

CHAPTER 2 – METHODOLOGY AND COORDINATION

2.1 Data Collection

Aerial photography of the VT 2A and Circ corridors was taken in April, 2005 and topographic base maps were prepared in June, 2005. This mapping provided an accurate and current survey of the two corridors. This mapping was limited to approximately 200 to 250 feet on either side of the roadway centerlines. In order to provide a broader view of the adjacent areas, this mapping was cut into base mapping available from the Vermont Center for Geographic Information. This composite mapping formed the base map for the development of the alternatives.

Utility information was obtained by contacting all of the public utility agencies and private utility companies with facilities in the two corridors. Information was obtained on their existing facilities and on their future plans for upgrades and expansion on their facilities.

Construction plans for portions of the VT 2A corridor were also obtained from VTrans. Since smaller portions of the road have been improved over the years, improvement projects at individual intersections were provided.

Right-of-Way information was obtained from several sources, including town assessor's maps, the Grand Lists, and VTrans Right-of-way plans for both the VT 2A and Circ corridors.

Comprehensive field reviews of the corridors were conducted to document existing conditions and traffic operations to assist in the refinements of the design alternatives. Photographs were taken to record existing conditions.

The existing data was compiled onto base maps of the corridors. For the VT 2A corridor, the existing base data was prepared onto a series of Existing Conditions maps as presented in Figures 2-1 through 2-16 in Volume II. These figures show the base survey information including topography, edge of pavement, buildings, and the location of historic resources. A roadway centerline was established as a best fit in relationship to the edge of travel way, and an existing profile of the road established based on the existing topography. These base plans formed the basis to define the proposed improvement for each of the alternatives for the VT 2A corridor.

Design plans for the Circ A/B project were advanced to the final design stage in 2003. The project was advertised for construction, bids received, and some minor site preparation work started before the project was halted. Copies of these plans were received from VTrans and served as the basis for Alternative 16. The design was reviewed for compliance with current design standards and refined where appropriate.

2.2 Roadway Design Criteria

Criteria for the preliminary design of the alternatives were established from publications issued by the Vermont Agency of Transportation (VTrans), the American Association of State Highway and Transportation Officials (AASHTO) and the Federal Highway Administration (FHWA). The geometric design of each alternative is governed by the classification of the roadway. It was determined that the VT 2A corridor is a principal arterial. For the Circ A/B corridor, Alternatives

16a, 16b, and 16c were considered as arterial highways with full access control and the purpose of carrying through traffic and providing no direct access to abutting properties. Alternative 17 was considered as a principal arterial with at-grade intersections. The Circ Street (Alternatives 18, 19, and 23) was considered as a Collector Road with at-grade intersections. A summary of the design criteria for these roads is presented in Table 2.1, and a full tabulation of the criteria is contained in Appendix A.

Table 2.1
Design Criteria Summary

Criteria	Circ Limited Access	Circ Boulevard	Circ Street	VT 2A
Functional Classifications	Arterial Highway	Principal Arterial	Collector Road	Principal Arterial
Design Speed, mph	50	40	30	30
Max Grade	5%	5%	5%	7.5%
Shoulder Width	8' outside 4' inside	4' outside 3' inside	4'	4'
Clear Zone	24'	16'	16'	16'
Drainage	Open	Open	Closed	Closed
Access Control	Limited Controlled	Limited	Limited	Limited

Note: Maximum grade on VT 2A based on existing grade.

Since the construction of modern roundabouts is a relatively new and evolving practice in the United States, design standards have not been developed to the same level as other highway elements. VTrans has not formally adapted formal design standards for roundabouts. Appendix A contains a summary of roundabout design criteria from FHWA's *Roundabouts: An Informational Guide*, as well as guidelines from New York and Maryland. One of the primary design controls for roundabout design is the inscribed diameter. The State of Vermont constructed a two lane roundabout in Brattleboro several years ago and utilized a 180-foot inscribed diameter for the design. In consideration of the traffic flow and safety experience with the Brattleboro roundabout and other available guidance, VTrans decided that an inscribed diameter of 180 feet be used for the preliminary design of all of the two-lane roundabouts evaluated for the Circ-Williston project.

2.3 Typical Sections

For the VT 2A corridor, the roadway typical section for Alternatives 2 and 3 (refer to figures on page 2-4) will consist of four 12-foot wide travel lanes with 4-foot shoulders on each side and additional turning lanes as required at intersections. The four lane section will allow two full lanes of traffic flow in each direction. There will be curbing on both sides and a closed drainage system. In the Williston portion, there will be a ten-foot wide multi-use trail on one side of the road, offset from the curb by ten feet where practical. The other side will have either a sidewalk or grass panel. In Essex Junction, the cross section will be reduced slightly by reducing the travel lanes to 11 feet wide, reducing the sidewalk to five feet wide and reducing the sidewalk offset to three feet, the same sidewalk width and offset that exists today.

For Alternatives 22 and 23, the four lane section described above will only extend from the southerly limit of the project north to Zephyr Road/Paul Street. This four lane section will include a raised median island with landscaping (refer to figure on page 2-4). North of the Zephyr Road/Paul Street intersection, VT 2A will taper to a three lane section up to James Brown Drive, then taper again to a two lane section into Essex Junction.

For the Circ corridor, the typical section for Alternative 16 will consist of two travel lanes in each direction, separated by a 22 foot wide grass median. The travel lanes will be 12 feet wide, with a four foot wide shoulder on the left side and an eight foot wide shoulder on the right side. There will be an open drainage system without curbing. Refer to figure on page 2-5.

The typical section for Alternative 17 will consist of two travel lanes in each direction, separated by a 16 foot wide raised landscaped median. The travel lanes will be 12 feet wide, with a three foot wide shoulder on the left side and a four foot wide shoulder on the right side. There will be a combination of both open and closed drainage systems. Refer to figure on page 2-5.

For Alternatives 18, 19, and 23, the roadway will terminate at Mountain View Road. The segment from I-89 to US 2 would have the same cross section as the Circ Boulevard, but between US 2 and Mountain View Road, the projected traffic volumes decrease and therefore the cross section can be reduced to a two-lane roadway. A multi-use path would be constructed parallel to the road for the segment from US 2 to Mountain View Road.

2.4 Agency Consultation and Coordination

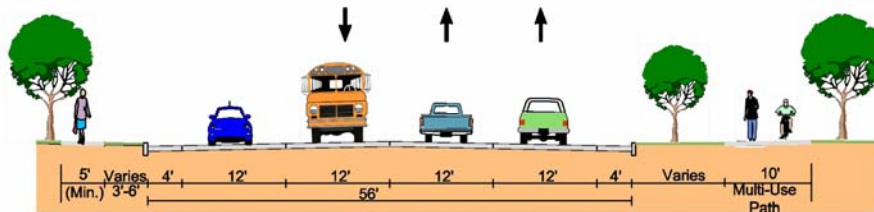
VTrans established a Design Review Committee (DRC) to coordinate and review the preliminary design efforts. Included on the DRC were the VTrans Project Manager, representatives of the highway design, traffic, bicycle/pedestrian, right-of-way, structures, stormwater sections, and a representative of the Federal Highway Administration (FHWA). During the preliminary design process, several meetings and work sessions were held with the DRC, and the design incorporated recommendations made by the committee.

Meetings were also held with representatives of the Towns of Williston and Essex Junction to obtain background information and to provide input on the alternatives.

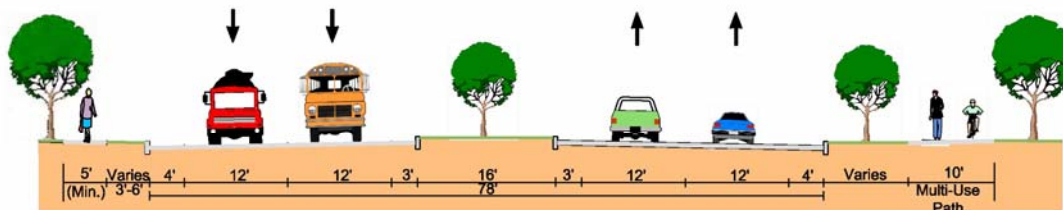
All of the utility agencies with facilities in the corridors were contacted and information obtained from these agencies incorporated into the design.

In February of 2006, a series of three public informational meetings were held in Williston and Essex Junction to obtain input from residents of these communities.

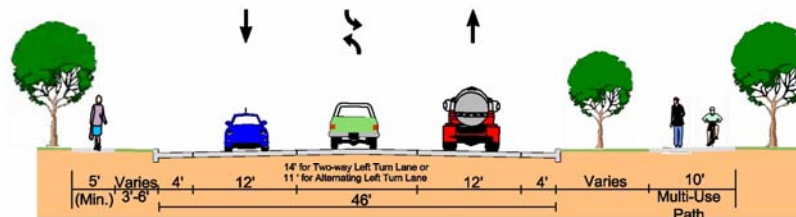
Route 2A - Typical Sections



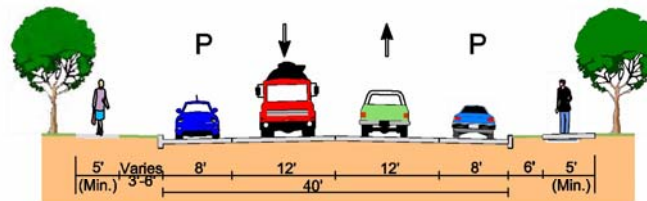
FOUR LANE ROADWAY
ALTERNATIVES 2 & 3



FOUR LANE BOULEVARD
ALTERNATIVES 22 & 23

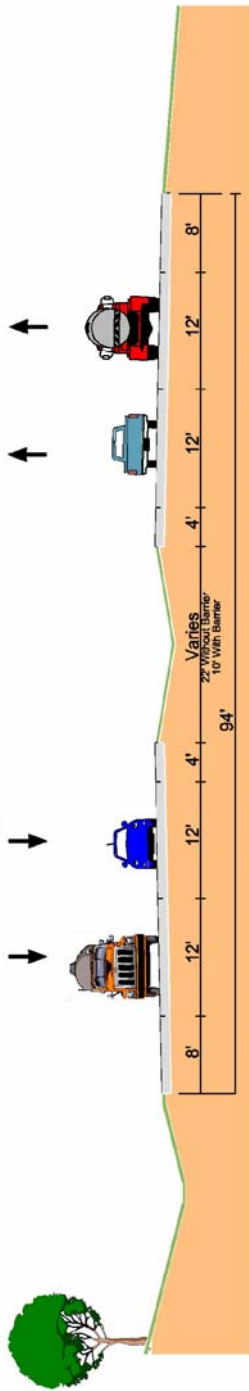


THREE LANE ROADWAY
ALTERNATIVES 22 & 23

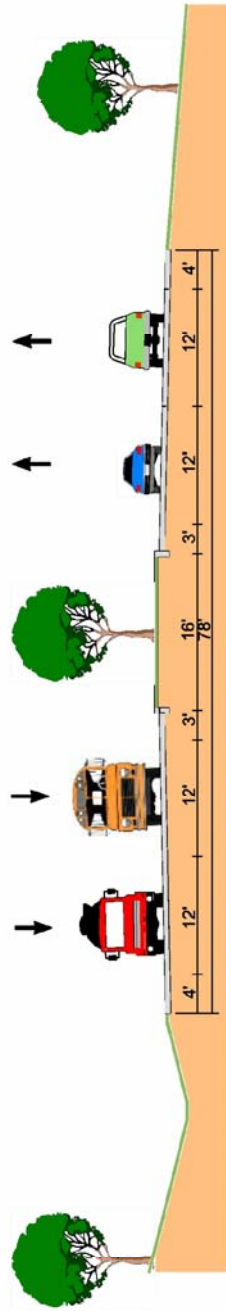


TWO LANE ROADWAY
ALTERNATIVES 22 & 23

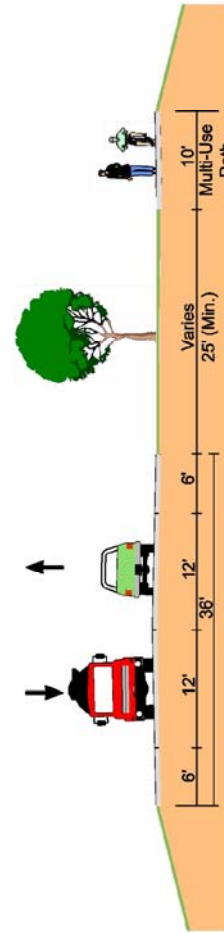
CIRC - Typical Sections



FOUR LANE DIVIDED ROADWAY
ALTERNATIVES 16



FOUR LANE BOULEVARD
ALTERNATIVES 17



TWO LANE ROADWAY
ALTERNATIVES 18, 19 & 23