at high points and curves on Bath Road.

In this series of rolling hills, the beginning of the study area is a low point at Montsweag Brook. See ***Figure 2-40***. Unfortunately the view of the brook is not highly visible when traveling along Bath Road for a number of reasons. See ***Figure 2-41*** for a view of the tidal brook. The northern end is a low point prior to entering the Village at the Holbrook Pond outlet. Located between these two brook low points is Ward Brook, one the most important brooks in Wiscasset.

Separating these low points, as noted above, are natural high points at curves that are significant because they are the location of the three primary existing intersections on Bath Road. All of these intersections have defined and emerging character as defined by the Development Pattern, Visual Inventory, and Environmental Constraints mapping.

The analysis of the mapping combined with the results of traffic studies, market forecasting and the review of undeveloped land and existing / potential access at these intersections may determine

themes of future development, preservation, and visual character along Bath Road, thus helping to differentiate the corridor as recommended by the Comprehensive Plan and the Bath Road Master Plan. These thematic areas could include changes to the Zoning Map as well as identifying appropriate land uses and site design standards.

Figure 2-40 A sight line north of Montsweag Brook, *an attractive southern gateway to Wiscasset and one of four brook crossings creating low points the length of Bath Road that establish the rolling terrain in this area*

Figure 2-41 The view of Montsweag Brook when standing on the bridge

For example, a certain intersection / district might focus on local conditions and incubate small businesses by not allowing larger buildings, gas stations or franchises. Another intersection / district might emphasize regional services, and another intersection / district might become a high-density mixed-use neighborhood complementing the Village. In between these intersections / districts might be areas with preserved lands or design standards for (re)development that help differentiate the intersections / districts.

2.2.4 Environmental Constraints

Figure 2-42 shown on following pages, is a map of the environmental constraints and buffer setbacks within the Bath Road Master Plan area. The information on this map needs to be cross referenced with the other analysis plans to understand opportunities for protecting certain lands as needed and guiding growth to appropriate locations per the policy of the Comprehensive Plan. There are no mapped vernal pools in the study area.

As noted previously, Bath Road crosses four streams. These streams are not as much a limiting factor for future development as they are low points in the rolling terrain, providing for unbroken sight lines.

The largest wetland system is located west of the Birch Point Road intersection between Bath Road and Old Bath Road. There are no other large mapped wetland systems that influence long-term land use planning for the area.

A deer wintering area runs parallel with Bath Road on the eastern side from Oxhorn Road to Beechnut Hill Road.

In summary, there are contiguous blocks of land suitable for development and redevelopment throughout the study area.

2.2.5 Infrastructure

Figure 2-43 on following pages, shows the location and availability of public water, wastewater, and utilities along Bath Road and vicinity. Both the Water District and the Wastewater Treatment Plant were contacted. The 1-foot water line was installed in 1988 and has adequate capacity for additional development along Bath Road. The wastewater line was installed in 1977 and also has capacity for additional development along Bath Road. The pump stations do not need upgrades. Overhead utilities along Bath Road were located to identify potential visual impacts, conflicts with street tree plantings as well as how line drops might occur with new development.

Figure 2-42 Environmental Constraints

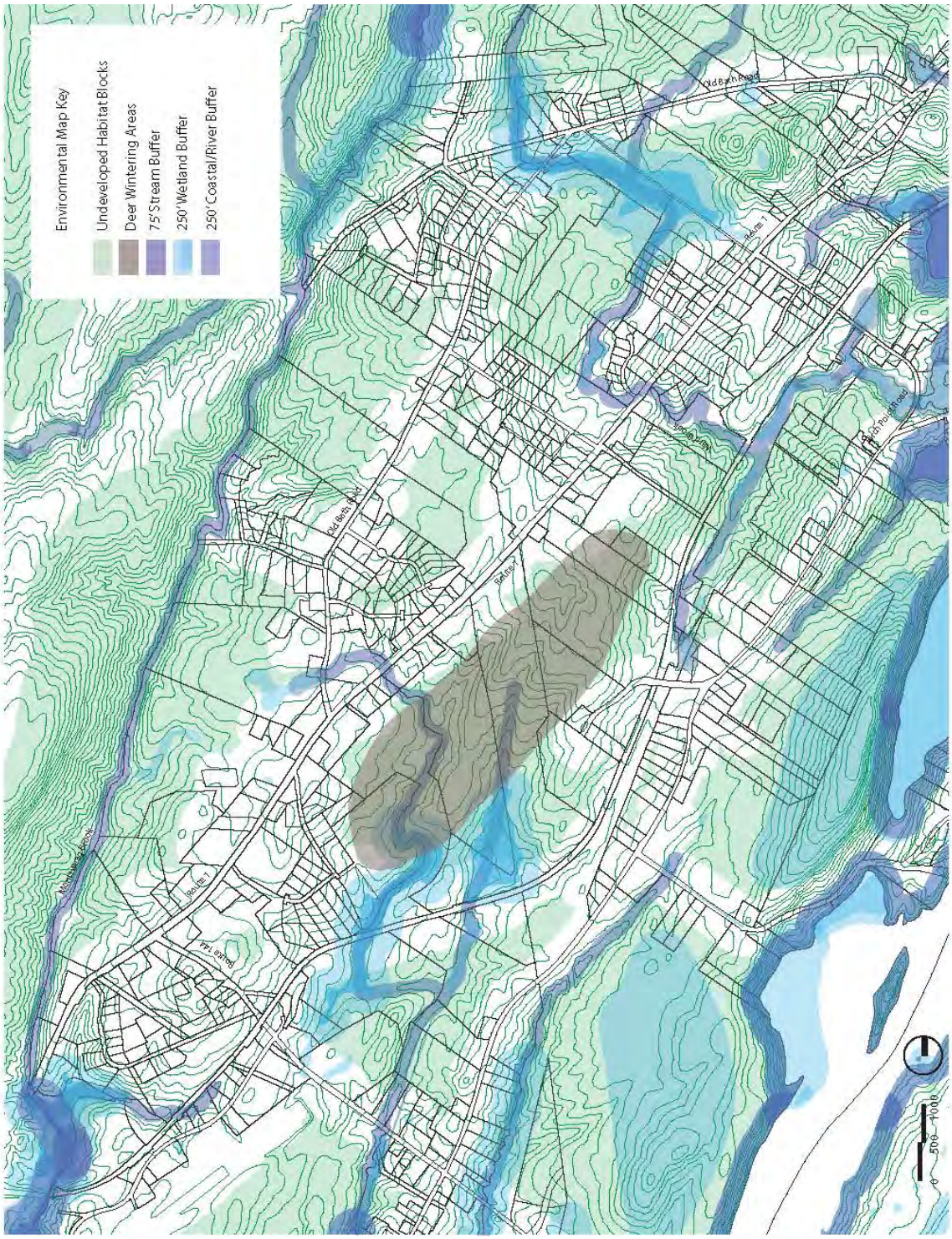
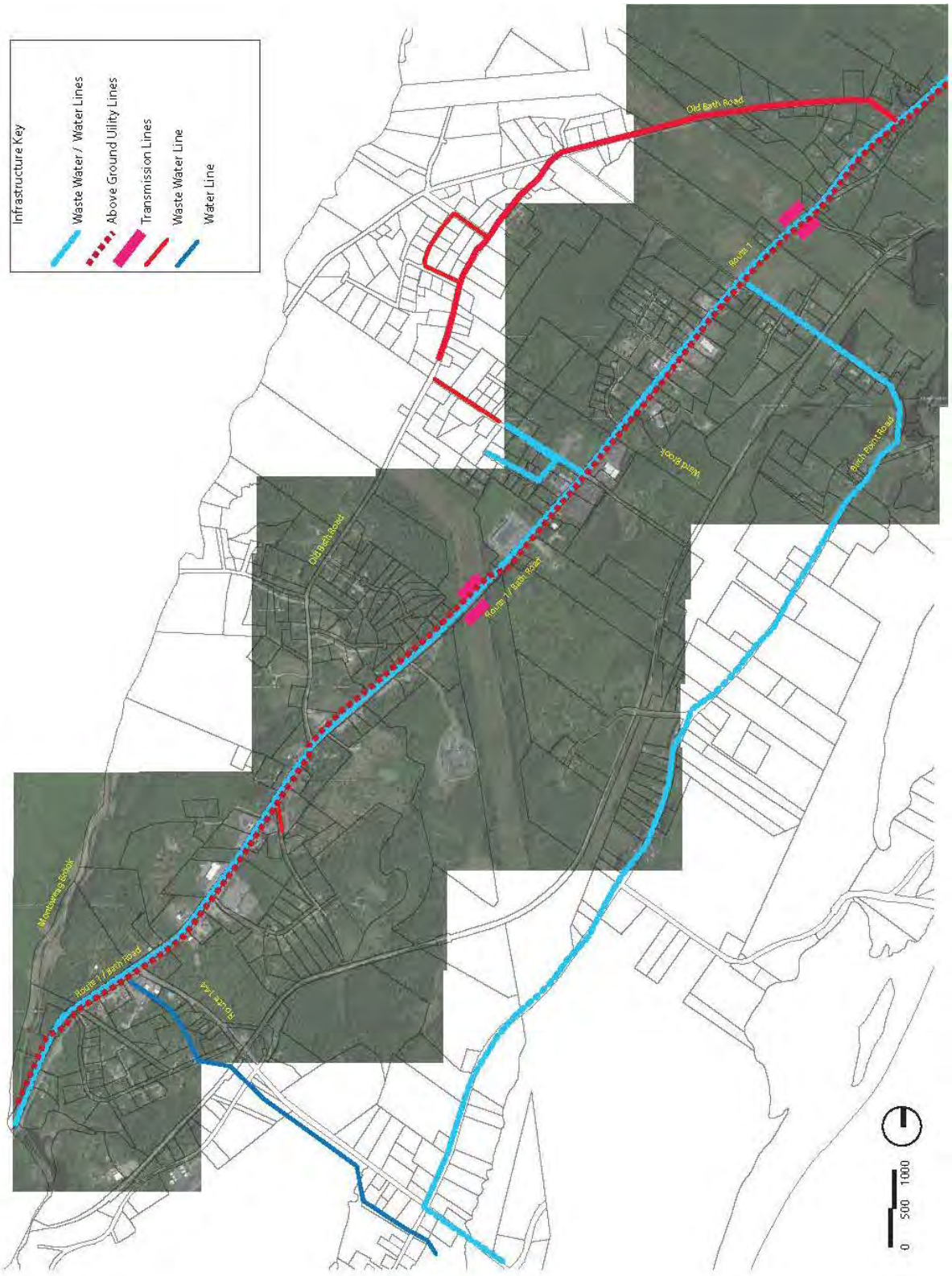


Figure 2-43 Infrastructure



3.0 FUTURE TRANSPORTATION CONDITIONS

3.1 Future Traffic Volume Forecast Methodology

Traffic forecasts for the U.S. Route One/Bath Road Master Plan were developed with the aid of computerized travel demand models for the region and for the State of Maine. The Maine Statewide Model provided information on through traffic growth in the study corridor. A subarea model of Wiscasset and its surrounding towns was used to estimate side street volumes and turn movements at intersections based on an anticipated 30 percent growth in residential dwelling units and 75 percent growth in commercial development within Wiscasset.

Growth assumptions in the traffic model included retail employment, non-retail employment, and residential dwelling unit construction. For the Bath Road Master Plan area (along Bath Road), the model included the following types and sizes of development:

- Non-Retail Land Uses – 323 new employees – 100,000 square feet of new office space
- Retail Uses – 100 new employees – 50,000 square feet of new retail space
- Residential – 60 new residential units

The above land use types and sizes were based upon a review of model assumptions for parcels of land abutting Bath Road within the study area. For Retail and Non-Retail uses, employee data was converted to a building area according to data from the Institute of Transportation Engineers Residential land use data in the model were specified as units and no conversion was necessary.

3.2 Historical Building Permits

Prior development activity in the study corridor was determined from a review of building permits issued between 2003 and 2012. **Table 3-1** lists 73 general building permits issued by permit type over the 10 year period. Although the table lacks detail, it does provide a general example of development activity.

Table 3-1 Building Permits between 2003 and 2012

Date	First Name	Last Name	St.#	Type
10/3/2012	Cecilio	Juntura	306	roof
11/1/2012	Robert H.	Rogers, Sr	760	Storage Addition
7/21/2011	Mark	Welborn	19	Shed
7/25/2011	Herbert	Register	19	Remodel
7/27/2011	Wendy	Ross	21	Rehab
8/1/2011	Robert	Nesbitt	304	Remodel - bath
8/2/2011	Mark	Welborn	19	Deck
8/2/2011	Diane	Robinson	519	Home/shed
8/3/2011	George & Marjorie	Knight	181	Modular
8/3/2011	Richard	Forrest	20	Deck add
8/9/2011	George & Marjorie	Knight	183	Garage
8/9/2011	Kyle	Yacoben	277	Remodel

Table 3-1 Building Permits between 2003 and 2012				
Date	**First Name**	**Last Name**	**St.#**	**Type**
2/8/2010		Gaftek, LLC (Circle K)	639	Remodel
3/23/2010	Maine Adventure Course LLC		698	Challenge Course
3/31/2010	Daniel	Chapman	568	Remodel
4/6/2010	Barry	Miete	510	Sign Structure
10/4/2010	Kyle	Yacoben	279	Shed
10/28/2010		Two Bridges Jail	522	Storage Bldg
11/3/2010	Bob	Rogers	762	Canopy
6/10/2009	Barry	Miete	510	Addition/alterations
11/4/2009		Wiscasset Holdings		Gas station, bank, car wash
11/18/2009	James	Seigars	320	Metal bldg
11/18/2009	James	Seigars	320	40 Box trailer
12/3/2009	Norman	Sherman	744	New storage building
2/27/2008	David	Jewell		Warehouse
3/26/2008	Ron	Finley	103	Screen Room
4/7/2008		A T & T Mobile	432	Equip placement
5/19/2008	Doug & Fale	Chick	229	Porch
7/23/2008		Northern Pride Communications	438	Upgrade
9/29/2008	Augustine	Lett, Sr.		Storage bldgs
4/23/2007		Irving Oil Corp	639	Alteration
6/8/2007	William R	Gillies	596	Rooms, 5 motel
6/8/2007	Kyle	Yacoben	279	Alteration
7/6/2007	Jess & Janasa	Herndon	510	Alteration
7/6/2007	Jess & Janasa	Herndon	510	Alteration
7/31/2007	John	Kazalski	721	Alteration
9/24/2007		Irving Oil Corp	639	Alteration
10/9/2007	Danny	Grover	342	Garage addition
5/18/2006		Lee Properties, LLC	681	Alterations
9/20/2006		Unicel		Dish Antenna
10/4/2006	James	Leclair	107	Deck
10/31/2006	Karen	Bloom	762	Relocation
4/12/2005	Jim	Collins	195	Shed & alterations
5/12/2005		Lincoln/Sagadahoc Jail	522	Jail
5/20/2005		American Tower		Shed & antenna
7/22/2005		Lincoln/Sagadahoc Jail	522	Garage, 3 bay
7/26/2005		D & M Marine	588	Shed
8/23/2005	Norman	Sherman	744	Storage building
10/20/2005	Jospeh H.	DeRosa	632	Business
1/12/2004		Shaw's Supermarket Inc	670	Alterations
3/26/2004	Francis S.	Soule, Jr.	432	Relocate storage bldg
5/4/2004		Ames Supply	399	Store
6/2/2004	Robert H.	Rogers	754	Roof over deck

Table 3-1 Building Permits between 2003 and 2012				
Date	**First Name**	**Last Name**	**St.#**	**Type**
9/13/2004	Erwin & Pearl	Skillin	625	Deck & steps
9/27/2004		Wiscasset, Town of	51	Alterations
10/7/2004	John	Stone	681	Store
10/22/2004	William R	Gillies	596	Rooms, 5 motel
11/9/2004	Thomas P.	Nadeau, O.D.	165	Addition
11/18/2004	Robert	Rogers	754	Roof & kayak racks
3/14/2003	BILL	GILLIES	596	RELOCATION
4/4/2003		ISLAND TEAK CO	681	STORAGE & AWNING
6/16/2003	JOHN	NICHOLS	187	SHED
7/25/2003	STEPHEN	KENT		ALTERATIONS
8/12/2003	NORMAN	SHERMAN	734	SHOP/SALES OFF
9/2/2003	NORMAN	SHERMAN	744	STORAGE
9/4/2003	DENNIS	ANDERSON		SEE NOTES
9/19/2003	PENNEY	SKILLIN		MH
9/23/2003	ELEANOR	CUNNINGHAM	276	RAMP
10/29/2003		LINCOLN COUNTY OF		STORAGE SHED
11/13/2003	FRANCIS	SOULE, JR	436	ALT/GARAGE
11/14/2003		US CELLULAR		BLDG/ANT/BASE
12/10/2003	ERNEST	GROVER, JR	342	STORAGE BLDG
12/12/2003	ALLEN	COHEN	298	STORAGE BLDG

3.3 Future Intersection Turning Movement Volumes (2030)

Future traffic volumes were forecasted at the following study intersections for the year 2030 for the weekday PM peak hour:

- Bath Road and Route 144
- Bath Road and Shaw's/Marketplace Shopping Center
- Bath Road and Old Bath Road (S)
- Bath Road and Birch Point Road
- Bath Road and Old Bath Road (N)

Table 3-2 presents a comparison between existing (2012) and future (2030) PM peak hour traffic volumes. As noted in the table, traffic growth along Bath Road within the Master Plan area is expected to increase between 14 and 22 percent over the next 18 years. For streets intersecting Bath Road the percentages of growth are generally expected to be greater, with the following key points:

- Birch Point Road is projected to experience significant growth in traffic volumes primarily due to development activity at Mason Station and at the Industrial Park.
- Route 144 is also projected to experience significant traffic growth primarily associated with development activity at the Industrial Park.

Table 3-2 Existing and Future Traffic Volume Comparison Weekday PM Peak Hour			
Location	**Existing Volume**	**Future Volume**	**% Change**
Bath Road and Birch Point Road			
Bath Road south of intersection	1843	2225	+21%
Bath Road north of intersection	1891	2313	+22%
Birch Point Road	94	288	+206%
Bath Road and Old Bath Road (N)			
Bath Road south of intersection	1870	2247	+20%
Bath Road north of intersection	1901	2277	+20%
Old Bath Road (N)	49	74	+51%
Bath Road and Old Bath Road (S)			
Bath Road south of intersection	1577	1824	+16%
Bath Road north of intersection	1513	1775	+17%
Old Bath Road (S)	86	129	+50%
Bath Road and Shaw's/Marketplace Shopping Center			
Bath Road south of intersection	1624	1850	+14%
Bath Road north of intersection	1748	1987	+14%
Shaw's	180	190	+6%
Marketplace	46	50	+9%
Bath Road and Route 144			
Bath Road south of intersection	1703	1950	+15%
Bath Road north of intersection	1745	1986	+14%
Route 144	250	372	+49%

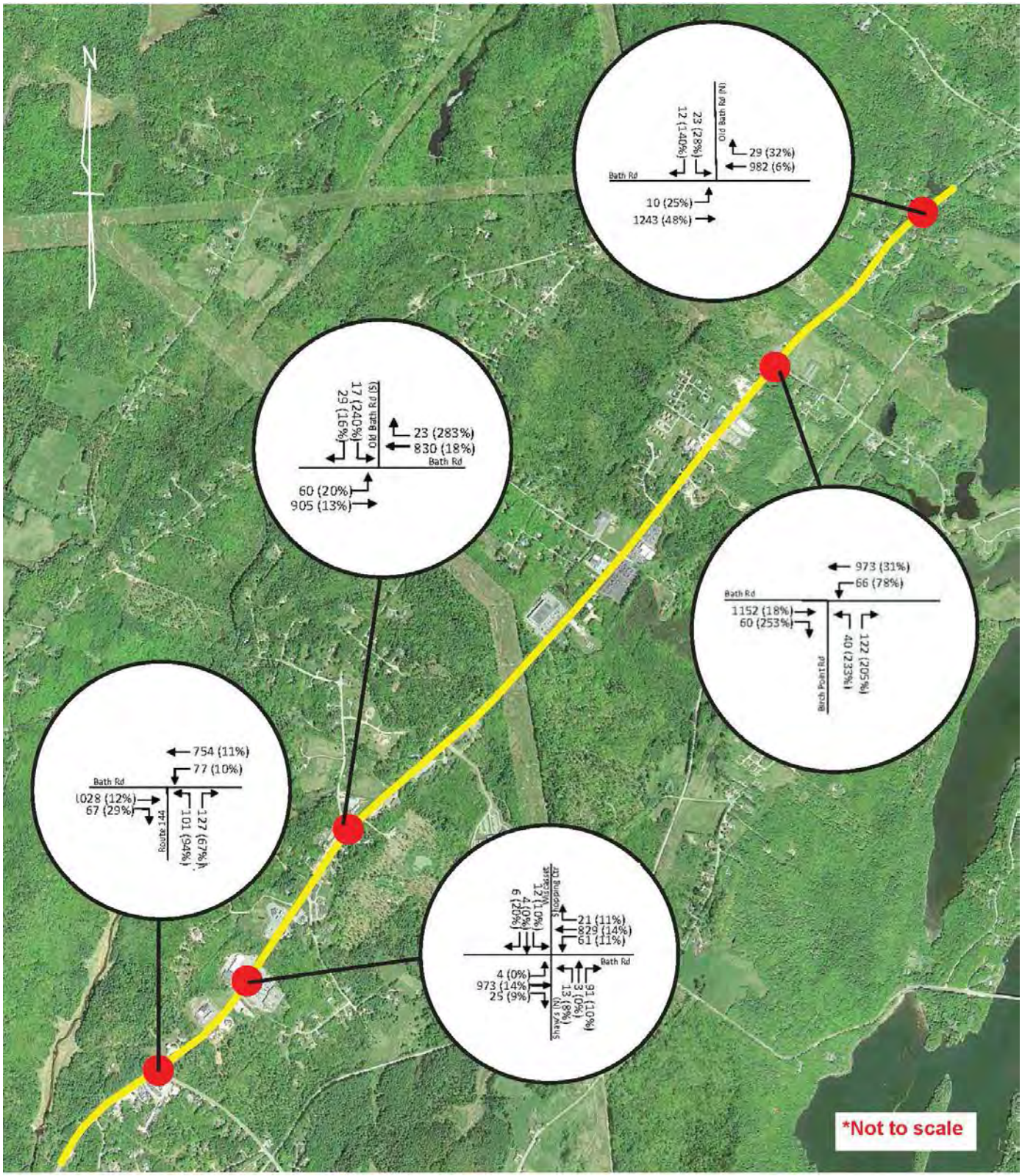
Figure 3-1 presents future 2030 weekday PM peak hour volumes for the study area intersections.

3.4 Future (2030) Level of Service

The standard used to evaluate traffic operating conditions of the transportation system is referred to as the Level of Service (LOS). This is a qualitative assessment of the quantitative effect of factors such as speed, volume of traffic, geometric features, traffic interruptions, delays, and freedom to maneuver. LOS analysis was based upon procedures detailed in the Transportation Research Board's 2010 Highway Capacity Manual. One of the standard programs used in traffic modeling – Synchro –was used to perform this analysis. Refer to Section 2.1.11 for further LOS methodology information.

Tables 3-3 through 3-7 summarize each intersection and movement - providing the Level of Service (A-F) followed by the delay (in seconds per vehicle) and queue (in feet). An overall Level of Service and delay for each intersection is also provided. The analysis was conducted for the weekday PM peak hour.

Figure 3-1 2030 PM Peak Intersection Turning Movement Volumes



2The analysis concludes that little vehicle delay occurs in both northbound and southbound directions but that traffic turning onto Bath Road has significant delays. It should be noted that traffic conditions on Bath Road are poor during peak summer time periods due to traffic delays in Wiscasset Village. Those conditions are not represented in the analysis. The source of traffic congestion is generally not related to capacity issues at intersections within the Master Plan corridor, but from congestion spilling back from the Village. In order to achieve a minimum overall LOS of D or better at all intersections, the addition of a separate right and left turn lane from Birch Point Road onto Bath Road and a signalized intersections at Route 144 and Birch Point Road were also analyzed. The results are provided below and show that these upgrades would provide significant improvements at each intersection.

Table 3-3 Future (2030) PM Peak Hour – Capacity Analysis Bath Road @ Route 144

	Existing Conditions Future Volumes			Signalized Intersection Future Volumes		
Movement	**Level of Service**	**Delay (sec/veh)**	**95th% Queue (feet)**	**Level of Service**	**Delay (sec/veh)**	**95th% Queue (feet)**
Route 144 Left/Right	F	980.0	644	C	34.7	92
				B	10.8	45
Bath Road NB Thru/Right	A	0.0	0	B	15.4	738
Bath Road SB Left	B	11.8	12	C	21.4	94
Bath Road SB Thru	A	0.0	0	A	7.1	264
Overall	F	112.4	N/A	B	13.3	N/A

Table 3-4 Future (2030) PM Peak Hour – Capacity Analysis Bath Road @ Shaw's/Marketplace Shopping Center Plaza

Movement	**Level of Service**	**Delay (sec/veh)**	**95th% Queue (feet)**
Marketplace Left/Thru/Right	F	441.3	92
Shaw's Left/Thru/Right	F	59.4	86
Bath Road NB Left/Thru/Right	A	0.2	0
Bath Road SB Left/Thru/Right	B	11.5	9
Overall	A	9.8	N/A

Table 3-5 Future (2030) PM Peak Hour – Capacity Analysis Bath Road @ Old Bath Rd (S)

Movement	**Level of Service**	**Delay (sec/veh)**	**95th% Queue (feet)**
Old Bath Road Left/Right	F	140.7	111
Bath Road NB Left/Thru	A	3.9	9
Bath Road SB Thru/Right	A	0.0	0
Overall	A	6.5	N/A

Table 3-6 Future (2030) PM Peak Hour – Capacity Analysis Bath Road @ Birch Point Rd						
	Existing Conditions Future Volumes			Separate Turn Lanes on Birch Point and Bath Rd SB, Signalized Future Volumes		
Movement	**Level of Service**	**Delay (sec/veh)**	**95th% Queue (ft)**	**Level of Service**	**Delay (sec/veh)**	**95th% Queue (ft)**
Birch Point Road Left	F	N/A	N/A	D	36.3	48
Birch Point Road Right				C	26.7	65
Bath Road NB Thru/Right	A	0.0	0	C	27.6	1023
Bath Road SB Thru	A	5.3	12	E	58.7	66
Bath Road SB Left				A	7.6	406
Overall	F	818.2	N/A	C	21.1	N/A

Table 3-7 Future (2030) PM Peak Hour – Capacity Analysis Bath Road @ Old Bath Rd (N)			
Movement	**Level of Service**	**Delay (sec/veh)**	**95th% Queue (feet)**
Old Bath Road Left/Right	F	230.6	102
Bath Road NB Thru/Left	A	0.9	1
Bath Road SB Thru/Right	A	0.0	0
Overall	A	5.1	N/A

In most cases the traffic flow along a roadway corridor is a function of how well major intersections work. Accordingly, intersection capacity analysis is a key determinant of corridor operations. Roadway segment capacity analysis methods are also available to assess general corridor capacity. Two-lane highways have high capacities and are rarely observed. A two-lane segment analysis of Bath Road was performed according to methods contained in the Highway Capacity Manual. As with the current conditions, the analysis concluded that given the number of lanes, passing opportunities, and geometry, Bath Road will operate at a level of service E, with a less than 3 second delay in free-flow speed over current conditions. Current field observations, combined with intersection capacity analyses do not support this conclusion and it is thought the corridor will operate at a better LOS with the outlined future volumes – not taking into account summer peaks north of the project study area causing delays in the corridor.

4.0 PUBLIC OUTREACH

Public involvement in large-scale master planning efforts is essential. Establishing a Steering Committee, identifying key stakeholders, and providing opportunities for the general public to be involved are all important for the effort to be transparent and politically sound. This Plan was based upon a Context Sensitive Solution (CSS) based process. CSS planning evolved from the desire of communities to have more structured involvement in the role of transportation planning on the impact of communities in terms of local character, the economy, the environment, historic trends, and future opportunities. At the beginning of the process the Steering Committee was charged with establishing a Values and Mission Statement that states the primary issues and the vision and metrics for developing responsive solutions. A summary of the public outreach efforts is noted below.

4.1 Steering Committee Meetings

The Bath Road Master Plan Steering Committee served as an advisory committee representing stakeholders in the study area, providing essential feedback throughout the master planning process. The Committee was charged with participating by reviewing and commenting on draft documents, addressing issues or concerns associated with the development of recommendations, and providing a range of insights, history, data, and comments to the Master Plan team in order to meet the goals of the Master Plan.

The Steering Committee included the following members:

- Wayne Averil – Ames True Value
- Don Jones – Member of the former Town Transportation Committee
- Gary Crosby – Wiscasset Marketplace
- Al Cohen - Big Al's Super Values Odd Lot Outlet
- Heather Pitcher - Wiscasset Trading Post
- Peter West - Bicycle and Pedestrian representative
- Troy Cline - Police Chief
- Judith Colby - Selectman
- Ed Polewarczyk - Selectman
- Laurie Smith – Town Manager
- Misty Parker – Town Planner
- Gerry Audibert – Maine Department of Transportation
- Bob Faunce - Lincoln County Regional Planning Commission
- Tim Merry - Selectman

Several meetings (as noted below) were held during the duration of the study. Meeting summary notes are provided in Appendix D.

- Steering Committee Meeting #1 (August 23, 2012) – Kick-off Meeting
- Steering Committee Meeting #2 (October 3, 2012) – Presentation of Existing Conditions and Establishing Project Values and Mission Statement
- Steering Committee Meeting #3 (December 17, 2012) – Presentation of Future Transportation Conditions
- Steering Committee Meeting #4 (February 7, 2013) – Draft Recommendations
- Steering Committee Meeting #5 (October 17, 2013) – Present Draft Final Report and Draft Materials for Public Meeting #2
- Steering Committee Meeting #6 (December 10, 2013) – Present Final Report

4.2 Mission Statement - Project Goals

The Bath Road Master Plan Steering Committee established the following study goals:

- Identify traffic improvements within the highway and on adjacent, developed and developable properties to meet the needs of existing and future development, while maintaining or improving the highway's mobility, safety and capacity;
- Address the potential of specific properties with concept plans and street networks demonstrating the potential for development adjacent to the corridor that improves local pedestrian and vehicular circulation;
- Develop a responsible plan for coordinated highway infrastructure improvements and transportation enhancements as well as practical financing strategies needed to implement the plan;
- Provide design standards for corridor preservation;
- Identify transportation-related land use strategies incorporating best management practices consistent with Wiscasset's Comprehensive Plan; and
- Balance the needs of residents with those travelling through Wiscasset.

4.3 Business/Property Owner Meetings

A number of business/property owners located within the study area were invited to partcicpate in one-on-one meetings with the Town Manager, Town Planner and Consultant team to gain a clear understanding of the effort and to ask questions. The meetings were held at Town Hall on March 11th and 15th, 2013.

4.4 Public Meetings

Two public meetings were held in conjunction with the development of this Master Plan. The first public meeting was held on March 20, 2013. It provided background information, findings on transportation and land use conditions, and recommendation topics to consider. A second public meeting was held on December 10, 2013 and presented the draft final Master Plan. Copies of meeting summary notes are provided in Appendix D.

5.0 RECOMMENDATIONS

5.1 Transportation Recommendations

The following sections identify transportation strategies that will guide actions by the Town and the MaineDOT such that future development can take place under a strategically planned process maintaining or improving Bath Road's mobility, safety and capacity. A key beneficiary of this effort will be private developers who are seeking local site plan and MaineDOT Traffic Movement Permits. The following actions are recommended:

- **Intersection Improvements** – Along roadway corridors, intersections tend to be the locations where crash frequency are higher and given traffic movement turn conflicts, mobility can become problematic. Accordingly, this Plan identifies strategies for providing capacity improvements at several key study intersections such that future development growth, both locally and regionally, can be accommodated. The plan recommends implementation mechanisms that will allow these improvements to be constructed under a shared or equitable program, thus not burdening one project applicant.

- **Corridor Improvements** – Similar to intersection improvements, recommendations have been identified to ensure safe and efficient travel corridor-wide. The analyses indicate one lane in each direction is sufficient from a traffic capacity perspective, with turn lane provisions. This action will be particularly beneficial as it relates to accommodating turn movements into and out of businesses located along Bath Road.

- **Street Connectivity** – Street connectivity involves establishing a network of streets that form a grid pattern, providing multiple routes and connections to get to origin and destination points. The plan suggests that improved street connectivity be implemented as a policy provision with improved connectivity suggested on the east and west sides of Bath Road between Route 144 and Old Bath Road (S) and on the east side of Bath Road from Birch Point Road towards the south. Additionally, a new street connection is suggested between Bath Road and Old Bath Road via a Birch Point Road Extension. Finally, inter-parcel connectivity (e.g. between Big Al's and the Car Wash) should continue to be encouraged. See Figures 5-1 and 5-2 for visual representations.

- **Access Management** – Access management is a set of techniques used to preserve highway capacity, manage highway congestion and reduce crashes. Examples include:
    - Traffic signal spacing;
    - Driveway location, spacing, and design;
    - Use of service and frontage roads; and
    - Land Use policies that control right-of-way access to highways.

  The Plan includes information on why access management is an important part of development planning and permitting. It also provides information on existing local and MaineDOT standards and processes. While there is flexibility in waiving some access management standards, design and planning of driveways is a very important part of preserving the safety and efficiency of a corridor. Street connectivity (further described in Section 5.1.3) is an access management action and will be an important strategy for providing alternative access options for developments that otherwise may not be permitted on Bath Road.

- **Bath Road Safety Audit** – MaineDOT conducted a Route 1 Road Safety Audit in June 2012 from the Woolwich-Wiscasset town line to the Edgecomb-Newcastle town line. It identified improvement suggestions for addressing existing safety concerns as compiled by four teams totaling 24 individuals representing the Towns of Wiscasset and Edgecomb, regional planning, emergency service providers, business owners, residents and MaineDOT. A list of the short-, mid-, and long-term actions and recommendations for further evaluation are summarized later in Section 5.1.7.

5.1.1 Intersection Recommendations

Strategies have been developed for providing capacity improvements at several key study intersections such that future development growth (Year 2030), both locally and regionally, can be accommodated. The study area for the corridor comprises of five key intersections along Bath Road at Route 144, Shaw's/Wiscasset Market Place, Old Bath Road (S), Birch Point Road, and Old Bath Road (N). The following sections summarize proposed recommendations for each of these study intersections.

General (applicable to all intersections)

Review driveway openings and access management requirements to ensure access to affected properties is reasonable and does not pose traffic safety concerns.

Bath Road at Route 144

Long vehicle delays are projected in the future for vehicles turning from Route 144 onto Bath Road. If development and the associated traffic growth materialize, it is likely that a traffic signal will be warranted and necessary. It should be noted that a traffic signal is not currently warranted and the installation of a traffic signal can only be installed when the warrants contained in the Manual on Uniform Traffic Control Devices, (MUTCD) are met. The recommended improvements are illustrated in Appendix B, ***Figure B-1***. **Table 5-1** summarizes the level of service benefit expected following the implementation of these improvements. As noted, level of service F conditions for Route 144 movements will be improved to an acceptable level of service C condition in the year 2030.

- Construct a formal left-turn lane and two-way center left turn lane on the southbound Bath Road approach.
- Provide separate left and right turn lanes on the Route 144 approach.
- Install a traffic signal (when warranted).
- Provide a future roadway connection to the north creating a 4th leg of the intersection when development occurs. Other changes to the intersection will be required when this fourth leg is constructed (e.g. adding a northbound left-turn lane and two-way center left turn lane to allow bus access to the Miss Wiscasset Diner; changing lane assignments; modifying the traffic signal, etc.).
- Possible need for northbound Bath Road right-turn lane in the future for smooth flow.
- Improved access control will be necessary in conjunction with intersection improvements.

Table 5-1 Bath Road @ Route 144 Level of Service Summary with Improvements PM Peak Hour			
Movement	**2012 Existing**	**2030 Without Improvements**	**2030 With Improvements**
Route 144 Left	F	F	C
Route 144 Right			B
Bath Road NB Thru/Right	A	A	B
Bath Road SB Left	B	B	C
Bath Road SB Thru	A	A	A
Overall	B	F	B

Bath Road at Shaw's/Wiscasset Market Place

While this location currently and in the future operates at poor levels of service, criteria for the installation of a traffic signal is not met. It is suggested that both Shaw's and the Wiscasset Market Place connect to rear backage roads in an effort to provide access/egress options for customers. Refer to Section 5.1.3 Street Network Connectivity and ***Figures 5-1 and 5-2*** for more detail. **Table 5-2** presents the level of service conclusions. No significant change in level of service is noted, although improvements may occur if new roadway connections are incorporated and traffic volumes shift to locations that can better process traffic.

Table 5-2 Bath Road @ Shaw's/Shopping Center Plaza Level of Service Summary (No Improvements Proposed) PM Peak Hour			
Movement	**2012 Existing**	**2030 Without Improvements**	**2030 With Improvements**
Shopping Center Left/Thru/Right	F	F	N/A
Shaw's Left/Thru/Right	E	F	N/A
Bath Road NB Left/Thru/Right	A	A	N/A
Bath Road SB Left/Thru/Right	B	B	N/A
Overall	A	A	N/A

Bath Road at Old Bath Road (S)

Movements from Old Bath Road (S) experience long delays during peak time periods due to heavy Bath Road traffic volumes. While traffic signal warrants are not met, the development of backage roads that shift traffic to Old Bath Road could trigger the need for a traffic signal in the future. The improvements noted below are recommended. ***Figure B-2*** in Appendix B illustrates the proposed improvements and **Table 5-3** notes level of service results with and without improvements.

Figure 5-1 Potential Future Street Southern Connections

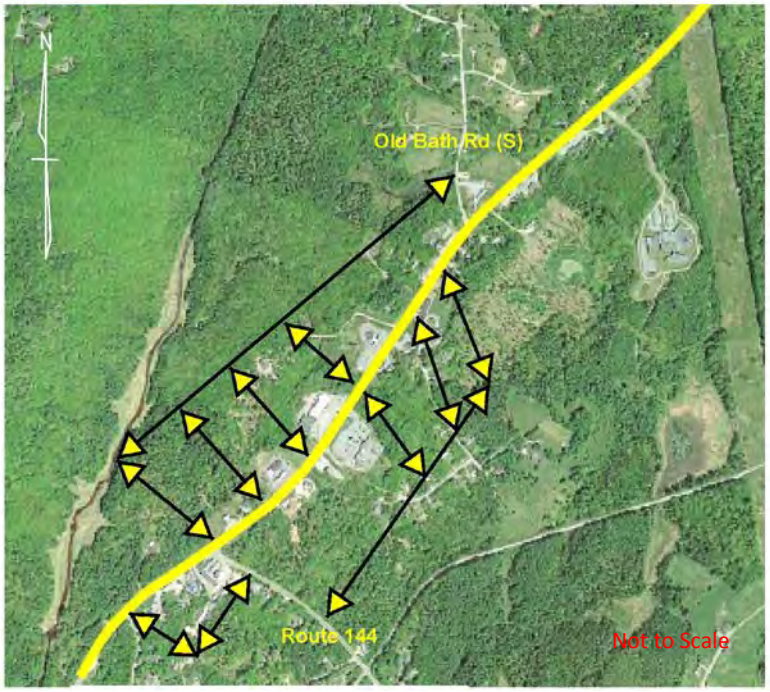
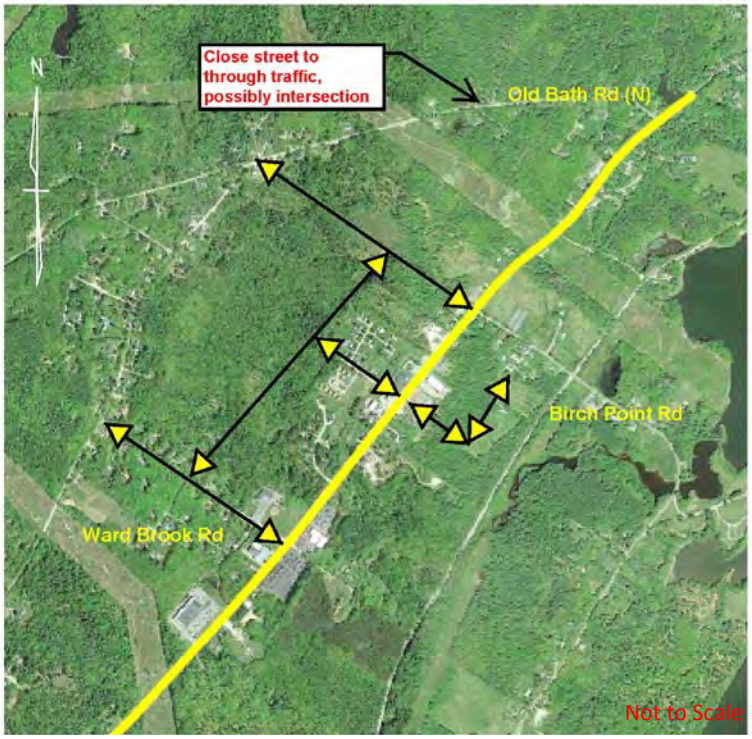


Figure 5-2 Potential Future Street Northern Connections



- Construct a left-turn lane on the northbound Bath Road approach.
- Construct separate left and right turn lanes on Old Bath Road. This will ensure that right turn movements are not excessively delayed due to left-turning vehicles waiting to find a gap in Bath Road traffic.
- Widen the southbound Bath Road shoulder or provide a right-turn lane. This improvement is suggested to allow right-turning vehicles to complete their maneuver without significantly reducing south bound Bath Road traffic speed, thus reducing potential rear-end crash conflicts.

Table 5-3 Bath Road @ Old Bath Road (S) Level of Service Summary with Improvements PM Peak Hour

Movement	2012 Existing	2030 Without Improvements	2030 With Improvements
Old Bath Road Left	D	F	F
Old Bath Road Right			C
Bath Road NB Thru	A	A	B
Bath Road NB Left			A
Bath Road SB Thru	A	A	A
Bath Road SB Right			A
Overall	A	A	A

Bath Road at Birch Point Road

Long vehicle delays on Birch Point Road are projected in the future. If development and the associated traffic growth materialize it is possible that a traffic signal will be warranted and necessary. It should be noted that a traffic signal is not currently warranted and the installation of a traffic signal can only be installed when the warrants contained in the MUTCD are met. The recommended improvements are illustrated below and on ***Figure B-3*** in the Appendix. **Table 5-4** summarizes the level of service benefit expected following the installation of these improvements. As noted, level of service F conditions for Birch Point Road movements will be improved to an acceptable level of service C condition in the year 2030.

- Construct a left-turn lane on the southbound Bath Road approach
- Construct separate left and right turn lanes on Birth Point Road
- Install a traffic signal (only when warranted)
- Provide future road creating 4th leg of the intersection (When development occurs)
- Possible need for northbound Bath Road right-turn lane in the future for smooth flow

Table 5-4 Bath Road @ Birch Point Road Level of Service Summary with Improvements PM Peak Hour

Movement	2012 Existing	2030 Without Improvements	2030 With Improvements
Birch Point Road Left	E	F	D
Birch Point Road Right			C
Bath Road NB Thru	A	A	C
Bath Road NB Right			A
Bath Road SB Thru	A	A	E
Bath Road SB Left			A
Overall	A	F	B

Bath Road at Old Bath Road (N)

Traffic delays currently exist for northbound traffic entering Bath Road from Old Bath Road (N), and these delays are projected to be longer in the future (see **Table 5-5**). However, traffic volumes do not currently meet criteria for installing a traffic signal. Also, the number of left turning vehicles from Old Bath Road onto Bath Road is not sufficient to justify installing separate right and left lanes on Old Bath Road. Additionally, the 2012 Route 1 Road Safety Audit noted concerns regarding cut-through traffic on Old Bath Road. To discourage northbound Bath Road traffic from using Old Bath Road as a cut-through in order to avoid Bath Road delays, the north intersection of Old Bath Road should be closed at Bath Road if and when Birch Point Road is extended west (north) to connect to Old Bath Road (refer to Section 5.1.3 Street Connectivity and ***Figures 5-1 and 5-2***). This change will not allow vehicles to use Old Bath Road for north/south travel but will allow local access to properties.

Table 5-5 Bath Road @ Old Bath Road (N) Level of Service Summary (No Improvements Proposed) PM Peak Hour

Movement	2012 Existing	2030 Without Improvements	2030 With Improvements
Old Bath Road Left/Right	F	F	n/a
Bath Road NB Thru/Left	A	A	n/a
Bath Road SB Thru/Right	A	A	n/a
Overall	A	A	n/a

5.1.2 Bath Road Corridor Recommendations

A key measure of corridor traffic operation adequacy, particularly as it relates to roadway segment capacity requirements, is how well intersections function and how many through travel lanes are needed for an acceptable level of service. The Highway Capacity Manual does not currently have methods to evaluate the proposed center two-way left turn lane. Studies have conclusively shown that this type of facility will increase safety in the corridor – particularly in the form of rear-end collisions and increase the overall free-flow speed of the corridor, especially with the quantity of access points throughout the corridor. This roadway section is proposed to consist of one 12-foot travel lane in each direction, one 12-foot center lane, and a 5-foot minimum width shoulder. Some minor pavement widening will be required to implement the proposed recommendations. The existing right-of-way is approximately 75 to 100 feet and no property acquisition is expected (some may be necessary at intersections). It should be noted that while some shoulder pavement is available for the proposed widening, the cost estimates include necessary pavement sub-base improvements as well.

A portion of Bath Road from Page Avenue to Birch Point Road deviates from the general typical section noted above. For this section of Bath Road, curbing and sidewalks are proposed in addition to the three-lane roadway section.

The highway recommendations are listed below and ***Figures B-4*** through ***B-15*** in the Appendix illustrate the recommended improvements.

General Roadway Segment Improvements

- South of Route 144 – Three lane section (center two-way left turn lane) to Shady Lane. No changes are proposed between Shady Lane and the Woolwich town line.
- Between Route 144 and Wood Lane – Three lane section (with select intersection turn lanes)
- Between Wood Lane and Ames True Value – No Change
- Between Ames True Value and Birch Point Road – Three lane section (center two-way left turn lane)
- North of Birch Point Road – No Change

Roadway Widening Locations

- Widen shoulders where sufficient space for bicyclists is not provided. A minimum of 5 feet should be provided. While the provision of marked and signed bicycle lanes are not specifically part of the details of the Master Plan, consideration of formalized bicycle lanes should be considered in the future. Pavement widening will be required in the following areas for shoulder, intersection and driveway improvements:
    - Route 144 as it approaches the intersection with Bath Road to allow for separate turn lanes.
    - Bath Road northbound and southbound near Dunkin Donuts and Skillin Lane.
    - Old Bath Road (S) as it approaches the intersection with Bath Road.
    - Intermittently between Old Bath Road (S) and Wood Lane on both the northbound and southbound sides.
    - Intermittently between Ames True Value and Wood Lane on both the northbound and southbound sides.
    - Intermittently between Ward Brook Road and Page Avenue on both the northbound and southbound sides.
    - Birch Point Road as it approaches the intersection with Bath Road.
    - Bath Road northbound just north of Birch Point Road to allow for the southbound dedicated left turn lane.

Driveway Turn Lanes

- Construct right-turn lane on southbound Bath Road at McDonald's Restaurant.
- Construct right-turn lane on southbound Bath Road at Ames True Value.

Other Improvements

- Extend culvert at Ward Brook
- Extend culvert north of Old Bath Road (S)
- Reconstruct existing shoulder base pavement to accommodate traffic vehicle loads where shoulders are being used for vehicle travel.
- Between Page Avenue and Birch Point Road, Bath Road will consist of a similar three-lane section as previously discussed. In addition, curbing and sidewalks will be provided on both sides of the Bath Road. Crosswalks are suggested at Page Avenue and Birch Point Road. At the Page Avenue crosswalk a flashing warning light system shall be installed. It should be noted that the implementation of sidewalks and crosswalks is on an as needed basis and will required the reduction of the regulatory speed limit and impact corridor mobility.
- Raised islands are proposed at locations that don't impact driveway access/egress movements, have adequate illumination, and are visible to motorists. These islands may be landscaped, but plantings must not obscure sight distance and meet engineering standards. Final location and details of these islands will be determined during the design process.

5.1.3 Street Network Connectivity

Street connectivity involves establishing a network of streets that forms a grid pattern, providing multiple routes and connections to get to origin and destination points. A well connected area includes parallel routes and cross connections, few dead-end streets and many points of access. Benefits of Connectivity can include:

- Reduced traffic congestion on arterials
- Reduced travel time
- Shorter travel distances and reduced vehicle miles of travel
- Continuous and more direct routes for pedestrians, bicyclists and transit users
- Greater emergency vehicle access and reduced response times
- Improved utility connections, easier maintenance and more efficient trash and recycling pick up
- Reduced speeds and severity of accidents

In effort to improve traffic access/egress opportunities to existing businesses on Bath Road and allow access opportunities for future development, given the need to meet access management standards (noted in Section 5.1.4), it is suggested that new streets be considered in the study area. The following (and illustrated on ***Figures 5-1 and 5-2***) summarizes the suggestions for new street connections.

- Consider roads/connections parallel to Bath Road on both east and west sides from Route 144 to Old Bath Road (S)
- Consider a road/connection on the east side of Bath Road from Route 144 to the south.
- Consider a new road on the west side of Bath Road from opposite Birch Point Road to Old Bath Road
- Consider roads/connections on the east side of Bath Road from Birch Point Road southerly to Page Avenue
- Close Old Bath Road near its northerly intersection with Bath Road when the new road is constructed opposite Birch Point Road to Old Bath Road

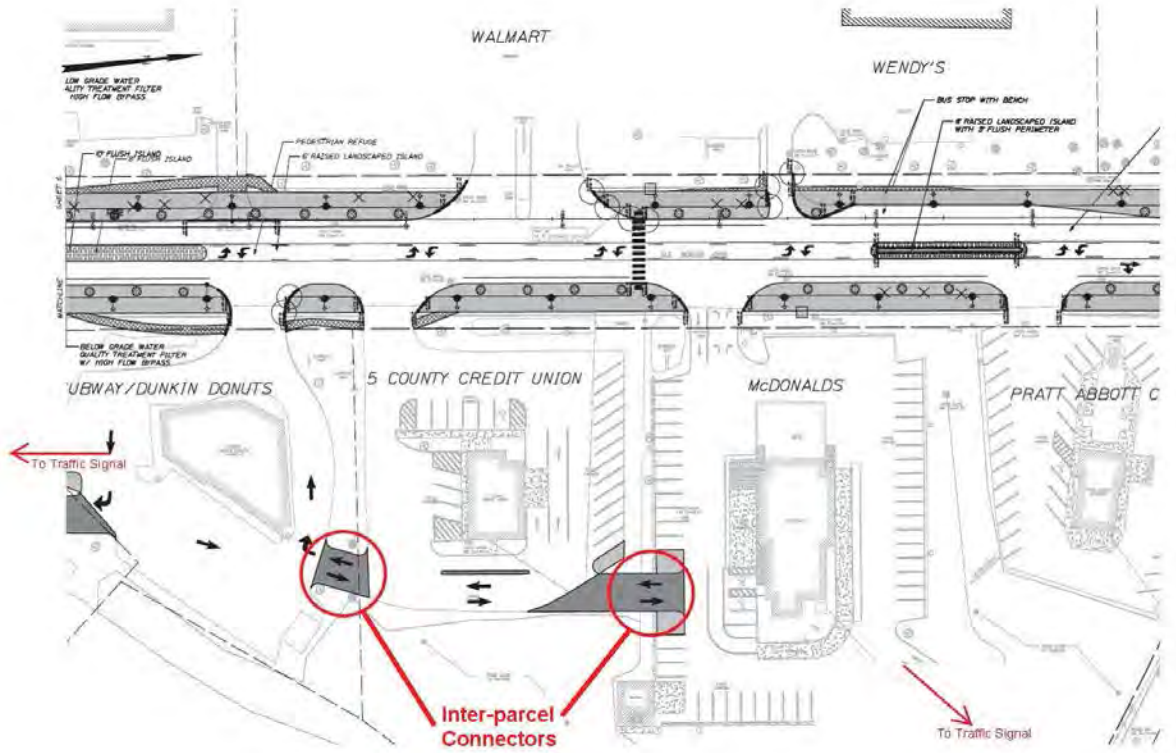
The above recommended street connections are conceptual only and will require engineering studies, environmental analyses and property acquisition details prior to being implemented. ***Figures 5-1 and 5-2*** illustrate the conceptual alignments but the ultimate location of these roadways will be a function of many factors including development proposals, environmental constraints, property/neighborhood impacts, topography, etc.

An example of a backage road is Monument Place in Topsham (see ***Figure 5-3***). Monument Place was constructed in an effort to allow development activity to continue on Route 196 with access and egress movements to parcels provided to the rear of businesses. Direct access to Route 196 was also provided at select, well-managed signalized intersections.

In addition to planning and constructing new roadway connections, inter-parcel connections should be considered in conjunction with development applications. These connections provide great benefit by minimizing unnecessary traffic turns onto Bath Road for vehicles patronizing abutting business. Several examples exist in the corridor including the simple connection between Big Al's and the Car Wash. ***Figure 5-4*** illustrates proposed inter-parcel connections along Route 1 in Falmouth that will allow development traffic to access existing traffic signals.

Figure 5-3 Topsham, ME Connector Road Example

Figure 5-4 Example of Inter Parcel Connection, Route 1, Falmouth, ME



5.1.4 Access Management

This Plan does not identify specific recommendations on how to correct existing deficiencies, but provides the framework for how driveway design is an important part of a healthy transportation corridor and what factors will need to be considered during the development process for a local Site Plan, MaineDOT Driveway Permit or Traffic Movement Permit approval.

Town of Wiscasset and MaineDOT Driveway Standards

Appendix C summarizes existing driveway design standards per the Town of Wiscasset and MaineDOT. These standards include details such as sight distance, driveway spacing, driveway width, number of driveways, etc. It is important to note that these standards will be closely reviewed during the review of a new or modified project (both locally and at MaineDOT). The following notes key differences between Town and MaineDOT standards. The more stringent rules apply.

- Sight Distance – MaineDOT sight distance standards are less than Town requirements with the exception of roads with a speed limit of 55 mph.

- Number of Driveways – MaineDOT limits lots to one two-way driveway or two one-way driveways. The Town allows for two driveways for developments that generate 100 or more daily vehicle trips.

- Corner Clearance – MaineDOT requires 125 feet of corner clearance while the Town requires 50 feet of clearance to an unsignalized intersection and 150 feet to a signalized intersection.

- Driveway Spacing - MaineDOT standards are greater than Town requirements. For 45 mph (the most common speed limit in the study area), MaineDOT requires 265 feet of separation while the Town requires 75 feet.

MaineDOT Driveway / Entrance Permits

A MaineDOT Driveway or Entrance permit is required under the following criteria. Refer to Appendix C for greater detail and specific rules.

- Driveways: less than 50 passenger car equivalents (PCE) per day. Examples:
  - Up to 5 dwelling units
  - Home-based occupations
  - Forest management & farming
  - Low-impact industrial (i.e., substations)
- Entrances: more than 50 PCEs/Day. Examples:
  - Over 5 dwelling units and housing developments
  - Retail, office or service business including department store, strip mall, convenience store, gas station, auto repair shop, restaurant, etc.

MaineDOT Traffic Movement Permit Process

For developments that generate significant traffic volumes, a Traffic Movement Permit (TMP) may be required. In many cases the TMP requires developers to prepare a traffic impact study assessing the impact the project may have on the public street system. Details of the TMP process are noted in Appendix C.

Key Access Management Steps to a Healthier Bath Road

Due to the importance of access management in maintaining a safe and efficient corridor and being a consideration in the development and re-development of properties along Bath Road, the following is a list of key steps that should be considered in achieving good driveway design. This summary is meant to provide a list of actions/strategies that should be considered during the development planning process.

Restrict the number of driveways per lot.
Restrict the number of driveways to one per parcel (or two one-way driveways), with special conditions for additional driveways. Lots with larger frontages, or those with needs for separate right and left-turn entrances, could be permitted more than one driveway, in accordance with driveway spacing standards. (MaineDOT does limit one driveway per lot).

Locate driveways away from intersections.
Setting driveways and connections back from intersections reduces the number of conflicts and provides more time and space for vehicles to turn or merge safely across lanes. This spacing between intersections and driveways is known as corner clearance. Adequate corner clearance can also be assured by establishing a larger minimum lot size for corner lots.

Connect parking lots and consolidate driveways.

Internal connections between neighboring properties allow vehicles to circulate between businesses without having to re-enter the major roadway. Joint and cross access requirements can help to assure connections between major developments, as well as between smaller businesses along a corridor. Cross access also needs to be provided for pedestrians. Sidewalks are typically placed far away from buildings on the right-of-way of major roadways, or are not provided at all. Pedestrians prefer the shortest distance between two points and will walk if walkways are provided near buildings. Joint and cross access strategies help to relieve demand on major roadways for short trips, thereby helping preserve roadway capacity. They also help to improve customer convenience, emergency access, and access for delivery vehicles.

Provide residential access through neighborhood streets.

Residential driveways on major roadways result in dangerous conflicts between high-speed traffic and residents entering and exiting their driveway. As the number of driveways increase, the roadway is gradually transformed into a high speed version of a local residential street. Subdivisions should always be designed so that lots fronting on major roadways have internal access from a residential street or lane. Minor land division activity can be managed by establishing a restriction on new access points and allowing land to be further subdivided, provided all new lots obtain access via the permitted access point.

Promote a connected street system.

As communities grow and land is subdivided for development, it is essential to assure continuation and extension of the existing local street system. Dead end streets, cul-de-sacs, and gated communities force more traffic onto collectors and arterials. Fragmented street systems also impede emergency access and increase the number and length of automobile trips. A connected road network advances the following growth management objectives

- fewer vehicle miles traveled
- decreased congestion
- alternative routes for short, local trips
- improved accessibility of developed areas
- facilitation of walking, bicycling, and use of transit
- reduced demand on major thoroughfares
- more environmentally sensitive layout of streets and lots
- interconnected neighborhoods foster a sense of community
- safer school bus routes

Encourage internal access to outparcels.

Shopping center developments often include separate lots or "outparcels" fronting on the major roadway. The outparcels are leased or sold to businesses looking for highly valued corridor locations. Access to these outparcels should be incorporated into the access and circulation system of the principal retail center. This reduces the need for separate driveways on the major road, while maintaining overall accessibility to the site. To accomplish this, establish that development sites under the same ownership or those consolidated for development will be treated as one site for the purposes of access management. Then require a unified traffic circulation and access plan for the overall development site.

Coordinate with the MaineDOT
MaineDOT is responsible for access permits meeting certain conditions along Bath Road. The Town oversees land use, subdivision, and site design decisions that affect access needs. Therefore, State and local coordination is essential to achieve effective access management. Lack of coordination can undermine the effectiveness of regulatory programs and cause unnecessary frustration for permit applicants. Timely communication is key to an effective review procedure.

5.1.5 Cost Estimate and Implementation of Proposed Highway Improvements

Concept level cost estimates were prepared for the suggested transportation related improvements along Bath Road and a summary of the costs are provided below. The conceptual 2014 total cost estimate is approximately $3,404,000. A very preliminary estimate of the connector/backage roads to serve development in the vicinity of Route 144 is approximately $7,500,000 while the estimated cost for the connector/backage roads in the vicinity of Birch Point Road is $4,000,000. Accordingly, the total cost for all improvements identified is $14,904,000

- Select roadway widening for three-lane section and intersections - $1,330,000
- Construction of three right turn lanes - $415,000
- Construction of three left turn lanes - $120,000
- Construction of sidewalk and curbing between Page Ave and Birch Point Rd - $744,000
- Traffic signalization at Route 144 and Birch Point Rd - $490,000
- Construction of two pedestrian crosswalks - $25,000
- Construction of six landscaped islands and streetscape improvements - $150,000
- Culvert widening/replacement at two locations - $130,000

The above estimates include: 5% Maintenance of Traffic; 20% Ancillary; 10% Mobilization; 10% Preliminary Engineering; and, 12% Construction Engineering. The above estimate does not include right-of-way acquisition or inflation assumptions. A cost for pavement overlay is also not included. In some cases where significant lane assignment changes are incorporated, pavement overlay is included.

Implementation

Implementation of improvements has been characterized as being undertaken in the immediate or short-term timeframe, or have been identified, for funding purposes (see Section 5.3), as (1) an existing deficiency, (2) associated with background traffic growth, or (3) associated with future local development (with background growth).

The responsibility for funding the improvements necessary to address current safety and/or capacity problems rests primarily with the MaineDOT and the Town of Wiscasset. The cost sharing arrangement for various types of improvements between the state and the Town is set forth in MaineDOT's Local Cost Sharing Policy (the policy is available at www.maine.gov/mdot/docs/lcspolicy16nov2010.pdf).

The MaineDOT should program these improvements into its long-term plans in accordance with statewide and local priorities. Realistically, the bulk of MaineDOT's highway and bridge capital funding is dedicated to maintaining the existing system via bridge investment, pavement preservation, and light capital paving. Even with the $100 million transportation bond approved by the Maine Legislature in August 2013 for voter referendum, MaineDOT estimates an annual capital

funding shortfall for bridge and highway needs of $110 million. As a result, MaineDOT is encouraging increased municipal and private cost sharing. In the event that Wiscasset wants to accelerate funding for these capital projects, the Town could apply for a Municipal Partnership Initiative project. Under this initiative, state funding would be capped at $500,000 and the state share of the project costs generally would be 50% or less.

Since the Town will be required to share in the cost of these improvements regardless of the state funding approach, the Town should consider establishing a "reserve account" to be funded on an annual basis to begin accumulating the Town's match for these projects.

The recommended actions and their relative time line are summarized in **Table 5-6** on the following pages.

Short –Term

The items that are recommended to be implemented in the near term are identified in the MaineDOT Route 1 Road Safety Audit (refer to Section 5.1.7). Most of these recommendations are signage and pavement marking changes and are the responsibility of MaineDOT.

Existing Deficiencies Recommendations

Bath Road at Route 144

- Route 144 separate left and right lanes ($100,000) – Required under existing conditions according to the level of service analysis. Given that the shoulder can be used to accommodate right-turning vehicles, the need for this improvement may be put off into the future.
- Bath Road southbound left lane ($35,000) - Required under existing conditions according to left-turn lane warrant criteria contained in the MaineDOT Design Guide.
- The Town of Wiscasset currently is holding $50,000 in an escrow account. The escrow was established to address Route 144 and Birch Point Road intersection needs. $50,000 which is set to expire in December of 2014. This money should therefore be directed to address the turning lane improvements noted above.

Bath Road at Old Bath Road (S)

- Bath Road northbound left lane ($35,000) – Required under existing conditions according to left-turn lane warrant criteria contained in the MaineDOT Design Guide.
- Bath Road southbound right lane ($110,000) – Safety Audit Recommendation (Mid-Term 2 to 4 years).

Bath Road at Birch Point Road

- Bath Road southbound left lane ($50,000) – Required under existing conditions according to left-turn lane warrant criteria contained in the MaineDOT Design Guide.
- The Town of Wiscasset currently is holding $50,000 in an escrow account, which is set to expire in December of 2014. The escrow was established to address Birch Point Road intersection needs. This money should therefore be directed to address the turning lane improvements noted above.

Bath Road at McDonald's

- Bath Road southbound right lane ($185,000) – Safety Audit (it is noted that this work should be performed by the property owner).

Bath Road at Ames True Value Hardware

- Bath Road southbound right lane ($120,000) – Safety Audit (it is noted that this work should be performed by the property owner).

Bath Road Widening

- Widening at Dunkin Donuts (for shoulder space) ($50,000) – Required under existing conditions given that no shoulder space is provided.
- Three lane section between Oxhorn Road and Old Bath Road (S) ($100,000) – Based upon the fact that the northbound lane at Old Bath Road (S) is currently warranted, this is considered to be an existing condition requirement.

With Background Growth (Only) Recommendations

Bath Road at Birch Point Road

- Birch Point Road separate left and right lanes ($50,000) – Required with background growth only.

With Future Wiscasset Development Recommendations

Bath Road at Route 144

- Installation of traffic signal ($245,000) – Required with future Wiscasset Development

Bath Road at Old Bath Road (S)

- Old Bath Road separate left and right lanes ($120,000) – Required with future Wiscasset Development

Bath Road at Birch Point Road

- Installation of traffic signal ($245,000) – Required with future Wiscasset Development

Bath Road between Page Avenue and Birch Point Road

- Sidewalk and Streetscape improvements ($769,000)

Bath Road Widening ($1,040,000)

- Three lane section south of Route 144 – Required with future Wiscasset Development
- Three lane section between Route 144 and McDonald's - Required with future Wiscasset Development
- Median at Shaw's – Aesthetic and not driven by traffic deficiencies
- Three lane section between Old Bath Road (S) and Wood Lane - Required with future Wiscasset Development
- Three lane section between Ames True Value and Page Avenue - Required with future Wiscasset Development

Table 5-6 Proposed Highway Improvements, Estimated Costs, Timelines and Fund Sources [1]				
Location	**Highway Improvement (Priority)**	**Estimated Cost [2]**		
		Existing Deficiency	**General Future Growth**	**Future Local Development**
Bath Road at Route 144 [3]	Construct Left Turn Lane on SB Bath Road Approach *(Mid-Term)*	$35,000	n/a	n/a
	Provide Separate Left & Right Turn Lanes on Rte. 144 Approach *(Mid-Term)*	$100,000	n/a	n/a
	Install Traffic Signal when Warranted *(Long-Term)*	n/a	n/a	$245,000
	Create 4th Leg of Intersection for Back Land Development Access *(Long-Term)*	n/a	n/a	X
Bath Road at Old Bath Road (S)	Construct Left Turn Lane on NB Bath Road Approach *(Mid-Term)*	$35,000	n/a	n/a
	Widen SB Bath Road *Shoulder* or Provide Right Turn Lane *(Mid-Term)*	$110,000	n/a	n/a
	Construct Separate Left & Right Turn Lanes on Old Bath Road *(Long-Term)*	n/a	n/a	$120,000
Bath Road at Birch Point Road [3]	Construct Left Turn Lane on SB Bath Road Approach *(Mid-Term)*	$50,000	n/a	n/a
	Construct Separate Left & Right Turn Lanes on Birch Point Road *(Long-Term)*	n/a	$50,000	n/a
	Install Traffic Signal when Warranted *(Long-Term)*	n/a	n/a	$245,000
	Create 4th Leg of Intersection for Back Land Development Access *(Long-Term)*	n/a	n/a	X
Bath Road - Add 3rd Lane	South of Route 144 to Shady Lane *(Long-Term)*	n/a	n/a	$120,000
	Route 144 to Wood Lane *(Long-Term)*	n/a	n/a	$30,000
	Ames True Value to Birch Point Road *(Long-Term)*	n/a	n/a	$260,000
Bath Road - Shoulder Widening (for Bicycle Access)[4]	NB and SB near Dunkin Donuts and Skillin Lane *(Mid-Term)*	$50,000	n/a	n/a
	NB & SB Intermittently Old Bath Road to Wood Lane *(Long-Term)*	n/a	n/a	$200,000
	NB & SB Intermittently Ames True Value to Wood Lane *(Long-Term)*	n/a	n/a	$200,000
	NB & SB Intermittently Ward Brook Road to Page Avenue *(Long-Term)*	n/a	n/a	$100,000
	NB & SB Oxhorn to New Old Bath Rd. turn lane *(Long-Term)*	$100,000	n/a	n/a
Bath Road - Driveway Turn Lanes	SB Right Turn Lane at McDonald's Restaurant *(Mid-Term)*	$185,000	n/a	n/a
	SB Right Turn Lane at Ames True Value *(Mid-Term)*	$120,000	n/a	n/a

Table 5-6 Proposed Highway Improvements, Estimated Costs, Timelines and Fund Sources				
Connector Roads	Rte. 144 to Old Bath Road (east side of Bath Road) *(Long-Term)*	n/a	n/a	$3,000,000
	Extend Rte. 144 west and north to connect to Old Bath Road *(Long-Term)*	n/a	n/a	$3,500,000
	Rte. 144 to south, vicinity of Shady Lane *(Long-Term)*	n/a	n/a	$1,000,000
	Extend Birch Point Road west to Old Bath Road *(Long-Term)*	n/a	n/a	$1,500,000
	Birch Point Rd. to Page Ave. *(Long Term)*	n/a	n/a	$1,000,000
	Close north intersection of Old Bath Road at Bath Road *(Long-Term)*	n/a	n/a	$1,500,000
Other Improvements	Upgrade Culvert at Ward Brook (Long-Term)	n/a	n/a	$65,000
	Upgrade Culvert north of Old Bath Road (S) *(Long-Term)*	n/a	n/a	$65,000
	Reconstruct Shoulders Where Used for Vehicle Travel *(Long-Term)*	*	n/a	n/a
	Sidewalks Between Page Avenue & Birch Point Road *(Long-Term)*	n/a	n/a	$744,000
	Crosswalk & Ped Warning Lights at Page Road *(Long-Term)*	n/a	n/a	$15,000
	Crosswalk at Birch Point Road when Signal is Installed *(Long-Term)*	n/a	n/a	$10,000
	Raised Islands Where No Impact to Traffic and Well-Lit and streetscape improvements*(Long-Term)*	n/a	n/a	$150,000
	Inter-parcel Connections *(Long-Term)*	n/a	n/a	X
	Access Management *(Long-Term)*	n/a	n/a	X
Totals		$785,000	$50,000	$14,069,000

1 - Refer to Appendix B for visual presentations of proposed highway improvements
2 - Planning-level estimates excluding Right-of-Way and extraordinary environmental permitting and utility extension costs.
3 - Traffic Movement Permit escrow account funds are available to help fund improvements if they are expended prior to December 2014.
4 - While the provision of marked and signed bicycle lanes are not specifically part of the details of the Master Plan, consideration of formalized bicycle lanes should be considered in the future.
X not estimated in this study
* accounted for in the 3 lane costs
Priority: *Mid-Term* = 2 to 4 years; *Long-Term* = 5 Years of Greater

5.1.6 MaineDOT Route 1 Road Safety Audit

MaineDOT led a Road Safety Audit along Route 1 from the Woolwich-Wiscasset town line to the Edgecomb-Newcastle town line in June 2012. The purpose of that effort was to review Route 1 (Bath Road) to identify existing safety and mobility concerns and to identify suggestions for strategies to correct the deficiencies. A Road Safety Audit (RSA) differs from an engineering review

in that all road user interests are considered. For the Route 1 RSA, four teams totaling 24 individuals were assembled representing the Towns of Wiscasset and Edgecomb, regional planning, emergency service providers, business owners, residents and MaineDOT. Though led by MaineDOT, all comments noted were captured and discussed with the group immediately following the field review to identify common issues and suggested approaches to improve mobility and safety along Bath Road. Some of the suggestions were agreed to while others required further analyses by MaineDOT.

Table 5-7 presents the RSA recommendations for Route 1 within the Bath Road Master Plan Study area. Most if not all of the short-term suggestions have been completed at the time of this writing. No action has been taken on the mid- and long-term suggestions within the Master Plan area pending completion of the Master Plan.

Table 5-7 Wiscasset Road Safety Audit 2012 - All Potential Strategies Identified

NOTE: Strategies for Woolwich to Flood Avenue May be Superseded by the Wiscasset Rte 1 Master Plan

Note: Bold Items Added or Revised per 9/26 Joint Boards of Selectmen Meeting

Issue	Suggestion	Timeline [1]	MaineDOT Support	Town Support	Lead Agency	Comments
[1]Timeline Notes: Short-Term = Less Than 1 Year; Mid-Term = 2 to 4 Years; Long-Term = 5 Years or Greater						
Intersection of Rte 144 (Old Ferry Road) and Rte 1						
High speed Rte 1 traffic	Increase police enforcement	On-going	YES		Town	
High speed Rte 1 traffic	Reduce Rte 1 speed limit	Short-Term	YES		MaineDOT	Move the 45 NB sign south of the intersection, align it with the 50 SB or move both further south
Rte 1 SB bypass lane being used to pass	Clearly mark both Rte 1 SB lanes	Short-Term	YES		MaineDOT	Striping
Rte 1 SB bypass lane being used to pass	Create exclusive left turn lane	Long-term	YES		MaineDOT	Capital funding required
Rte 1 SB bypass lane being used to pass	Install "Lane Merges" signage	Short-Term	YES		MaineDOT	Sign for "Left Turn Only" lane
Rte 144 traffic stops at bad angle	Reconfigure the island on Rte 144	Long-term	NO		MaineDOT	Will not markedly improve safety
No stop bar for Rte 144 traffic	Provide a stop bar	Short-Term	NO		MaineDOT, Town	Reference point is understood; support only if MaineDOT paints first, then Town maintains
Turning vehicles causing delays	Install Right-turn lane on Rte 144 to Rte 1	Long-term	NO		MaineDOT	Sufficient space, not necessary

Table 5-7 Wiscasset Road Safety Audit 2012 - All Potential Strategies Identified

NOTE: Strategies for Woolwich to Flood Avenue May be Superseded by the Wiscasset Rte 1 Master Plan

Note: Bold Items Added or Revised per 9/26 Joint Boards of Selectmen Meeting

Issue	Suggestion	Timeline [1]	MaineDOT Support	Town Support	Lead Agency	Comments
Turning vehicles causing delays	Install Right-turn lane on Rte 1 NB to Rte 144	Long-term	YES		MaineDOT	
Turning vehicles causing delays	No left turns off Rte 144, add a jug handle reverser further north	Long-term	NO		Maine DOT	This would be cumbersome & have little effect on safety
Poor sight distance looking south from Rte 144	Relocate business signs in Rte 1 right of way	Short-Term	Possibly, if Supported by Town		Business Owners	While in the R-O-W, signs are not a sight distance issue
Culvert depression across entrance on Rte 144	**Repair the culvert depression**	**Short-Term**	**Possible**		**MaineDOT**	**MaineDOT will look into (Work Completed)**
Rte 1 Commercial Area from Route 144 to Southerly Intersection with Old Bath Road						
Center left-turn lanes are not consistent through this area	Continue the center left-turn lane throughout this corridor	Long-term	YES		MaineDOT	Requires capital funding
McDonald's -- difficult to enter from Rte 1 Southbound	**Provide a Right-Turn Lane on Rte 1 SB**	**Mid-term**	**Yes**		**Property Owner**	**Work should be performed by the property owner**
Market Street Plaza entrance too small for large trucks	Widen the entrance/exit to this plaza	Long-term	NO		Property Owner	The entrance is properly sized for truck access
High Speed/Safety Concerns for Rte 1 traffic at Shaw's	Consider connecting Shaw's to Oxhorn Rd for alternate access	Long-term	Possibly, if Supported by Town		Town, Property Owner	Would place traffic on local roads
Rear-end collisions at Dunkin' Donuts	Sign and stencil the right-turn lane properly	Short-Term	YES		MaineDOT	Stencil & sign for "Right Lane Must Turn Right"; requires annual maintenance
Intersection of Old Bath Road (South End) and Rte 1						
North of the Border access points on Rte 1	Consolidate entrances and pave aprons at remaining entrances	Short-Term	YES		MaineDOT, Town, Business Owner	Close most northerly access on Rte 1 & consolidate others
North of the Border access points on Rte 1	Relocate one of the entrances onto Old Bath Road	Mid-term	NO		MaineDOT, Town, Business Owner	Access must be at least 75'-100' from intersections

Table 5-7 Wiscasset Road Safety Audit 2012 - All Potential Strategies Identified

NOTE: Strategies for Woolwich to Flood Avenue May be Superseded by the Wiscasset Rte 1 Master Plan

Note: Bold Items Added or Revised per 9/26 Joint Boards of Selectmen Meeting

Issue	Suggestion	Timeline [1]	MaineDOT Support	Town Support	Lead Agency	Comments
Poor sight distance for vehicles leaving Wiscasset Motor Lodge	Cut back the vegetation restricting sight lines	Short-Term	YES		Property Owner	Appears to be a property owner issue
Poor sight distance of Rte 1 traffic from Old Bath Rd	Install intersection warning signage on Rte 1	Short-Term	YES		MaineDOT	Sign
Poor sight distance of Rte 1 traffic from Old Bath Rd	Install flashing beacon	Mid-term	NO		MaineDOT	Not necessary
Poor sight distance of Rte 1 traffic from Old Bath Road	Install Stop bar on Old Bath Rd	Short-Term	NO		MaineDOT	Point of Reference is clear - Not necessary; maintenance issue
Rte 1 SB right turn angle is very sharp	Add Rte 1 SB right-turn/deceleration lane	Mid-term	NO		MaineDOT	Widening the gravel shoulder will suffice
Rte 1 SB right turn angle is very sharp	Widen Southbound Shoulder	Mid-Term	Yes		MaineDOT	Requires capital funding
NB Rte. 1 Traffic Conflict with Left-Turning Traffic onto Old Bath Road	Install NB Rte 1 Left-Turn Lane	Long-term	YES		MaineDOT	Requires capital funding
Insufficient Lighting at Intersection -- General Issue as well	**Install Street Light**	**Short-Term**	**Possibly**		**MaineDOT**	**MaineDOT will assess and evaluate**
Ames True Value Entrance/Exit on Rte 1						
Rte 1 NB traffic can't see store entrance	Install advisory signage on Rte 1	Short-Term	YES		MaineDOT, Property Owner	Sign for "Left Lane Must Turn Left"
NB Two-Way Center Left-Turn Lane (TWCLTL) begins too late	Create a center left-turn lane further south	Short-Term	YES		MaineDOT	Change TWCLTL to NB Left Turn Lane and sign accordingly
Inadequate sight distance for traffic leaving Ames	Provide new access point at north end of Ames	Long-term	NO		Property Owner	Sight distance of entrance is adequate; SD at new entrance would be worse

Table 5-7 Wiscasset Road Safety Audit 2012 - All Potential Strategies Identified						
NOTE: Strategies for Woolwich to Flood Avenue May be Superseded by the Wiscasset Rte 1 Master Plan						
Note: Bold Items Added or Revised per 9/26 Joint Boards of Selectmen Meeting						
Issue	**Suggestion**	**Timeline [1]**	**MaineDOT Support**	**Town Support**	**Lead Agency**	**Comments**
Inadequate sight distance for traffic leaving Ames	Prohibit left-turn exits and provide jug handle reverser further south	Long-term	NO		Property Owner	Not needed. Turning traffic can use the TWCLTL to accelerate.
Inadequate sight distance for traffic leaving Ames	Narrow this exit so only one vehicle can exit at a time	Long-term	NO		Property Owner	Entrance width is needed for truck deliveries
Unpaved NB road shoulder	Widen shoulders to 5 feet north to Wiscasset Ford.	Long-term	NO		MaineDOT	Would require road reconstruction
Unpaved road shoulder	Install "Share the Road" Signs	Short-Term	YES		MaineDOT	Currently problematic for bicyclists
SB traffic uses center lane to pass turning vehicles	Provide Right-turn pocket for SB traffic to enter Ames	Mid-term	YES		Property Owner	Ames would have to build it
Poor sight distance for traffic exiting Ames	Install flashing beacon	Mid-term	NO		MaineDOT	Flashing beacons are not installed for business entrances
Traffic Exiting Ames has Obstructed Views Due to Dual Exit Lanes	Install Offset Stop Bars or Reduce the Exit to Single Lane by Striping the Pavement and Installing a "Single Lane" Sign	Short-Term	YES		Property Owner	Single Lane Exit is Likely the Safest Approach
Intersection of Old Bath Road (North End) and Rte 1						
Old Bath Road being used to bypass Rte 1 congestion	Install "No through traffic" signage on Old Bath Road	Short-Term	YES		Town	Sign
Old Bath Road being used to bypass Rte 1 congestion	Reduce speed limit or use traffic calming on Old Bath Road	Mid-term	YES		Town	Speed Limit is OK; Traffic calming/speed enforcement is responsibility of town
Poor sight distance of this intersection for Rte 1 SB traffic	Install Intersection Warning signage on Rte 1	Short-Term	YES		MaineDOT	Sign
Poor sight distance of this intersection for Rte 1 SB traffic	Lower the hill just north of this intersection	Long-term	NO		MaineDOT	Very costly, minimal safety benefit

Table 5-7 Wiscasset Road Safety Audit 2012 - All Potential Strategies Identified						
NOTE: Strategies for Woolwich to Flood Avenue May be Superseded by the Wiscasset Rte 1 Master Plan						
Note: Bold Items Added or Revised per 9/26 Joint Boards of Selectmen Meeting						
Issue	**Suggestion**	**Timeline [1]**	**MaineDOT Support**	**Town Support**	**Lead Agency**	**Comments**
Left-turn off Rte 1 NB too difficult	Install Left-turn lane on Rte 1 NB	Long-term	NO		MaineDOT	Not necessary - Counted only 30 turns in 12 hours
Catch basin Depression on South Side of Old Bath Road is Too Deep	**Reduce Depression to Avoid Safety Hazard**	**Short-Term**	**Yes**		**MaineDOT or Town**	**MaineDOT to Determine Who Owns the Catch basin**
Intersection of Flood Avenue (North End) and Rte 1						
High speed of traffic and history of collisions	Relocate speed limit signs for more gradual transitions	Short-Term	YES		MaineDOT	Move Speed Zones and use oversize (36"X48") signs
High speed of traffic and history of collisions	Install Intersection Warning signage on Rte 1	Short-Term	YES		MaineDOT	Signs
No stop bar on Flood Avenue	Provide stop bar	Short-Term	NO		MaineDOT	Not necessary; maintenance issue
Flood Avenue being used to bypass Rte 1 congestion	Install "Local Traffic Only" signage	Short-Term	YES		Town	Sign
Poor sight distance on Rte 1 south from Flood Avenue	Cut back the vegetation	Short-Term	NO		MaineDOT	Sight Distance not a problem

5.2 Land Use Recommendations

5.2.1 Bath Road Vision Overview

This Plan seeks to maximize development opportunities along Bath Road in a responsible manner through strategically coordinated design standards, zoning / policies and traffic infrastructure improvements. By planning for growth, economic development is used as a tool to leverage the creation of areas of distinct character as well as strengthening the tax base. As noted in the Mission Statement, "through an intensive study of traffic and land use along Bath Road, the Bath Road Master Plan will provide guiding principles, strategies, and opportunities to facilitate sustainable growth along the commercial corridor while maintaining the capacity for the safe movement of local and pass thru traffic." Sustained growth will:

- Maintain the vehicular capacity and safety of Bath Road
- Anticipate required traffic infrastructure improvements such as traffic signals and turning lanes
- Respect the rights of property owners and businesses
- Preserve sensitive natural areas and valued scenic views
- Improve the visual quality of development
- Promote diversity by differentiating the scale and type of growth along Bath Road
- Establish networks of vehicular connectivity to create new development frontage and serve local traffic
- Expedite the permitting process
- Establish equitable cost sharing for infrastructure and connectivity improvements
- Represent the values of the community

The vision for Bath Road as an attractive, functional corridor supporting growth is consistent with the goals and strategies of the 2008 Comprehensive Plan, the 2012 Land Use Ordinance and the detailed analysis of existing mobility conditions, transportation infrastructure, growth patterns, land uses and policies as outlined in Section 2 of the Plan.

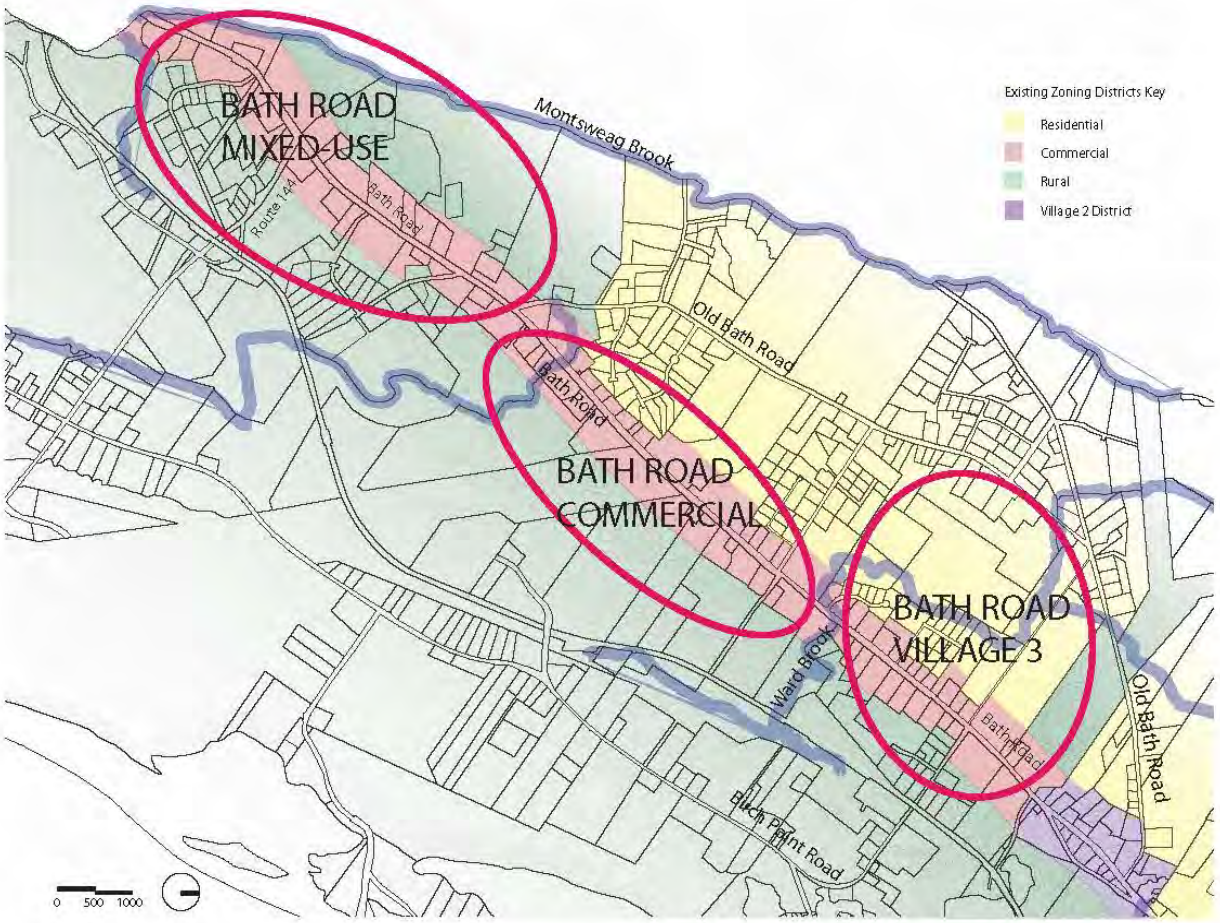
It is a high priority of the Comprehensive Plan to create "different open space as well as business zones along the Bath Road in order to leave some open space." The policy in the Comprehensive Plan regarding the pattern of development along Bath Road "is to not permit a continuous strip of development to emerge from the Woolwich line to the Village center. This would have negative effects on the Town's ability to grow as a tourist destination, as well as on the flow of traffic on U.S. Route One."

Furthermore, the vision for Bath Road that evolved during the planning process reflects direct input from the Bath Road Master Plan Steering Committee, stakeholders and the community.

This section of the Plan reviews proposed zoning and design standards that in conjunction with the transportation improvements will shape Bath Road as a series of thematically differentiated segments rather than a continuous strip of development. In summary, the recommendations are context sensitive, integrating land use, economic development, environmental constraints, the availability of public water and sewer, mobility options, visual character and public policy. While there are recommendations specific to each zone, a common recommendation for Bath Road is to locate consistently designed signage at each of the four stream and brook crossings along this length of Bath Road to make users aware of the environmental context.
As noted on ***Figure 2-15***, the existing zoning for Bath Road is uniform from the Woolwich town line to the Village 2 District. This uniformity does not encourage growth in legible patterns, but instead reinforces the linear and pass-thru nature of the corridor. However, Bath Road as demonstrated in the character area mapping has both existing and emerging trends that can become increasingly distinct over time.

The proposed Bath Road Mixed Use, Bath Road Commercial and Bath Road Village 3 Districts are recommended to replace the existing Bath Road Commercial District and parts of the adjacent Districts while maintaining the integrity of established residential neighborhoods, sensitive environmental areas and the current and future mobility and safety needs of Bath Road. See ***Figure 5-5***

Figure 5-5 Proposed Zoning.



5.2.2 Proposed Bath Road Mixed-Use District

Vision

The Bath Road Mixed-Use Commercial District will support a range of residential, commercial and professional uses by utilizing an improved Route 144 intersection, new street networks accessing backlands and coordinated access management on Bath Road. Development to the west will maintain the required buffer for Monstweag Brook, while development to the east will maintain the integrity of existing residential neighborhoods. Bath Road traffic infrastructure improvements will improve the safety and viability of development. By planning for traffic infrastructure and connectivity improvements, permitting will be expedited and cost sharing for area improvements will be equitable.

Development fronting Bath Road will be required to meet the Town and MaineDOT standards for access management and Site Plan Review. Wherever possible, consolidation of access and multi-development access sharing should be encouraged in order to minimize negative safety and mobility impacts to Route 1 traffic. Higher standards for parking, building placement, landscaping and

connectivity should be adopted to improve the character of the corridor. Development should be discouraged from having direct access to Bath Road by creating new development frontage, providing a network for vehicular connectivity and maximizing compatible uses.

General Location and Relationship to Existing Zoning

The proposed Bath Road Mixed-Use District runs from the Woolwich town line north to the intersection of Old Bath Road (S) and west to Montsweag Brook and east to the established residential neighborhoods located behind Shaw's. See ***Figure 5-5.***

The area is currently zoned Commercial 500' either side of Bath Road and Rural for the remaining lands. See ***Figure 2-15.***

Existing Character and Growth Trends

Most new development on Bath Road is occurring in this area recommended for rezoning to Mixed Use. While the frontage development along Bath Road is predominantly automobile-oriented, there is a mix of uses serving everyday needs of residents. These uses include but are not limited to banks, restaurants and food service, gas stations, car dealerships, a hotel, an outfitter and the area's largest grocery store. There remain a number of lots fronting on Bath Road with development potential.

There also is a significant amount of land that does not front on Bath Road to the east and west that is suitable for development. Due to the availability of unconstrained lands with access to public water and sewer, the Proposed Bath Road Mixed-Use District has a depth to support a range of uses and establish a network of local roads. Professional, commercial, light industrial and residential uses should be guided to this area whereas more industrial uses and rural uses should be guided to other better-suited parts of the town such as the Industrial Park. Currently there is a general consistency between the allowable uses in the Commercial and Rural Districts. This does not encourage different types of growth patterns.

Environmental Constraints

The proposed Bath Road Mixed-Use District has minimal environmental constraints as noted on ***Figure 2-42***. The topography is relatively flat, except towards the west where the land drops to Montsweag Brook. There are no mapped natural areas, streams or wetlands of significance, though there are several drainage ways in the area west of Bath Road. Any area specific development would require professional assessment as part of a Site Plan or Subdivision application.

Existing Infrastructure

As noted on ***Figure 2-35***, water and sewer serve Bath Road. All new development in the proposed District should be served by public water and sewer.

Steering Committee Visioning Exercise

In general, the Steering Committee Visioning Exercise located the highest concentration of mixed-use (retail, non-retail, and residential) future growth in this area when considering development opportunities from the Woolwich town line to the existing Village 2 District. This area was mapped "New Development" in the character area inventory. The proposed Mixed-Use District is consistent with established policy, proposed traffic infrastructure improvements, existing conditions analysis, market forces and public input.

Future Transportation Infrastructure and Connectivity

It is anticipated that the Route 144 intersection will require significant upgrades, including signalization, in order to support ongoing growth. See ***Figure 5-6*** for before and after concept visualizations of the intersection. The improved intersection will be a critical factor in stimulating economic development in the proposed Bath Road Mixed-Use District. Development to the west of Bath Road will utilize the new traffic signal at Route 144 as an access point to an envisioned parallel road intersecting with Old Bath Road.

Figure 5-7 is an illustrative concept plan of this area including the ideal location of a road accessing lands to the west and the placement of new development to either side of the new road. There are recommendations for improving the Old Bath Road (S) intersection, but they do not include signalization at this time. There is an opportunity to make the improved Route 144 intersection both a crossroads for the District and a distinct southern approach to Wiscasset, particularly if buildings are placed to define the corners of the intersection. See ***Figure 5-6.***

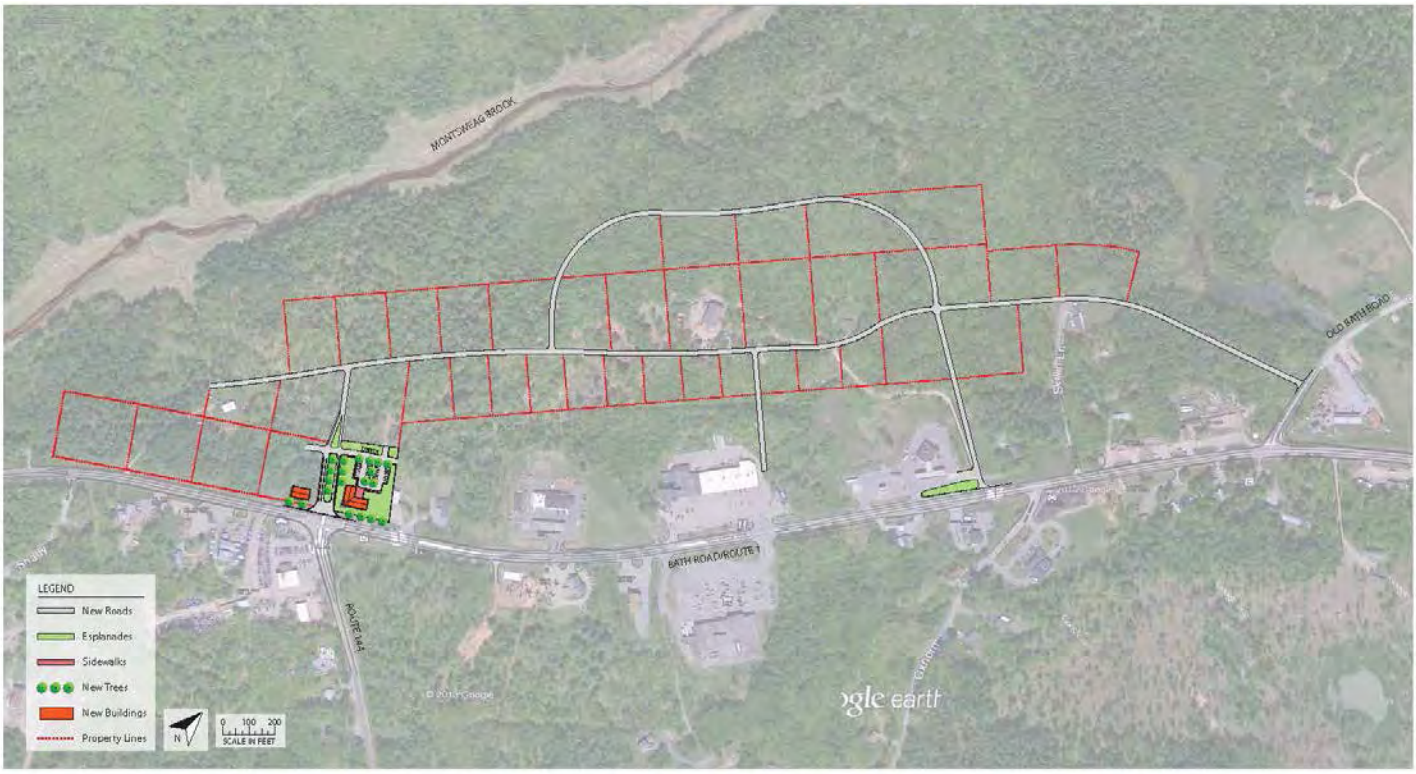
As part of ensuring that a future signal serves mobility needs and promotes sustainable growth, the Town should establish Site Plan and/or Subdivision standards in conjunction with a right of first refusal policy in order to secure right-of-ways that channel development to controlled access points on Bath Road – be it a traffic signal or not. This will encourage the development of backlands and improve connectivity throughout the District.

Figure 5-6 Route 144/Bath Road Proposed Intersection Improvements

Existing Conditions

Proposed Improvements

Figure 5-7 Illustrative Connectivity Master Plan



Connectivity can be achieved in the short-term with such improvements as connecting existing parking lots (see ***Figure 5-10*** on following pages) or with long range planning by anticipating how each development can provide future links to abutting parcels, thus allowing for phased growth. ***Figure 5-8*** is an illustrative plan showing how growth can occur in phases in order to maximize both traffic infrastructure investments and connectivity. This is just an illustrative plan and phased growth will either happen under the control of one owner or the cooperation of multiple property owners. Phasing will occur as growth happens, but the Town should adopt a connectivity ordinance to promote the interrelationship between connectivity and economic development.

To the east of Bath Road new development would be supported by a parallel road connecting Route 144 with undeveloped land while maintaining the integrity of the existing residential neighborhoods. Over time, a network of streets should evolve, providing both development frontage as well as opportunities to circulate through the area without having to access Bath Road. Planning ahead for how traffic infrastructure will support future growth is central to the Plan.

Land Use

Professional, commercial, light industrial and residential uses should be guided to this area whereas more industrial and rural uses should be guided to different parts of the town such as the Industrial Park. Currently there is a general consistency between the allowable uses in the Commercial and Rural Districts. The Industrial Park is currently underutilized and by limiting certain uses in the proposed Bath Road Mixed-Use District these uses will be strategically guided to a more appropriate area.

The land in the proposed Bath Road Mixed-Use District has excellent development potential due to the relative lack of environmental constraints, good access to Bath Road, Route 144 and Old Bath Road, and the availability of water and sewer. Large scale, low impact uses such as agriculture or racetracks would not contribute to realizing the highest and best use of the proposed Bath Road Mixed-Use District.

In addition, to encourage density that will help support the creation of street networks and generate revenues for infrastructure improvements, the minimum lot size for a residential unit should be lowered to 10,000 square feet. This will create smaller lots and will increase densities when planning for Open Space (cluster) Subdivisions and Planned Residential Developments. This will further differentiate the Proposed Bath Road Mixed-Use District from the Rural and Residential Districts.

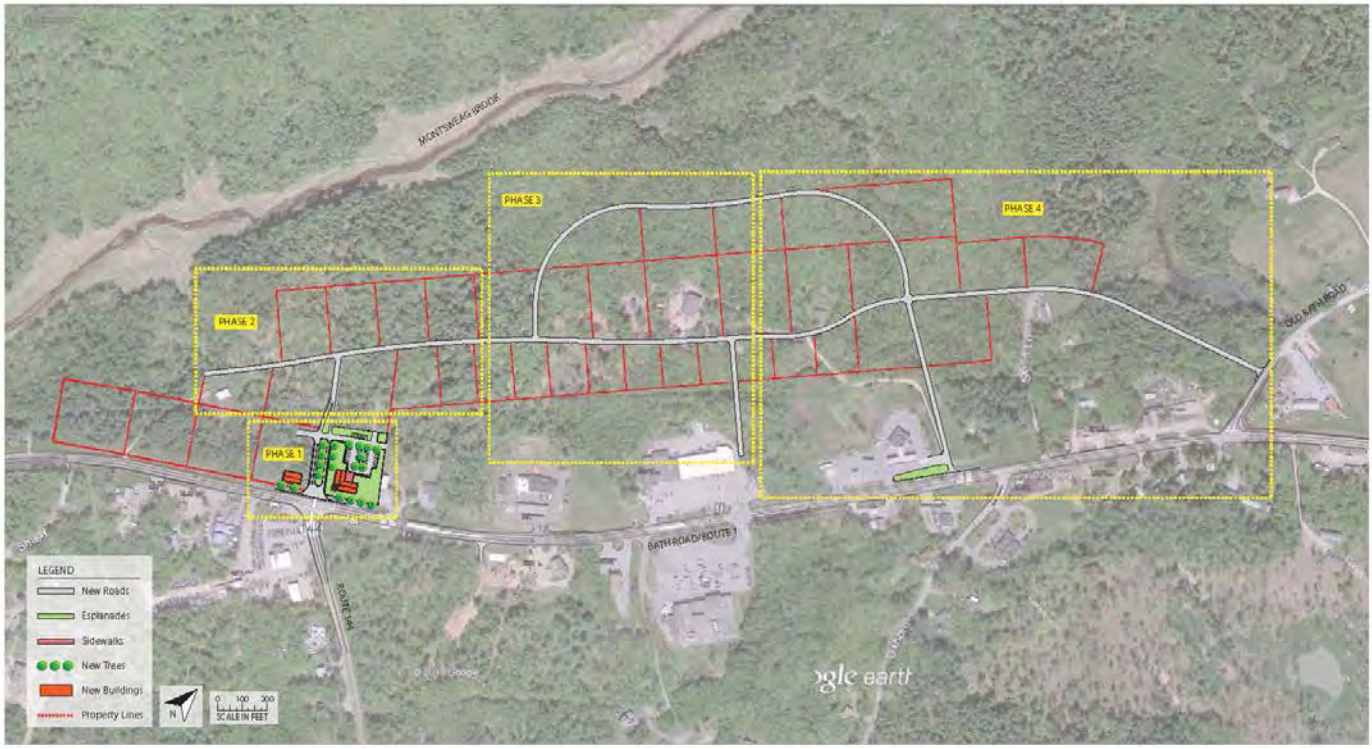
Residential uses within 500' of Bath Road should be located on the second floor of buildings.

See the land use recommendations matrix in **Table 5-8**, Section 5.2.5.

Design Standards

The existing Site Plan and Subdivision Ordinances are thoughtful and well organized. For example, a standard requiring cross easements is required in anticipation of vehicular connections to abutting undeveloped property. Required parking can be reduced if the parking lot is shared by uses that require parking at different times.

Figure 5-8 Illustrative Connectivity Master Plan With Phasing



While these standards create a strong baseline for attractive and functional development along Bath Road, there are opportunities to create more specific standards that would further enhance visual character, preserve the environment and improve the experience for patrons of the area. The Town should consider revising standards to include the following:

- Preserve existing trees with a 5" caliper or greater within the front 25' setback
- A 25' minimum front setback landscape area with 3" minimum caliper trees spaced no greater than 40' apart
- If the site is already cleared, place the building no more than 25' from the front property line with a landscape area, including street trees, between the building and property line
- Parking to rear or side
- Drive thru facilities at rear of building
- Maximum of one two-way curb cut
- If development is located at a strategic controlled access point to Bath Road, access to the site will accommodate connectivity to adjacent lands. See ***Figure 5-9***
- The utilization of decentralized rain gardens / green infrastructure to treat stormwater within the parking lot and on edges of the development instead of standard stormwater treatment designs that are not integrated with the overall site plan
- Reserved cross easements for connectivity to adjacent land as required by the current Site Plan standards
- Inter-parcel parking lot connections as required by current Site Plan standards
- Underground utilities to minimize visual impacts
- No outdoor display of goods
- If the applicant can demonstrate a reduced need for parking – up to a 20% reduction – this area can be grass over gravel to reduce impervious surface and development costs
- Where feasible, one coordinated freestanding sign at a shared entrance rather than a series of uncoordinated freestanding signs

Figure 5-9 is a sketch of an idealized site plan for a building locating at an intersection. Features include:

- Access from the new road created as part of the intersection improvements
- Parking to rear and side of the building
- Placement of the building to both the Bath Road and new road frontage in order to define the corner as a gateway to the backlands
- Landscaping and street trees between the building and Bath Road
- Trees and rain gardens dispersed throughout the site
- Grass over gravel overflow parking
- Reduced parking count (20% reduction for a 10,000 two floor building)
- Reserved cross easements to adjacent undeveloped parcels
- Underground utilities to minimize visual impact
- No outdoor display of good
- Building mounted sign to reduce site clutter

Figure 5-9 Conceptual Ideal Site Map

Figure 5-10 on the following pages is an illustration of the development parcel adjacent to McDonald's. A cross easement is already recorded as part of the Site Plan approval and is depicted in the graphic as an access drive to parking behind the yellow building

Right-of-Way Design

Design within the corridor can enhance the experience of Bath Road in terms of safety and aesthetics.

Figure 5-11 is a before and after illustration of a center lane retrofitted as a median. The design of the median needs to take into account MaineDOT regulations, long-term maintenance and coordination with access management.

Medians play an important role in guiding traffic movement. Decorative or landscaped medians help integrate the corridor with the surroundings without blocking signage or compromising sight lines. Planted medians are often viewed at an oblique angle and therefore have a strong impact on improving the visual experience of the corridor. Landscape medians are an effective traffic-calming tool and can mitigate stormwater impacts. Landscape medians along Bath Road must meet MaineDOT standards. The 12' wide median depicted in ***Figure 5-11*** includes two 2' offsets between the sloped curbs and the travel lanes.

Figure 5-10 Bath Road Development with Inter-Parcel Connectivity

Existing Conditions

Proposed Improvements

Figure 5-11 Concept Retrofitted Center Lane

Existing Conditions

Proposed Retrofit

5.2.3 Proposed Bath Road Commercial District

Vision

The Bath Road Commercial District includes a range of potential economic development and redevelopment opportunities with a focus on professional and commercial frontage uses. Traffic infrastructure improvements such as landscaped medians integrated with access management and site design standards will promote safe mobility, access and visual quality. By planning for traffic infrastructure improvements and access management, individual developments will be easier to permit and incremental parcel-by-parcel growth will not contribute significantly to long-term congestion.

Of the three proposed Districts, the Bath Road Commercial District is the most similar to the existing Commercial District. There are no extensive recommendations for use changes and no major traffic infrastructure improvements are envisioned such as the Route 144 intersection other than upgrading the road segment to three lanes. Access management should be pursued as noted in Appendix A

General Location and Relationship to Existing Zoning

The proposed Bath Road Commercial District runs from Old Bath Road (S) north to Ward Brook Road. The depth of the proposed District to the East and West is similar to the existing 1000' wide Commercial District. See ***Figure 5-5.***

The area is currently zoned Commercial 500' either side of Bath Road, Rural to the east and Residential to the west. See ***Figure 2-15.***

Existing Character and Growth Trends

As noted previously on ***Figure 2-17*** this segment of Bath Road was identified as "Strip Development." With the exception of Ames, most of the development is to the eastern side of Bath Road. There are a number of residences directly fronting Bath Road on the western side. Due to this low intensity land use, the western side of Bath Road is primarily wooded. However with future development pressure the removal of these mature trees could impact the visual character of the area. This is evident on the eastern side of Bath Road with long stretches of development where trees were not preserved.

There are little to no personal service oriented businesses, restaurants, nor developments such as banks or chain restaurants with drive thrus. These types of uses are located in either the proposed Bath Road Mixed-Use District or the proposed Bath Road Village 3 District.

Due to residential uses to the west and environmental constraints to the east, the trend for growth will continue to be development or redevelopment of frontage lots. The transmission lines crossing Bath Road in this District further limit development opportunities and also impact visual quality.

This stretch of Bath Road as noted previously on ***Figure 2-28*** includes long sight lines due to the rolling terrain and straight road geometry. Therefore, development in this area is highly visible.

There are no clear emerging growth trends in this area in terms of land uses.

Unlike the Route 144 or Birch Point Road intersections, there is no emerging crossroad serving as an anchor or center for the area. The predominant character is linear.

Environmental Constraints

As noted previously on ***Figure 2-43*** a mapped deer wintering area runs parallel to the eastern side of Bath Road. There are two stream crossings along this segment of Bath Road. These habitats and natural features, as with the presence of residential neighborhoods to the west, limit the depth for growth and opportunities for backland connectivity. Any area specific development would require a professional assessment as part of a Site Plan or Subdivision application.

Existing Infrastructure

As noted previously on ***Figure 2-43*** water and sewer serve Bath Road. There is adequate capacity for development.

Steering Committee Concept Visioning

Of the three proposed Districts, the Bath Road Commercial District was identified as having the least development potential as part of the Steering Committee Visioning exercise. Several parcels scattered along Bath Road, particularly on the western side of Bath Road, were identified as having potential for commercial development.

Future Transportation Infrastructure and Connectivity

There are no major transportation improvements recommended for the proposed Bath Road Commercial District. It is recommended to make the cross-section three lanes the length of this District. While this will aid turning movements, the increase in lanes will further widen the open, unbroken views. Several medians are proposed. These are located in areas that do not currently impact access. Access management in this District should include more opportunities to place planted medians in order to mitigate visual impacts and calm traffic. ***Figure 5-12*** depicts how the placement of landscaped medians in coordination with access management can improve the visual quality and safety along this segment of Bath Road. The description of an access management process is discussed below in the section on enhanced design standards for the Bath Road Commercial Corridor.

Land Use

Unlike the proposed Bath Road Mixed-Use District, the vision for the future of the proposed Bath Road Commercial District is not that different from the current conditions. There are no unique emerging or historic trends to reinforce. However, as with the proposed Bath Road Mixed-Use District there is an opportunity to refine zoning in this area with the goal of guiding particular uses to an area where there has been considerable investment in infrastructure and the zoning has already been amended such as the Industrial Park. It has been noted that the Industrial Park is one of the best areas for development in the region due to location and the physical environment. By limiting particular commercial / industrial uses in other parts of Wiscasset, but allowing them in the Industrial Park (which is in the Rural District) the Town can capitalize on this effort. It is outside the scope of this Plan, but further consideration should be given to guiding certain uses to the Industrial

Park by creating a special zone for this area and limiting certain uses in the Rural District, which is the most permissive District in Wiscasset.

No parcels currently zoned Residential should be rezoned. Consideration should be given to rezoning some of the Rural District located to the east of Bath Road to the proposed Bath Road Commercial District, if appropriate.

Residential uses within 500' of Bath Road should be located on the second floor of buildings.

See the land use recommendations matrix in **Table 5-8**, Section 5.2.5.

Design Standards

As noted in the review of standards in regards to the proposed Bath Road Mixed-Use District, the existing Site Plan and Subdivision Ordinances are thoughtful and well organized. As discussed in Section 2.2 on the character of the proposed Bath Road Commercial District, frontage development and redevelopment is highly visible in this area and there are a number of residential lots on the western side of Bath Road that could be redeveloped, impacting the visual character of the corridor by widening the "cone of vision."

Figure 5-12 Bath Road Commercial District with Improvements
(Infrastructure, Landscape, Signage and Access Management Improvements)

Existing Conditions

Proposed Improvements

The Site Plan Review Ordinance already requires the preservation of vegetation, however when parking can be as close as five feet (5') to the right-of-way and a building can be set back 75', it is impractical to preserve mature vegetation. The Site Plan Review Ordinance should require the preservation of mature trees. This can in part be accomplished by increasing the minimum front setback for parking from 5' to at least 20' as well as requiring the integration of mature trees into the site plan, particularly in parking areas. Mature trees do not screen development: however, they mitigate stormwater impacts and help preserve the natural character along Bath Road. See below in the discussion on enhanced standards for strategies for preserving mature trees.

Businesses in this proposed District have extensive curb cuts and high visibility. Parcel-by-parcel development combined with thru traffic has created a situation where accessing businesses can be inconvenient and unsafe. Assuming that the trend of new development investment will continue to take place in the proposed Bath Road Mixed-Use District, the focus in the proposed Bath Road Commercial District should be on affordable and incremental coordinated access management and landscaping. Because the depth of development potential is shallow in this area, the relationship between parcels is critical to creating a safe and attractive District that is appealing and convenient. By strategically identifying curb cuts to share, curb cuts to reduce in width and curb cuts to close, land can be reclaimed for a combination of landscaping, parking and internal circulation. These types of mutual access management efforts combined with right-of-way improvements such as medians will create a District that can continue to grow by channeling traffic movement to controlled points. See below for more information on how an area specific access management master plan can promote economic development, improve safety and enhance visual quality.

The following Site Plan Review standards are recommended to help improve visual quality and safety while encouraging consistency in development review.

- All existing trees with a 5" caliper or greater preserved in the front 25' setback
- Mature trees integrated into over all site plan including parking areas
- A 25' minimum front setback landscape area with 3" minimum caliper trees spaced no greater than 40' apart unless existing mature trees are preserved to the same effect
- Parking to rear or side
- No curb cut or a shared curb cut
- If development is located at a strategic controlled access point to Bath Road, access to the site will accommodate connectivity to adjacent lands. See ***Figure 5-7*** as an example although a controlled access point of this magnitude is not recommended for this area. A localized access management plan may accommodate similar opportunities
- The utilization of decentralized rain gardens / green infrastructure to treat stormwater within the parking lot and on edges of the development instead of standard stormwater treatment designs
- Reserved cross easements for connectivity to adjacent land as required by the current Site Plan standards
- Inter-parcel parking lot connections as currently required by current Site Plan standards
- Currently most uses in this area operate during daylight hours. Besides signage lighting, site lighting should not be allowed when businesses are closed to minimize light pollution as well as help differentiate the proposed Bath Road Commercial District from the other Districts
- No outdoor display of goods
- Where feasible, one coordinated freestanding sign at a shared entrance rather than a series of uncoordinated freestanding signs

- If the applicant can demonstrate a reduced need for parking – up to a 20% reduction – this area can be grass over gravel to reduce impervious surface and development costs
- Underground utilities to minimize visual impacts

Right-of-Way Design

The importance of coordinated right-of-way improvements has been discussed above and as illustrated in ***Figure 5-12***. While design within the corridor is outside the control of business and property owners, strategic coordination with other businesses, property owners, the Town and MaineDOT can lead to a safer, more attractive and functional corridor in the proposed Bath Road Commercial District. The Bath Road Commercial District includes long straight road segments with open views accentuated by the rolling terrain. Reforesting or preserving mature trees along the corridor will enhance visual character without limiting the visibility of businesses. Where feasible, trees planted in a center median will further integrate Bath Road with the context. The specific design and placement of medians will require review from the Town and MaineDOT.

An access management master plan is recommended for this district. This focused master plan will need to involve all stakeholders so they can understand the mutual benefits of a unified approach to corridor improvements, site design and economic development.

5.2.4 Proposed Bath Road Village 3 District

Vision

The Bath Road Village 3 District includes an area of many small locally owned businesses. There is an opportunity to build on the history of the area and differentiate this District from the proposed Bath Road Mixed-Use District and the Bath Road Commercial District through unique design standards and land uses. The District includes a streetscape retrofit to Bath Road uniting the uses, improving vehicular access and reinforcing local character by introducing sidewalks, crosswalks, streetscape elements, reduced or shared curb cuts and interconnected parcels.

Existing buildings are already set closer to Bath Road than in the other proposed Bath Road Districts and redevelopment or infill buildings should be similarly located close to the streetscape in order to encourage pedestrian activity. Page Avenue and Birch Point Road intersections will guide traffic to common access points, providing connectivity to backlands and future street networks. Uses to the west and east of Bath Road will be compatible with existing residential uses and complement the commercial uses on Bath Road.

There are a number of uses from Ward's Brook Road to Birch Point Road that are incompatible with Wiscasset's historic Village, however they are in general appropriate for the proposed Bath Road Village 3 District. The goal of the Bath Road Village District 3 is to encourage this diversity, but limit the scale and intensity of uses in order to maintain the local character. This is a tight-knit area, therefore parcels fronting on Bath Road should not include uses that require large parking lots and building footprints should be limited to the scale of existing buildings or smaller.

General Location and Relationship to Existing Zoning

The Bath Road Village 3 District runs from Ward's Brook north to the Village 2 District and has an approximate depth to Old Bath Road to the west and approximately 1,500 feet to the east of Bath Road as shown on ***Figure 5-5***.

The area is currently zoned Commercial 500' either side of Bath Road. Beyond 500' to the east the area is currently zoned Rural. Beyond 500' to the west the area is currently zoned Residential. See ***Figure 2-15.***

Existing Character and Growth Trends

As noted on ***Figure 2-17*** this segment of Bath Road was identified as "Traditional Roadside Development." There are a number of restaurants, a hotel, a market, residences, a ministry, a tavern, home businesses, Big Al's and vehicular related services and sales. In addition, the Concord Trailways Wiscasset bus stop is located here. The area is surrounded by a high concentration of residential neighborhoods within walking distance of Bath Road. The creation of the Bath Road Village 3 District is a strategic effort to preserve and encourage existing and future businesses, preserving a competitive market share.

The area does not have a distinct New England feel like downtown Wiscasset, but the area functions as a Village – it is just currently auto-oriented.

Currently there are a number of vacant and underutilized buildings and parcels along this portion of Bath Road. Investment in public infrastructure will encourage private investment along Bath Road.

There are extensive lands with development potential located to the west of Bath Road in the Page Avenue vicinity.

As with the envisioned Route 144 intersection improvements, improving the Birch Point Road intersection, including extending Birch Point Road to Old Bath Road, would create a northern crossroads to the proposed District. The improved Birch Point Road intersection would include accommodations for pedestrians, allowing for safe passage to residential neighborhoods and the commercial center. As noted previously the construction of sidewalks and crosswalk will be implemented on an as needed basis and will require a reduction in the regulatory speed limit and therefore may impact corridor mobility. It is anticipated that most pedestrians will cross Bath Road at the future Birch Point Road signal and this should minimize conflicts with vehicles and pedestrians.

Environmental Constraints

As noted on ***Figure 2-42*** there is a wetland system to the west of Bath Road. This can become a unique natural area and resource around which new neighborhoods emerge.

Existing Infrastructure

As noted on ***Figure 2-43*** water and sewer serve Bath Road. Wastewater extends from Old Bath Road (N) to a point just north of Beechnut Hill Road. Water does not serve this segment of Old Bath Road. Water and sewer extend to the east on Birch Point Road. All new development in the proposed District should be served by public water and sewer in order to meet the requirements for lots less than one acre as well as to minimize impacts on natural resources.

Steering Committee Concept Visioning

Of the three proposed Districts, the proposed Bath Road Village District 3 was identified as having the greatest concentration of residential development with several retail / commercial uses located on the parcel on the eastern side of Bath Road near the Birch Point Road intersection. There was an assumption that a potential Birch Point Road extension connecting to Old Bath Road would provide access to retail / commercial development in this area and then serve a series of residential neighborhoods integrated with the Page Avenue residential neighborhoods. The existing development on Bath Road between Ward Brook Road and Birch Point Road was assumed to remain or be redeveloped at a similar scale and with a similar range of existing uses.

Future Transportation Infrastructure and Connectivity

In addition to creating a three-lane cross-section in this area, the Birch Point Road intersection is specifically targeted for improvements including signalization. There is also an opportunity to create an unsignalized road alignment across from Page Avenue providing controlled access to abutting parcels. Other mobility and connectivity improvements include the streetscape and sidewalks on both sides of Bath Road running from Page Avenue to Birch Point Road. ***Figure 5-13*** is a section through Bath Road and ***Figure 5-14*** illustrates how the recommended streetscape improves visual quality, access management and creates a more pedestrian-friendly environment. It is recommended that the sidewalk have a width of 10’ in order to accommodate an amenity zone with street trees, street lights and snow storage.

An important goal of the Bath Road Master Plan is to create thematic zones along the corridor promoting economic development while remaining responsive to the need to coordinate land use with traffic infrastructure improvements. The portion of Bath Road between Page Avenue and Birch Point has the highest concentration of local businesses as well as surrounding residential neighborhoods. While the area currently does not have high pedestrian counts, retrofitting the area with phased streetscape improvements will not just improve pedestrian safety, but improve access management and visual quality.

This area includes a number of parcels that have more than one curb cut or there is no defined edge between the property and the street. ***Figure 5-14*** illustrates that one of many benefits of strategically closing curb cuts is that valuable parking spaces can be gained.

As with the Bath Road Mixed-Use District, street networks are envisioned to the west of Bath Road eventually connecting to Old Bath Road with an extension of Birch Point Road. Connectivity to the east is limited due to the proximity of established residential neighborhoods, but opportunities for providing a parallel road accessing existing businesses and creating new frontage has been identified.
The option of closing the Old Bath Road (N) intersection when new connectivity to Old Bath Road is created, such as through the extension of Birch Point Road is under consideration in order to minimize cut-through traffic on Old Bath Road.

As required by the current Site Plan Review standards and recommended in this Plan, parcel-to-parcel interconnectivity should be stressed to allow vehicles to move from business to business without having to use Bath Road.

Land Use

It is the goal to preserve the existing mix of land uses along Bath Road and in the lands to the east and west in the creation of the Bath Road Village 3 District. To accomplish this, areas zoned residential will see few changes to current land use standards. However, the commercial core on Bath Road will require a number of changes to help differentiate this area from the proposed Bath Road Commercial District and the proposed Bath Road Mixed Use District. In general, uses with large buildings (requiring extensive surface parking), formula restaurants and uses with drive thrus will not be allowed and should be guided to the other two proposed Districts or other existing Districts. Uses that do not encourage pedestrian activity, such as auto sales, should not be permitted.

In addition, to encourage density that will help support the creation of street networks and generate revenues for infrastructure improvements, the minimum lot size for a residential unit should be lowered to 10,000 square feet. This will create smaller lots and will increase densities when planning for Open Space (cluster) Subdivisions and Planned Residential Developments. This will further differentiate the Proposed Bath Road Mixed-Use District from the Rural and Residential Districts.

Residential uses within 500' of Bath Road should be located on the second floor of buildings.

See the land use recommendations matrix in **Table 5-8**, Section 5.2.5.

Design Standards

Unlike the proposed Bath Road Commercial District and the proposed Bath Road Mixed Use District, development in the Bath Road Village 3 District should become integral to an overall form and pattern where Bath Road is a part of this matrix, while still providing mobility capacity. As the vision for the area and the available land does not allow for large developments, there has to be reasonable expectations for the level of private sector development. This is evident in the quality of the existing architecture and much of the landscaping in the area. But it is important to look beyond this when understanding the future of this area.

In some ways, the proposed Bath Road Village 3 District has the most evident historic trends upon which to shape a sustainable future. For example, restaurants in the area are not going to compete with McDonald's and small auto sales are not going to compete with Wiscasset Ford. The area already meets a niche market. This niche market should be embraced by limiting uses and creating design standards that reinforce the scale of the area and focus on making access to businesses safe and convenient. The area is compact and walkable. Pedestrian infrastructure will create a safe pedestrian environment, calm traffic, unify the street edge conditions and help with access management.

In terms of order of importance in achieving the desired function and aesthetics for the Proposed Bath Road Village 3 District, most of the critical improvements are within the right-of-way, but these improvements have to be carefully coordinated with the businesses as part of access management. There are currently too many curb cuts in the area and as previously noted some parcels provide no differentiation between the right-of-way and the parcel. There are four issues that need to be coordinated to maximize the potential of this area:

- Parking
- Access
- Inter-parcel connectivity
- Sidewalks and crosswalks

An access management and streetscape master plan is recommended from Ward Brook Road to Birch Point Road. This focused master plan will need to involve all stakeholders so they can understand the mutual benefits of a unified approach to design and economic development.

The following Site Plan Review standards are recommended to help improve the visual quality, encourage consistency in development review and improve safety within the Bath Road Village 3 District:

- Integration of site design with the front streetscape (light fixtures, street trees, pavers, signage)
- A maximum building footprint to encourage smaller, less intense developments
- Buildings placed as close to the streetscape as possible to reinforce the scale and character of the area and encourage pedestrian activity
- No curb cut or a shared curb cut
- No drive-thru facilities
- If development is located at a strategic controlled access point to Bath Road, access to the site will accommodate connectivity to adjacent lands. See ***Figure 5-7*** as an example although a controlled access point of this magnitude is not recommended for this area (accept for Birch Point Road). A localized access management plan may accommodate similar opportunities
- Reserved cross easements for connectivity to adjacent land as required by the current Site Plan standards
- Inter-parcel parking lot connections as currently required by current Site Plan standards
- No outdoor display of goods
- Where feasible, one coordinated freestanding sign at a shared entrance rather than a series of uncoordinated freestanding signs\
- Underground utilities to minimize visual impact

Benefits that could result from coordinated pedestrian, vehicular and streetscape improvements might include:

- Parking can be shared if used at different times (the number of required spaces can be reduced)
- Parking spaces can be gained by closing curb cuts with a streetscape. What would normally be an access drive can be converted to parking stalls
- Visitors to the area can park once and then patronize a number of businesses on foot
- Required landscaping on site can be reduced or waived because the focus is on the streetscape
- The minimum required lot size could be reduced in order to accommodate small locally owned businesses
- Required site lighting can be reduced if it is demonstrated that streetscape lighting functions to serve the business as well

Right-of-Way Design

The importance of coordinated right-of-way improvements has been discussed above. Of the three proposed Districts, the right-of-way design for the proposed Bath Road Village 3 is the most critical for supporting economic development on adjacent lands. The addition of the center turning lane, the streetscape, improved access management and the proposed signal at Birch Point Road work together to improve the functionality, safety and visual quality of the area. These improvements will

help make this area, rather than one use, a destination. However, it is important to emphasize that this segment of Bath Road does not compete and will not compete with the historic Village. But implementing the vision for this area is important for sustainable growth, branding, as well as meeting the goals of both the Comprehensive Plan and this Master Plan. See ***Figures 5-13*** and ***5-14*** for the recommended right-of-way design improvements.

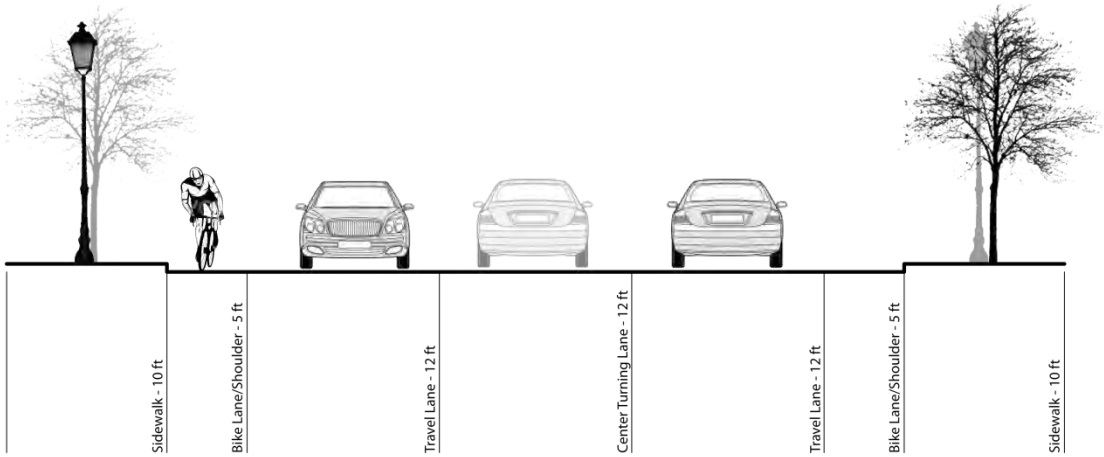


Figure 5-13 Cross-section through Bath Road *in the proposed Bath Road Village 3 District. Improvements would be within the right-of-way creating a safe, attractive and unified design.*

Figure 5-14 Bath Road Village 3 District with Corridor Improvements

Existing Conditions

Proposed Improvements

5.2.5 Proposed Bath Road Zoning

Traditional zoning practices, particularly relating to allowable land uses, is typically a mapping or mirror of existing uses. This approach does not use zoning as a strategic economic development tool. There is a tendency to maximize the amount of allowable uses in each District, as this is considered equitable. However, by maximizing uses, rather than taking a more selective look at allowable uses, the different Districts are potentially too consistent and a particular use loses value because it is ubiquitous. The careful selection of uses guides growth to an appropriate area, promoting a diversity of economic development opportunities. If economic diversity is encouraged and enabled through zoning, then the allowable uses in each District have a higher valuation on the market. Therefore, a higher degree of selectivity, particularly along Bath Road, will promote economic development and encourage the three desired character areas.

In summary, when considering allowable uses in Districts, the benefits for that District and other Districts should be weighed. To provide an example, by creating a proposed Bath Road Mixed-Use District that is distinct in uses from the Rural District, this new District will not compete with the investment and long-term planning that went into the establishment of the Industrial Park, which is located in the Rural District. In this case, what might be considered a loss for the Bath Road Mixed-Use District is a gain for the Industrial Park, which is currently under utilized. There needs to be a give and take between uses in different Districts in order to promote growth in a logical, diverse and sustainable manner.

Table 5-8 includes the Rural, Residential and Commercial Districts, which comprise the proposed Bath Road Mixed-Use, Bath Road Commercial and Bath Road Village 3 Districts. The allowable uses in the three existing Districts are part of a matrix including the proposed Districts, allowing for a quick read of the recommended changes.

Table 5-8 Proposed Use Table

Use	Residential	Commercial	Rural	Proposed Bath Road Mixed Use	Proposed Bath Road Commercial	Proposed Bath Road Village	Proposed Bath Road Village Within 500'
Open Space Uses							
Community garden, greenhouse, nursery or similar agricultural use	CEO*	CEO	CEO	CEO	CEO	CEO	
Agriculture	PB**	PB	PB			PB	
Park, playground	PB	PB	PB	PB	PB	PB	PB
Parking lot		PB[3]	PB[3]	PB[3]	PB[3]		PB
Public park	PB	PB	PB	PB	PB	PB	PB
Campgrounds, commercial			PB	PB[8]			
Cemeteries			PB				
Confined feeding operations			PB				
Storage of fishing, clamming and similar gear	Yes	Yes	Yes	Yes[8]		Yes	
Golf course/driving range		PB	PB				
Commercial outdoor recreation		PB	PB	PB			
Timber harvesting			PB				
Aquaculture			PB				
Residential Uses							
Single-family dwelling	CEO	CEO	CEO	CEO[8]	CEO[8]	CEO	CEO[8]
Two-family dwelling	PB	CEO	CEO	CEO[8]	CEO[8]	PB	CEO[8]
Multi-family dwelling for 3 or more families	PB	PB	PB	PB[8]	PB[8]	PB	PB[8]
Renting of rooms in a private dwelling		Yes	Yes	Yes[8]	Yes[8]	CEO	Yes[8]
Home occupation	PB	CEO	CEO	CEO[8]	CEO[8]	PB	CEO[8]
Planned residential development		PB	PB	PB[8]	PB[8]	PB	PB[8]
Open space (cluster) subdivision		PB	PB	PB[8]	PB[8]	PB	
Mobile home park			PB	PB[8]	PB[8]		
Institutional Uses							
Charitable or educational institution	PB[4]	PB	PB	PB[4]	PB	PB[4]	PB[4]
Church, parish house	PB	PB	PB	PB	PB	PB	PB
Clinic, medical or dental	PB[4]	PB	PB	PB[4]	PB	PB[4]	PB[4]
Convalescent or rest home, nursing home or elderly congregate housing	PB[4]	PB	PB	PB[4]	PB	PB[4]	
Day nursery	PB[4]	PB	PB	PB[4]	PB	PB[4]	PB[4]
Day care facility	PB[4]	PB	PB	PB	PB	PB[4]	PB[4]
Municipal use	PB[4]	PB	PB	PB	PB	PB[4]	PB[4]
Public Utility Installation	PB	PB	PB		PB	PB	
Group home with more than 8 residents	PB[4]	PB	PB	PB	PB	PB[4]	

	Residential	Commercial	Rural	Proposed Bath Road Mixed Use	Proposed Bath Road Commercial	Proposed Bath Road Village	Proposed Bath Road Village Within 500'
Hospice	PB[4]	PB	PB	PB	PB	PB[4]	
Library	PB[4]	PB	PB	PB	PB	PB[4]	PB[4]
Museum	PB[4]	PB	PB	PB	PB	PB[4]	PB[4]
Civic service facilities, clubhouses, social and fraternal organizations	PB[4]	PB	PB	PB	PB	PB[4]	PB[4]
Municipal solid waste facility			PB				
Social and fraternal organizations	PB[4]	PB	PB	PB	PB	PB[4]	PB[4]
Commercial Uses							
Antique shop		PB	PB	PB	PB		PB
Convenience store		PB	PB	PB	PB		PB
Convenience store with fuel sales		PB	PB	PB[9]	PB		
Restaurant		PB	PB	PB	PB		PB
Restaurant with drive-thru		PB	PB	PB[9]	PB[9]		
Drinking establishment		PB	PB	PB	PB		PB
Funeral home		PB	PB	PB	PB		
Hotels, motel		PB	PB	PB	PB		PB
Marina, boatyard							
Marine research facility			PB				
Offices	PB[4]	PB	PB	PB	PB	PB[4]	PB
Professional building	PB[4]	PB	PB	PB	PB	PB[4]	PB
Recreational use such as a bowling alley, theater, dance hall		PB	PB	PB	PB		PB
Retail business unless otherwise listed		PB	PB	PB	PB		PB
Retail and wholesale outlet		PB	PB	PB	PB		PB
Service establishment such as a bank, barbershop, tailor, Laundromat		PB	PB	PB	PB		PB
Adult bookstore/adult video store		PB	PB	PB	PB		
Adult entertainment facility		PB	PB	PB	PB		
Airports			PB				
Bed and breakfast		PB	PB	PB	PB		PB
Race track			PB				
Farm market/farm stand		PB	PB	PB	PB		PB
Grocery store		PB	PB	PB	PB		PB
Kennel/Dog daycare		PB	PB	PB	PB		
Small engine repairs		PB	PB	PB	PB		
Vehicle body shops		PB	PB	PB	PB		
Vehicles sales and/or service		PB	PB	PB	PB		
Auction barn		PB	PB	PB	PB		PB

	Residential	Commercial	Rural	Proposed Bath Road Mixed Use	Proposed Bath Road Commercial	Proposed Bath Road Village	Proposed Bath Road Village Within 500'
Boat building and repair		PB	PB	PB	PB		
Veterinary clinic		PB	PB	PB	PB		PB
Shopping center		PB	PB	PB	PB		PB
Redemption center			PB	PB			
Recycling facility		PB	PB	PB[8]	PB		
Transportation facilities			PB	PB[8]			
Spas, health clubs		PB	PB	PB	PB		PB
Indoor/outdoor boat storage		PB	PB	PB[8]	PB		
Agricultural/lawn equipment sales and service		PB	PB	PB	PB		
Lumber yard		PB	PB	PB	PB		
Industrial Uses							
Gravel pits			PB				
On-site manufacturing		PB	PB	PB	PB		
Trucking/distribution terminal			PB				
Industrial			PB				
Light industrial			PB	PB[8]			
Abattoir			PB				
Auto graveyards/junkyards			PB				
Bottling facility			PB				
Breweries and distilleries		PB	PB	PB	PB		
Microbreweries and brew pubs		PB	PB	PB	PB		PB
Hazardous materials manufacturing/storage/distribution		PB	PB				
Sawmills		PB	PB		PB		
Research laboratories		PB	PB	PB	PB		
Warehousing		PB	PB	PB[8]	PB		
Other Uses							
Essential services	CEO	CEO	CEO	CEO	CEO	CEO	CEO
Essential service buildings	PB	PB	PB	PB	PB	PB	PB
Uses similar to use requiring permit from the CEO	CEO	CEO	CEO	CEO	CEO	CEO	CEO
Uses similar to use requiring Planning Board approval	PB[4]	PB	PB	PB	PB	PB[4]	PB[4]

(1) See Article VI Section 9 for Development Standards related to new construction requirements for Village 1, Village 2, and Village Waterfront District.

(2) Uses must be located entirely within 500 feet of the centerline of Routes 1 or 27 and on lots that directly abut or have direct legal access to Routes 1 or 27. Said access to Routes 1 or 27 must serve as the only access for the use except the Planning Board, pursuant to Site Plan Review, may allow

access to be located on a less traveled road. New buildings shall not exceed 6,500 square feet in total floor area.

(3) Proposals to pave, strip, grade, or remove earth materials from areas of more than 10,000 square feet within a five-year period shall receive site plan review.

(4) Permitted uses provided buildings are not more than 3 stories in height, and are of the same general architectural appearance as existing buildings in the immediate neighborhood, and provided there are adequate off-street parking areas for the normal amount of vehicles expected to be used by inhabitants, clients and employees.

(5) All streams in the Nequasset Lake watershed shall be protected by state shoreland regulations extended to the uppermost source of each stream. Public sewer lines, public waterlines, and municipal sewage treatment plants are not permitted.

(6) Permitted per State Regulations.

(7) Timber harvesting is permitted only in accordance with the standards established in Article VI Section A.3.[3-92]

(8) Notes used not allowed within 500' feet of Bath Road. If it is a residential use within 500'of Bath Road it must be on the second floor of a building.

(9) Not allowed further than 500' of Bath Road.

*CEO = Code Enforcement Officer
**PB = Planning Board

5.3 Potential Funding Strategy

5.3.1 Bath Road Corridor Transportation Improvements

The total cost for implementation of all recommendations associated with the Master Plan inclusive of Bath Road Corridor improvements as well as construction of connector/backage roads is $14,904,000. The Master Plan identifies approximately $3,404,000 of potential improvements to the Bath Road corridor. These improvements address current capacity and safety issues, capacity and safety issues that may develop in the future due to growth in traffic resulting from development in and adjacent to the corridor as well as increases in through traffic on Route One, and the development of a more Village-like environment in a portion of the corridor. Funding these improvements will require the creative use of a variety of mechanisms on an ongoing basis. This section of the Master Plan identifies the various funding mechanisms that are currently available and how those mechanisms may be able to be used to implement the proposals set out in the Master Plan.

In addition, the Master Plan proposes the construction of connector/backage roads on both sides of Bath Road that would carry traffic from development on land that is not directly adjacent to Bath Road to existing or planned intersections. The cost of these roads will be subject to the nature of the development, the design of the individual projects, and the actual field conditions in these areas. A very preliminary estimate of the connector/backage roads to serve development in the vicinity of Route 144 is approximately $7,500,000 while the estimated cost for the connector/backage roads in the vicinity of Birch Point Road is $4,000,000.

5.3.2 Financial Responsibility

While it is tempting to simply say the Maine Department of Transportation (MaineDOT) will provide the entire funding to implement the Master Plan, this is not realistic. Even though MaineDOT will be a partner in carrying out some of the recommendations, additional funding will

need to come from other sources. This section creates a conceptual framework for who should be responsible for paying for various types of improvements and then identifies specific funding mechanisms that may be able to be used. In the following section, this conceptual framework is then applied to the various improvements proposed in the Master Plan.

1. Improvements to address current safety and/or capacity problems

The need for some of the improvements proposed in the Master Plan is driven by existing deficiencies in the corridor. The financial responsibility for these improvements should rest primarily with MaineDOT and with the Town of Wiscasset through the state's cost-sharing formula. Funding of these improvements should be provided by MaineDOT through its normal budgeting process. The Town's share of the cost of these improvements can be funded through the General Fund. The Town could establish a Bath Road Improvements reserve account that it funds regularly through the annual operating budget or through the issuance of a bond which is repaid through the General Fund.

2. Improvements to address future capacity and/or safety issues caused by growth in background or through traffic using the corridor

The Master Plan includes one project (Birch Point Road) that could be driven by development adjacent to the corridor, but that will likely be needed through growth in background traffic whether or not such development occurs. In the case where that improvement is needed due to growth in background traffic in the corridor, the financial responsibility for that improvement should rest primarily with MaineDOT and with the Town of Wiscasset through the state's cost-sharing formula and be funded in the same manner as 1 above.

3. Improvements to address future capacity and/or safety issues caused by increased traffic generated by development in or adjacent to the corridor

Many of the traffic improvements proposed in the Master Plan are driven by traffic increases at specific locations resulting from new or expanded development in or adjacent to the corridor. In the case where the need for the improvement is caused by development, the primary responsibility for funding the needed improvements should rest with the property owner or developer creating or contributing to the need for the improvement. There are a number of potential mechanisms for implementing these improvements:

> **MaineDOT Traffic Movement Permits** – The Maine Department of Transportation administers the state's Traffic Movement Permit (TMP) system. This system requires developments that generate significant amounts of traffic to undertake a traffic study to assess the impact of the additional traffic on the adjacent road network. If the development will have a negative impact on the system, the developer is required to either make improvements to mitigate the impacts or, in some cases, to pay an in-lieu fee to the MaineDOT to be used in funding improvements to address the impacts. Larger development projects in the Bath Road corridor and adjacent areas will be subject to these requirements and will have to participate financially in needed improvements. The Town is currently holding $100,000 of in-lieu-of payments made in conjunction with the Shaw's development. In addition, the Town has earned interest on this account making a total of approximately $117,000 available for Route One improvement projects. Approximately half of this amount

can be used for improvements at the Route 144 intersection and half at the Birch Point Road intersection.

Local Development Exactions – A development exaction is a requirement in local development standards that requires property owners or developers to undertake off-site improvements to provide the infrastructure needed to support a proposed development. This includes off-site traffic improvements, sidewalk extensions, and similar projects. The Town of Wiscasset has such a requirement in its Site Plan Review Ordinance and has the ability to impose similar requirements on subdivisions if necessary to meet the standards of approval. Some communities use these local requirements to address situations that do not generate enough traffic to require a state Traffic Movement Permit from MaineDOT. This could be the situation in Wiscasset since the threshold for a traffic study can be lower in the Town's Site Plan Review requirements than under the state system.

Impact or In-Lieu-of Improvement Fees – A weakness of both the state TMP system and local development exactions is that they can result in unequal treatment of similar projects depending on the specific situation and the size of the project. For example, under the state TMP system a project that generates one or two fewer peak-hour trips than the review threshold may not be responsible for traffic issues while a project with only a few more trips may incur significant costs for improvements. Similarly at the local level, Planning Boards are often reluctant to impose substantial costs on small projects when the project is creating only part of the problem or using only a small share of the capacity created by an improvement. An alternative is the creation of a local in-lieu-of fee structure in which development projects that generate additional traffic that may cumulatively create the need for future improvements contribute to a fund to pay for the improvement(s) when it is needed. Such a system can provide for the equitable treatment of all new development that contributes to the need for traffic improvements. In the Bath Road situation, the Town could require in-lieu-of payments from new development in the Bath Road corridor and in adjacent areas that add traffic to the Bath Road corridor and use this revenue to fund the improvements identified as development-related in this Master Plan.

Tax Increment Financing – Tax Increment Financing (TIF) is a tool that allows the Town to shelter increases in property valuation within a designated development district thereby resulting in lower state assessed valuation. Since state valuation is used in the determination of state education aid, state revenue sharing, and the Town's share of the county tax, the creation of a TIF District can result in a so-called "tax shift" that retains more of the property taxes paid by new development in the Town. The incremental property taxes paid by the real estate subject to the sheltering must go into a separate development fund rather than the general fund and be used only for the purposes set out in the development plan and approved by the state. The "sheltered revenue" can be used to pay for traffic improvements and other infrastructure within or that supports the development district. In this situation, the Town could create one or more TIF Districts as development is proposed and use some or all of the incremental property tax revenue from the sheltered incremental valuation to fund the proposed improvements.

4. Improvements to create a Village environment between Page Avenue and Birch Point Road and improve the visual environment of the corridor

The Master Plan proposes a few improvements that are intended to make the Bath Road corridor more visually appealing and to create more of a Village-like area in a small segment of the corridor.

Funding for these improvements is probably the most problematic but some possibilities do exist. The Town could choose to fund these types of improvements through the General Fund although that is probably unlikely. Here are two other possible approaches for funding:

Tax Increment Financing – If substantial investment is likely to occur in the portions of the corridor where these improvements are planned, the Town could create a Tax Increment Financing (TIF) District as described above to shelter this new property valuation. The property tax revenue resulting from the incremental valuation in the district could then be used to support the proposed beautification and pedestrian improvements. This approach is worth considering only if there is a reasonably high degree of certainty that investment will occur and will be of a sufficient magnitude to generate a reasonable revenue stream over time to pay for the improvements.

Special Assessment or Business Improvement District – State law allows a municipality to create a special district in which property owners pay a higher property tax rate than property owners outside of the district. Historically, municipalities used these districts to pay for projects such as the extension of sewers, water mains, and sidewalks in which the costs where shared by the property owners who benefitted from the improvement and the municipality. More recently, a few Maine communities have used this approach to fund business improvement programs primarily in downtown areas. For example, Portland and Bangor both use this approach to provide additional services in their downtowns. Use of this approach requires the substantial consent of the property owners who will pay the higher property taxes – by law most of the owners have to agree to this program for a community to adopt it. In the Bath Road situation, the Town, with the consent of the property owners, could create a special assessment district in the area where the sidewalk and streetscape improvements are proposed. The district would run for say 15 or 20 years with all revenue from the supplemental property taxes earmarked to pay for the specified improvements.

5. Improvements to create connector or backage roads to serve development adjacent to Bath Road

The Master Plan proposes the construction of connector/backage roads on both sides of Bath Road that would carry traffic from development on land that is not directly adjacent to Bath Road to existing or planned intersections. The costs for these improvements should be borne entirely by the owners of the land served by these roads. These improvements can be funded through the same mechanisms outlined in 3 above.

5.3.3 Potential Funding Strategies

The prior section identifies the financial responsibility for various classes of improvements and possible mechanisms to fund each type. This section applies that framework to the individual improvements proposed in the Master Plan. The strategy looks at the components of improvements piece-by-piece since the need for various components may be driven by different factors. For example, an intersection may have an existing deficiency that requires a turning lane while other improvements may be required in the future if there is growth in traffic resulting from development.

Table 5.9 provides the 2013 estimated cost for each element of the Bath Road improvements. This total cost is then apportioned among the MaineDOT, the Town, and property owners/developers based on the following considerations. In determining the share of improvement costs that would be paid by the state, we have assumed that MaineDOT will continue to pay 80% of the costs with the

Town responsible for 20%. We understand that this cost sharing formula is currently under review by MaineDOT and that the local share may increase for projects done in the future. It should be emphasized that these cost allocations are preliminary and are based on judgments of likely funding arrangements but the actual arrangement may differ based on local decisions. For example, the allocations assume that the Town will choose to have developers pay for some or all of the cost of certain improvements but the Town may alter that cost sharing arrangement.

It should also be noted that the funding approach and related cost sharing may change depending on whether significant development occurs in or adjacent to the corridor. For example, if significant redevelopment occurs at the Mason Station, improvements to the Birch Point Road intersection may be required to support that redevelopment and be paid for or made by the developer. If, however, that does not occur, cumulative growth in traffic on Bath Road may result in the need for the improvement to be made even if redevelopment does not occur. In that case, other funding for the improvement will be necessary.

Table 5.9 2013 Estimated Costs for Bath Road Improvement Elements

Project Description	2013 Estimated Cost	State Share	Local Share *		Avail. Funding
			Town	Developers	
Widen Rte 144 approach to 2 lanes	$100K	✓	✓	$0	$50K
Create NB left turn lane at Old Bath Rd (south)	$35K	✓	✓	$0	
Create 3-lane section - Oxhorn to new Old Bath Rd turn lane	$100K	✓	✓	$0	
Create SB right turn lane at Old Bath Rd (south)	$110K	✓	✓	$0	
Widen Bath Rd near Dunkin Donuts	$50K	✓	✓	$0	
Create SB left turn lane at Birch Point Rd	$50K	✓	✓	$0	
Widen Birch Point Rd approach to 2 lanes - with development	$50K	$0	✓	✓	
Create SB left turn lane at Rte 144	$35K	$0	$0	✓	$50K
Widen Old Bath Rd (south) approach to two lanes	$120K	$0	$0	✓	
Create SB right turn lane at McDonald's driveway	$185K	✓	✓	✓	
Create SB right turn lane at Ames Hardware driveway	$120K	✓	$0	✓	
Install traffic signals at Rte 144 intersection	$245K	$0	$0	✓	
Install traffic signals at Birch Point Rd intersection	$245K	$0	$0	✓	
Create 3-lane section - south of Rte 144; 144 to McDonalds; Old Bath Rd (S) to Wood Lane and Ames to Page Avenue	$1,040K	$0	$0	✓	

Project Description	2013 Estimated Cost	State Share	Local Share *		Avail. Funding
			Town	Developers	
Construct sidewalks - Page Avenue to Birch Point Rd	$744K	✓	✓	✓	
Install streetscape improvements - Page Avenue to Birch Point Rd	$150K	$0	$0	✓	
Create a landscaped island in vicinity of Shaw's and Wiscasset Marketplace	$25K	$0	✓	$0	
Construct Connector/Backage Roads	$11,500K	$0	$0	✓	
TOTAL ESTIMATE	$14,904K				
* Note: Local Share includes costs to be paid by the Town and/or developers of projects that generate traffic on Route One					

1. Improvements to address current safety and/or capacity problems

The need for the following improvements identified in the Master Plan is driven primarily by current problems in the corridor. As such, the funding for these improvements should rest primarily with the Maine Department of Transportation (MaineDOT) and with the Town of Wiscasset through the state's cost-sharing formula:

a. The widening of the Route 144 approach to the Route 144/Bath Road intersection to create separate left and right turn lanes. The estimated cost for this improvement is $100,000.

b. The establishment of a northbound left turn lane on Bath Road at the southern Old Bath Road intersection. The estimated cost for this project is $35,000 that will be split between the state and the Town.

c. The creation of a three lane section on Bath Road from Oxhorn Road north to the new left turn lane at the southern Old Bath Road intersection. The estimated cost for this improvement is $100,000 that will be split between the state and Town.

d. The establishment of a southbound right turn lane on Bath Road at the southern Old Bath Road intersection as identified in the MaineDOT Safety Audit. The estimated cost for this improvement is $110,000 that will be split between the state and Town.

e. The establishment of a southbound left turn lane on Bath Road at the Birch Point Road intersection. The estimated cost of this project is $50,000. The Town is currently holding an in-lieu-of fee of $50,000+ paid by Shaw's that can be used for this project so there will be no additional state or local cost.

f. Widening of Bath Road in the vicinity of the Dunkin Donuts to re-create a shoulder that is wide enough to accommodate bicyclists. The estimated cost for this improvement is $50,000 that will be split between the state and Town.

g. The creation of a southbound left turn lane on Bath Road at the Route 144 intersection. The estimated cost for this improvement is $35,000. The Town is currently holding an in-lieu-of fee of $50,000+ paid by Shaw's that can be used for this project so there will be no additional state or local cost.

h. The creation of a southbound right turn lane at the existing McDonald's driveway entrance to serve additional development. The estimated cost for this project is $185,000.

This project received a traffic movement permit that did not require construction of this lane. If the lane is needed in the future, the cost should be shared by the state and Town unless future development uses this drive for access to Route One. In that situation, the developer should be required to construct this lane.

i. The creation of a southbound right turn lane at the existing Ames's Hardware driveway entrance. The estimated cost for this project is $120,000. This project received a traffic movement permit that did not require construction of this lane. If the lane is needed in the future, the cost should be shared by the state and Town.

The MaineDOT should program these improvements into its long term plans in accordance with statewide priorities and the priorities established in the Master Plan. Since the MaineDOT will require that the Town share in the cost of these improvements (currently 20% but likely to increase), the Town should consider establishing a "reserve account" to be funded on an annual basis to begin accumulating the Town's match for these projects. The total local cost for these improvements is estimated to be approximately $80,000.

2. Improvements to address future capacity and/or safety issues caused by growth in background or through traffic using the corridor

The Master Plan identifies the future need for the widening of the Birch Point Road approach to the Bath Road intersection to create separate left and right turn lanes. The estimated cost of this improvement is $50,000. If significant development occurs in the Birch Point Road traffic-shed (including redevelopment of Mason Station) this could trigger the need for this improvement and will move the project to the "developer" funded category. However, if significant development in this area does not occur, this improvement will still be needed if there is a growth in background traffic on Route One. Because of the uncertainty of the timing and driver of the need for this improvement, the need for this improvement should be periodically re-evaluated if development in and adjacent to the corridor does not trigger the need for a developer-funded improvement.

3. Improvements to address future capacity and/or safety issues caused by increased traffic generated by development in or adjacent to the corridor

Many of the improvements identified in the Master Plan will be needed if and when development occurs that increases the amount of traffic in the Bath Road corridor and/or moving on to and off of Bath Road at the various road intersections. In a broad sense, the potential improvements can be divided into two categories: 1) intersection improvements needed due to increased traffic moving on and off Bath Road to get to developments in the traffic-shed served by that intersection, and 2) improvements needed due to increased traffic on Bath Road. Obviously these are not mutually exclusive and the need for a specific improvement may be driven by a combination of these factors.

Intersection improvements - The following improvement is likely to be needed primarily to provide adequate access to developments serviced through an intersection. The following improvement falls into this category:

The widening of the southern Old Bath Road approach to the Bath Road/Old Bath Road intersection to create separate left and right turn lanes. The estimated cost of this project is $120,000.

Overall Bath Road Corridor Improvements – The following improvements are likely to be needed as a result of cumulative growth in traffic on Route One although a large-scale development project could trigger the need for a specific improvement:

1) The installation of traffic signals at the intersection of Bath Road and Route 144. The estimated cost is $245,000.

2) The installation of traffic signals at the intersection of Bath Road and Birch Point Road. The estimated cost is $245,000.

3) The creation of a three-lane section on Bath Road (S) of Route 144; Route 144 to McDonalds; Old Bath Road (S) to Wood Lane; and Ames Hardware driveway to Page Avenue. The estimated cost is $1,040,000.

The total cost for these improvements is approximately $1,500,000 in 2013 costs. Using the funding techniques outlined in the previous section, the following funding strategy is proposed to allow the improvements included in the Master Plan to be made as sufficient development occurs in and adjacent to the corridor to warrant the improvement.

The principal tool for funding needed intersection improvements in conjunction with large-scale development should continue to be the MaineDOT TMP system in which owners/developers are required to make the necessary improvements to provide adequate and safe access to their development. In reviewing development projects under this system, MaineDOT should be guided by this Master Plan so that developer funded improvements are consistent with the overall Master Plan. To better facilitate the use of in-lieu-of improvement fees to meet TMP requirements, the Town should create a dedicated Bath Road Traffic Improvement Account to allow for the accumulation of in-lieu-of fees from a variety of sources.

The funding of intersection improvements needed as a result of the cumulative impact of a number of development projects is more problematic. The following strategy is suggested to allow the Town (in conjunction with MaineDOT) to accumulate the funding to undertake improvements as the need arises:

- As discussed above, the Town should create a Bath Road Traffic Improvement Account to enable it to hold and accumulate funding from a variety of sources.
- The Town should review and revise the traffic impact requirements in the Site Plan Review Ordinance to allow developments subject to that ordinance to mitigate traffic impacts through the payment of an in-lieu-of fee.
- The Town should also review and revise it subdivision requirements to include traffic impact requirements similar to the Site Plan Review ordinance including the payment of in-lieu-of fees.
- As part of the review and approval of development projects subject to either site plan or subdivision review, the Town should require the applicant to make needed traffic improvements if warranted by the volume or type of traffic generated by the development provided that the project is not subject to the MaineDOT TMP system.
- As part of the review and approval of development projects subject to either site plan or subdivision review, the Town should require the payment of an in-lieu-of intersection improvement fee for developments that are not subject to the MaineDOT TMP system and are not required as part of the local approval to make off-site traffic improvements. This requirement should apply to all projects that increase the volume of traffic on Bath Road.

The need for the overall Bath Road Corridor Improvements including providing three-lane sections is more diffuse and includes increased traffic related to development, more through traffic on Route One in the future, and a higher volume of turning movements at both existing driveways, road intersections, and accesses to new development along the corridor. Therefore a broader, more inclusive approach is needed toward the funding of these improvements. This recognizes that there should be a shared responsibility for the funding of these improvements among the MaineDOT, the Town of Wiscasset, and development in the broader Bath Road Corridor. The following strategy is suggested to fund these improvements as the need arises in the future:

- If a large-scale development is proposed that will have a substantial impact on Bath Road traffic, the Town should consider creating a TIF District for that project and using a portion of the incremental property taxes from that development to fund overall Bath Road improvements in addition to improvements that may be required as part of a TMP.
- If the volume of traffic in the corridor begins to grow significantly in future years, the Town should explore the possibility of creating a regional impact fee in conjunction with MaineDOT and Lincoln County to pay for the local share of the future cost of these improvements. Under this system, all new development in the Route One corridor that results in additional traffic on Route One in Wiscasset would share in the cost of the necessary improvements to accommodate the increased traffic.

4. Improvements to create a Village environment between Page Avenue and Birch Point Road and improve the visual environment of the corridor

The Master Plan proposes a few improvements that are intended to make the Bath Road corridor more visually appealing and to create more of a Village-like area in a small segment of the corridor. These improvements include the conversion of the existing painted island in the center lane between Shaw's and the Wiscasset Marketplace into a landscaped median (estimated cost of $25,000) and the construction of sidewalks ($744,000) and related streetscape improvements ($150,000) in the portion of the corridor between Page Avenue and Birch Point Road.

Funding for the construction of the landscaped median is probably limited to the use of Town funds. This project does not improve traffic flow or safety and is unlikely to be fundable through other sources. Funding for the sidewalk and streetscape improvements could be done by the Town from the General Fund although this is unlikely. Other possible approaches are:

Other Funding Opportunities: – The Maine Department of Transportation operates the Transportation Alternatives Program (TAP). TAP is a replacement of the former Transportation Enhancements (TE) Program. The provision of facilities for pedestrians and bicycles will continue to be an eligible activity under TAP. Historically the TE program provided 80% funding for approved projects. Projects were selected based upon a competitive application process. The funding situation for these types of improvements regularly changes and should be monitored periodically to see if there are programs for which this project could be eligible. Similarly, this type of project is not one that private foundations have typically been interested in funding but the idea of trying to convert a commercial strip into more of a second Village for the community is one which currently has a lot of interest both in the private and public sectors. For example, GrowSmart in Maine is involved in a project looking at the conversion of older commercial strips to more Village-type centers. Therefore, it might be worthwhile to "shop" this project to foundations

and other funders to see if there is any interest in Wiscasset as a demonstration or model project.

Create a Tax Increment Financing District – If substantial investment is likely to occur in this portion of the corridor, the Town could create a Tax Increment Financing (TIF) District as described previously to shelter this new property valuation. The property tax revenue resulting from the incremental increase in valuation in the TIF district could then be used to support the proposed beautification and pedestrian improvements. The improvements could be financed through a municipal bond which is then repaid with the revenue from the TIF District. This approach is worth considering only if there is a reasonably high degree of certainty that investment will occur and will be of a sufficient magnitude to generate a reasonable revenue stream over time to pay for the improvements.

For discussion purposes, if the Town bonded $1,000,000 to pay for the sidewalk and streetscape improvements for 20 years at 3% interest, the total debt service costs depending on the principal repayment schedule would be approximately $1,300,000. In simple terms this would be an annualized debt service cost of approximately $65,000. With a tax rate of approximately $16/$1000 of assessed valuation, this would require approximately $4 million in new sheltered valuation in Year 1 or larger amounts if this occurred incrementally over time. For comparison purposes, the properties along Bath Road between Birch Point Road and Page Avenue have a combined assessed valuation of approximately $4.1 million.

Special Assessment or Business Improvement District – The primary beneficiaries of the sidewalk and streetscape improvements are the owners of the property in and immediately adjacent to this portion of Bath Road. The Town could explore the creation of a special tax district with the property owners in this area. The basic concept would be that the property owners would agree to pay a portion of the cost of the improvements (say 2/3s) through higher property taxes over a specified period of time (possibly twenty years) with the Town paying the balance thorough the General Fund. State law typically requires that the owners of at least 75% of the property in the proposed district agree to this approach. As with a TIF District, the revenue from the incremental property taxes would go into a dedicated fund that could be used only to pay for the cost of the improvements. The improvements could be financed through a municipal bond which is then repaid with the revenue from the special tax assessment.

Using the same figures as in the TIF scenario and assuming that 2/3's of the cost is paid for through this approach, the supplemental property taxes for the Bath Road properties between Birch Point Road and Page Avenue would be about $10-11/$1000 of assessed value over the 20 year period. This probably makes this approach as the only funding source infeasible but if the Town is able to obtain a grant for some of the costs, this could be a viable funding mechanism especially if combined with a Town contribution from the general fund. For example, if the Town was able to obtain funding for 80% of the sidewalk construction and streetscape improvements costs through the TAP, that would leave 20% of the cost or approximately $200,000 to be paid locally. If this cost was split 50-50 between the Town and the Bath Road property owners, the property owners' share would be approximately $100,000 or an annualized debt service cost for a 20 year bond of approximately $6,500. Based on the current assessed value of the properties along Bath Road where the sidewalks are proposed, this would result in a supplemental property tax of approximately $1.65/$1000 of assessed value.

APPENDICES

APPENDIX A – EXISTING ACCESS MANAGEMENT FIGURES

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Figure A-1:
Existing Access Management Conditions

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Figure A-2:
Existing Access Management Conditions

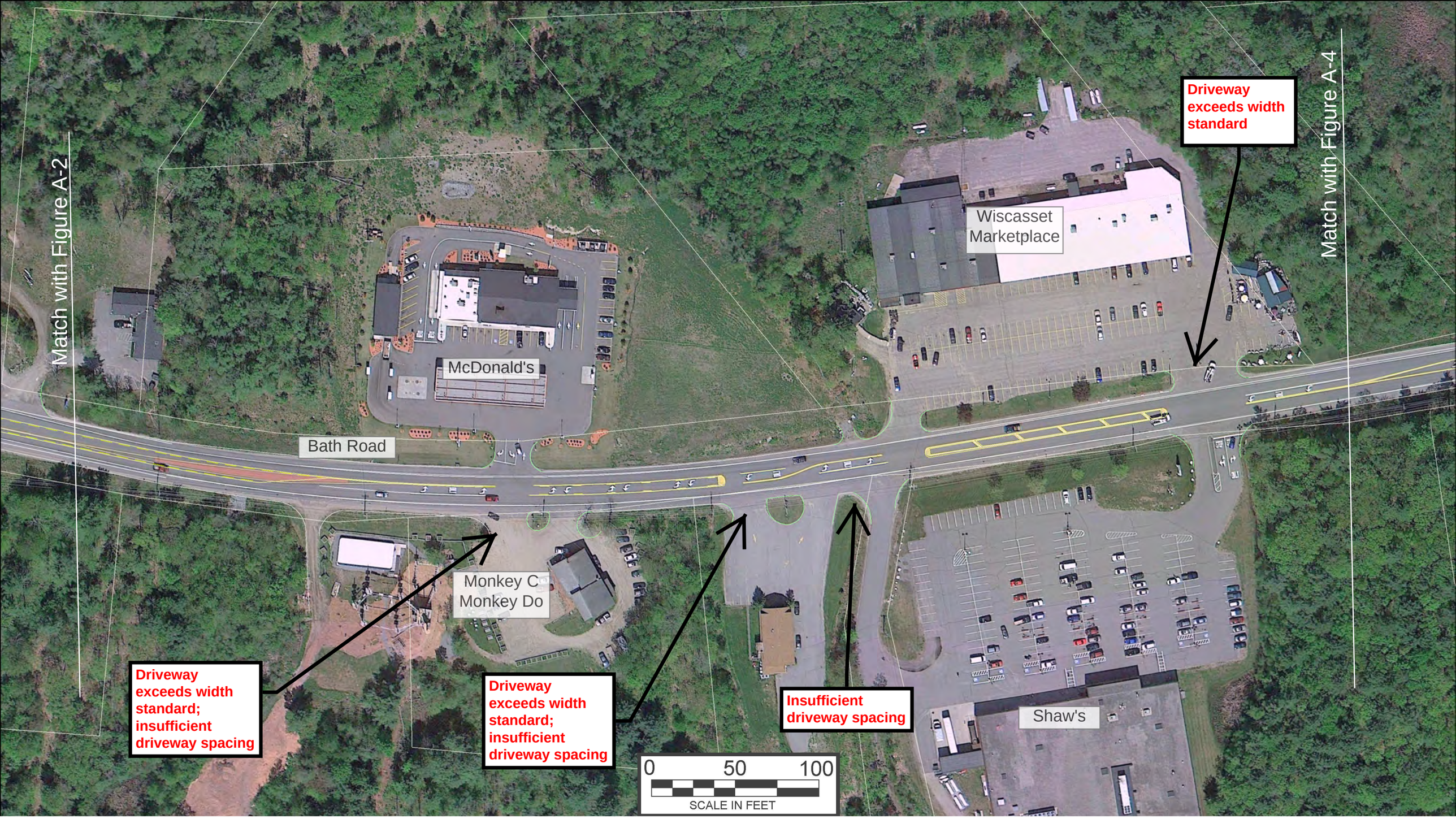

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Figure A-3:
Existing Access Management Conditions

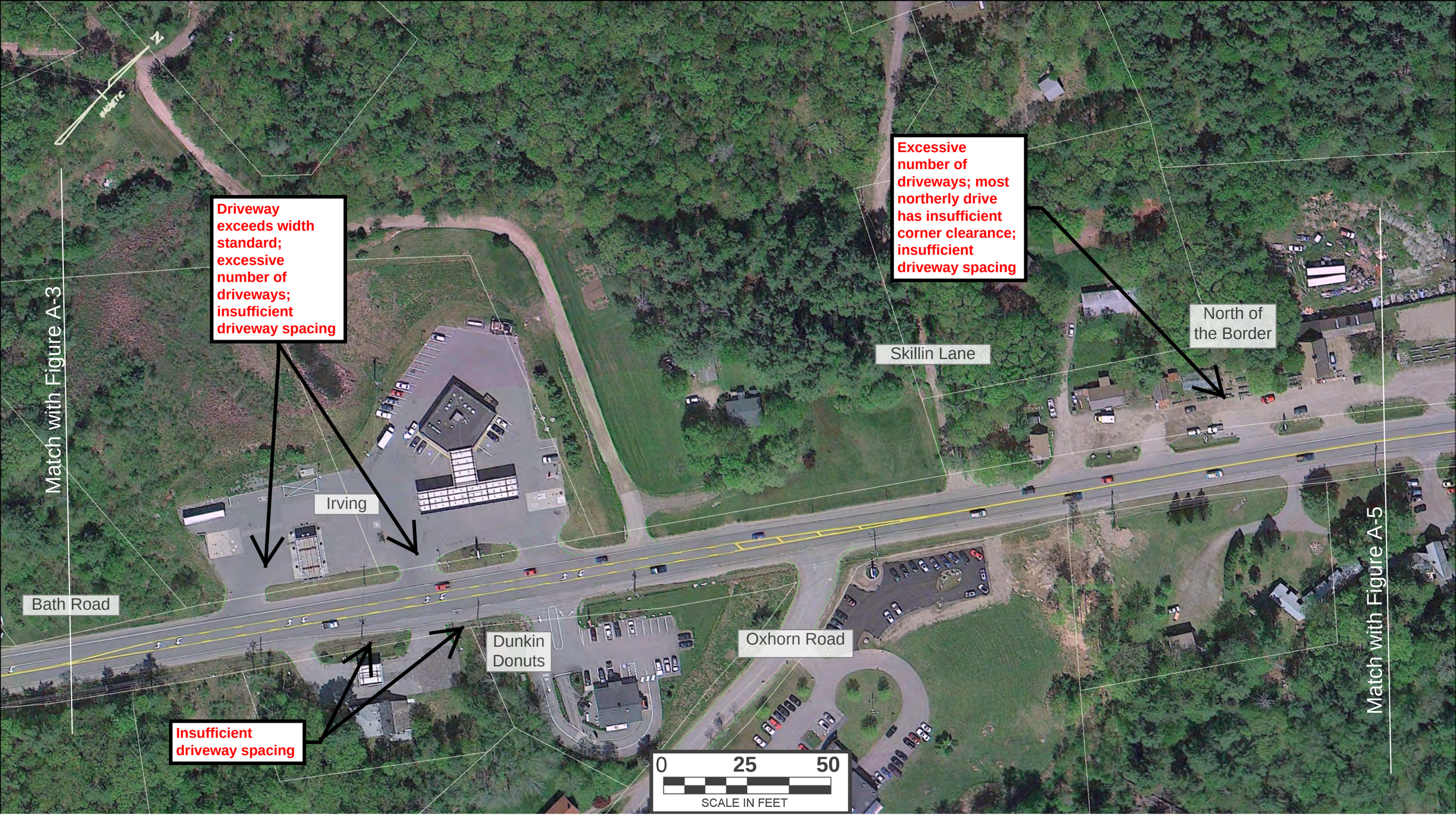

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Figure A-4
Existing Access Management Conditions

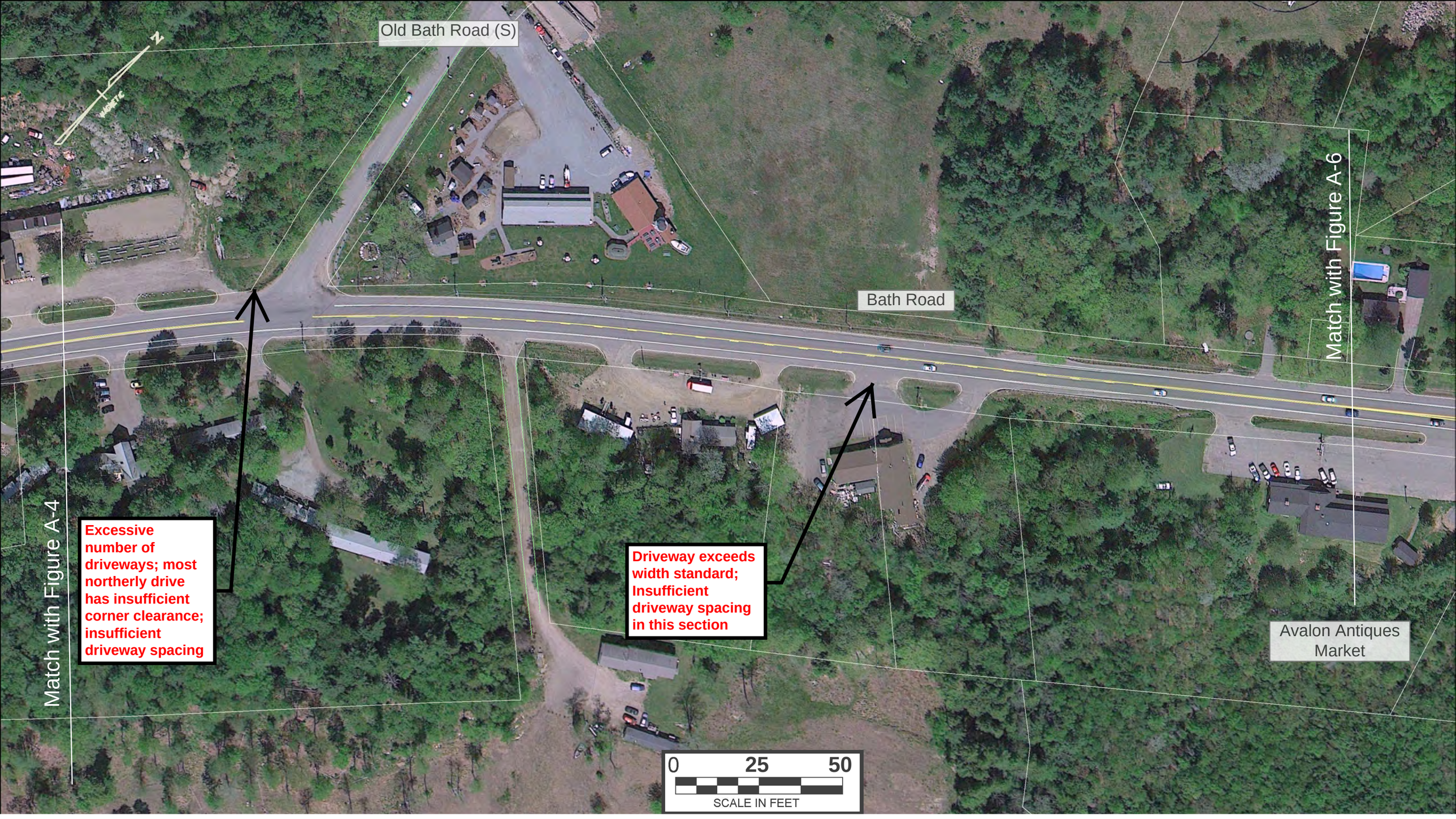

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Figure A-5:
Existing Access Management Conditions

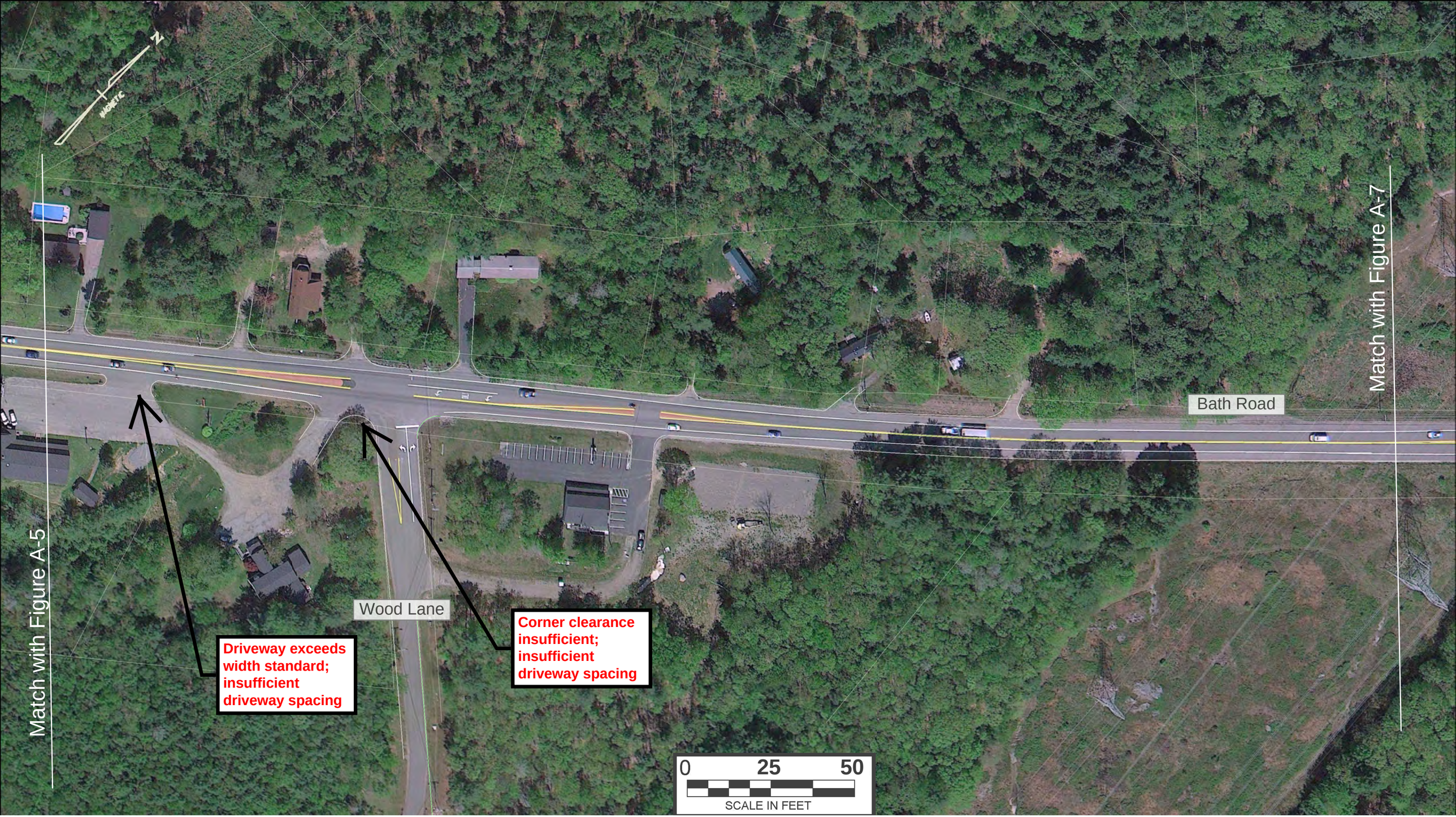

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Figure A-6:
Existing Access Management Conditions

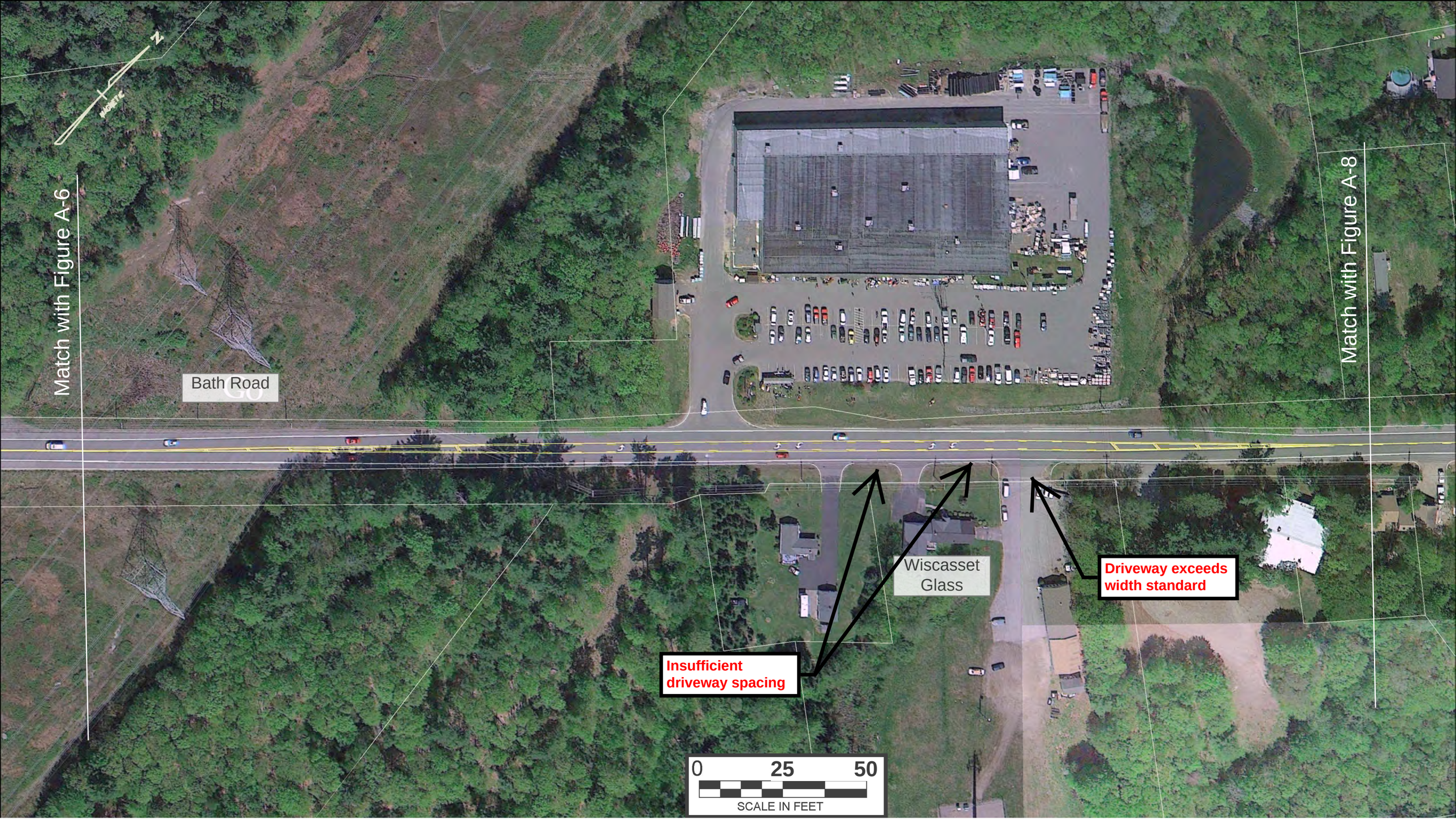

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Figure A-7:
Existing Access Management Conditions

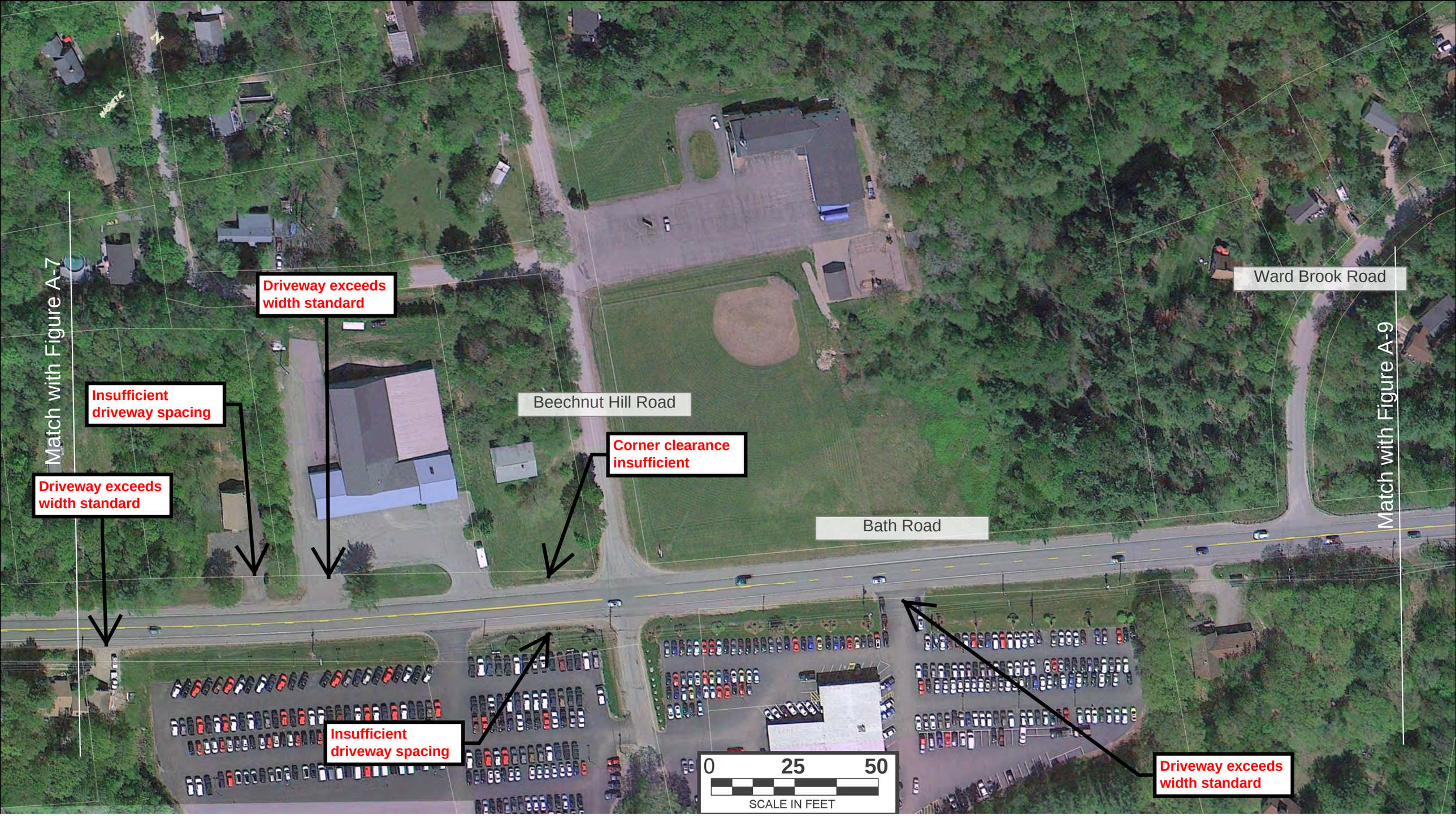

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Figure A-8:
Existing Access Management Conditions

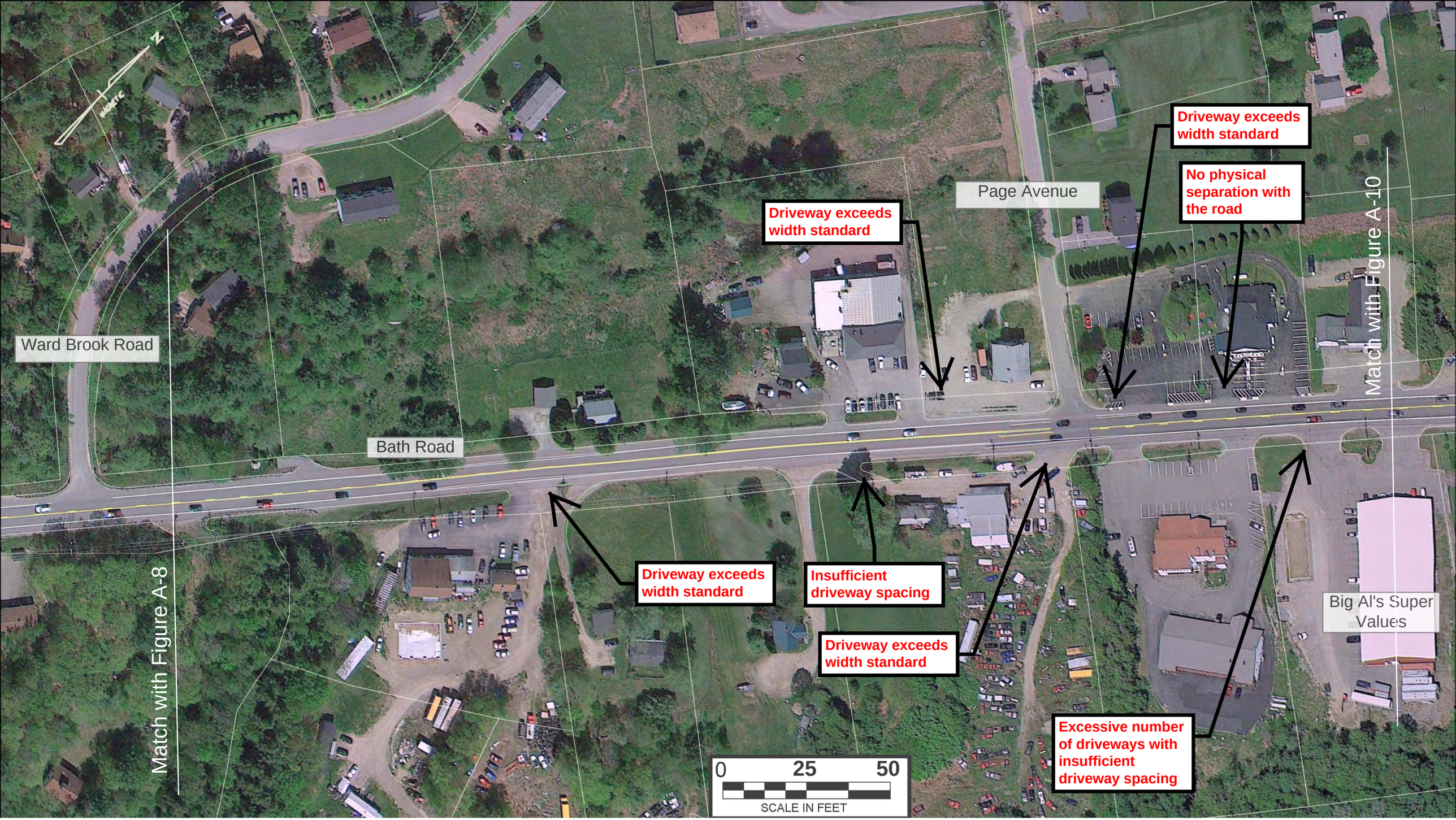

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Figure A-9:
Existing Access Management Conditions

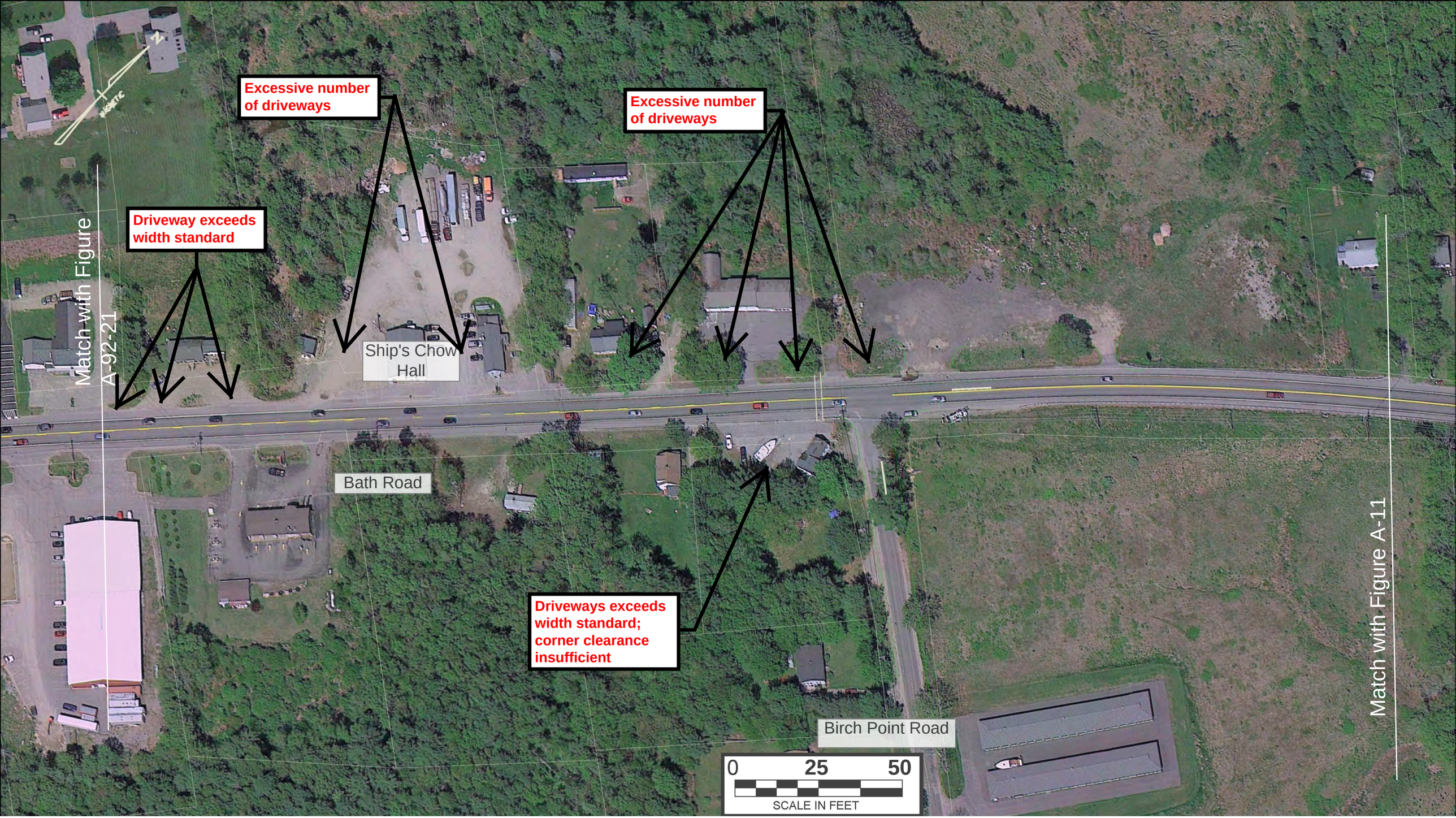

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Figure A-10:
Existing Access Management Conditions

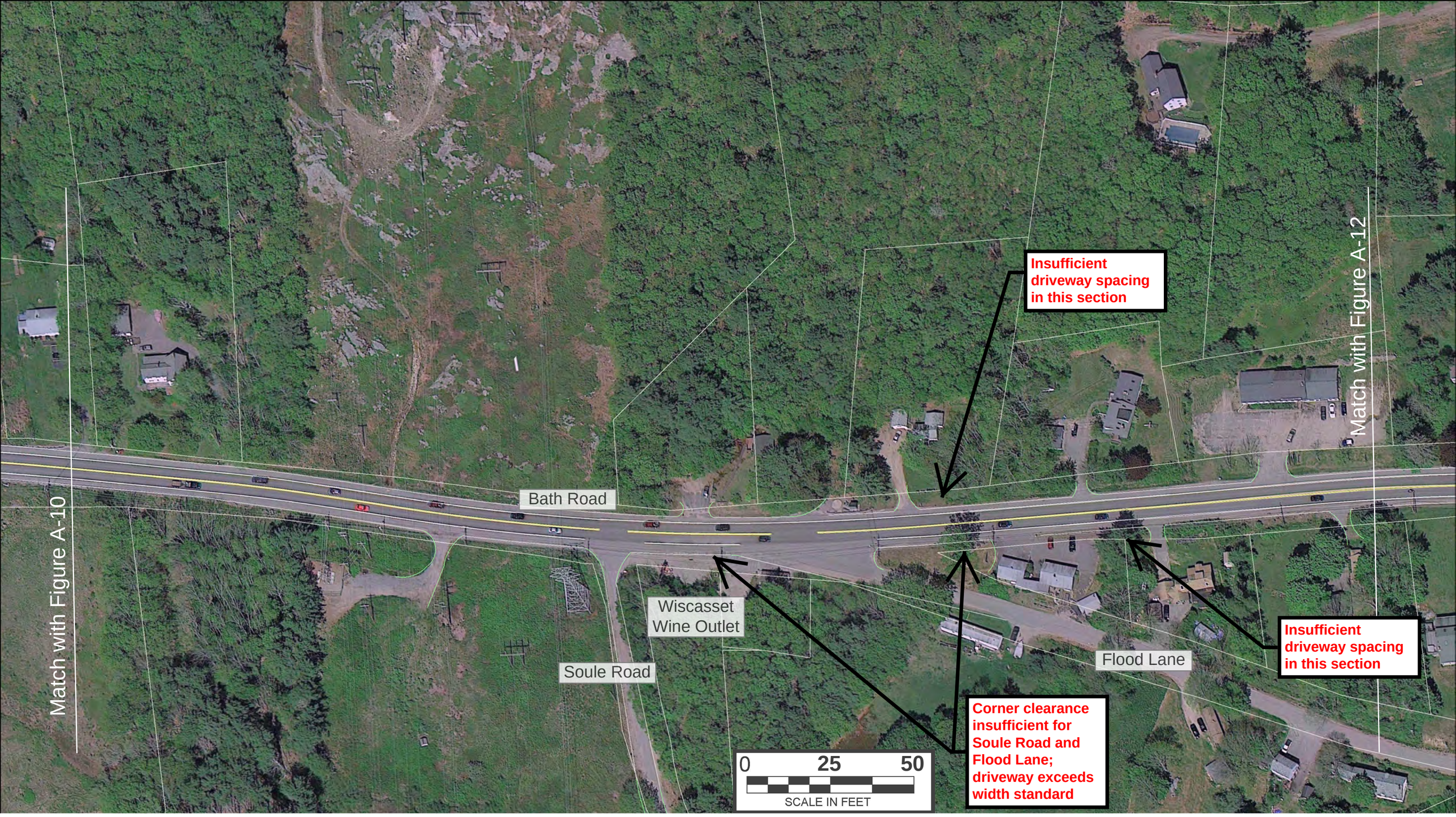

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Figure A-11:
Existing Access Management Conditions

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Figure A-12:
Existing Access Management Conditions

APPENDIX B – CORRIDOR IMPROVEMENT FIGURES

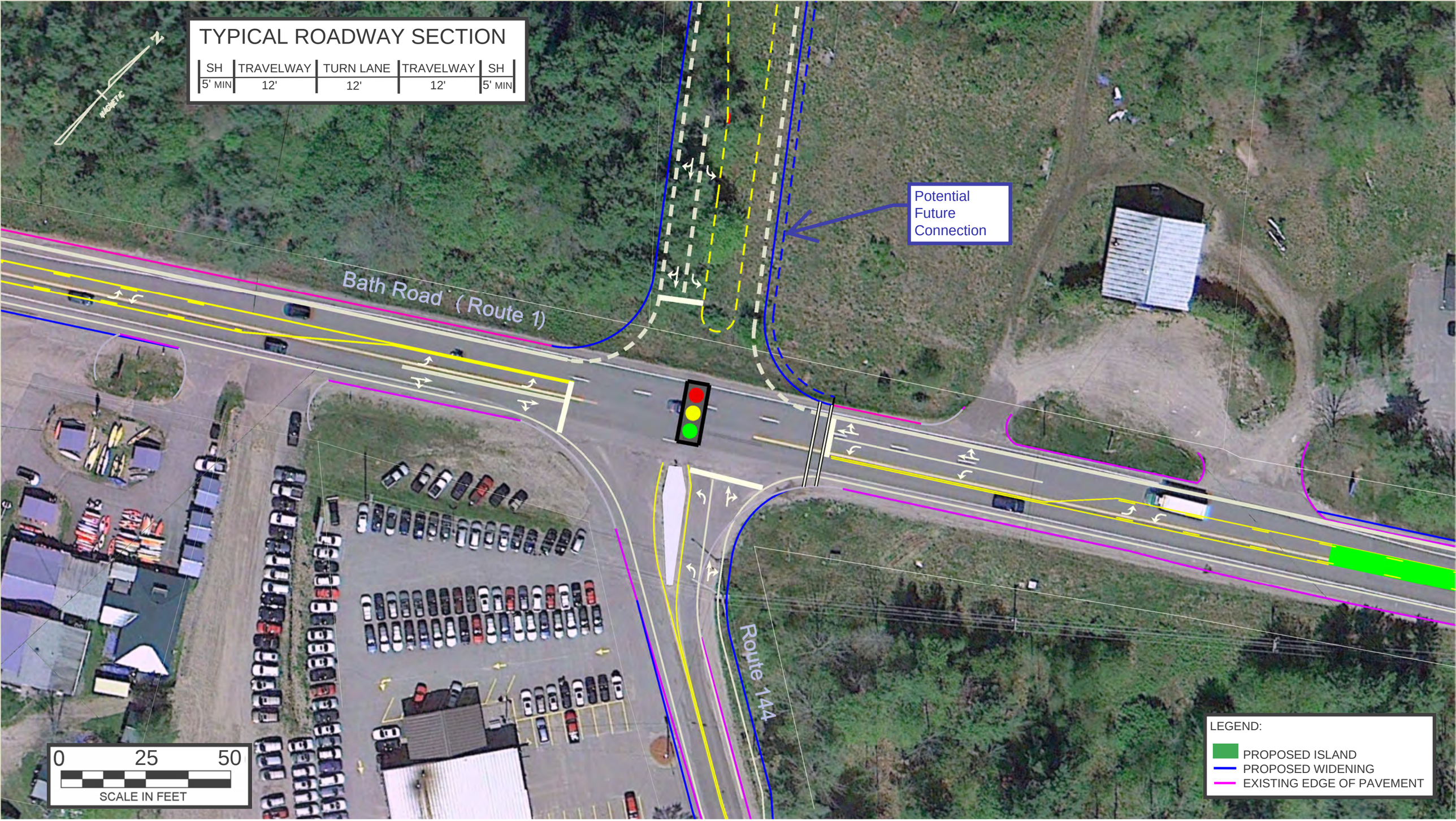

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Figure B-1:
Route 144 Proposed Intersection Improvement Concept

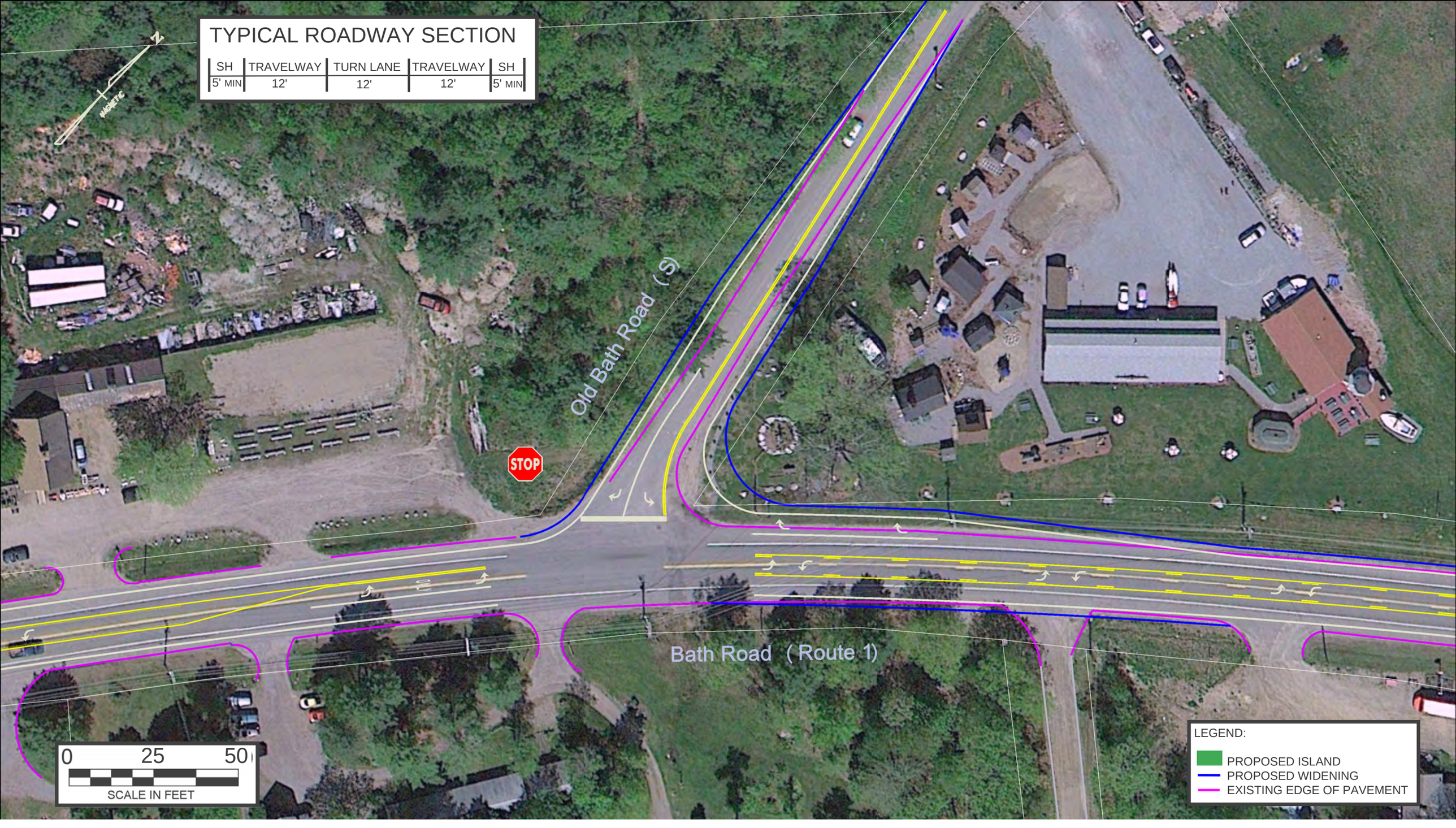

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Figure B-2:
Old Bath Road (S) Proposed Intersection Improvement Concept

TYPICAL ROADWAY SECTION*

SH	TRAVELWAY	TURN LANE	TRAVELWAY	SH
5' MIN	12'	12'	12'	5' MIN

SH	TRAVELWAY	TRAVELWAY	SH
5' MIN	12'	12'	5' MIN

Potential Future Connection

10' Sidewalks

10' Sidewalks

Bath Road (Route 1)

Birch Point Road

0 25 50

SCALE IN FEET

LEGEND:

PROPOSED ISLAND

PROPOSED WIDENING

EXISTING EDGE OF PAVEMENT

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* The typical road section with turn bays apply to the southerly section and the typical road section with the standard two travel ways applies to the section to the north of the intersection.

Figure B-3:

Birch Point Road Proposed Intersection improvement Concept

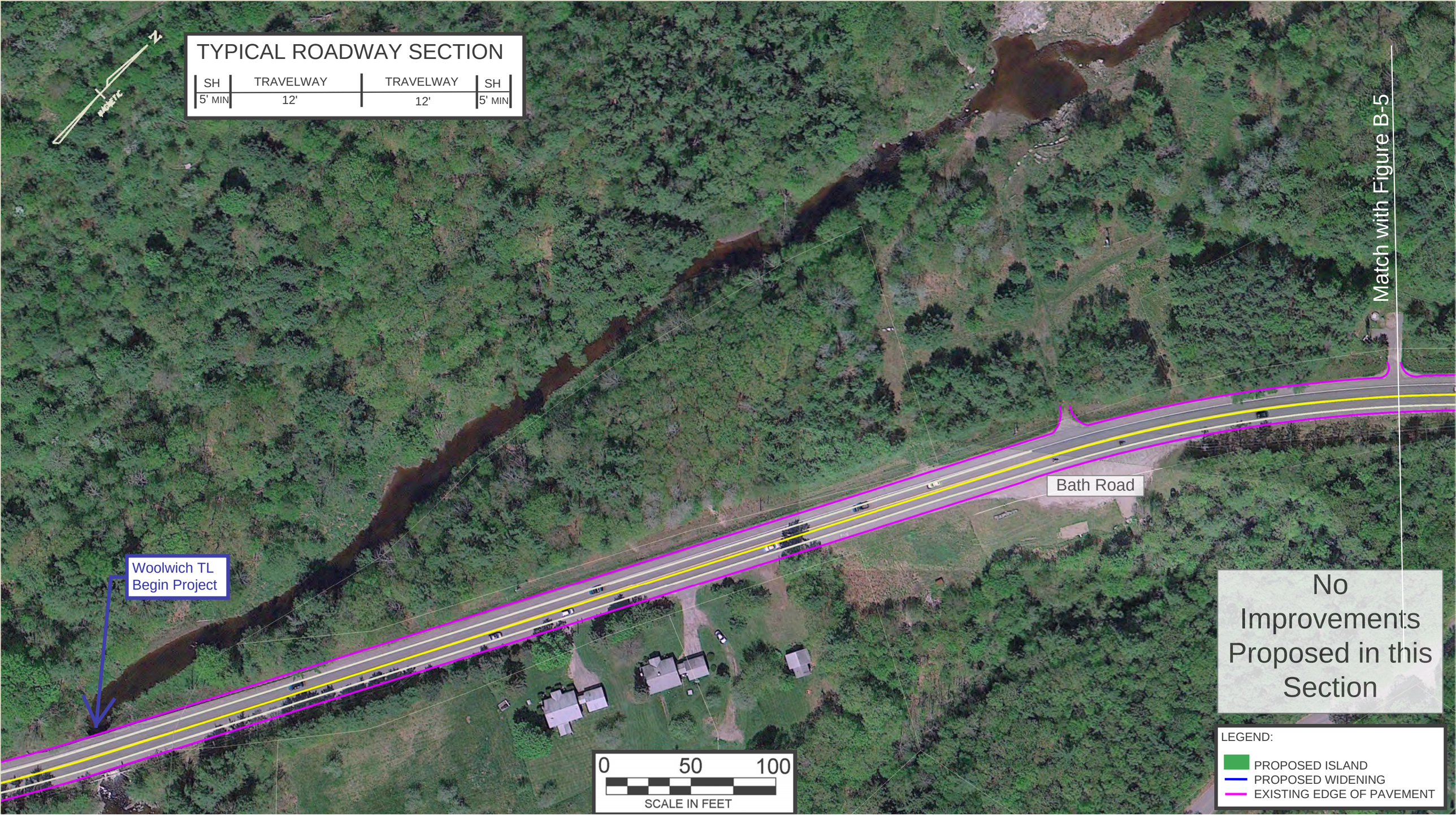

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Figure B-4:
Future Street Recommendations

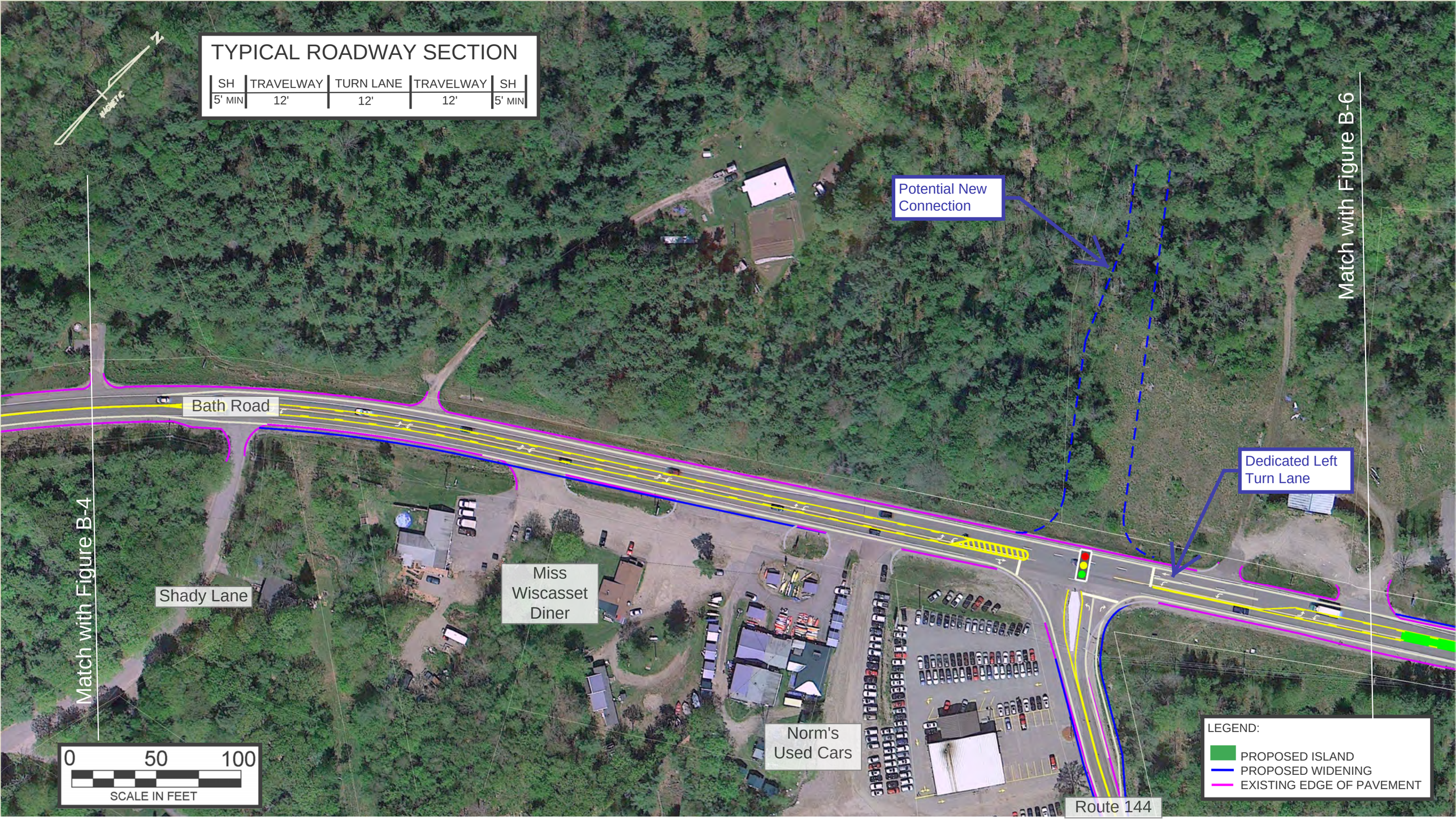

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Figure B-5:
Future Street Recommendations

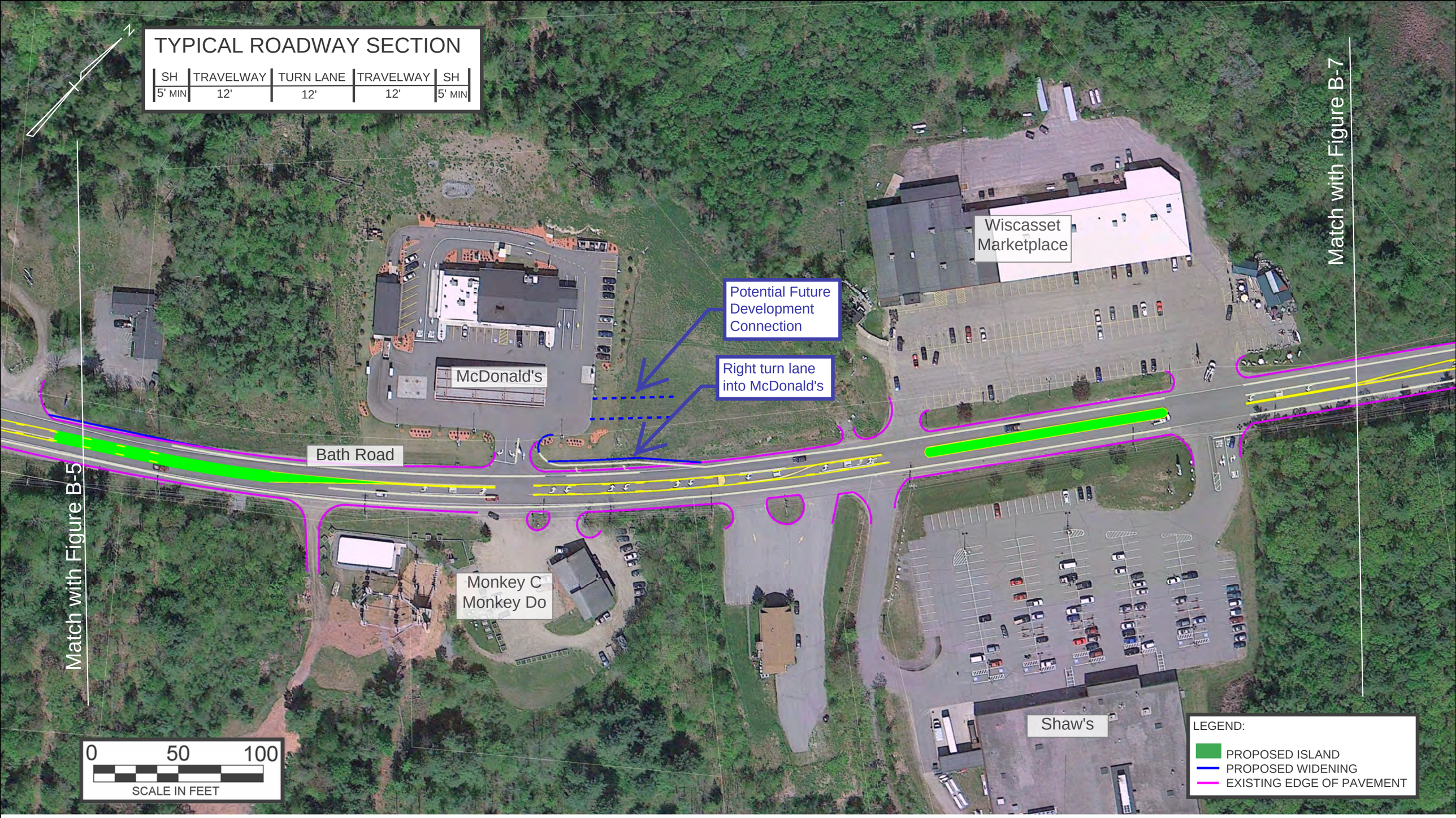

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Figure B-6:
Future Street Recommendations

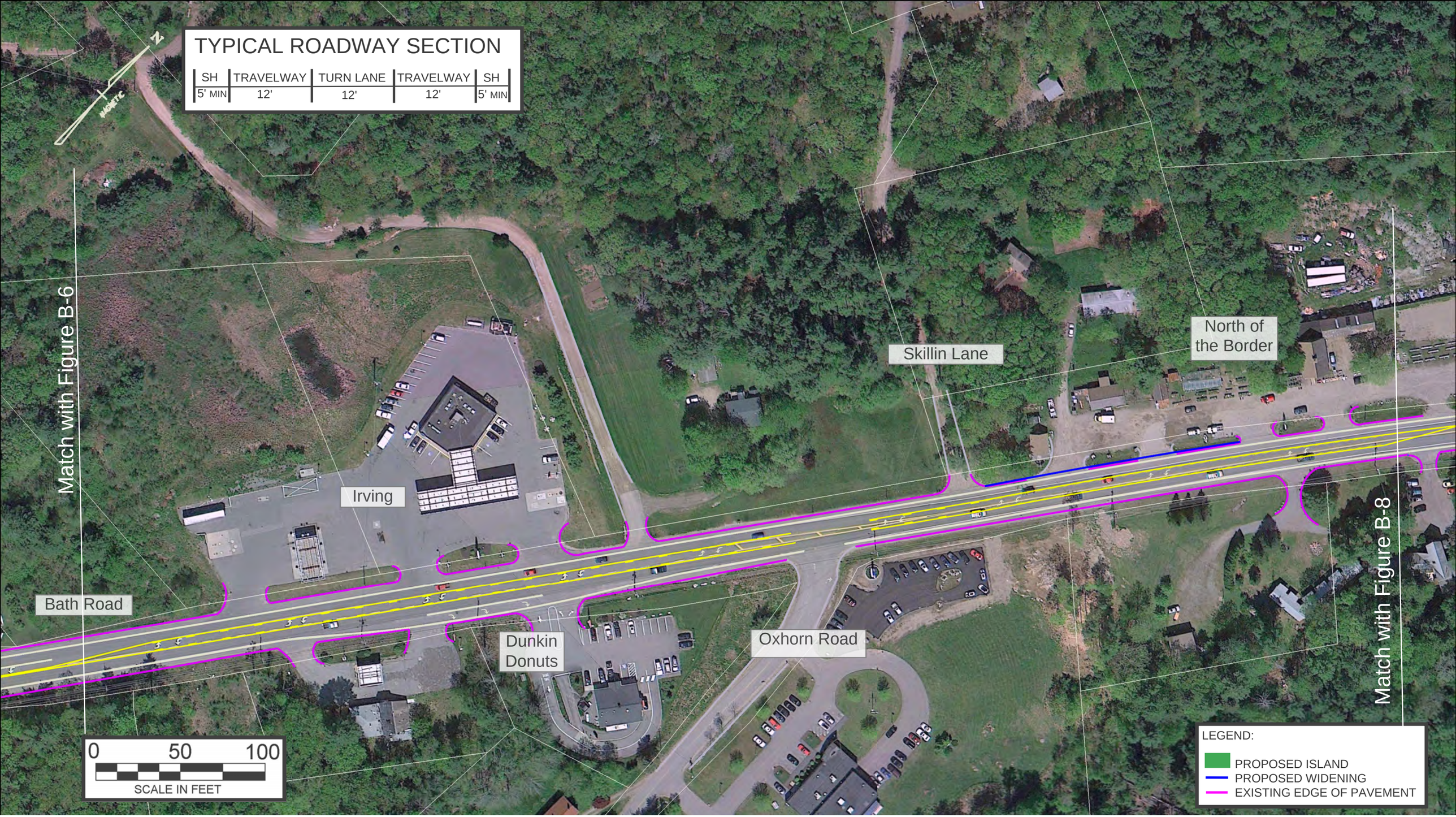

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Figure B-7:
Future Street Recommendations

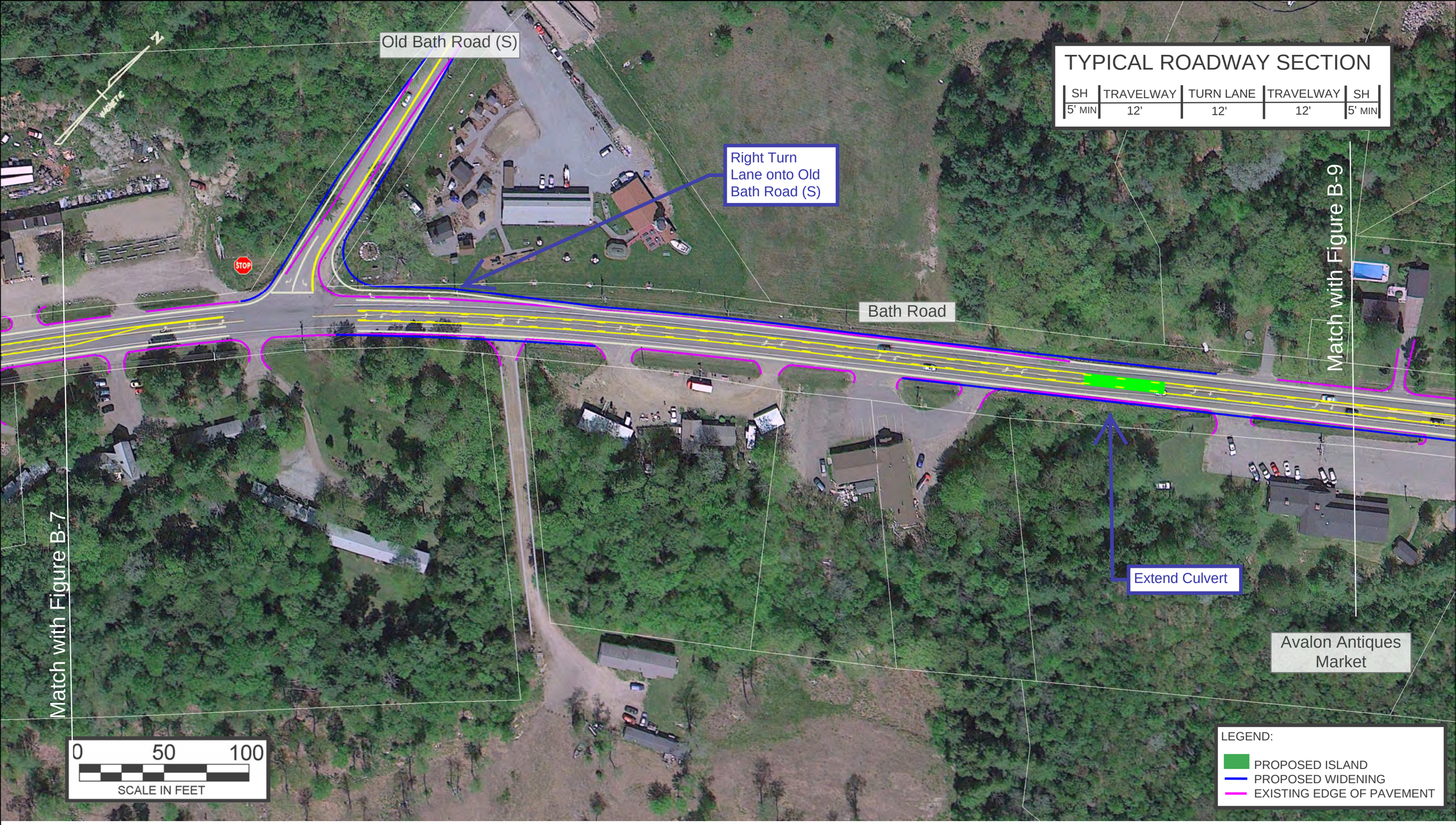

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Figure B-8:
Future Street Recommendations

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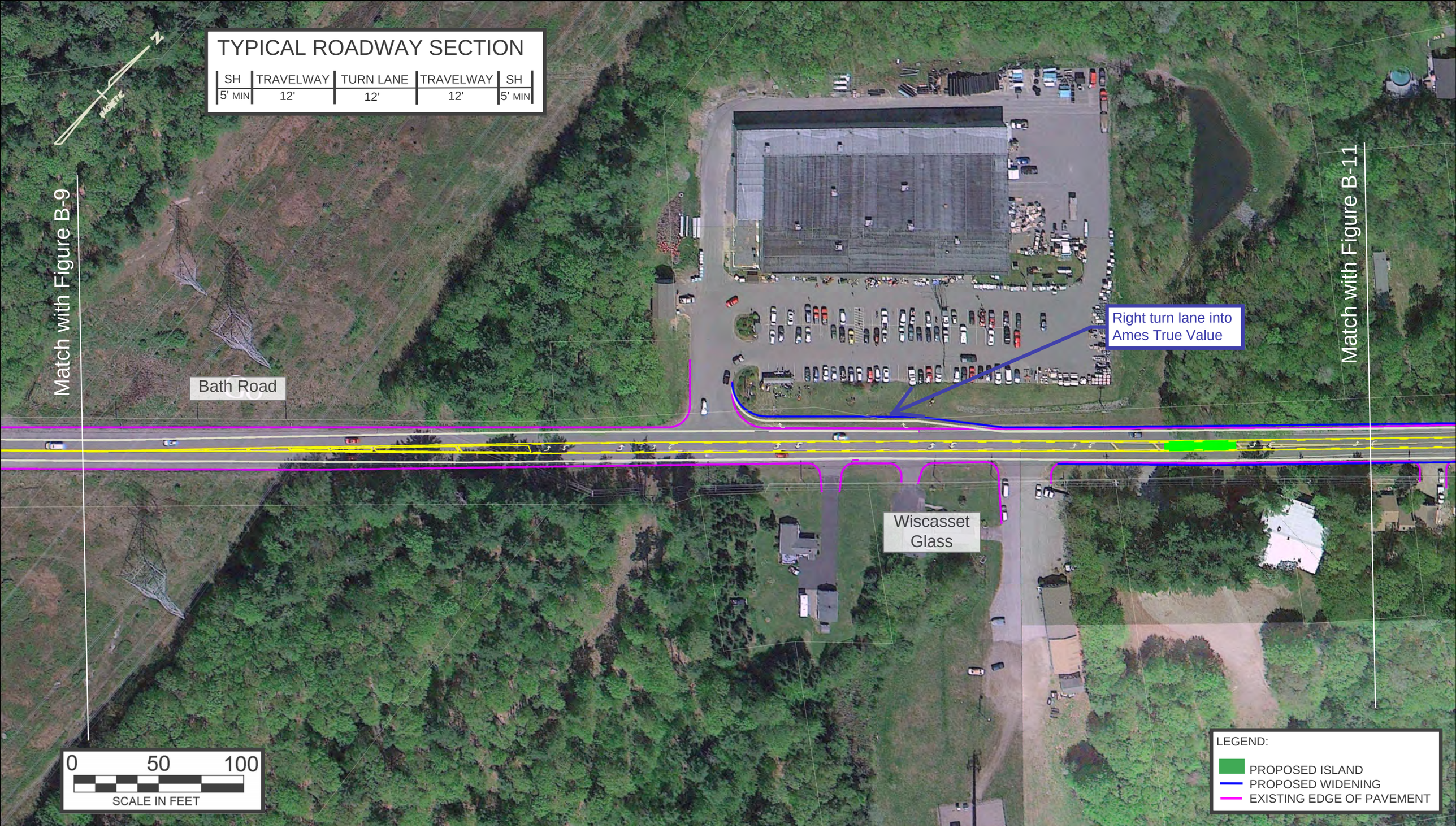
Bath Road Master Plan
Wiscasset, Maine

* The typical road section with turn bays applies up to Wood Lane and the typical road section beyond road lane is just a two lane section.

Figure B-9:
Future Street Recommendations



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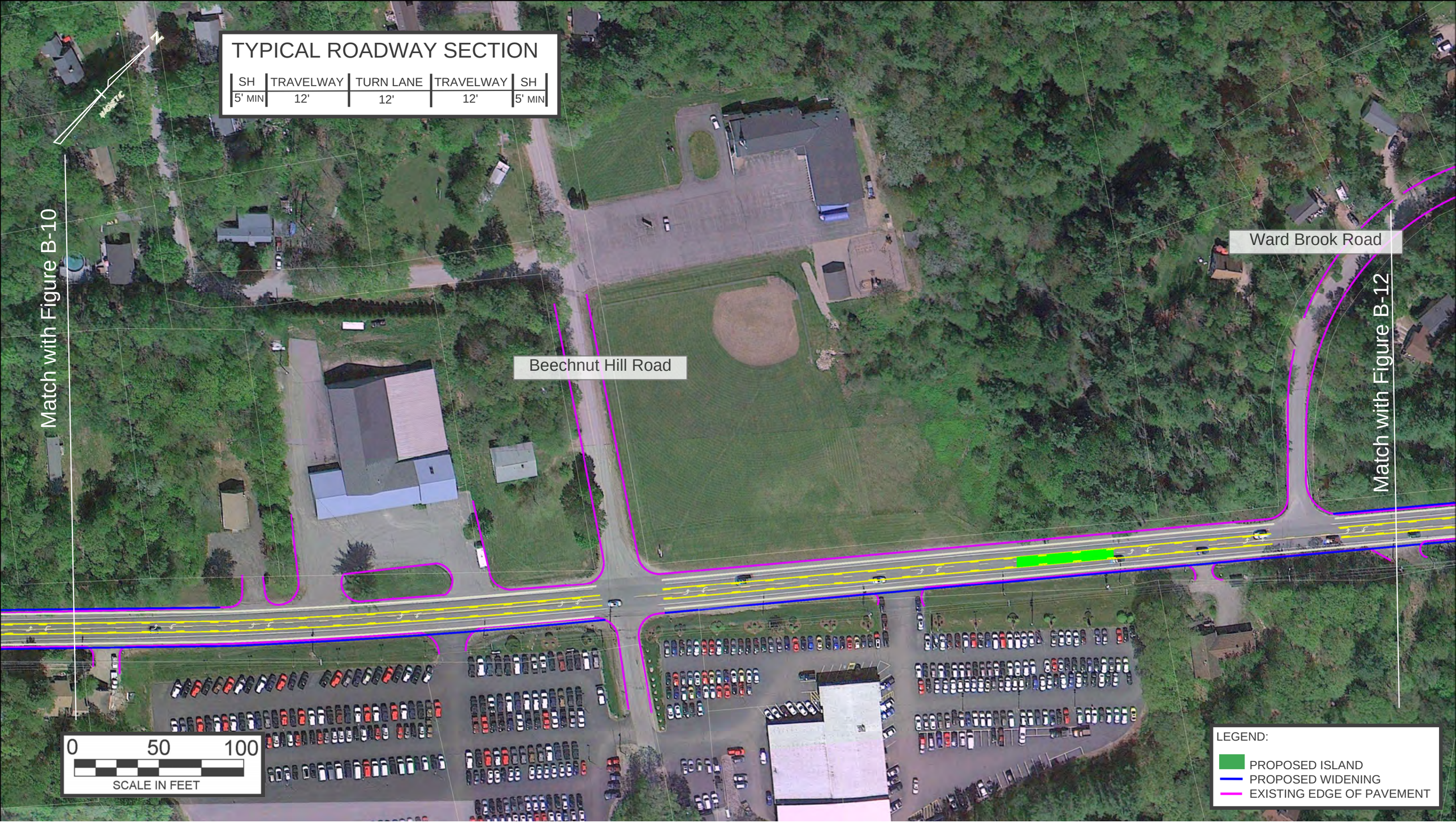
Wiscasset, Maine

Figure B-10:
Future Street Recommendations



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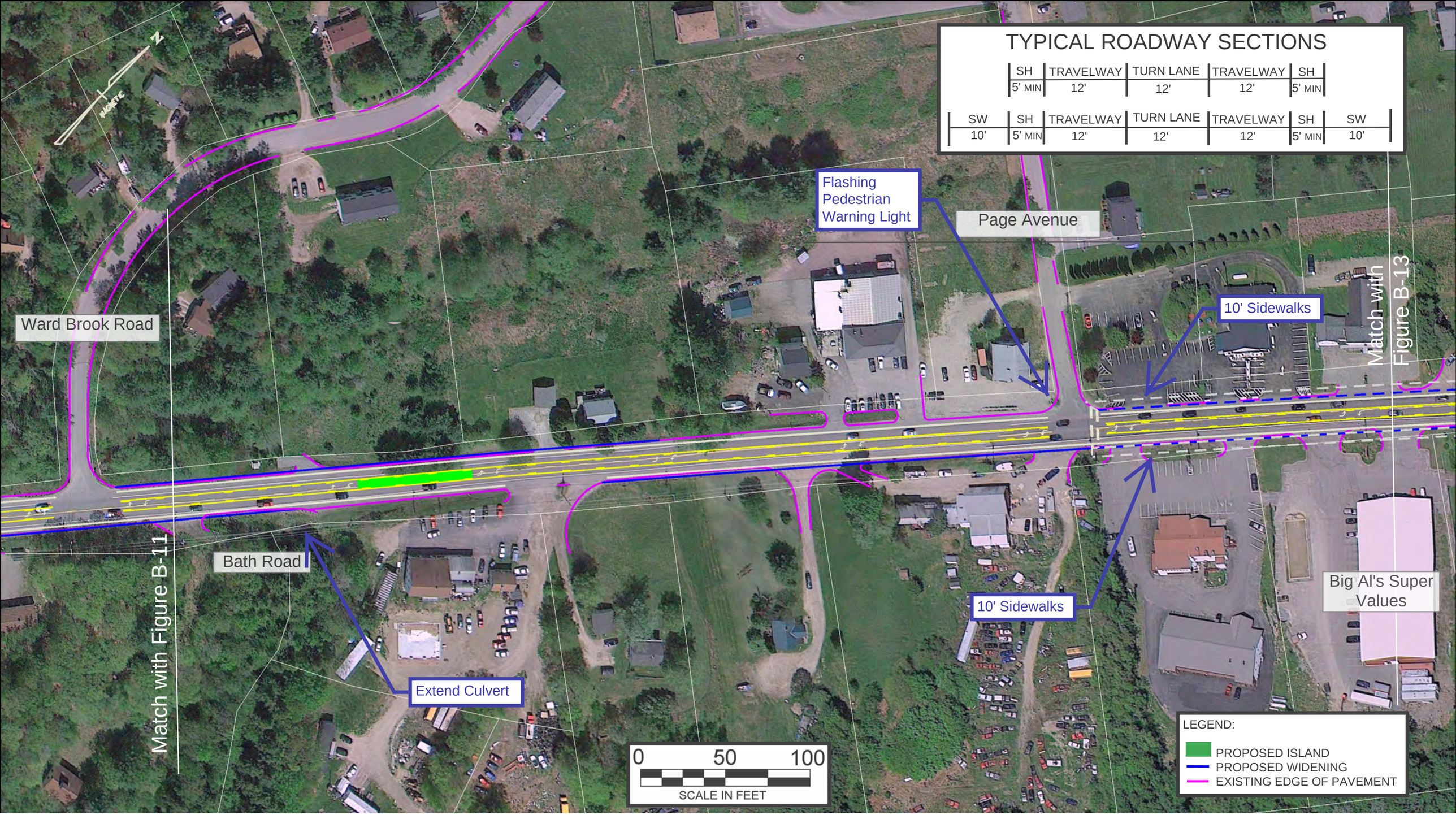
Wiscasset, Maine

Figure B-11:
Future Street Recommendations



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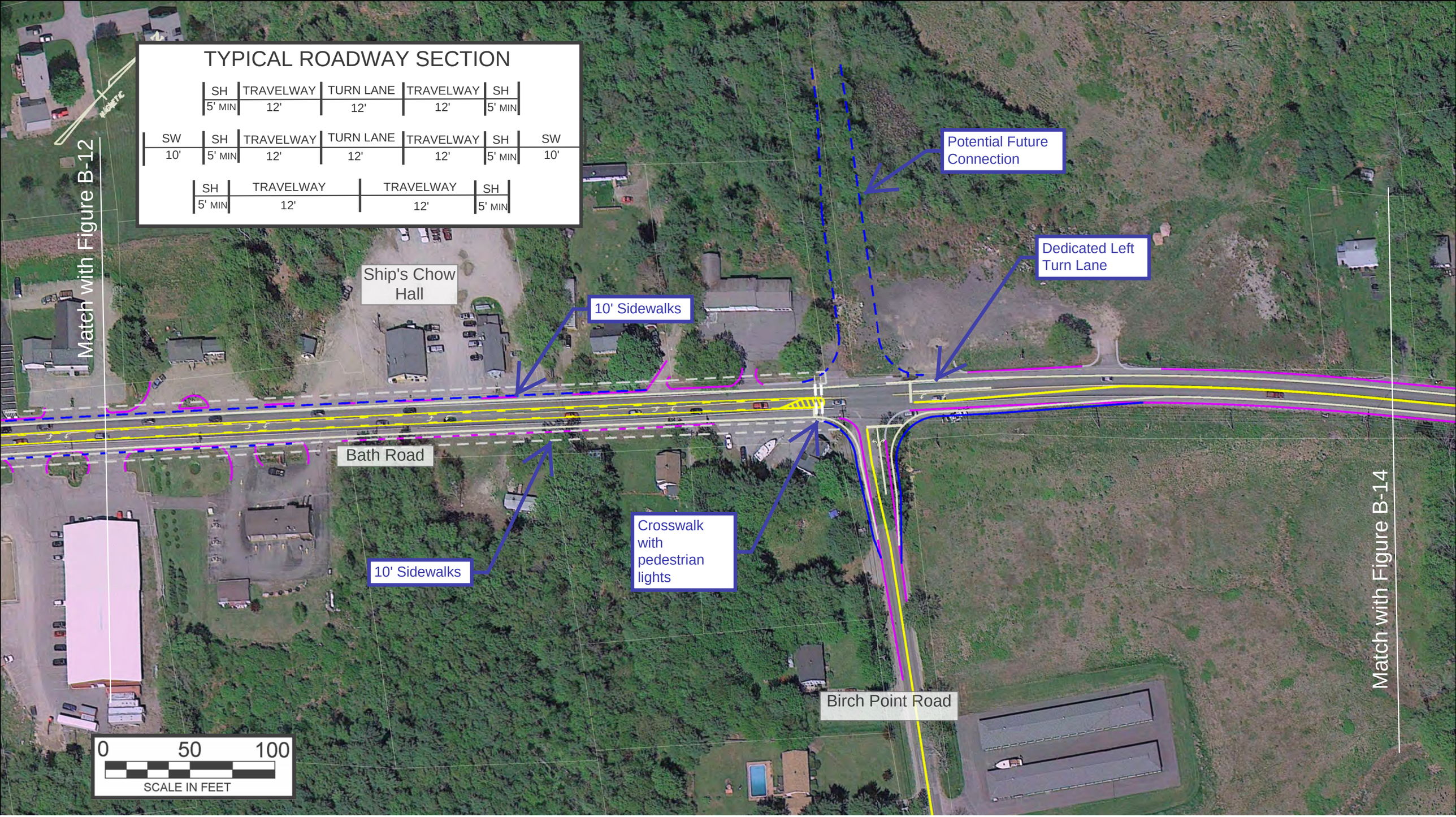
Bath Road Master Plan
Wiscasset, Maine

* The typical road section with turn bays applies to the section of Road up to Page Avenue, the typical road section beyond Page Avenue includes sidewalks.

Figure B-12:
Future Street Recommendations



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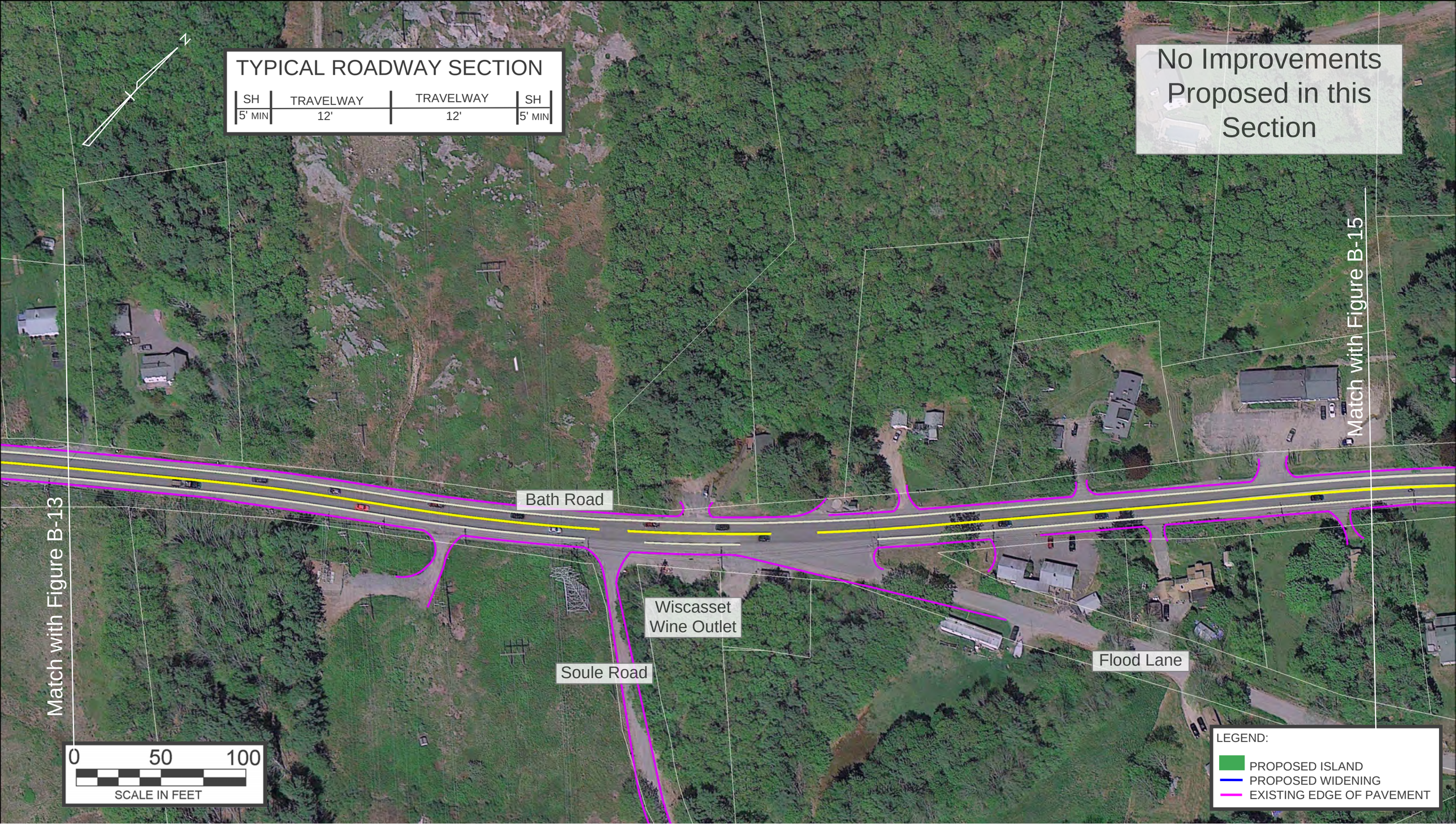
Bath Road Master Plan
Wiscasset, Maine

* The typical sections with sidewalks applies to the section just to the south of the intersection with Birch Point Rd, the typical sections with turn bays applies to the Birch Point and SB approaches, and the two lane section applies just north of the intersection.

Figure B-13:
Future Street Recommendations



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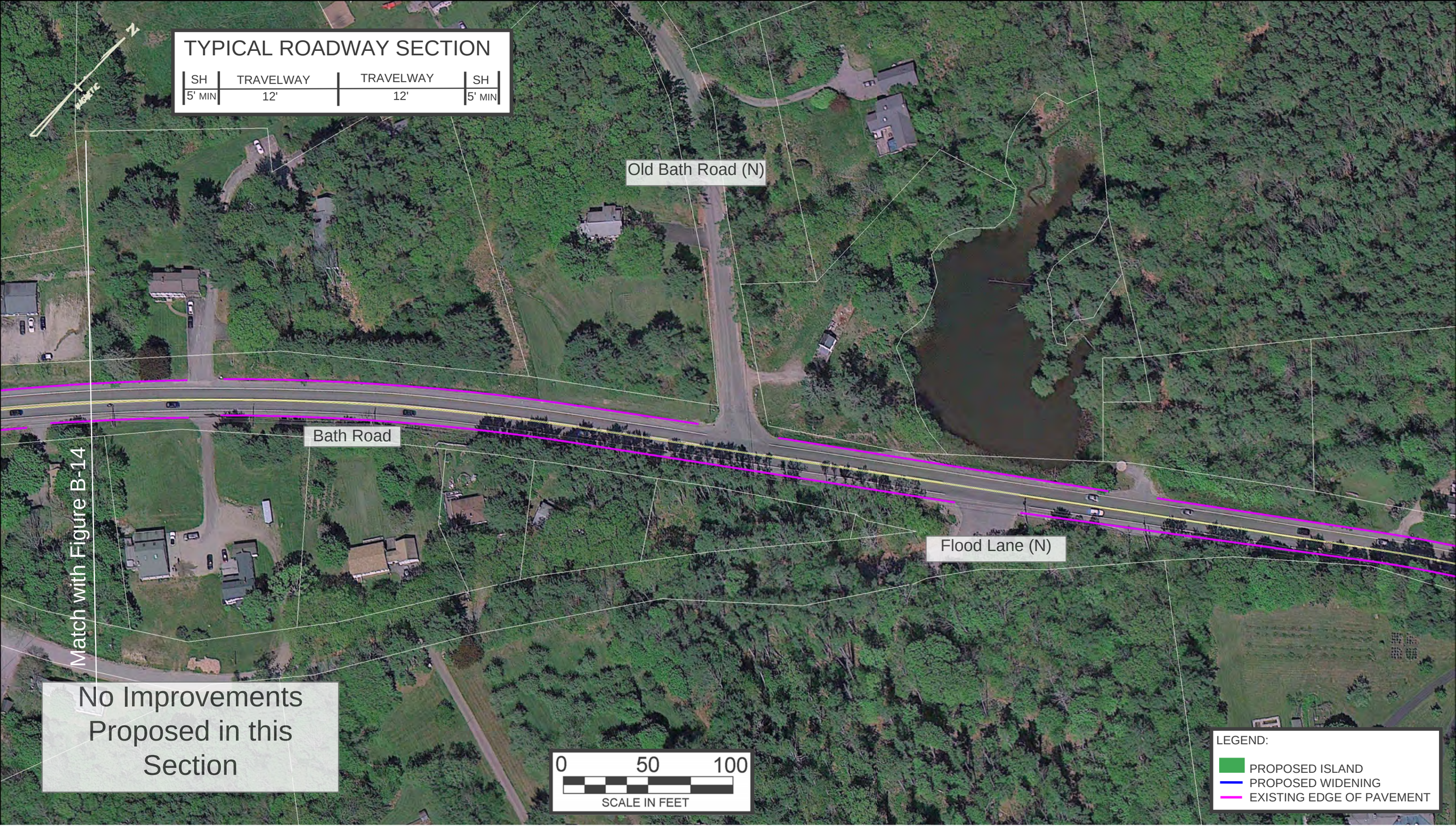
Wiscasset, Maine

Figure B-14:
Future Street Recommendations



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Bath Road Master Plan
Wiscasset, Maine

Figure B-15:
Future Street Recommendations

APPENDIX C – ACCESS MANAGEMENT STANDARDS AND MAINEDOT PERMITS

C.1 Access Management

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 automobile 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 (like Bath Road), 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. Bath Road lies outside the urban compact area and therefore MaineDOT administers access permits. This Plan includes an introduction to access management; local and state access management processes and standards; an introduction to the MaineDOT Traffic Movement Permit process; and examples of best-practices solutions.

This Plan does not identify specific recommendations on how to correct existing deficiencies, but provides the framework for how driveway design is an important part of a healthy transportation corridor and what factors will need to be considered during the development process for a local site plan or Traffic Movement Permit approval.

C.2 Introduction to Access Management

Access Management is a set of techniques used to preserve highway capacity, manage highway congestion and reduce crashes. Examples include:

- Traffic signal spacing;
- Driveway location, spacing, and design;
- Use of service and frontage roads; and
- Land Use policies that control right-of-way access to highways.

Specific benefits of Access Management include:

- Preserve integrity of the roadway system
- Improve safety and highway capacity
- Extend ***functional*** life of the roadways
- Preserve public investment in infrastructure
- Preserve private investment in properties
- Provide a more efficient (and predictable) motorist experience
- Improve "thru" times through a corridor
- Improve aesthetics (less pavement, more green)

C.3 Town of Wiscasset and MaineDOT Driveway Standards

The following summarizes existing driveway design and construction standards per the Town of Wiscasset and MaineDOT.

Town of Wiscasset Ordinance (Site Plan Standards)

- Access into site. Vehicular access to and egress from the development shall be safe and convenient.
    - Any driveway or proposed street shall be designed so as to provide at least the minimum sight distance as noted below:

Posted Highway Speed (MPH)	Minimum Sight Distance (in feet)	MaineDOT (in feet)
2	25	20
3	30	25
3	35	30
4	40	36
4	45	42
5	50	49
5	55	57

    - Points of access and egress shall be located to avoid hazardous conflict with existing turning movements and traffic flows.
    - The grade of any proposed drive or street shall not be more than plus or minus 3% for a minimum of 40 feet, from the edge of travel way.
    - The intersection of any access/egress drive or proposed street shall function at Level of Service D or better following development if the project will generate 100 or more peak hour trips or at a level which will allow safe access into and out of the project if less than 100 peak hour trips are generated.
    - Where a lot has frontage on two or more streets, the primary access to and egress from the lot shall be provided from the street where there is less potential for traffic congestion and for traffic and pedestrian hazards. Access from other streets may be allowed by the Planning Board if it finds if it is safe and does not promote shortcutting through the site.
    - Where it is necessary to safeguard against hazards to traffic and pedestrians and/or to avoid traffic congestion, and if required by the MaineDOT or if recommended by a traffic engineer, the Planning Board in consultation with the appropriate town official may require the applicant to provide turning lanes, traffic directional islands and traffic controls within public streets.
    - Accessways shall be designed and have sufficient capacity to avoid queuing of entering vehicles on any public street.

- The following criteria shall be used to limit the number of accessways serving a proposed project:
  - No use which generates fewer than 100 vehicle trips per day shall have more than one two-way driveway onto a single roadway. Such accessway shall be no greater than 30 feet wide.
  - No use which generates 100 or more vehicle trips per day shall have more than two points of entry from and two points of egress to a single roadway. The combined width of all accessways shall not exceed 60 feet.

- Accessway location and spacing. Accessways shall meet the following standards:
  - Private entrances/exits shall be located at least 50 feet from the closest unsignalized intersection and 150 feet from the closest signalized intersection, as measured from the edge of the private entrances/exits to the edge of the intersection, excluding radii. This requirement may be reduced if the shape of the site does not allow conformance with this standard.
  - Private accessways in or out of a development shall be separated by a minimum of 75 feet where possible.

MaineDOT Standards (See http://www.maine.gov/mdot/ppp/accessmgmt/index.htm)

The following summarizes MaineDOT driveway standards per their Highway Driveway and Entrance Rules as they apply to Bath Road, which is characterized as a Retrograde Arterial. A Retrograde Arterial is defined by MaineDOT as a Mobility Arterial having an access-related crash-per-mile rate exceeding the 1999 statewide average for arterial highways of the same posted speed limit. A Mobility Arterial is defined as an arterial highway not located within an Urban Compact Area (none in Wiscasset) that has a posted speed limit of 40 mph or more and is:

(1) Part of an arterial corridor located between Urban Compact Areas or Service Centers that carries an average annual daily traffic of at least 5,000 vehicles per day for at least 50% of its length, or
(2) Is part of a Retrograde Arterial Corridor located between Mobility Arterials described in (1).

- Number of Driveways - Except for forestry management and farming activities, lots on Mobility Arterials will be limited to one two-way or two one-way entrances, unless a waiver is granted.

- Corner Clearance (distance to an intersection) - Mobility Arterial Corner Clearance. The minimum corner clearance for entrances onto Mobility Arterials must be no less than125 feet.

- Driveway Spacing

Minimum Entrance Posted Speed (MPH)	Spacing Standards Entrance Separation (Feet)
25 or less	Not applicable
30	Not applicable
35	Not applicable
40	175
45	265
50	350
55 or more	525

- Sight Distance (Mobility Corridor)

Applicable Speed (MPH)	Sight Distance (Feet)
20	Not applicable
25	Not applicable
30	Not applicable
35	Not applicable
40	580
45	710
50	840
55	990
60	1,150

- Driveway Width - If 30% or less of the traffic projected to use the proposed entrance will be larger vehicles, the width of a two-way entrance within the highway right of way must be between 22 and 30 feet inclusive, unless a waiver is granted. If more than 30% of the traffic projected to use the proposed entrance will be larger vehicles, the width of a two-way entrance within the highway right of way must be between 30 and 42 feet.

- Double Frontage Lots. Unless a waiver is granted, entrances for lots with frontage on a Non-compact Arterial and another public way will be restricted to the other public way, unless MaineDOT determines that queuing of traffic using an entrance off the other public way would interfere with traffic on the Non-compact Arterial due to insufficient lot frontage along the other public way. If the other public way is a mobility or retrograde arterial the entrance must be located on the highway frontage that allows the intent of this rule to be most effectively and efficiently met.

The following notes key differences between Town and MaineDOT standards. The more stringent rules apply.

- Sight Distance – MaineDOT sight distance standards are less than Town requirements with the exception of roads with a speed limit of 55 mph.

- Number of Driveways – MaineDOT limits lots to one two-way driveway or two one-way driveways. The Town allows for two driveways for developments that generate 100 or more daily vehicle trips.

- Corner Clearance – MaineDOT requires 125 feet of corner clearance while the Town requires 50 feet of clearance to an unsignalized intersection and 150 feet to a signalized intersection.

- Driveway Spacing - MaineDOT standards are greater than Town requirements. For 45 mph (the most common speed limit in the study area), MaineDOT requires 265 feet of separation while the Town requires 75 feet.

C.4 MaineDOT Driveway / Entrance Permits

A MaineDOT Driveway or Entrance permit is required under the following criteria.

- Driveways: less than 50 passenger car equivalents (PCE) per day. Examples:
  - Up to 5 dwelling units
  - Home-based occupations
  - Forest management & farming
  - Low-impact industrial (i.e., substations)
- Entrances: more than 50 PCEs/Day. Examples:
  - Over 5 dwelling units and housing developments
  - Retail, office or service business including department store, strip mall, convenience store, gas station, auto repair shop, restaurant, etc.

<u>MaineDOT Access Management Rules</u>

- Applies to State and State-Aid Highways (Bath Road) to:
  - Preserve Mobility
  - Preserve Safety
  - Reduce Negative Drainage impacts
  - Preserve Economic Productivity Related to Highways
  - Avoid Long-Term Cost of Adding New Highway Capacity
- Excludes Portions of highways located inside Urban Compact limits

Applicability

- Changes to access location, width, cross-section, grade or drainage characteristics
- Change in Use: Activity that will result in
  - Intermittent or seasonal use becoming permanent or year-round use
  - Increase in daily traffic from under 50 Passenger Car Equivalents PCE/Day or 99 PCE/Hour
  - Significant drainage risk
  - Exclusion - Change in ownership only

Three Levels

- Basic (Lower Classification Roads through Major Collectors)
- Mobility Arterials
  - Posted Speeds of 40 MPH or Greater
  - AADT of 5,000 or more
- Retrograde Arterials (incl. US Route 1 – Bath Road)
  - Mobility Arterials having Access-Related Crash Rates greater than the 1999 Statewide Average for Similar Arterials
  - Applicant must Avoid, Minimize or Mitigate Reduction in Safety or Posted Speed Limit

Design Considerations

- Sight Distance
- Spacing between Access Points
- Spacing of Access Points to Intersections
- Drainage Impacts
- Mitigation (Retrograde Arterials)
    - Signage, Lighting, Trimming Vegetation, etc.
    - Addition of Shoulders, Turn Lanes, Traffic Signals
    - Changes in Highway Alignment
    - In-Lieu Impact Fee Payments (Town or State)

Access Management Waivers

- Criteria that can be waived for reason
    - Access point spacing
    - Spacing from access points to intersections
    - Traffic signal spacing
    - Mobility Sight Distances
- Criteria that cannot be waived
    - Safety Sight Distances

C.5 MaineDOT Traffic Movement Permit Process

For developments that generate significant traffic levels, a Traffic Movement Permit (TMP) may be required. In many cases the TMP requires developers to prepare a traffic impact study assessing the impact the project may have on the public street system. Details of the TMP process are noted as follows.

Traffic Movement Permit (TMP) required:

- Project abuts <u>any</u> (public or private) road, and
- Project includes any construction, alteration or conversion of a site, building or development, and
- Adds 100 or more PCEs/ Peak Hour
    - Per ITE Trip Generation Guide
- Exemptions
    - Solid Waste Facility
    - Hazardous Waste Transfer or Storage Facility
    - Waste Oil Storage Facility or Biomedical Waste Facility

Off-Site Traffic Study Area Requirements

- 1st major intersection in each direction from entrances and exits
- Additional intersections where proposed development adds
    - 25 additional left-turns
    - 35 additional through-, right-turn or combined through- and right-turn
    - 35 additional (multiplying left-turn by 1.5) in combined left-turn plus through, or combined left-turn, through- and right-turn

APPENDIX D - MEETING NOTES

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Meeting Notes
Bath Road Master Plan
October 4, 2012 Steering Committee
Prepared by: Tom Errico/Mitchell Rasor

Attendees

- Steering Committee
  - Wayne Averil
  - Don Jones
  - Gary Crosby
  - Peter West
  - Troy Cline
  - Heather Pitcher
  - Al Cohen
  - Ed Polewarczyk
  - Judy Colby
  - Laurie Smith
  - Misty Parker
  - Gerry Audibert
- Consultant Staff
  - Robert Faunce
  - Tom Errico
  - Mitchell Rasor

Agenda

- Introductions

- Review Draft Project Schedule
  - Misty reviewed the project schedule and noted that the next Steering Committee meeting would likely be in early December. The study is expected to be completed in May 2013.
  - The SC noted that public meeting schedule changed from prior information. Misty noted that the public meeting schedule was revised to give the public more material substance.

- Draft Mission Statement
  - Mitchell reviewed the draft Mission Statement
  - The SC asked what does adjacent to Bath Road mean? Mitchell noted that in general it included the land parcels that abut Bath Road.
  - The SC discussed the use of the description "auto-oriented" in describing the corridor. A consensus was reached that Bath Road is auto-orientated because of the lack of public transit and pedestrian/cyclist options. Mitchell noted that the plan would be assessing that issue.
  - The SC noted that multi-modal aspect will be a component of the Plan.

- Draft Existing Conditions Information - Transportation
  - Tom presented the existing traffic volume data collected in the corridor. The SC asked why the daily traffic volume at Ward Brook was substantially lower than at Old Bath Road (N). Tom noted that they were

from different years. Additionally, Tom noted that the methods for estimating AADT volumes were different. The Ward Brook location is not factored but an actual AADT, while the Old Bath Road (N) location is factored according to the state-wide factors applied by MaineDOT.

- Tom presented the existing level of service conclusions for both intersections and roadway segments. The SC was surprised that the level of service for Bath Road was 'D' when prior By-Pass studies indicated worse conditions. Gerry noted that the By-Pass conclusions were based upon long-term future growth conditions versus existing conditions.
- Tom presented vehicle classification information and noted that while on a percent basis it is lower than other major roadways in the State, it has a significant number of trucks (900) on a daily basis.
- Tom presented crash data and noted that there are no High Crash Locations per MaineDOT criteria in the study area. Tom noted that some segments had a number of collisions and poor access management conditions may be a factor.
- Tom presented vehicle speed information and noted that speeds are generally consistent with posted speed limits with the exception of north of Old Bath Road where speeds are higher. However, speeds are significantly lower than the posted speed limit in the northbound direction during the PM peak hour due to existing congestion in the village area.
- Tom presented examples of access management non-conformities (driveway spacing, corner clearance, driveway width, number of driveways). The SC asked how access management can affect traffic mobility and safety. Tom noted that unmanaged driveways have been proven to be a factor in higher crash rates and reduced mobility. Driver confusion is a factor in unsafe roads and impedes traffic flow. Additionally, vehicle turn movements occurring in close proximity to each other can result in higher crash rates and reduced mobility.

- Draft Existing Conditions Information - Zoning, Comprehensive Plan, and Land Use
  - Mitchell noted at the beginning of the presentation that the Town prepared a Comprehensive Plan in 2008 and that the planning process for this study should refer back to relevant recommendations for Bath Road. The recent adoption of the Village 2 District is a good example of implementing a recommendation of the Comprehensive Plan. It addresses the goal of limiting "strip" development from the town line to the village while promoting the appropriate scale and type of development and it introduces new standards for a transition zone to the Historic Village District.
  - Mitchell presented the Existing Conditions and Zoning Analysis Memo stating that the findings were summarized in the following areas: Zoning, Comprehensive Plan and the Land Use Ordinance Analysis; Character Areas; Visual Inventory; Environmental Constraints; and Infrastructure.

- The Comprehensive Plan emphasizes that the Town should prepare a specific Master Plan for Bath Road. This SC is directly related to guiding that effort.
- The primary recommendation from the Comprehensive Plan in regards to Bath Road is that it should not become a non-descript, over developed corridor, but that it should be attractive and diverse, adding to the value of Wiscasset as a tourist destination.
- Mitchell introduced the idea of "Character Areas" – different types and patterns of existing development along Bath Road. The five mapped character areas include: Traditional Roadside Development; New Development; Strip Development; Residential Development; and Residential Mixed Use Development. The SC commented that this was a new perspective of looking at the corridor. The SC noted that this might suggest future growth scenarios, such as a local business district from Grover's Tire to Birch Point Road, but the SC also does not want to limit property rights.
- The Visual Inventory looked at different existing edge conditions along Bath Road including: Forested Edge; Commercial Edge; Field Edge; Power Lines; and Mixed Residential Edge. A SC member asked for clarification on "edge" and it was clarified that "edge" meant the character directly fronting the right of way.
- Mitchell described how "Objects" were also part of the Visual Inventory with descriptions of different types of signs. Examples included a free standing sign and a business where the extensive visibility of inventory in front of the building was the "sign" of the use, which to some might appear as clutter.
- Mitchell described how another important aspect of the Visual Inventory for Bath Road was the relationship between Sight Lines and Focal Points. Long sight lines are directly related to the nature of the rolling terrain - with low points at the four stream crossings - and general long and straight stretches of road segments that terminate in either developed or undeveloped focal points. The long sight lines – or views – down straight alignments of the corridor create segments that could potentially inform an overall vision for the corridor as a "place" with variations in character. Does a certain segment have a more rural feel with preserved stands of trees fronting Bath Road and does another segment have a more commercial feel with quality architecture, landscaping and signage?

  The focal points directly relate to the long sight lines where in the distance the terrain rises and the road turns. These locations might become areas to preserve – such as a stand of trees – or areas where a project may be developed or redeveloped with a visible icon like a tower or steeple. As shown in the analysis, three of the high point / focal points are existing intersections: Route 144, Old Bath Road, and Birch Point Road. These

intersections might become more defined "nodes" providing well-planned access to new development on land not directly fronting Bath Road. In summary, Bath Road is comprised of a series of long sight lines terminating at focal points. The sight lines and focal points should inform the Master Plan, helping to implement the goal of the Comprehensive Plan by creating a diverse and attractive Bath Road rather than strip development from the town line to the village.

- Mitchell noted that an interesting finding from the Sight Lines and Focal Points analysis is that the major high points are located at existing intersections: Route 144; Old Bath Road; and Birch Point Road. It was also noted that the study area has two low points at either end comprised of water: Montsweag Brook and Holbrook Pond.
- In terms of Environmental Constraints it was noted that there is developable land along Bath Road, but the information from the Environmental Constraints Map should ultimately be cross-referenced with other analysis maps and the Comprehensive Plan to develop a better understanding of how the corridor could develop. This information may help the SC formulate a vision for future development potential in the corridor.
- Mitchell presented a map showing that water and sewer serve the area. There are no known capacity issues for future growth scenarios.

- General Comments
  - The SC asked what are the permitting implications of existing LOS's? Are these a limiting factor to take into account now in terms of future land use / capacity? Will you be able to predict traffic mitigating needs from the concept planning and growth scenarios? It was noted there is a specific MaineDOT Traffic Movement Permit process that requires projects to meet LOS standards and to implement mitigation improvements, if necessary. In general, this process focuses on intersections, as intersections generally are the controlling factor in roadway capacity. New organized development patterns may create less curb cuts and more defined intersections that would improve access / capacity coordinating the required traffic improvements, distributing the cost of these improvements, and streamlining permitting for developers.
  - The SC noted that three curb cuts at the Irving Station are needed and closing a curb cut is not recommended.
  - The SC noted that the report/graphics mislabeled the Market Place Plaza.

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Meeting Notes
Bath Road Master Plan
December 17, 2012 Steering Committee
Prepared by: Tom Errico/Mitchell Rasor

Attendees

- Steering Committee
  - Wayne Averil
  - Don Jones
  - Gary Crosby
  - Peter West
  - Troy Cline
  - Heather Pitcher
  - Al Cohen
  - Ed Polewarczyk
  - Judy Colby
  - Laurie Smith
  - Misty Parker
  - Gerry Audibert
- Consultant Staff
  - Robert Faunce
  - Tom Errico
  - Mitchell Rasor

Agenda

- Introductions / Project Schedule
  - Misty reviewed the project schedule and noted that the next Steering Committee meeting would be in early February.
- Presentation of Traffic Volume Forecasts and Analysis
  - Tom presented information on the following:
    - Traffic Modeling Methodology.
    - Development assumptions for the Town of Wiscasset and the Bath Road Corridor.
    - PM Peak hour traffic volume changes between 2012 and 2030.
    - Anticipated Levels of service conclusions for intersections and the roadway segment in 2030.
    - Preliminary study area intersection improvement thoughts due to future traffic volume growth.
    - Example development types and their general access needs and traffic generation estimates.
  - Comments/questions from the Steering Committee:
    - What is the HCM 2-Lane analysis? Tom noted that it is an evaluation of the corridor as it relates to the ability of vehicles to travel the posted speed limit and opportunities to pass if slow vehicles are present. HCM is an acronym for Highway Capacity Manual, Transportation Research Board, the national publication on roadway capacity analysis.

        - In respect to the example of a Big Box Store located on Bath Road and the levels of service conclusions, it was noted that while they meet MaineDOT permit standards, some movements are approaching unacceptable levels and vehicle queue lengths are very long. It was also noted that the example only illustrates improvement needs at the driveway and that a traffic study would need to evaluate nearby intersections and the study could require off-site mitigation needs.
        - It was noted by staff member that it is not necessarily the size of the development, but the use that determines the level of traffic.
        - Question whether introducing a signal at an intersection like Birch Point Road would just draw more local traffic to that signal, creating more congestion in addition to any new demand in the area. It was noted that shifts in traffic routings could take place due to ease of access onto Bath Road.
        - Question regarding situations where two exit lanes are created for a development how driver can see passed the other car. Noted that in some cases there are ways to stagger stop lines to maintain sight lines.

- Mitchell presented the following:
    - A Review of the "Character Areas" Map
    - A Review of Relevant Comprehensive Plan Goals for Bath Road
        - There was a question as to whether to "grow as a tourist destination" is appropriate. It was noted that while Bath Road is a regional corridor, that it should not lose a sense of local history and uses and that it should be developed in a manner as to not distract from the historic village by becoming anywhere USA. Bath Road accommodates different needs, but it is still part of Wiscasset.
        - It was noted that the "Welcome to Wiscasset" sign is not at the town line, but as one enters the historic village.
    - Presentation of Potential Development Areas
        - There was confusion about the stream buffer noted on the handout. It was noted that there is a buffer and the color copy did not depict it.
        - It was asked what criteria went into selection of the "Potential Development Area" noted on the Map. It was explained that on a "planning level" land areas that did not have environmental constraints such as wetlands, streams, and steep slopes were identified as having potential for development.
        - It was noted that for other land that does have potential environmental constraints, permitting projects become more difficult and specifically needing permits with MaineDEP (Site

Location Permit) and a National Resource Protection (NRPA) permit.

- Presentation of Visuals from other Corridors
  - It was asked whether the "Corridor, Transition, Center" graphic is Wiscasset specific. Mitchell noted that it was not, but that it is relevant to Wiscasset if one thinks in terms of the transition from Village, Village 2, to Bath Road.

- Introduction to Steering Committee Visioning Exercise

  The basic structure of the exercise was presented: breakout groups with a facilitator, questions exercise, mapping exercise, and regroup to share thoughts. It was recommended to utilize the Comprehensive Plan goals and the Character Areas Map as resources. It was also noted that this is not a "site planning" exercise, but an exercise in looking ahead to the desired distribution and intensity of residential, retail, and non-retail uses – similar to creating a "future character areas map".

- Steering Committee Visioning Exercise
  - Question Exercise

    The Following questions were asked of the three groups:

    1. What are the first words that come to mind when you think of Bath Road?

       Summary of Responses:

       - Summer traffic
       - Dark
       - Barren-no trees
       - Accidents
       - Commercial – anywhere USA
       - Sign clutter
       - Way it used to be
       - Commercial
       - Restaurants
       - Way to go to Bath
       - Traffic
       - Franchise
       - Unsafe for pedestrians
       - Summer cyclists
       - Service businesses
       - Old local

2. What role does Bath Road play in the community?

   Summary of Responses:

   - Major corridor
   - Connection to coast and south
   - Business – services
   - Commercial
   - Thruway
   - Local destination for services – more so than historic village
   - Regional

3. What are the pros and cons of how Bath Road has developed?

   Summary of Responses:

   <u>Pros</u>
   - Slow growth
   - Most development has stayed
   - Still some open space / undeveloped land
   - Local businesses
   - Convenience businesses
   - Job opportunities
   - Good mix of uses serving community

   <u>Cons</u>
   - Random development – parcel by parcel
   - Accidents due to summer traffic
   - Traffic is haphazard
   - Hard to enter Bath Road from side roads
   - Difficult to make left turns to side roads
   - Road design – adds to congestion
   - 1950's / 1960's development planning skipped this area (in comparison to limited access on Route 1 in Woolwich)
   - Loss of rural aesthetic
   - Need more development along Bath Road

4. If you could go back thirty years, what would you have done differently in planning development along Bath Road?

   Summary of Responses:

   - Not a regional road – create bypass
   - More compact development
   - More development with fewer restrictions from State in terms of traffic permits
   - Bought more land for private development
   - Bought certain properties to protect rural character
   - Preserve / replace roadside vegetation
   - Reconsider lot size requirements
   - More connections between developments to reduce congestion

5. Looking forward, how would you encourage future development while meeting the goals of the adopted Comprehensive Plan?

   Summary of Responses:

   - Do not try and meet goals of the Comprehensive Plan – let development occur
   - Do not impose any design standards
   - This is problematic and complex
   - Resolve impact fee burden – particularly for smaller businesses
   - Try to find ways to protect certain lands from development

- Mapping Exercise

  Each breakout group was given a Potential Development Areas Map and asked to distribute retail, non-retail, and residential uses in the study area.

  Each group had to identify the location of:

  60 residential units (15 yellow stickies)
  50,000 square feet of retail (10 red stickies)
  100,000 square feet on non-retail (10 blue stickies)

Summary of Findings

Misty's Group:

Residential

Residential uses were clustered off of Bath Road in two locations: Along the developable area overlooking Montsweag Brook and in an infill area off of Page Avenue. Eight units of housing were located in two distinct areas to the east of east Bath Road. In no case were residential uses shown fronting Bath Road. In terms of connectivity, the cluster of homes off of Page Avenue included a new connection to Old Bath Road. It also appears that the cluster of homes overlooking Montsweag Brook would either have common access to a frontage parcel at the Bath Road / Route 144 intersection or Old Bath Road.

Non-Retail

All non-retail uses (100,000 sf) were clustered between the homes overlooking Montsweag Brook and the back of development fronting Bath Road. There was the assumption that this could be a type of business park with access to a frontage parcel at the Bath Road / Route 144 intersection or Old Bath Road.

Retail

Retail uses (50,000 sf) were clustered in three locations. The first location is on the land behind Monkey C, that also has frontage on Route 144. It appears that this development would have common access on Route 144, not Bath Road. The second retail cluster was midway along Bath Road to the north and south of Bath Road on either side of the Maine Yankee ROW. It is assumed this is frontage development. The third cluster of development was on the parcel of land to the west of the Birch Point / Bath Road intersection. Again, this assumes frontage access on to Bath Road.

Bob's Group:

Residential

Residential uses (60 units) were either clustered in the area off of Page Avenue, absorbed into underutilized subdivisions, or scattered along the eastern side of Bath Road – with the highest concentration behind Big Al's. Road networks were depicted showing that developments either used

existing streets or create new single points of access on to Bath Road, such as to the west of the Birch Point Road / Bath Road intersection. Only residential uses were distributed between the southern Old Bath Road / Bath Road intersection and the village. All retail and non-retail uses are located to the south of the Old Bath Road / Bath Road intersection.

Non-Retail

All the non-retail uses (100,000 sf) were located between Montsweag Brook and the development fronting Bath Road. It is noted on the map that there would be a common access point at a frontage parcel at the Bath Road / Route 144 intersection.

Retail

Retail uses (50,000 sf) were clustered in the "New Development" area, with the highest concentration behind Monkey C. Some of this development has frontage on Bath Road, but most of the development is accessed from Route 144.

A second cluster of retail is located to the north of Shaw's and shares one of the curb cuts to Shaw's.

The third cluster of retail is infill on the western side of Bath Road and is "infill" frontage development, but shares access to Bath Road with existing points of access.

Mitchell's Group

Residential

Residential uses (60 units) were either clustered in three locations to the west of Bath Road: Off of Page Avenue (providing access to Old Bath Road), to the south of the Maine Yankee ROW (providing access to Old Bath Road) and in a cluster overlooking Montsweag Brook with assumed access on to Old Bath Road.

Non-Retail

As with the retail uses, non-retail uses were dispersed along Bath Road, but not fronting directly on Bath Road. As with the other schemes the highest concentration of non-retail was the area behind the "New Development" (e.g. Irving, etc.) fronting Bath Road. This development as with the other schemes accessed Bath Road at the Route 144 intersection

and adjacent to the Irving Station. Other non-retail was located behind Wiscasset Ford, Big Al's, and to the west of the Birch Point Road/Bath Road intersection.

Retail

Of the three schemes, retail uses (50,000 sf) were most dispersed on this plan with all retail directly accessing Bath Road except for a development to the north of Maine Heritage Village with access to Old Bath Road (per the MaineDOT requirement for this parcel) and the potential for Route 144 access for development fronting Bath Road at the Route 144/Bath Road intersection. There was also a cluster of retail development at the Birch Point Road / Bath Road Intersection.

Common Themes:

Distribution:

Most uses, in general, were clustered in relationship to existing development trends. For example, all schemes showed a concentration of residential development off of Page Avenue. However, all three schemes showed a concentration of non-retail between Montsweag Brook and the existing development fronting Bath Road.

Most retail and non-retail uses were clustered near the Route 144/Bath Road intersection.

Access:

Residential and non-retail uses did not front on Bath Road. Opportunities were explored in every scheme to create connections between Bath Road, Old Bath Road, and Route 144.

Retail uses had the highest visibility along Bath Road, with some developments directly accessing Bath Road, but in many instances there shared common access points were identified.

Most retail and non-retail uses were clustered near the Route 144/Bath Road intersection.

Redevelopment / Infill

Besides Bob's scheme, which showed a unique approach to guiding growth to underutilized subdivisions (not redevelopment per se) no

redevelopment was show along Bath Road. New development was shown fronting Bath Road.

Preservation of Open Space

None of the three plans depicted certain lands to be protected/conserved. There was a general trend to not develop land to the east of Bath Road, but these areas are in general not visible from Bath Road and would not contribute to a rural aesthetic.

However, the fact that most of the plans suggest common access points for development, even frontage retail, suggests there is an opportunity to maintain existing natural features as a type of buffer.

Improvements to Existing Traffic Issues

The plans did not identify existing areas of concern in terms of congestion or safety. However, the fact that the distribution of most uses identified new connections (Old Bath Road and Route 144 or shared access to Bath Road) suggests that the Steering Committee was aware of the negative implications of lot-by-lot curb cuts the length of Bath Road and the positive implications of creating new connectivity or routing traffic to an existing intersection such as Route 144, Page Avenue or Birch Point Road.

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Meeting Notes
Bath Road Master Plan
February 13, 2013 Steering Committee
Prepared by: Tom Errico/Mitchell Rasor

Attendees

- Steering Committee
  - Wayne Averil
  - Don Jones
  - Gary Crosby
  - Peter West
  - Troy Cline
  - Heather Pitcher
  - Al Cohen
  - Ed Polewarczyk
  - Judy Colby
  - Laurie Smith
  - Misty Parker
  - Gerry Audibert
- Consultant Staff
  - Robert Faunce
  - Tom Errico
  - Mitchell Rasor

Agenda

- Introductions / Project Schedule
  - Misty reviewed the project schedule and noted that the Public Meeting would be in March given schedules and the need to prepare materials for the meeting.
- Review Study Mission Statement
  - Mitchell reviewed the Mission Statement. There were no comments.
- Review of Relevant Comprehensive Plan Goals for Bath Road
  - Mitchell reviewed the Mission Statement. There were no comments.
- Recap of Steering Committee Visioning Exercise
  - Mitchell reviewed the results of the Visioning Exercise – specifically the land use mapping exercise. SC member noted that the intensity of mixed uses at the Route 144 / Old Bath Road intersection was a common aspect of each plan.

- Draft Transportation Recommendations

  Tom presented draft transportation recommendations as it relates to: 1) Intersection Improvements; 2) Corridor Improvements; 3) New Road Connections; and 4) Access Management. Comments included:

  - SC member asked at what point is a signal required. What triggers this? Tom noted that there are specific criteria established by the Federal Highway Administration that generally include traffic volumes and crash history. These criteria must be me before a traffic signal is installed.

  - SC member asked if land takings were required to make improvements. It was noted that signalization and access management would occur in the existing right-of-way. However, conceptual connectivity would occur outside the right-of-way and ideally be guided to a common access point on Bath Road – such as a new signalized intersection at Route 144 or Birch Point Road.

  - A SC member asked why parallel connections are not located closer to the existing right-of-way rather than deeper in the property as shown. Tom noted that this would create safety issues with various turning movements in close vicinity to Bath Road. It was also noted that new parallel roads set deeper into properties adjacent to Bath Road would create new frontage, helping to tap the develop potential of the land.

  - A SC member noted that the northern entrance to the Marketplace Plaza provides better sight distances and the proposed improvements should direct people traveling north to use this entrance.

  - A SC member noted that it appears in the draft transportation plan that the new southbound lane into McDonald's appeared to place the vehicles leaving the McDonald's driveway directly in front of the oncoming traffic, leaving little window of opportunity for vehicles to move to the northbound lane. Tom explained that the exit lane from McDonald's would extend beyond the entrance to McDonald's and the vehicles would have clear sight lines to the north of the oncoming southbound traffic. This, in theory, would ease the difficulty of making left-turn egress movements.

  - As Tom proceeded to show access management issues and opportunities along Bath Road, when the presentation reached the Dunkin Donuts across from the Irving Station, a SC member noted that traffic movements in this area are complex and asked why a common

connection was not made at Oxhorn Road rather than creating curb cuts on Bath Road. Tom noted this could have been a possibility, but did not know the details of the permitting for the project.

- A discussion referencing the presentation regarding access issues with the Woolwich Cumberland Farms scenario was revisited. The project is only viable due to access to Route 127 at the back of the property – an example of a "parallel road" directing traffic to a common point at Route 1. Tom noted that vehicles may use the Route 127 / Route 1 intersection to head north on Route 1. A SC member noted that vehicles cannot turn north at the intersection and must proceed south to a loop road passing under Route 1 eventually connecting to the north bound lane. This access "can of worms" is the type of situation that can be avoided on Bath Road with planned access management.

- It was noted by a SC member that there are safety issues with school buses stopping across from Ames due to topography heading north, limiting the sight distance. There was a discussion regarding the regulations of where bus stops can be located, but that this specific situation needed to be addressed as soon as possible. It was noted that the buses are required to turn on the amber warning lights 200' before a bus stop.

- It was noted by a SC member that the pavement markings should be revised such that a dedicated left-turn lane into Ames is illustrated.

- A SC member noted that there is a discussion to have Concord Trailways access their property (Miss Wiscasset Diner) coming north and that any curb cut closures or even a reduction in size would impact bus movements as well as the required access for delivery trucks. It was noted that Norm's Auto, the Trading Post and the Miss Wiscasset Diner had numerous curb cuts and driveways while still maintaining the required access to the businesses. Tom noted that if Route 144 is signalized there are regulations regarding the distance to the nearest curb cut that must be met. A SC member noted that an access point off of Route 144 behind Norm's was often used as a way of avoiding the Route 144 / Bath Road intersection. Tom noted that in the concept street connectivity diagram an access road was shown behind all of these properties, which would allow vehicles to reach the Route 144 intersection in an orderly manner. Misty noted that Norm owns 26 acres behind his property and this concept parallel road would also help connectivity to his land.

- A SC member asked why the Bath Road / Beechnut Hill Road intersection was not proposed for signalization. Tom replied that it did not have traffic volume levels or crash problems that would warrant a traffic signal.

- Bob noted that the Town has installed sewer and water along Bath Road to support growth. This infrastructure has additional capacity. It is Bath Road and the intersections that are near or over capacity. Planning for access management will encourage and allow for growth along Bath Road and the back lands while improving the capacity of Bath Road.

- It was noted that the McDonald's site has an access easement to the development parcel to the north and that a parking lot connection was made between Big Al's and the car wash – both examples of planned access management (inter parcel connectivity).

- Laurie noted that growth is going to happen. Educating the community regarding the importance of access management to enable growth is important. Laurie asked do we want Bath Road to be "anywhere" or should we us the Master Plan to guide growth in a manner that retains and adds to the integrity of Bath Road as a place, not just another regional arterial?

- Draft Land Use and Design Recommendations

  - Mitchell presented the previous analysis of Bath Road including the "Character Areas Map", the "The Sight Lines and Focal Points Map" and the existing Zoning Map. The results of the SC Land Use Mapping exercise were also revisited.

  - Mitchell noted that there was a general relationship between the analyses, the goals of the Comprehensive Plan and the SC findings leading to three consistent areas of character and use. The proposed "zones" include:
    - "Bath Road Mixed Use" running from Woolwich to Old Bath Road south, west to Montsweag Brook and east to the residential neighborhoods. There are a number of undeveloped parcels in this area with development potential. This area is already seeing the greatest change. It was noted by the SC as having the greatest potential for a mix of uses – housing, retail, and non-retail – that could be supported by a new signalized intersection at Route 144, access to Old Bath Road, Route 144, and connections to existing frontage driveways such as the

northern entrance to Shaw's. Back lands would be accessed by a series of interconnected streets.

- "Bath Road Commercial" running north from Old Bath Road to Ward's Brook, but lacking the depth of the Bath Road Mixed Use due to residential development to the west and environmental restrictions to the east. No new connectivity behind the frontage development is envisioned. Thus the focus should be mitigating traffic and visual impacts with frontage development and redevelopment opportunities. This area was also noted for having straight rolling terrain and high points providing unbroken views of frontage development. This adds to the "strip" feel that should be mitigated with strategic access management and the preservation or enhancement of landscaping.
- "Village 3" running from Ward's Brook to the existing Village 2 District. This area – specifically between Grover Tire and Birch Point Road – already has a mix of local business, buildings set close to the road, and adjacent residential neighborhoods that could be expanded to help create a walkable "village" corridor node with streetscape improvements.
    - Misty noted that by encouraging high volume uses such as drive-thru's to locate elsewhere on Bath Road, congestion and back up traffic in the proposed "Village 3" will be relieved.
    - Tom noted that even if streetscape elements were introduced to this area such as sidewalks, crosswalks, street trees and streetlights, that bicycle lanes (shoulder space) will still be extended the length of Bath Road.
    - A new signalized intersection at Birch Point Road would make this area safer, provide access to new lands, and allow existing development to connect to a network of new streets allowing for easier movement throughout the area and opportunities for new frontage development. New parallel roads may also enable curb cut / driveway consolidation. An extension of Birch Point Road through undeveloped lands to Old Bath Road was central to the connectivity concept for this area.
    - Misty noted that like the proposed "Bath Road Mixed Use" that the proposed "Village 3" zone" has the potential for a depth of development to the east and west. New connectivity, including a Birch Point Road

signalized intersection would support this growth and mitigate traffic impacts.

- A SC member noted that the ideas for connectivity, access management and creating different zone areas make sense, but that it is important to meet with key stakeholders to discuss the recommendations in order to get their feedback and educate them on the benefits of the Master Plan recommendations. It was suggested that these meetings occur before the public meeting.

- Next Steps
  - Select a Public Meeting date
  - Meet with key stakeholders to discuss the concepts
  - Schedule a SC debrief meeting following the Public Meeting

Bath Road Master Plan
March 20, 2013 Public Meeting
Public Comments and Questions

- How is Route 1 Camden traffic dispersed
- Why use 2011 data and not current traffic counts
- 2012 counts much smaller – fewer backups in 2012
- What is the basis for the residential and jobs growth projections
- Why not do improvements now; why wait for development to occur first
- How effective are turning lanes
- What is the relationship between the comp plan future land use plan and the BRMP
- Comp plan supports connectivity
- Backage road is good for aesthetics, successful elsewhere
- Backage road on north side of Route 1 behind Shell, Irving, mall is a good idea
- Backage road on the south side of Route 1 above RR tracks will help industrial park, Westport traffic and access to Shaws
- Connect Routes 1 and 27 via Old Bath Road
- Use telephone ROW that travels behind the Yellowfront for backage road and to connect Routes 1 and 27
- Why not develop field on north side of Birch Point Road
- Protect the open approach to the village and concentrate development elsewhere
- Block the north end of Old Bath Road to protect integrity of residential area
- Bypass lane stops at diner and is unsafe
- Add right turn lane NB at Route 144
- Extend third lane through entire corridor
- Pursue landscaped medians
- Manage growth but allow for Wiscasset's best interests
- Provide developers some certainty
- Street lights – only one in corridor; it is near Dunkin Donuts and doesn't work
- Which is safer – continuous or intermittent third lane
- Raised islands prevent drivers from using third lane for passing
- Plan needs to meet highest standards and reflect town's heritage

APPENDIX E - TRAFFIC ANALYSIS

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	5	25	50	799	703	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.63	0.63	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	8	40	61	974	857	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1957	861	865			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1957	861	865			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	88	89	92			
cM capacity (veh/h)	65	352	787			

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total	48	1035	865
Volume Left	8	61	0
Volume Right	40	0	7
cSH	203	787	1700
Volume to Capacity	0.23	0.08	0.51
Queue Length 95th (ft)	22	6	0
Control Delay (s)	28.0	2.3	0.0
Lane LOS	D	A	
Approach Delay (s)	28.0	2.3	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	11	4	5	12	3	83	4	854	23	55	726	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.84	0.84	0.84	0.87	0.87	0.87	0.96	0.96	0.96
Hourly flow rate (vph)	15	6	7	14	4	99	5	982	26	57	756	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			1			2						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1936	1898	766	1881	1895	995	776			1008		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1936	1898	766	1881	1895	995	776			1008		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	48	91	98	70	94	67	99			92		
cM capacity (veh/h)	30	64	406	47	64	300	849			695		

Direction, Lane #	SE 1	NW 1	NE 1	SW 1	SW 2
Volume Total	28	117	1013	57	776
Volume Left	15	14	5	57	0
Volume Right	7	99	26	0	20
cSH	49	330	849	695	1700
Volume to Capacity	0.58	0.35	0.01	0.08	0.46
Queue Length 95th (ft)	55	39	0	7	0
Control Delay (s)	151.7	36.3	0.2	10.6	0.0
Lane LOS	F	E	A	B	
Approach Delay (s)	151.7	36.3	0.2	0.7	
Approach LOS	F	E			

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	65.0%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	52	76	920	52	70	679
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.86	0.86	0.95	0.95	0.92	0.92
Hourly flow rate (vph)	60	88	968	55	76	738
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1886	996			1023	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1886	996			1023	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	12	70			89	
cM capacity (veh/h)	69	299			682	

Direction, Lane #	WB 1	NE 1	SW 1	SW 2
Volume Total	149	1023	76	738
Volume Left	60	0	76	0
Volume Right	88	55	0	0
cSH	147	1700	682	1700
Volume to Capacity	1.01	0.60	0.11	0.43
Queue Length 95th (ft)	189	0	9	0
Control Delay (s)	136.8	0.0	10.9	0.0
Lane LOS	F		B	
Approach Delay (s)	136.8	0.0	1.0	
Approach LOS	F			

Intersection Summary			
Average Delay	10.7		
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	5	33	976	17	51	788
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.73	0.73	0.85	0.85	0.97	0.97
Hourly flow rate (vph)	7	45	1148	20	53	812
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2076	1158			1168	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2076	1158			1168	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	87	81			91	
cM capacity (veh/h)	55	241			605	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	52	1168	865
Volume Left	7	0	53
Volume Right	45	20	0
cSH	166	1700	605
Volume to Capacity	0.31	0.69	0.09
Queue Length 95th (ft)	31	0	7
Control Delay (s)	36.2	0.0	2.5
Lane LOS	E		A
Approach Delay (s)	36.2	0.0	2.5
Approach LOS	E		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	18	5	4	1028	836	22
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.72	0.72	0.91	0.91	0.98	0.98
Hourly flow rate (vph)	25	7	4	1130	853	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2003	864	876			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2003	864	876			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	62	98	99			
cM capacity (veh/h)	66	357	780			

Direction, Lane #	EB 1	NE 1	SW 1
Volume Total	32	1134	876
Volume Left	25	4	0
Volume Right	7	0	22
cSH	80	780	1700
Volume to Capacity	0.40	0.01	0.52
Queue Length 95th (ft)	39	0	0
Control Delay (s)	76.8	0.2	0.0
Lane LOS	F	A	
Approach Delay (s)	76.8	0.2	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	17	29	60	905	830	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.63	0.63	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	27	46	73	1104	1012	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2276	1026	1040			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2276	1026	1040			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	32	84	89			
cM capacity (veh/h)	40	282	676			

Direction, Lane #	SE 1	NE 1	SW 1
Volume Total	73	1177	1040
Volume Left	27	73	0
Volume Right	46	0	28
cSH	87	676	1700
Volume to Capacity	0.84	0.11	0.61
Queue Length 95th (ft)	111	9	0
Control Delay (s)	140.7	3.9	0.0
Lane LOS	F	A	
Approach Delay (s)	140.7	3.9	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	106.9%	ICU Level of Service	G
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	12	4	6	13	3	91	4	973	25	61	829	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.84	0.84	0.84	0.87	0.87	0.87	0.96	0.96	0.96
Hourly flow rate (vph)	17	6	8	15	4	108	5	1118	29	64	864	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			1			2						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2199	2158	874	2140	2154	1133	885			1147		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2199	2158	874	2140	2154	1133	885			1147		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	87	98	47	92	57	99			90		
cM capacity (veh/h)	16	43	352	29	43	249	773			616		

Direction, Lane #	SE 1	NW 1	NE 1	SW 1	SW 2
Volume Total	31	127	1152	64	885
Volume Left	17	15	5	64	0
Volume Right	8	108	29	0	22
cSH	27	212	773	616	1700
Volume to Capacity	1.16	0.60	0.01	0.10	0.52
Queue Length 95th (ft)	92	86	0	9	0
Control Delay (s)	441.3	59.4	0.2	11.5	0.0
Lane LOS	F	F	A	B	
Approach Delay (s)	441.3	59.4	0.2	0.8	
Approach LOS	F	F			

Intersection Summary				
Average Delay	9.8			
Intersection Capacity Utilization	71.9%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	101	127	1028	67	77	754
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.86	0.86	0.95	0.95	0.92	0.92
Hourly flow rate (vph)	117	148	1082	71	84	820
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		2				
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2104	1117			1153	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2104	1117			1153	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	42			86	
cM capacity (veh/h)	49	254			610	

Direction, Lane #	WB 1	NE 1	SW 1	SW 2
Volume Total	265	1153	84	820
Volume Left	117	0	84	0
Volume Right	148	71	0	0
cSH	90	1700	610	1700
Volume to Capacity	2.95	0.68	0.14	0.48
Queue Length 95th (ft)	644	0	12	0
Control Delay (s)	980.0	0.0	11.8	0.0
Lane LOS	F		B	
Approach Delay (s)	980.0	0.0	1.1	
Approach LOS	F			

Intersection Summary			
Average Delay	112.4		
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	40	122	1152	60	66	973
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.73	0.73	0.85	0.85	0.97	0.97
Hourly flow rate (vph)	55	167	1355	71	68	1003
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2530	1391			1426	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2530	1391			1426	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	5			86	
cM capacity (veh/h)	26	176			483	

Direction, Lane #	NW 1	NE 1	SW 1
Volume Total	222	1426	1071
Volume Left	55	0	68
Volume Right	167	71	0
cSH	73	1700	483
Volume to Capacity	3.02	0.84	0.14
Queue Length 95th (ft)	Err	0	12
Control Delay (s)	Err	0.0	5.3
Lane LOS	F		A
Approach Delay (s)	Err	0.0	5.3
Approach LOS	F		

Intersection Summary			
Average Delay	818.2		
Intersection Capacity Utilization	121.8%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	23	12	10	1243	982	29
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.72	0.72	0.91	0.91	0.98	0.98
Hourly flow rate (vph)	32	17	11	1366	1002	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2405	1017	1032			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2405	1017	1032			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	12	94	98			
cM capacity (veh/h)	36	291	681			

Direction, Lane #	EB 1	NE 1	SW 1
Volume Total	49	1377	1032
Volume Left	32	11	0
Volume Right	17	0	30
cSH	52	681	1700
Volume to Capacity	0.93	0.02	0.61
Queue Length 95th (ft)	102	1	0
Control Delay (s)	230.6	0.9	0.0
Lane LOS	F	A	
Approach Delay (s)	230.6	0.9	0.0
Approach LOS	F		

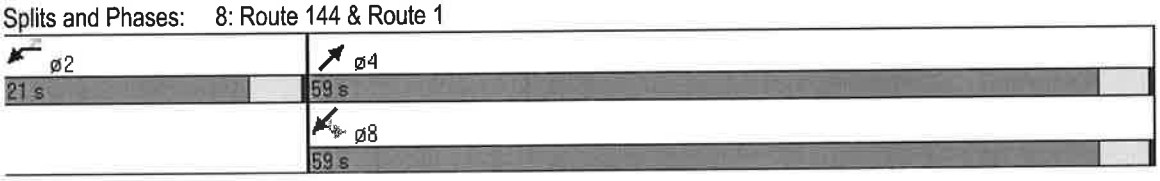
Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

Lane Group	WBL	WBR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	101	127	1028	67	77	754
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	100		0	175	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.992			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1752	1615	1847	0	1787	1845
Flt Permitted	0.950				0.113	
Satd. Flow (perm)	1752	1615	1847	0	213	1845
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		137	9			
Link Speed (mph)	30		30			30
Link Distance (ft)	816		834			1762
Travel Time (s)	18.5		19.0			40.0
Peak Hour Factor	0.86	0.86	0.95	0.95	0.92	0.92
Heavy Vehicles (%)	3%	0%	2%	3%	1%	3%
Adj. Flow (vph)	117	148	1082	71	84	820
Shared Lane Traffic (%)						
Lane Group Flow (vph)	117	148	1153	0	84	820
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type		Perm			Perm	
Protected Phases	2		4			8
Permitted Phases		2			8	

Lane Group	WBL	WBR	NET	NER	SWL	SWT
Detector Phase	2	2	4		8	8
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	21.0	21.0	59.0	0.0	59.0	59.0
Total Split (%)	26.3%	26.3%	73.8%	0.0%	73.8%	73.8%
Maximum Green (s)	17.0	17.0	55.0		55.0	55.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Min	Min	None		None	None
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	10.1	10.1	49.9		49.9	49.9
Actuated g/C Ratio	0.15	0.15	0.73		0.73	0.73
v/c Ratio	0.45	0.42	0.85		0.54	0.61
Control Delay	34.7	10.8	15.4		21.4	7.1
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	34.7	10.8	15.4		21.4	7.1
LOS	C	B	B		C	A
Approach Delay	21.4		15.4			8.4
Approach LOS	C		B			A

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 68.3			
Natural Cycle: 80			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 13.3		Intersection LOS: B	
Intersection Capacity Utilization 76.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Route 144 & Route 1



Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Volume (veh/h)	17	29	60	905	830	23
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.63	0.63	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	27	46	73	1104	1012	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	2262	1012	1040			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2262	1012	1040			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	34	84	89			
cM capacity (veh/h)	41	288	676			

Direction, Lane #	SE 1	SE 2	NE 1	NE 2	SW 1	SW 2
Volume Total	27	46	73	1104	1012	28
Volume Left	27	0	73	0	0	0
Volume Right	0	46	0	0	0	28
cSH	41	288	676	1700	1700	1700
Volume to Capacity	0.66	0.16	0.11	0.65	0.60	0.02
Queue Length 95th (ft)	61	14	9	0	0	0
Control Delay (s)	197.2	19.9	11.0	0.0	0.0	0.0
Lane LOS	F	C	B			
Approach Delay (s)	85.4		0.7		0.0	
Approach LOS	F					

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

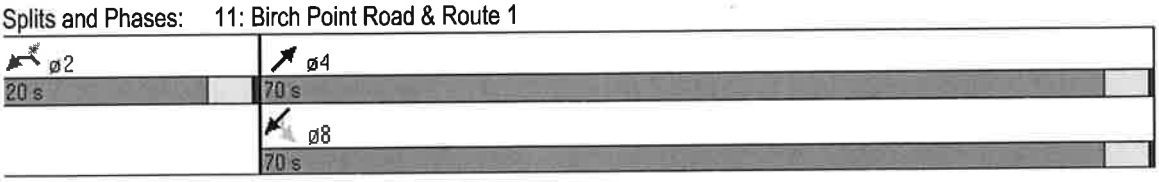
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	40	122	1152	60	66	973
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	150		0	150	
Storage Lanes	1	1		0	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850	0.993			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	1615	1869	0	1805	1881
Flt Permitted	0.950				0.061	
Satd. Flow (perm)	1805	1615	1869	0	116	1881
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		94	8			
Link Speed (mph)	30		30			30
Link Distance (ft)	2039		8162			3354
Travel Time (s)	46.3		185.5			76.2
Peak Hour Factor	0.73	0.73	0.85	0.85	0.97	0.97
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	55	167	1355	71	68	1003
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	167	1426	0	68	1003
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2		1	2
Detector Template	Left	Right	Thru		Left	Thru
Leading Detector (ft)	20	20	100		20	100
Trailing Detector (ft)	0	0	0		0	0
Detector 1 Position(ft)	0	0	0		0	0
Detector 1 Size(ft)	20	20	6		20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type		Perm			Perm	
Protected Phases	2		4			8
Permitted Phases		2			8	

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Detector Phase	2	2	4		8	8
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0
Minimum Split (s)	20.0	20.0	20.0		20.0	20.0
Total Split (s)	20.0	20.0	70.0	0.0	70.0	70.0
Total Split (%)	22.2%	22.2%	77.8%	0.0%	77.8%	77.8%
Maximum Green (s)	16.0	16.0	66.0		66.0	66.0
Yellow Time (s)	3.5	3.5	3.5		3.5	3.5
All-Red Time (s)	0.5	0.5	0.5		0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Recall Mode	Min	Min	None		None	None
Walk Time (s)	5.0	5.0	5.0		5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0		11.0	11.0
Pedestrian Calls (#/hr)	0	0	0		0	0
Act Effct Green (s)	9.7	9.7	66.1		66.1	66.1
Actuated g/C Ratio	0.12	0.12	0.79		0.79	0.79
v/c Ratio	0.26	0.62	0.97		0.75	0.68
Control Delay	36.3	26.7	27.6		58.7	7.6
Queue Delay	0.0	0.0	0.0		0.0	0.0
Total Delay	36.3	26.7	27.6		58.7	7.6
LOS	D	C	C		E	A
Approach Delay	29.1		27.6			10.9
Approach LOS	C		C			B
Queue Length 50th (ft)	27	36	471		13	170
Queue Length 95th (ft)	48	65	#1023		#66	406
Internal Link Dist (ft)	1959		8082			3274
Turn Bay Length (ft)		150			150	
Base Capacity (vph)	321	364	1476		91	1484
Starvation Cap Reductn	0	0	0		0	0
Spillback Cap Reductn	0	0	0		0	0
Storage Cap Reductn	0	0	0		0	0
Reduced v/c Ratio	0.17	0.46	0.97		0.75	0.68

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 83.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 21.1 Intersection LOS: C
Intersection Capacity Utilization 78.5% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Birch Point Road & Route 1



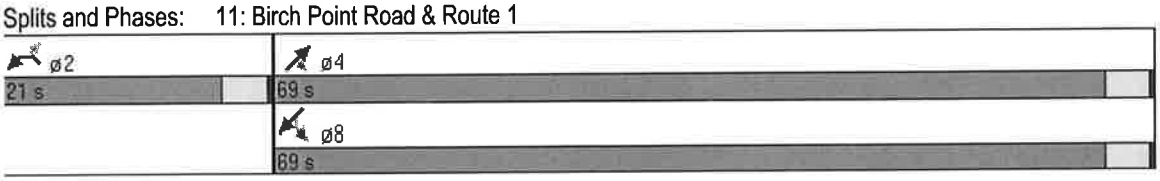
Lane Group	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (vph)	40	122	1152	60	66	973
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	150		0	150	
Storage Lanes	1	1		1	1	
Taper Length (ft)	25	25		25	25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1805	1615	1881	1615	1805	1881
Flt Permitted	0.950				0.062	
Satd. Flow (perm)	1805	1615	1881	1615	118	1881
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		90		71		
Link Speed (mph)	30		30			30
Link Distance (ft)	2039		8162			3354
Travel Time (s)	46.3		185.5			76.2
Peak Hour Factor	0.73	0.73	0.85	0.85	0.97	0.97
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	55	167	1355	71	68	1003
Shared Lane Traffic (%)						
Lane Group Flow (vph)	55	167	1355	71	68	1003
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type		Perm		Perm	Perm	
Protected Phases	2		4			8
Permitted Phases		2		4	8	

Lane Group	NWL	NWR	NET	NER	SWL	SWT
Detector Phase	2	2	4	4	8	8
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	21.0	21.0	69.0	69.0	69.0	69.0
Total Split (%)	23.3%	23.3%	76.7%	76.7%	76.7%	76.7%
Maximum Green (s)	17.0	17.0	65.0	65.0	65.0	65.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Min	Min	None	None	None	None
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0	0	0	0	0
Act Effct Green (s)	9.8	9.8	64.1	64.1	64.1	64.1
Actuated g/C Ratio	0.12	0.12	0.78	0.78	0.78	0.78
v/c Ratio	0.26	0.61	0.92	0.06	0.74	0.68
Control Delay	35.5	27.0	20.7	0.9	57.3	7.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	35.5	27.0	20.7	0.9	57.3	7.8
LOS	D	C	C	A	E	A
Approach Delay	29.1		19.8			11.0
Approach LOS	C		B			B
Queue Length 50th (ft)	26	38	388	0	13	172
Queue Length 95th (ft)	48	66	#931	8	#64	410
Internal Link Dist (ft)	1959		8082			3274
Turn Bay Length (ft)		150			150	
Base Capacity (vph)	345	382	1477	1283	93	1477
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.44	0.92	0.06	0.73	0.68

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 81.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.92
Intersection Signal Delay: 17.1 Intersection LOS: B
Intersection Capacity Utilization 74.9% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 11: Birch Point Road & Route 1



SB Future Volumes

HCS 2010: Two-Lane Highways Release 6.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	A. Greenlaw
Agency/Co.	TYLI
Date Performed	12/14/2012
Analysis Time Period	PM
Highway	Route 1
From/To	Route 144 to Flood Lane (N)
Jurisdiction	
Analysis Year	Existing
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	2	%
Grade: Length	-	mi	% No-passing zones	88	%
Up/down	-	%	Access point density	39	/mi

Analysis direction volume, Vd 985 veh/h
Opposing direction volume, Vo 1250 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	1.000		1.000	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	1119	pc/h	1420	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	9.8	mi/h
Free-flow speed, FFSd	50.3	mi/h
Adjustment for no-passing zones, fnp	0.7	mi/h
Average travel speed, ATSd	29.8	mi/h
Percent Free Flow Speed, PFFS	59.4	%

Percent Time-Spent-Following

SB Future Volumes

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	1119	pc/h	1420	pc/h
Base percent time-spent-following,(note-4) BPTSFd	84.2	%		
Adjustment for no-passing zones, fnp	10.9			
Percent time-spent-following, PTSFd	89.0	%		

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.66	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	29.8	mi/h
Percent time-spent-following, PTSFd (from above)	89.0	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3

SB Future Volumes

Flow rate in outside lane, vOL	1119.3
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.81
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

NB Existing Volumes

HCS 2010: Two-Lane Highways Release 6.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	A. Greenlaw
Agency/Co.	TYLI
Date Performed	12/14/2012
Analysis Time Period	PM
Highway	Route 1
From/To	Route 144 to Flood Lane (N)
Jurisdiction	
Analysis Year	Existing
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	2	%
Grade: Length	-	mi	% No-passing zones	82	%
Up/down	-	%	Access point density	39	/mi

Analysis direction volume, Vd 1030 veh/h
Opposing direction volume, Vo 945 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	1.000		1.000	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	1170	pc/h	1074	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h

Estimated Free-Flow Speed:

Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	9.8	mi/h
Free-flow speed, FFSd	50.3	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATSd	32.0	mi/h
Percent Free Flow Speed, PFFS	63.6	%

Percent Time-Spent-Following

NB Existing Volumes

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	1170	pc/h	1074	pc/h
Base percent time-spent-following,(note-4) BPTSFd	83.0	%		
Adjustment for no-passing zones, fnp	14.8			
Percent time-spent-following, PTSFd	90.7	%		

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.69	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	32.0	mi/h
Percent time-spent-following, PTSFd (from above)	90.7	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3

NB Existing Volumes

Flow rate in outside lane, vOL	1170.5
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.83
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

SB Existing Volumes

HCS 2010: Two-Lane Highways Release 6.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	A. Greenlaw
Agency/Co.	TYLI
Date Performed	12/14/2012
Analysis Time Period	PM
Highway	Route 1
From/To	Route 144 to Flood Lane (N)
Jurisdiction	
Analysis Year	Existing
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	2	%
Grade: Length	-	mi	% No-passing zones	88	%
Up/down	-	%	Access point density	39	/mi

Analysis direction volume, Vd 945 veh/h
Opposing direction volume, Vo 1030 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	1.000		1.000	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	1074	pc/h	1170	pc/h

Free-Flow Speed from Field Measurement:

Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	9.8	mi/h
Free-flow speed, FFSd	50.3	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATSd	31.9	mi/h
Percent Free Flow Speed, PFFS	63.6	%

Percent Time-Spent-Following

SB Existing Volumes

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	1074	pc/h	1170	pc/h
Base percent time-spent-following,(note-4) BPTSFd	81.5	%		
Adjustment for no-passing zones, fnp	14.9			
Percent time-spent-following, PTSFd	88.6	%		

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.63	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	31.9	mi/h
Percent time-spent-following, PTSFd (from above)	88.6	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3

SB Existing Volumes

Flow rate in outside lane, vOL	1073.9
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.79
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.

NB Future Volumes

HCS 2010: Two-Lane Highways Release 6.3

Phone: Fax:
E-Mail:

Directional Two-Lane Highway Segment Analysis

Analyst	A. Greenlaw
Agency/Co.	TYLI
Date Performed	12/14/2012
Analysis Time Period	PM
Highway	Route 1
From/To	Route 144 to Flood Lane (N)
Jurisdiction	
Analysis Year	Existing
Description	

Input Data

Highway class	Class 1		Peak hour factor, PHF	0.88	
Shoulder width	6.0	ft	% Trucks and buses	2	%
Lane width	12.0	ft	% Trucks crawling	0.0	%
Segment length	0.0	mi	Truck crawl speed	0.0	mi/hr
Terrain type	Level		% Recreational vehicles	2	%
Grade: Length	-	mi	% No-passing zones	82	%
Up/down	-	%	Access point density	39	/mi

Analysis direction volume, Vd 1250 veh/h
Opposing direction volume, Vo 985 veh/h

Average Travel Speed

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adj. factor,(note-5) fHV	1.000		1.000	
Grade adj. factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	1420	pc/h	1119	pc/h

Free-Flow Speed from Field Measurement:		
Field measured speed,(note-3) S FM	-	mi/h
Observed total demand,(note-3) V	-	veh/h
Estimated Free-Flow Speed:		
Base free-flow speed,(note-3) BFFS	60.0	mi/h
Adj. for lane and shoulder width,(note-3) fLS	0.0	mi/h
Adj. for access point density,(note-3) fA	9.8	mi/h
Free-flow speed, FFSd	50.3	mi/h
Adjustment for no-passing zones, fnp	0.9	mi/h
Average travel speed, ATSd	29.7	mi/h
Percent Free Flow Speed, PFFS	59.1	%

Percent Time-Spent-Following

NB Future Volumes

Direction	Analysis(d)		Opposing (o)	
PCE for trucks, ET	1.0		1.0	
PCE for RVs, ER	1.0		1.0	
Heavy-vehicle adjustment factor, fHV	1.000		1.000	
Grade adjustment factor,(note-1) fg	1.00		1.00	
Directional flow rate,(note-2) vi	1420	pc/h	1119	pc/h
Base percent time-spent-following,(note-4) BPTSFd	87.8	%		
Adjustment for no-passing zones, fnp	10.8			
Percent time-spent-following, PTSFd	93.8	%		

Level of Service and Other Performance Measures

Level of service, LOS	E	
Volume to capacity ratio, v/c	0.84	
Peak 15-min vehicle-miles of travel, VMT15	0	veh-mi
Peak-hour vehicle-miles of travel, VMT60	0	veh-mi
Peak 15-min total travel time, TT15	0.0	veh-h
Capacity from ATS, CdATS	1700	veh/h
Capacity from PTSF, CdPTSF	1700	veh/h
Directional Capacity	1700	veh/h

Passing Lane Analysis

Total length of analysis segment, Lt	0.0	mi
Length of two-lane highway upstream of the passing lane, Lu	-	mi
Length of passing lane including tapers, Lpl	-	mi
Average travel speed, ATSd (from above)	29.7	mi/h
Percent time-spent-following, PTSFd (from above)	93.8	
Level of service, LOSd (from above)	E	

Average Travel Speed with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for average travel speed, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for average travel speed, Ld	-	mi
Adj. factor for the effect of passing lane on average speed, fpl	-	
Average travel speed including passing lane, ATSpl	-	
Percent free flow speed including passing lane, PFFSpl	0.0	%

Percent Time-Spent-Following with Passing Lane

Downstream length of two-lane highway within effective length of passing lane for percent time-spent-following, Lde	-	mi
Length of two-lane highway downstream of effective length of the passing lane for percent time-spent-following, Ld	-	mi
Adj. factor for the effect of passing lane on percent time-spent-following, fpl	-	
Percent time-spent-following including passing lane, PTSFpl	-	%

Level of Service and Other Performance Measures with Passing Lane

Level of service including passing lane, LOSpl	E	
Peak 15-min total travel time, TT15	-	veh-h

Bicycle Level of Service

Posted speed limit, Sp	45
Percent of segment with occupied on-highway parking	0
Pavement rating, P	3

NB Future Volumes

Flow rate in outside lane, vOL	1420.5
Effective width of outside lane, We	24.00
Effective speed factor, St	4.42
Bicycle LOS Score, BLOS	2.93
Bicycle LOS	C

Notes:
1. Note that the adjustment factor for level terrain is 1.00, as level terrain is one of the base conditions. For the purpose of grade adjustment, specific dewngrade segments are treated as level terrain.
2. If vi (vd or vo) >= 1,700 pc/h, terminate analysis-the LOS is F.
3. For the analysis direction only and for v>200 veh/h.
4. For the analysis direction only.
5. Use alternative Exhibit 15-14 if some trucks operate at crawl speeds on a specific downgrade.