

EXECUTIVE SUMMARY

The City of South Burlington and the Chittenden County Metropolitan Planning Organization (CCMPO) have commissioned the Dorset Street Corridor Study to analyze future conditions along Dorset Street between Kennedy Drive and Barstow Road/Cheesefactory Road. This study examines future conditions under various scenarios, taking into account planned developments and transportation improvements around the corridor such as the impacts of new east-west streets. Through a thorough analysis of existing and future conditions and solicitation of public input, this study recommends specific short-term and long-term actions which can be taken to support the City's goals and improve mobility and accessibility along corridor.

This report contains the following three sections:

- **Part I: Existing Conditions:** This section describes the land use and roadway system context for the study intersections, documents existing roadway, bicycle, and pedestrian facilities, evaluates congestion under existing and future conditions, evaluates safety, and provides a screening of natural, cultural, and historic resources that may affect design alternatives.
- **Part II: Future Demand:** This section explains the assumptions and methodology used to estimate future demand on the transportation network and discusses the results of the analysis.
- **Part III: Alternatives Analysis and Recommendations:** This section identifies both transportation and land use recommendations that were developed and evaluated relative to the issues identified in the assessment of existing and future conditions and input from City and staff, residents, and local stakeholders.

SUMMARY OF EXISTING CONDITIONS

Key findings from the existing conditions assessment include the following:

- A number of east-west connections along the Dorset Street corridor were identified by the 2001 CCMPO East-West Road Study¹. These include extending Swift Street and Old Cross Road east to VT 116/Hinesburg Road and extending Midland Avenue west to Spear Street.
- The 3,200 acre Southeast Quadrant is estimated to be approaching 50% buildout with approximately 1,805 residential units on the ground or in the development process, and 2,071 development rights remaining.

¹ CCMPO, *South Burlington Planned East-West Roads Analysis-DRAFT*, March 19, 2001.



- There is currently no regular public transportation service in the corridor. As the density of the corridor increases, transit service should be expanded into the study area when and where possible.
- Travel demand on Dorset Street is typical of AM and PM commuting patterns, with the majority of traffic traveling northbound in the AM and southbound in the PM.
- A vehicle crash analysis of the corridor indicates that the Dorset Street intersections with Kennedy and Swift, as well as the segment of Dorset Street between Kennedy and the I-89 overpass meet the criteria of a High Crash Location.
 - Rear-end collisions are predominant at both the Kennedy and Swift intersections.
 - At the Swift Street intersection, the prevalent crash type involves eastbound left-turning vehicles and westbound through traffic.
 - Field observations and automatic traffic recorder data suggest that there may be an issue of vehicles traveling at unsafe speeds along Dorset Street south of Swift Street.
- There are currently no serious access management problems in the study area, although a continued effort should be made to manage access through the subdivision and site plan review process.

SUMMARY OF FUTURE CONDITIONS

This section of the report provides traffic forecasts for 2008 and 2013 conditions that account for anticipated development along and near the Dorset Street corridor and for a set of assumed transportation network improvements. These assumptions were entered into the Chittenden County Transportation Model, which was then used to model the following scenarios:

1. **2008 PM Peak Hour Base Scenario:** Existing transportation network with the proposed residential and commercial land uses forecast to be in place by 2008;
Result: Level-of-Service (LOS) is acceptable at all study intersections under the 2008 base scenario except for the Dorset-Kennedy intersection.
2. **2013 PM Peak Hour Base Scenario:** Existing transportation network plus the new east-west road connections and the proposed residential and commercial land uses forecast to be in place by 2013.
Result: With the projected development and base transportation network assumptions in place, LOS E or F is projected for at least one approach at eight of the nine analyzed intersections.



SUMMARY OF RECOMMENDATIONS AND IMPLEMENTATION PLAN

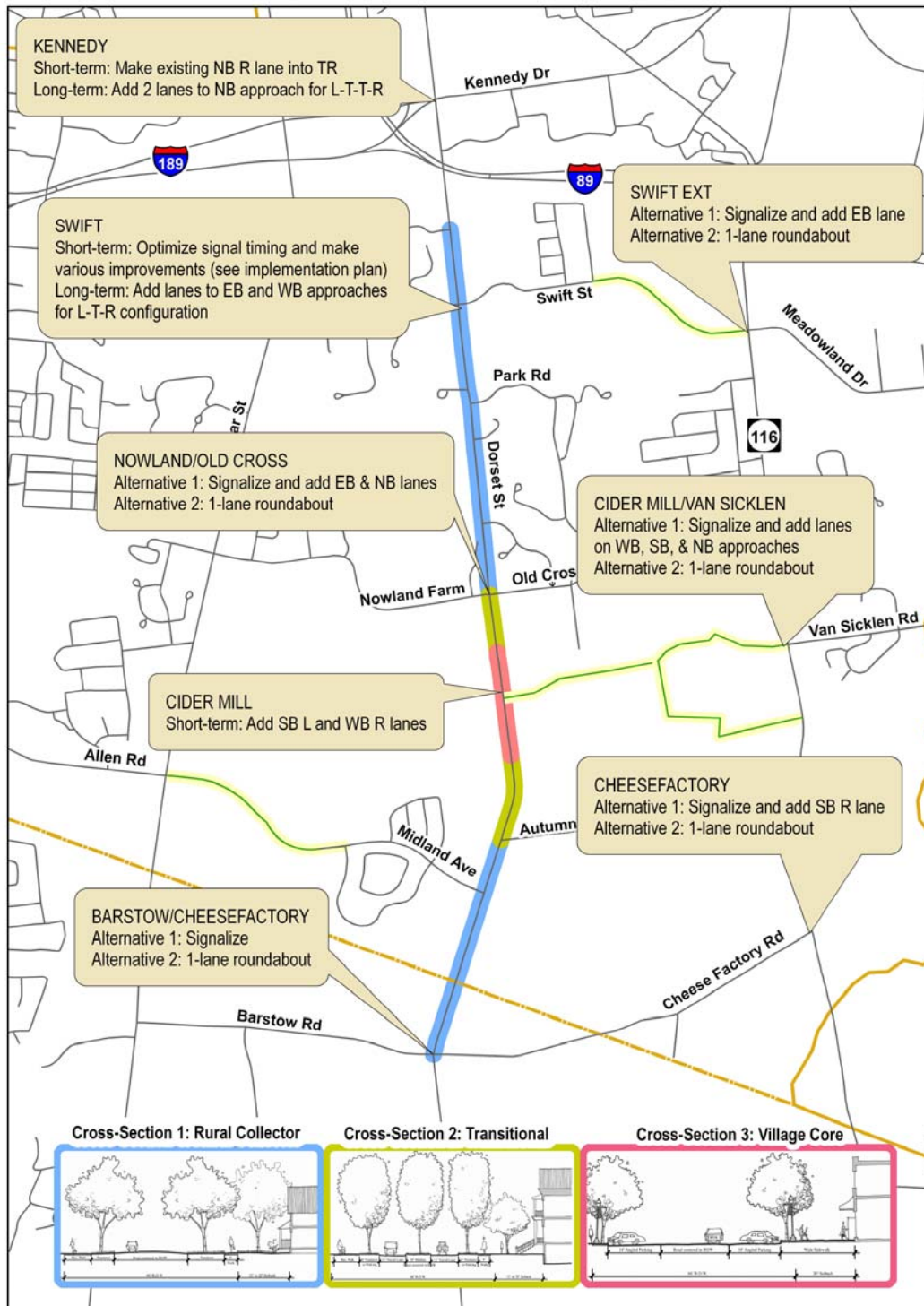
This section of the report presents a series of corridor and intersection alternatives and recommendations developed through a comprehensive review of existing and future conditions and public review and comment. These short- and long-term alternatives (summarized in the map below) were assessed using the 2013 base scenario (described in Section 2.0) which takes into account future land use and transportation network improvements. The section ends with an implementation plan which identifies next steps to implement the identified recommendations.

Both short- and long-term recommendations were developed to improve the intersections identified as deficient in the 2013 Base Scenario (Section 2.2). The table below summarizes the impacts that these improvements have on the level-of-service for each of the intersections¹.

¹ All signalized intersection recommendations assume optimized timings and cycle lengths.



Summary of Recommendations



Level of Service Impacts of Recommendations

	Overall	Dorset Street		Side Roads	
		Northbound	Southbound	Eastbound	Westbound
Dorset Street Intersections	LOS	LOS	LOS	LOS	LOS
Kennedy					
2013 Baseline	F	F	F	E	F
Short Term: Make existing R lane into TR for LT-TR configuration	F	F	E	E	E
Long Term: Add two lanes to create L-T-T-R configuration	E	E	E	E	E
Swift					
2013 Baseline	C	B	B	C	D
Short Term: Optimize signal timing	C	B	C	C	C
Long Term: Change NB config to LT-R and WB config to L-TR	B	B	B	B	C
Nowland/Old Cross					
2013 Baseline	*	A	*	F	A
Long Term Alternative 1: Signalize intersection and add EB lane for L-TR configuration	A	A	A	B	A
Long Term Alternative 2: 1-lane Roundabout	A	A	A	B	A
Cider Mill					
2013 Baseline	*	*	A		C
Short Term: Add SB L and WB R lanes	*	*	A		C
Midland					
2013 Baseline	*	A	*	B	
Barstow/Cheesefactory					
2013 Baseline	E	C	D	D	F
Long Term Alternative 1: Signalize intersection (maintain existing LTR lane configuration)	B	B	B	A	B
Long Term Alternative 2: 1-lane Roundabout	A	A	A	A	A
	Overall	VT 116/Hinesburg Road		Side Roads	
		Northbound	Southbound	Eastbound	Westbound
VT 116/Hinesburg Road Intersections	LOS	LOS	LOS	LOS	LOS
Swift Street extension					
2013 Baseline	*	A	*	E	A
Long Term Alternative 1: Signalize intersection; add EB R and re-stripe for NB L and SB R lanes	A	A	A	C	A
Long Term Alternative 2: 1-lane Roundabout	A	A	A	B	A
Cider Mill/Van Sicklen					
2013 Baseline	*	A	A	F	F
Long Term Alternative 1: Signalize intersection, add L turn lanes on WB and SB approaches, R lane on NB approach	B	A	B	A	B
Long Term Alternative 2: 1-lane Roundabout	B	A	D	B	A
Cider Mill II					
2013 Baseline	*	*	*	C	
Cheesefactory					
2013 Baseline	*	A	*	F	
Long Term Alternative 1: Signalize intersection; add SB R lane	A	A	A	B	
Long Term Alternative 2: 1-lane Roundabout	A	A	A	B	

*At stop controlled intersections, LOS is only provided for side street approaches and left turns from the main line.

Note: All intersections with signals have been optimized.



The implementation plan (presented in the following table) provides a summary of critical information and next steps for realizing the recommendations made in this report. The plan is broken into short-term recommendations, long-term recommendations, and corridor-wide recommendations. The plan provides an order-of-magnitude cost estimate which includes right-of-way, engineering, and construction costs in 2007 dollars. Potential funding sources are also identified (discussed in Section 3.4) as well as the agency(ies) which should take the lead on the project and potential partners. Next steps provide the link between this plan and its realization.



Location	Short-Term Recommendation (less than 5 years)	Capital Cost	Potential Funding Sources	Lead	Potential Partners	Next Steps
NB Dorset-Kennedy	Make existing R lane into TR for LT-TR configuration	\$1,500	STP	City/ VTrans	CCMPO, VTrans	Re-stripe with next paving or maintenance project. Adjust signs as necessary.
Dorset-Swift	-Move the westbound Swift Street stop-bar behind the crosswalk so that vehicles do not queue on the crosswalk. -Add queue detectors on westbound Swift Street approach to improve traffic flow after major events at Dorset Park. -Increase the curb radii on the northeast and southeast corners of intersection to facilitate safer turning movements. -Improve lane designation signage on northbound and southbound Dorset Street approaches. -Flatten vertical alignment on eastbound approach to improve sight distances. -Replace missing pedestrian signal and actuator button on southeast corner. -Optimize signal timing.	Signal optimization: \$3,500 Other improvements: To be determined	STP	City/ VTrans	CCMPO, VTrans	Develop preliminary plans.
Dorset-Cider Mill	Add SB L and WB R lanes	\$20,000	STP, Transportation Impact Fees	City/ VTrans	CCMPO, VTrans, Cider Mill Developer	Implementation would not take place until Cider Mill connector is built. Identify potential right-of-way issues, develop preliminary plans.
Location	Long-Term Recommendation (more than 5 years)	Capital Cost	Potential Funding Sources	Lead	Potential Partners	Next Steps
Dorset-Kennedy NB Approach	Add two lanes to create L-T-T-R configuration	\$230,000	STP	City/ VTrans	CCMPO, VTrans	Identify potential right-of-way issues, develop preliminary plans.
Dorset-Swift	Add one lane to EB & WB approaches to provide L-T-R configurations	\$230,000	STP	City/ VTrans	CCMPO, VTrans	Identify potential right-of-way issues, develop preliminary plans.
Dorset-Nowland Farms/Old Cross	Alternative 1: Signalize intersection and add EB & NB lanes for L-TR configurations	\$480,000	STP, Transportation Impact Fees, Bond	City/ VTrans	CCMPO, VTrans	Conduct alternatives analysis to determine whether signalization or roundabout should be pursued. If signalization is identified as preferred alternative, develop preliminary plans.
	Alternative 2: 1-lane Roundabout	\$500,000	STP, Transportation Impact Fees, Bond	City/ VTrans	CCMPO, VTrans	Conduct alternatives analysis to determine whether signalization or roundabout should be pursued. If roundabout is identified as preferred alternative, identify potential right-of-way issues, develop preliminary plans.
Dorset-Barstow/Cheesefactory	Alternative 1: Signalize intersection (maintain existing LTR lane configuration)	\$250,000	STP, Transportation Impact Fees, Bond	City/ VTrans	Town of Shelburne, City of South Burlington, VTrans	Conduct alternatives analysis to determine whether signalization or roundabout should be pursued. If signalization is identified as preferred alternative, develop preliminary plans.
	Alternative 2: 1-lane Roundabout	\$500,000	STP, Transportation Impact Fees, Bond	City/ VTrans	Town of Shelburne, City of South Burlington, VTrans	Conduct alternatives analysis to determine whether signalization or roundabout should be pursued. If roundabout is identified as preferred alternative, identify potential right-of-way issues, develop preliminary plans.
VT 116-Swift Street Extension	Alternative 1: Signalize intersection; add EB R and re-stripe for NB L and SB R lanes	\$255,000 (Does not include eastbound Swift St extension approach)	STP, Transportation Impact Fees, Bond	City/ VTrans	City of South Burlington, VTrans, developers	Implementation would not take place until Swift St. extension is built. Conduct alternatives analysis to determine whether signalization or roundabout should be pursued. If signalization is identified as preferred alternative, include eastbound right-turn lane in plans for Swift Street extension. Re-stripe northbound and southbound approaches.
	Alternative 2: 1-lane Roundabout	\$500,000	STP, Transportation Impact Fees, Bond	City/ VTrans	City of South Burlington, VTrans, developers	Implementation would not take place until Swift St. extension is built. Conduct alternatives analysis to determine whether signalization or roundabout should be pursued. If roundabout is identified as preferred alternative, identify potential right-of-way issues, develop preliminary plans.
VT 116-Van Sicklen/Cider Mill	Alternative 1: Signalize intersection, add L turn lanes on WB and SB approaches, R lane on NB approach	\$600,000 (Does not include eastbound Cider Mill approach)	STP, Transportation Impact Fees, Bond	City/ VTrans	City of South Burlington, VTrans, Cider Mill Developer	Implementation would not take place until Cider Mill connector is built. Conduct alternatives analysis to determine whether signalization or roundabout should be pursued. If signalization is identified as preferred alternative, develop preliminary plans.
	Alternative 2: 1-lane Roundabout	\$500,000 (Does not include eastbound Cider Mill approach)	STP, Transportation Impact Fees, Bond	City/ VTrans	City of South Burlington, VTrans, Cider Mill Developer	Implementation would not take place until Cider Mill connector is built. Conduct alternatives analysis to determine whether signalization or roundabout should be pursued. If roundabout is identified as preferred alternative, identify potential right-of-way issues, develop preliminary plans.
VT 116-Cheesefactory	Alternative 1: Signalize intersection; add SB R lane	\$365,000	STP, Transportation Impact Fees, Bond	City/ VTrans	City of South Burlington, VTrans, developers	Intersection to be monitored and recommendations applied when development makes improvements necessary. Conduct alternatives analysis to determine whether signalization or roundabout should be pursued.
	Alternative 2: 1-lane Roundabout	\$500,000	STP, Transportation Impact Fees, Bond	City/ VTrans	City of South Burlington, VTrans, developers	
Corridor-wide Short-term Recommendation (less than 5 years)		Capital Cost	Potential Funding Sources	Lead	Potential Partners	Next Steps
Road Cross-Sections		N/A	N/A	City	VTrans, CCMPO	Identify appropriate timing for retrofitting Dorset Street cross-sections as village center development progresses. Implement identified E/W street cross-sections when new roads are designed.
Public Transit Service		N/A	CMAQ, State & Federal Transportation Funds	CCTA	City, CCMPO	Identify appropriate timing for initiating transit service along Dorset Street.
Access Management Enhancements		N/A	N/A	City	VTrans, CCMPO, developers	Closely examine all proposed accesses onto Dorset Street during site plan and subdivision review process to identify opportunities for access consolidation and internal connectivity.