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Transit, Bicycle, and Pedestrian Improvement Study

for

Williston and Shelburne Roads

South Burlington, Vermont

Prepared for
the
City of South Burlington
through
the
Chittenden County
Metropolitan Planning Organization

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INTRODUCTION

Williston and Shelburne Roads are the primary transportation corridors serving South Burlington. These two important routes are more than just roadways. They contain bus routes, bus stops, pedestrian ways and future bikeways. Up to the present time, their full transportation potential has been overlooked and design priority in these corridors has been given to cars. The result of this "autocentric" design has been a roadway inaccessible to the disabled and hostile to other non-drivers.

The goal of this study will be to find ways to balance the use of the corridor and improve it for bus, bicycle and pedestrian traffic. This design is an attempt to accommodate the needs of several transportation users and to create a truly inviting and comfortable shared transportation corridor. It maximizes the use of alternative transportation choices, relieves the current pressure on automobile use, and improves the traveling experience for **all** those using the corridor.

Shifting the design focus away from private auto use and toward an integrated transportation system will have environmental and community benefits as well. It can change the character of Williston and Shelburne Roads, from strip development highways to broad avenues, transforming an ugly, harsh landscape into one that is appealing both to be in and drive through.

SCOPE

The purpose of this study is to prescribe specific improvements to the Williston/ Shelburne Road corridors that will increase their multi-modal use. Improvements to the following facilities were studied:

- Additions to and repair of the sidewalk systems with specific attention to ADA requirements
- Improvements and additions to pedestrian crossings
- Additional pedestrian actuated signalization where justified.
- Provisions for bicycle traffic.
- Improvements to bus waiting and boarding facilities

THE STUDY AREA

The study area includes the entire length of **Williston Road** from the Burlington City line east of the "Jug Handle" to the Williston town line at Muddy Brook. Since the Agency of Transportation is developing plans for the widening of the portion of Williston Road between Dorset Street and Hinesburg Road, sidewalk recommendations were not requested for this part of the road.

However, since the planned widening will have a significant effect on the character of the road we have included a discussion of the widening and general recommendations. Provisions for bicycles using these blocks is also included. Consideration of transit facilities in these blocks was not part of the study since CCTA's bus route currently does not use this part of the road .

Shelburne Road, from Imperial Drive north to the Burlington city line is also included in the Study Area. The South Burlington city line crosses Shelburne Road at approximately the

intersection of Swift Street and Shelburne Road and runs along the east side of the road up to Proctor Ave near the intersection of Flynn Ave. Along this stretch of road South Burlington lies east of the right-of-way line and Burlington on the west. The road itself is actually in Burlington. For the purpose of continuity, we have included in the study area recommendations for this section as well.

The study area is generally within the width of the right of way but in some cases consideration was given to adjacent private parcels where locations for bus shelters, or routing of bike ways was considered.

PROCESS

The consulting team began the study with a kick-off meeting in South Burlington City Hall. Representatives from the City Planning office, the Recreation Department, the Recreation Path Committee, business representatives from the Study Area, Chittenden County Transportation Authority, The Regional Planning Office, a representative from the Disabilities Council, the Vermont AOT, and the City of Burlington were invited. Attending the meeting were the following.

- Agency of Transportation: Ande Deforge, Vail Leach, David Smith, Don Allen, Jodee Anderson
- City of South Burlington: Joe Weith - Planning Director; Bruce O'Neill - Recreation Director.
- South Burlington Recreation Path Committee: Lou Bresee; Lenore Budd
- Chittenden County Transit Authority: Catherine Debo
- Regional Planning Commission: Mike Oman
- Fitzpatrick-Llewellyn (Consultants to S.B on Williston Rd access management plan) : Brendon Kelly
- Consulting Team
  Genie Soboslai - Engineers Inc. of Vt, Bob Alexander - Pinkham Engineering Inc.
  Kathleen Ryan - Landscape Architect
  Julie Campoli - Landscape Architect

The purpose of this meeting was to introduce the project and solicit information and background data and opinions from all parties.

A week after the initial meeting the same group was invited to participate in a site reconnaissance and alternative transportation tour of the study area. The purpose of this field trip was to give those involved in planning and alternative transportation for the area, a first hand experience with the problems faced by pedestrians, transit users and bikers.

After assembling at Lilydale Bakery on Shelburne Road the participants broke into two groups. One group walked and rode the CCTA bus along Shelburne Road while the other walked sections of Williston Road. Most participants found this event very instructive. A reporter and photographer from the Burlington Free Press attended the field trip and the event received coverage in the following weeks. This article is part of the Appendix of this Study.

Attending the Alternative Transportation Field Trip were the following:

City of South Burlington - Joe Weith
Agency of Transportation - Gary DuBray, Ande DeForge, Don Allen
CCRPC - Karen Beij, Peter Keating
Fitzpatrick/ Llewellyn - Brendan Kelly
CCTA - Chris Greenman
Consultant Team - Bob Alexander, Julie Campoli, Kathleen Ryan
Burlington Free Press - Matt Sutkowski, Adam Pike-Reisner

Not present but submitting notes from independent site visits were Lou Bressee and Lenore Budd of the South Burlington Rec Path Committee

During the project the team met with various representatives of alternative transportation interests. Meetings were held with Catherine Debo, CCTA, and Stan Marshall, an advocate for the disabled. The Consultants also met with Janet Kennedy from T.J. Boyle and Assoc. to review progress findings and recommendations of the Chittenden County Alternative Transportation Paths Study and with City Planner Joe Weith and Brendan Kelly from Fitzpatrick - Llewellyn to review progress on an access management study for Williston Road.

The team also conducted phone interviews with members of the Burlington Biking Coalition who represent the interests of a growing community of serious on-road bikers in the Chittenden County area.

Research was conducted into current reports and documents related to transportation plans in the the Study Area. A list of these documents is on the Reference page at the end of this report.

The consulting team also completed extensive field investigation on bicycles and on foot and photographed the length of the study area. Field measurements of road width and lane widths were also taken at important intersections.

Both corridors were inventoried for project plans, including "as-builts" or record plans from earlier years, and those projects either under constuction or in various stages of design. The results are shown on the 1"= 100 ' scale plans included in this study.

PART I

EXISTING CONDITIONS

Williston and Shelburne Roads are the primary transportation corridors through South Burlington. As such they are not only the prime feeder roads for most of the city but they are also the conduits carrying an ever increasing number of people in and out of Burlington. Shelburne Road not only serves the expanding businesses and services along its length, it is also a link for traffic going between Interstate 189 and points south. To many Vermonters, what they see and experience driving these two arterials determines their impression of the City of South Burlington.

Most South Burlington residents would probably agree that with the exception of the residential area along Williston Road, these two stretches of road are typical strip development highways, examples of which are present on the edges of many cities throughout the country. They are probably not their favorite parts of the city but they are areas that they frequently visit to reach many businesses, stores and restaurants .

CHARACTER

Williston Road
The character of Williston Road changes a good deal as it passes through the City.

Burlington to Dorset St.
The length of road from the Burlington city line to Dorset Street, except the I-89 bridge has been widened several times over the past 60 years and now, in its current form, it is five lanes wide at its narrowest point and seven where turning lanes have been added.

Past widening of Williston road from the edge of Burlington to the Interstate bridge was based on a highway style of engineering that has evolved from interstate design standards. These differ from standards used for traditional urban boulevards that are part of older cities in the United States and Europe. These boulevards often carry large numbers of cars but were designed with people as well as cars in mind. AASHTO standards included high speed detailing, large curb radii, large signage etc. Consideration of pedestrian comfort level was not a consideration in the development of these design standards and federal funding generally did not include provisions for such ammenities . Consequently the roadway has an appearance similar to that of an interstate highway.

Within the 1/2 mile of this stretch, there are only three crossing points, one is located at the jug handle turn at Spear Street and the second is located at the Staples Plaza/Sheraton intersection. A pedestian signal is currently being installed at the Dorset Street intersection at the time of this writing.

In this section of road there are no pedestrian scale elements, large numbers of cars swirl around the pedestrian, on and off ramps and past at high speeds; The sidewalks are fairly narrow. Six of the eight interstate ramps have no handicapped curb ramps. It is one of the most forbidding stretches of the road for pedestrians and bikers.

But it is the only link between downtown Burlington, UVM and the commercial areas and businesses east of the Interstate. The youthful population of the University and Burlington can often be seen traveling this short distance by foot and bicycle despite dangerous conditions. This segment of Williston Road is clearly a desire line, in need of alternative transportation improvements to serve a population without cars.

Dorset St. to Hinesburg Rd.
The section of Williston Road between Dorset and Hinesburg Roads is a stretch of strip development that includes several fast food restaurants and gas stations. These auto-oriented businesses emerged in an earlier era of suburban trends, and their pattern is denser than the highway development elsewhere on the corridors. Here, lots are smaller, grass strips are narrow, and buildings are close to the road. This relatively compact pattern has limited the opportunities for planting, but where greenspace is present along private property, it is more detailed and scaled to the pedestrian.

Over the years the amorphous layouts of the parking lots in front and back of several businesses on both sides of the road have merged, allowing the flow of traffic between establishments. These internal service roads allow cars to go between businesses without re-entering the main road.

Because of the scale of development, this section of Williston holds more opportunities for pedestrian use than many other sections of the study area. (See Recommendations - Sheet 2)

Many developers have invested in improvements to their street side property. These improvements offer real benefits to the pedestrian and the driver. For instance, the wall and planting at the Comfort Inn & Vermont Federal Bank have a positive visual impact on that block of Williston Road. Such changes seemed to have a ripple effect, encouraging other property owners to make landscape improvements.

Within the 1/2 mile of this stretch, there are two opportunities to cross Williston Road. The first is a pedestrian actuated signal at Ramada Inn. The second cross walk and pedestrian actuated signal is found at Hinesburg road.

For cyclists ,this section of the road is extremely dangerous because of the lack of shoulders, the number of cars, multiple curb cuts, and the frequent and unpredictable dodging movements of cars.

Hinesburg Rd. to Mills Ave.
The section of Williston from Hinesburg Road to Mills Avenue still retains a good deal of its 1930-1950's character with a mix of residences and small businesses. Many of the homes have well maintained lawns and large shade trees which form a canopy over the sidewalk and street creating a relatively pleasant walking and driving experience.

However, the four lanes of traffic effectively cuts this neighborhood in half. With no marked crosswalks or signals along this 1/2 mile section of Williston Road, it is quite difficult to cross the street.

Here, cyclists share the road with less traffic. Since there are fewer businesses, there are less turning movements and curb cuts for the cyclist to contend with.

Mills Ave to Williston
The character of the easternmost section of Williston road from Mills Avenue, past the Kennedy Drive intersection and on to the Williston town line, reflects its recent development as a commercial strip emerging from a rural setting. Although there are some converted residences, the parcels and the buildings are larger and the buildings are set back from the street. The development is more spread out with a greater emphasis on parking.

All sidewalks end east of the Air Guard Road with no provision for pedestrians along the road. It is possible to walk along the sporadic lawns that flank the road, but there are many areas were grade changes and vegetation make the off-road route impassable and pedestrians are forced to walk in the highway shoulder.

The speed of drivers increases in the four lane section making lane sharing difficult for cyclists. At P.J's Auto Village, the four lanes merge into two, slowing traffic speed. At this point in the road a shoulder emerges and the cyclist has more room to maneuver, but the curb ends and there is substantial erosion at the edge of the paving, creating a hazard.

There are no signals after Kennedy Drive. Pedestrian crossings are difficult at slow traffic times and close to impossible at rush hour.

This segment of the road is approximately 1 1/3 miles in length.

SHELBURNE ROAD

The study area along Shelburne Road has three segments with varying character.

Home Ave to Proctor Ave

Here Shelburne Street (as it is called in Burlington) acts as the boundary line between Burlington and South Burlington. On the South Burlington side, motels and other businesses line the road. Sidewalks are intermittent and pedestrians walking to nearby shopping centers have worn a trail in the grass between paved segments. The pedestrian route is defined by these dirt trails and a few crosswalks painted on asphalt parking lots. Except for the noise of traffic, the Burlington side is comfortable for walkers. The character is residential, with a generous grass strip and large shade trees buffering the sidewalk from the road.

For bicyclists, however, this 1/3 mile section is problematic. The center lanes are striped wider then the lanes on the outside. Consequently there is no space for riding next to the curb. The outsidelanes are already narrow (11 ft.) and narrow further to 10 feet wide at intersections where a left turn lane is included. Traffic moves at a relatively high speed and bicycles are forced to choose between competing with cars for the right lane or riding on the sidewalk.

Sears to Queen City Park Rd.

From Sears / Grand Union shopping area to Queen City Park Road, the corridor has the same interstate highway appearance as the western end of Williston Road mentioned previously. With the exception of adaquate curb ramps for the handicapped, recent construction of the I-189 bridge failed to address the needs of pedestrians or cyclists traveling in any direction and the interstate continues to act as an enormous barrier to users of alternative transportation. This segment is 1/3 mile in length.

Queen City Park Rd. to Imperial Dr.

South of Queen City Park Road, commercial strip development takes over, but with a slightly different, more expansive character than that of Williston Road. Here, much of the development occurred in the 1970's and 80's. It was influenced by latter day zoning ordinances which required wide setbacks from the road and side properties, extensive parking and controlled curb cuts. Sidewalks are intermittent, installed as required by the City in more recent development. The road is five lanes wide and six where turning or deceleration lanes have been added. Compared to Williston Road, this section of Shelburne Road has more green space. However, the effect of the greenswards on either side of the road are diminished by the breadth of the asphalt along the highway.

Shade trees are notably missing. The few trees that have been planted are not yet matured. There may be a reluctance by businesses to plant large trees along the sidewalk for fear of blocking the visibility of signs from the road.

There is only one existing crosswalk in this 3/4 mile segment, located at the northern extreme. The pedestrian actuated signal at Queen City Park Rd. provides the only link between the Burlington and South Burlington bike paths, however at this writing another pedestrian signal is being installed at the McIntosh Avenue intersection.

THE NEED FOR ALTERNATIVE TRANSPORTATION MODES

The emphasis on planning for alternatives to the automobile is relatively new in this half of the century. Until the 1950's, travelers had many choices; trains, trolleys, buses, and a comfortable safe walking environment.

The years since World War II have been the boom years for the automobile. In 1950 there were 53 million vehicles in the world. Today there are over half a billion. (A 1000% increase in 43 years.) Someone born in 1950 has had little opportunity to experience alternative transit modes. The trolley, train, and bus services that were available in cities here in Vermont and other areas of the country in the first half of the century have greatly deteriorated or have been removed.

Because so little provision has been made for non-auto transportation, especially in rural areas, it is somewhat futile to ask citizens what their use of these services and facilities would be, if they were available. To ask a citizen to select a transportation pattern they have never experienced and know little about is similar to asking one to chose between an apple and a kumquat when one has never seen much less tasted the latter.

Despite the limits this lack of familiarity places on traditional opinion polling, there is reason to believe that the public is quite open to alternative modes of transportation .

PEDESTRIAN AND BICYCLE TRIPS

The recently completed mail-back survey conducted by Resource Systems Group (RSG) as part of the Chittenden Country Alternative Transportation Study surveyed households in eight municipalities in the Burlington area. The purpose was to gain information on current and potential use of alternative non-motorized transportation, with a focus on pedestrian and bicycle modes.

The survey, which had a 26% response rate, concluded that it may be possible to double the number of trips made by alternative, non-motorized means. The results indicated that the City of Burlington, had a higher per day number of alternative trips (4-6 per day) indicating the greater ease of alternative transportation in more urban areas.

This latter statistic provides hope that as South Burlington evolves from a suburban to a more compact pattern, and as alternative transportation facilities improve, residents will rely on a wider variety of transportation modes.

The RSG study concluded that four of the six highest ranking obstacles to using alternative transportation cited by respondents could be overcome by improving existing or creating new alternative transportation facilities. Listed below in order of rank are the four conditions:

- Bicycle/Pedestrian safety along roads
- Heavy auto/ truck traffic along route
- Poor Road Conditions
- Security of Equipment (i.e. bike racks)

This study concludes that the presence of adequate facilities may increase the use of alternative transportation and will likely support its use as a routine part of daily transportation.

Based on unscientific field observations by the consulting team, the use of the right-of-way by pedestrians and cyclists was estimated to number approximately 20 trips per hour or 200 trips per day at busy points on the road. Because these trips were made in an unimproved environment, one can expect an increase in trips as the environment improves.

Nationally the trends are promising. In cities that are on the forefront of bike planning, bicycle use is on the rise. In Eugene, Oregon 8% of work trips are on bicycle. Time magazine reported recently that nationwide bike ridership is up from 72 million in 1983 to 93 million in 1991.

BUS RIDERSHIP

Statistics point to a potential for increased ridership for the bus system as well. Information available from Chittenden County Transit Authority on existing bus ridership indicates that the bus line generates 6,000 rider trips per day, an estimated 13-15% of whom are children. The number of riders has been increasing yearly. CCTA is presently planning to increase bus service from 30 minute to 15 minute intervals and planning efforts are now underway which will estimate where need is greatest for this increased service. CCTA expects this upgrade to increase ridership significantly.

A few years ago, in an effort to relieve parking problems at the Burlington Airport, the Airport Authority sponsored free rides on the CCTA airport bus route through South Burlington. This effort increased ridership on the route by 65% on weekdays and 52% on Saturdays for a total weighted average increase of 63%. The free fares were offered for the entire year. After the free service ended a 31% of the new ridership was retained on that route. According to Catherine Debo, Director of CCTA, free ridership programs when offered throughout an entire system increase ridership at even greater percentages.

EQUITY & QUALITY OF LIFE

Some studies indicate that up to 50% of the population is "transportation disadvantaged". There are over one hundred million people in the U.S. who do not drive or don't own a car and therefore rely on walking, biking , public or privately arranged transportation.

Projections indicate that by the year 2020, 15% of the population will be elderly. Together with children, the disabled ,and those who cannot afford or choose not to purchase a car this figure does not seem unreasonable. Since the 1960's, the transportation system of the U.S. has severely discriminated against this group by focusing primarily on cars. After 30 years of inequality, it is time to address this imbalance and end the discrimination. By improving sidewalks, crosswalks, bike lanes and transit facilities South Burlington can improve the mobility and the quality of life for a large segment of its population.

ADEQUATE PEDESTRIAN ACCESS IS THE LAW

The Americans with Disabilities Act requires that all municipalities provide sidewalks that are fully accessible and crosswalks that can be negotiated by wheelchair users and the visually and hearing impaired. Buses are required to be fitted with lifts (CCTA does comply with this requirement). Wheel chair users need to be able to get to bus stops over a sidewalk that complies to standards for surfacing and grade. Upgrading pedestrian facilities to ADA standards will provide access to all users and failure to do so may result in legal action.

BASELINE DATA

The Consulting Team was disappointed to find so little data relating to existing pedestrian use of road right-of-way and alternative transportation.
It will be important to document current use of both sidewalks and crosswalks and correlate these to traffic counts and average speeds at a variety of intersections. On-road use of bicycles under varying conditions would also be informative.

Baseline data of this nature will be important to have as facilities are installed or upgraded. These figures can be used to rate the success of various improvements.

PART II: RECOMMENDATIONS

APPROACH

As improvements are made to Williston and Shelburne Roads, the opportunity exists to make these roads into urban avenues that reflect the image of South Burlington's future. They can be amenities to the City and contribute to the quality of life in South Burlington.

We propose the development of Williston and Shelburne Roads as broad avenues; tree-lined green corridors in which cars, buses, bicyclists and pedestrians comfortably share the right-of-way. South Burlington and Burlington are already pursuing versions of this model in the construction of Dorset Street, Riverside Drive, and the Champlain Parkway.

Other cities in the U.S. have such streets. Many of the older avenues of Washington, DC, Richmond, Virginia, and Kansas City, Missouri fit this description. Although they were designed in the last century they are still vital and functioning well today. Newer avenues created in the past two decades include those in Portland, Oregon and Santa Monica, California. These cities have thrown out the old highway formulas and created truly integrated roadways that are beautiful, comfortable environments for pedestrians, cyclists and transit riders and still serve large numbers of cars. South Burlington can chose to do the same.

It is somewhat difficult for most of us to envision Williston and Shelburne roads as gracious additions to the urban fabric, but given vision and commitment by the City, they can evolve that way.

Many forces have combined to shape Williston and Shelburne Roads. Numerous books and articles have been written about the auto history, economics, and planning practices that have led to strip development. Suburban sprawl has been the only development pattern most Americans have experienced. Residents of South Burlington may conclude that, given the power of these trends, they must embrace an ever expanding highway network, and accept these noisy, broad masses of asphalt as the necessary evils of life in the auto society. Given the overwhelming task of changing transportation priorities, it is tempting to assume that alternative transportation can be improved simply by adding sidewalks and crosswalks to the current autocentric design.

Some believe that these high traffic roads have become so hostile that cars, pedestrians and bicycle uses are no longer compatible, that bikeway and walkways should be located away from the road and the high use areas.

We recommend a different approach. We believe that the City of South Burlington can create a successful multimodal transportation environment and significantly improve the character of Williston and Shelburne Roads

PROSPECTS

There is cause for optimism for several reasons:

• We can learn from the mistakes of these other cities . We can now clearly see the circular process that occurs when the same transportation formula has been applied in other cities again and again with the same result . Roads are widened and traffic flow is relieved for a few years but before long the widened road is congested again with traffic. In other areas of the country, where highways have become 8 or 10 and even 12 lanes wide and still congested, cities

becomes severed, pedestrians can' t cross the highway, citizens are now seriously questioning the wisdom of using the old formula to "solve" traffic problems.

In South Burlington the traffic flow on Williston Road increased from 22,400 trips per day in 1977 to 32,000 trips per day in 1990. That is an increase of 43% in 23 years. During that time the population of all of Chittenden County increased from 111, 841 to 131,000; an increase of 18%. It is clear that the increase in traffic on Williston Road is not due solely to a rise in the population but more to the fact that people are driving more, driving further and taking more trips per day.

South Burlington has a choice of encouraging this trend or encouraging the use of alternative transportation.

• Secondly, on most parts of Williston and Shelburne Roads there are still real opportunities for improving the transportation corridor. To most Vermonters, the busiest parts of these roads represent suburban sprawl at its worst. In fact, by some standards, they are quite tame. Many cities in other states have allowed highways to become so wide that pedestrians cannot walk beside them let alone cross them. Although the needs of pedestrian and transit users have long been neglected in the study area, our survey concludes that there are many areas where the pedestrian experience is good, amenities exist and there is room for future improvement.

• South Burlington has already made a commitment to planning for compact growth patterns by adopting the City Center Plan. The City has also exercised its initiative to ensure that Dorset Street was built to meet the needs of all users. The South Burlington City Plan states as one of its goals; " Expansion and improvement of all modes of transportation for all abilities and incomes."

• Lastly the Intermodel Surface Transportation Efficiency Act (ISTEA) passed by the Congress in 1991 and only recently being felt on the local level promotes not only the use of alternative transportation and amenities to roadway design but promotes transportation decisions being made at the local level.

DESIGN SOLUTIONS

COMFORT LEVEL

Encouraging people to walk requires more than applying a concrete walking surface next to the road. Although a serviceable sidewalk begins with a wide well drained surface, provision needs to be made for improving the total pedestrian environment in a way that respects the users need for comfort and safety. It is important to remember that auto users, competing for space in the same corridor, have the advantage of an enclosed, highly engineered environment with ergonomic seats, air conditioning, and stereo sound. (All of which produce 650 lbs of CO_2 per year).

To improve the comfort level for pedestrians it is necessary to design their total environment as well. The drawings accompanying this report (SIDEWALK CONDITIONS) present an evaluation of comfort level throughout the study area. Sections of sidewalk along the corridors are rated according to their comfort level. Areas labeled "hostile" or "poor" can be improved by introducing the following elements:

- **Wide Buffer**

  Buffer zones should be a minimum of five feet wide, preferably 10 or 15 ft. There is a noticeable difference between the effectiveness of a 3' wide strip and 5' wide strip. Where the road is wider and traffic is moving faster, the minimum width should be increased. Buffer zones add a sense of safety for the user. Distance from the road diminishes the noise of traffic and protects from water and salt spray.

  In very dense urban areas these strips become paved and are part of the sidewalk. Street trees are installed in grates.On Shelburne and Williston roads until the land use pattern changes and pedestrian traffic increases they can remain green and planted.

- **Street Trees**

  Large shade trees are probably the most important and valuable amenity for pedestrians. Not only do they mitigate the negative impacts of traffic by absorbing sound and cleaning the air, they provide a canopy that shades and gives a vital sense of human scale to an inhuman environment.

  Trees provide shade in summer when pedestrian traffic is most heavy. To a certain extent they provide shelter from light rain. They let the driver know that they are driving a city street and not a highway. Drivers pulling off the interstate encountering a tree lined road are immediately aware they are in a populated area. As a result, studies have shown, the incidences of speeding are reduced and the road is safer for both driver and pedestrian. Driving a tree lined street reduces driver stress and reduces the level of frustration. Consequently less erratic driving takes place. Studies have shown that better decisions are made when people are in a more comfortable environment.

  Trees should be planted in continuous rows in the buffer zone or on the private side of the walk or both. (A mature tree absorbs 1963.3 lbs of CO_2 from the air per year, the amount produced by three cars). AASHTO standards allows trees to be installed in a median a few feet behind the curb on any roadway designed to a typical " urban section".

  This study recommends that South Burlington work with the Agency of Transportation to ensure that trees are included in all new roadway construction. The AOT has recently adopted a landscape policy that promotes the use of roadside planting wherever possible. It is also recommended that trees be installed along existing parts of the roadway in greenstrips if the width exists.

It is recommended that the City appoint a citizen Tree Warden who would begin, with the help of a committee, an urban forestry program for the city. This group might begin a program of installing and maintaining trees along streets and throughout the city. A City Arborist who is part of the full time staff is another way to ensure a successful tree planting and maintenance program. Federal funds are currently available through the Urban Forest Program.

Zoning ordinances and the site plan review process at Planning Commission hearings should emphasis that the treatment of the private edge of the public walkway must respect the pedestrian corridor by providing a green planted setback or an interesting pedestrian scaled building facade. Parking or asphalt at the sidewalk should not be permitted.

•Site Furnishings

Pedestrian scale amenities such as lighting, benches, bus shelters, signs and trash receptacles make the pedestrian environment more comfortable and appealing. These elements let the pedestrian and the transit user know that a space has been created for their use and they also let the driver know that pedestrian share the corridor and that they need to be alert for their presence.

PEDESTRIAN CROSSINGS

• Frequent Crossings

Provide crosswalks and pedestrian signals at all intersections and at all four legs of the intersection. If the goal is encouraging pedestrian use, is it sensible to ask a pedestrian to walk several hundred feet out of his way just to cross a road?. Consider walkable distances. The proposed intersection at the Southland development on Shelburne road would require some pedestrians to cross three streets and a distance totaling 250 feet to get from one side of Shelburne Rd. to the other. Developers consider 200 ft. to be a maximum walking distance from a parked car to a store. In other cases a city block of 400 feet is considered a reasonable walking distance. If 250 ft is required to cross the street, that leaves very little for the rest of the trip. Providing four way crossings allows the pedestrian to use the most direct route and it increases his level of safety.

• Refuge Islands

With added lanes and larger turning radii, crosswalk distances are great. Refuge islands should be used on all intersections over four lanes wide. The left turning lane sometimes serves as a refuge to those crossing five lane sections. This is a dangerous situation. A median island should be a minimum of 5 feet and preferably 8 to 10 feet in width.

• Curb Radii

AASHTO standards for turning radii on new road construction are designed to accommodate large vehicles and to maintain free moving traffic. These standards are at the expense of the pedestrians use and safety who is required to cross a larger expanse of roadway and often depart from a direct path across the street. Traditional urban areas have streets with 15 foot curb radii. The new intersection planned for Hinesburg Road and Williston Road will have radii from 35 to 70 feet. Within the AASHTO regulations there are accomodations for urban environments. The minimum radii should to used. Positioning stop lines to allow additional manuvering space in an intersection is also an

option that in some cases allow a smaller radius be used. AASHTO turning standards are based on a vehicle speed of 15 MPH. Where slower speeds are reasonable smaller radii many also be possible. Where a large turning radius is unavoidable refuge island should be installed as has been done at Dorset Street near Howard Johnsons.

• **Stop Lines**

Add stop lines at intersections to prevent cars from blocking the crosswalk. Drivers often prevent pedestrians from crossing by cutting off access to the crosswalk and curb ramps. A line marked on the pavement can show cars where to stop.

• **Signage**

Drivers frequently need to be warned of the presence of pedestrians and reminded that, in the crosswalks, they have the right of way. "Yield to Pedestrians " signs are needed at several locations throughout the corridors, especially at crosswalks on interstate ramps where sight distances are poor and speeds are fast.

•**Visible and Accessible Signals**

Many traffic signals in the study area are designed with heavy visors and shade cylinders. The shielded signals are aimed at drivers and are difficult or impossible for pedestrians and bicyclist to see. This inability to see the changing signals presents a real problem at intersections where no pedestrian signals are installed and it also limits the information available to pedestrians at crossings where actuated signals are installed. (see below) Cut-away signal lights are recommended at all signalized intersections.

•**Adequate Crossing Time**

Pedestrian signal should be timed to allow the slower walker to cross in comfort. At the Sears Plaza/ Outlet Mall crossing, the pedestrian crossing signal is shown flashing for a total of 9 seconds. Such a brief signal time can be very disconserting to those who know their walking speed is slower than average. This is especially true if the vehicle signal lights are not visible to the pedestrian and they cannot reassure themselves that the oncoming car still has a red light.

•**Pedestrian Signals**

Traffic signals may be used to interrupt heavy traffic at intervals to permit pedestrians to cross. The Manual on Uniform Traffic Control Devices (MUTCD), adopted by the State for all public highways, contains a Minimum Pedestrian Volume Warrant (#3). This warrant is not necessarily applied where signals are already justified by crossing vehicle volumes. Good design policy suggests that a pedestrian phase be included in the overall signal cycle where a protected pedestrian crossing is needed.

It is recommended that all signalized crossings on Williston and Shelburne Roads, existing and proposed, be equipped with a pedestrian actuated signal. These signals should be located no further than an arms length from the sidewalk in a place that is consistant at all crossings. Signal buttons must be accessible to those using wheel chairs and in a place easily located by the visually impaired. Pedestrian signals should include and auditory signal as well. One in the study area near Spear Street was equiped for an auditory signal which was not functioning.

SIDEWALKS

The sidewalk system that serves the pedestrian is also closely linked to bus ridership. The bus rider becomes a pedestrian on his way to and from the bus so any improvements to the sidewalk will have benefits for both users.

- **ADA**
  As mentioned prviously, public sidewalks must meet regulations issued by federal agencies under the Americans with Disabilities Act of 1990. This includes a continuous surface free of obstructions, curb ramps not exceeding maximum slopes, audible signals and detectable warnings at pedestrian signals. The specific requirements for accessibility are detailed in the American National Standard Institute's document A117.1-1980 (ANSI). Some sections of the sidewalk system in the study area met standards for ramps and grades (see SIDEWALK CONDITIONS plans), most did not.

- **Level of Service**
  The accompanying drawings in the appendix (SIDEWALK CONDITIONS) show the condition of side walks thoughtout the study. They also rate the "level of service"of the sidewalk throughout the corridor. (This rating system was devised by the consultant team and does not necessarily relate the AASHTO rating system.) None of the study area is accessible to the visually impaired and very little of it is accessible to wheelchair users.

BICYCLES

This study assumes that bicyclist are legitimate users of the roadway who need to have access to the services, business and places of employment located on major road arteries. The study also assumes that the bicycle is a legitimate transportation vehicle and provisions need to be made for their safe use within the right-of-way.

During numerous site visits we were aware of the use of even the most hostile parts of corridor by bicyclists (e.g.- the bridge over the I-89 on Williston Road) If bicycle use even exists in the current hostile conditions, any improvement the City can make to upgrade existing biking conditions should result in a significant increase in the use of bikes for transportation.

This study recommends that on road accommodation be made for bicycles along the entire length of Shelburne and Williston Roads. These arterials access major commercial and retail areas and also provide a link to Burlington. To deny cyclists the use of these roads significantly discriminates against this mode of transportation. Requiring cyclists to leave the road and use the sidewalk for part of the route (as has been suggested by AOT staff for bikes crossing bridges) increases travel time and puts the biker at a disadvantage.

Off-road recreation paths are important for alternative transportation but they should not be viewed as a substitute for on-road routes. Bike paths should continue to be used as part of a two tier bicycle system for slower bicycle traffic and other modes. Recreation paths are often not practical for the serious cyclist who travels at speeds over 10-12 miles per hour and seeks the most direct route between two points

We recommend the following improvements to improve bicycle safety and comfort on Shelburne and Williston Roads:

- **Smooth Surface / Maintenance** - the condition of the roadway driving surface is especially critical to cyclists. Small irregularities can cause the rider to lose balance. Over the winter the gutter next to the curb tends to accumulate gravel which is also a safety hazard. Repair and cleaning of the bike route or lane should be a routine part of street maintenance. Raised pavement markings of any kind including thermoplastic markings currently being used, should also be avoided in bicycle or shared lanes.

- **Friendly Drain Grates** - Most public works departments are now aware of the need to use bicycle friendly grates on all roadways, however it is also important that grates be kept flush with the surface of the road. At many locations in the study area the roadway had been re paved and the grate had been left 2 or 3 inches lower forming a "pot hole" for the biker. This situation is as much of a safty hazard as an improper grate design.

- **"Shared Route" Signs** - Where space is planned for a full bicycle lane the pavement should be marked accordingly. Where space is currently not available for a full lane and cyclists share the outside lane with the car "shared lane" signs should be installed to alert the driver to the fact that bicycles have use of the road and to be aware of their presence. Vehicle speed is a concern on these stretches of the road. Twenty -five mile per hour speed limits are recommended and should be enforced. Narrow lanes tend to slow traffic and reinforce the speed limit.

- **Visible Signals** - Traffic signals with visors and cylinder shades are difficult for cyclists to see in many intersection situations. Signal design should consider all user modes (see paragraph on Signals).

TRANSIT

As statedpreviously pedestrian improvements also serve the transit user. Over and above these, this study also considered the following transit improvements:

- **Bus Pull- Offs** - Bus pull-offs are not recommended for use in the study area. Pull-offs work to ease vehicle traffic flow but slow bus speed because of the difficulty the driver has pulling back out into the flow of traffic. To encourage the use of alternative transit it is preferable to give buses every advantage possible. Installation of bus pull offs also requires the elimination of green space, diminishing the environment for the pedestrian.

- **Bus Stops** - Currently the CCTA bus stops on demand at most intersections. Bus stops are marked by a painted strip on utility poles. Although in some ways frequent stops represents good bus service, frequent stops also slow the entire trip and make transit use less appealing than "taking the car". As ridership increases it will be advisable to study the advantage of more formalized stops (with the informal understanding that buses will stop in between when flagged down.) These stops should be no further than 800 feet apart so that the maximum walk for reaching a stop is 400 feet, or one city block.

  Plans are currently in motion at CCTA for the installation of bus shelters at high volume stops along the bus route in South Burlington and other parts of the service area. A bus shelter prototype has been chosen. (See graphic below). This shelter has the advantage of being small enough to adapt to the limited site spaces available on the route and also serve its purpose as a place for resting and for cover in rainy weather. Although space in the right of way is limited some opportunities exist (see Recommendation plans). On

PRESS RELEASE

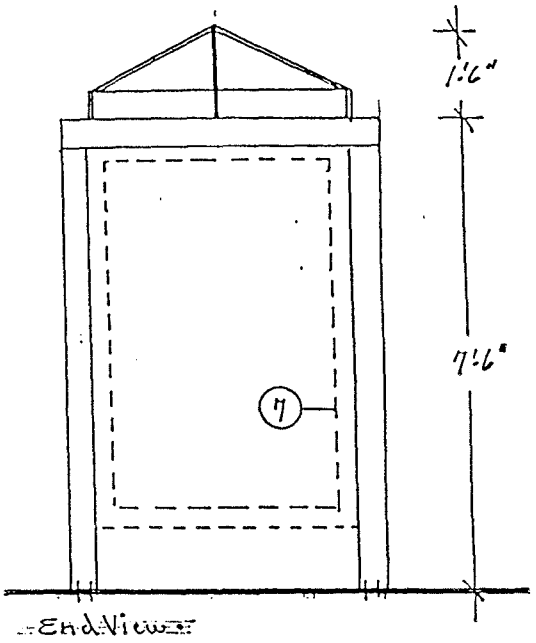
Pedestrian, Bike and Transit Improvements for Williston and Shelburne Roads

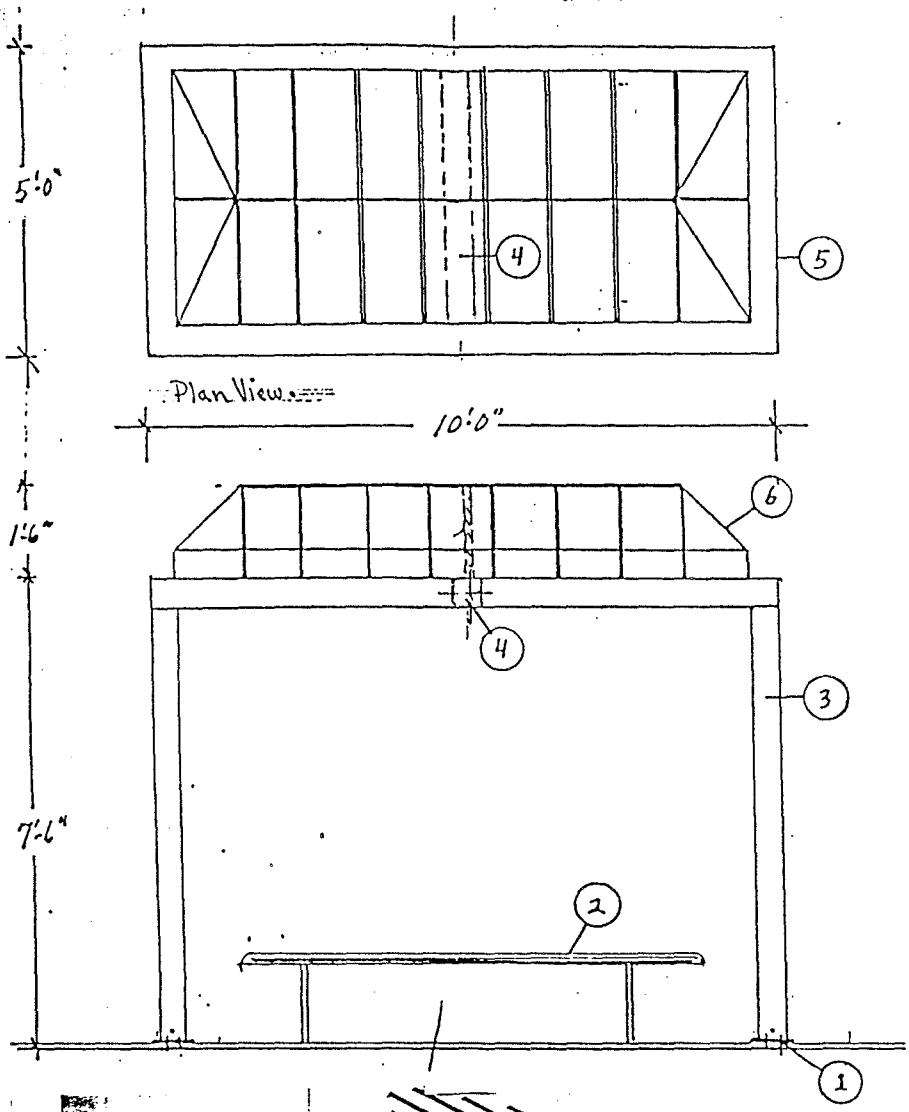
Williston and Shelburne Roads are major transportation corridors for Chittenden County, linking South Burlington with surrounding towns. They also serve as the only connection between many destinations within South Burlington. Up until now, design priority in these corridors has been given to cars, resulting in a dangerous and unpleasant environment for walkers, bus riders, and cyclists. Those who cannot drive or choose not to drive often have no alternate routes to destinations on these roads.

In recognizing that these important corridors should be shared more equitably by all transportation users, the City of South Burlington, together with the Chittenden County Regional Planning Commission is undertaking a study to improve the pedestrian, bike and transit "friendliness" of sections of Williston and Shelburne Roads.

In the coming months landscape architects Julie Campoli and Kathleen Ryan will work together with Pinkham Engineering to develop plans for sidewalk repair, pedestrian signals, bike lanes, bus shelters and other amenities to increase comfort and safety for users of alternative transportation. These plans will address the segment of Shelburne Road north of the improvements planned by the Vermont Agency of Transportation as well as the entire length of Williston Road. The team will present its recommendations to the city on September 1.

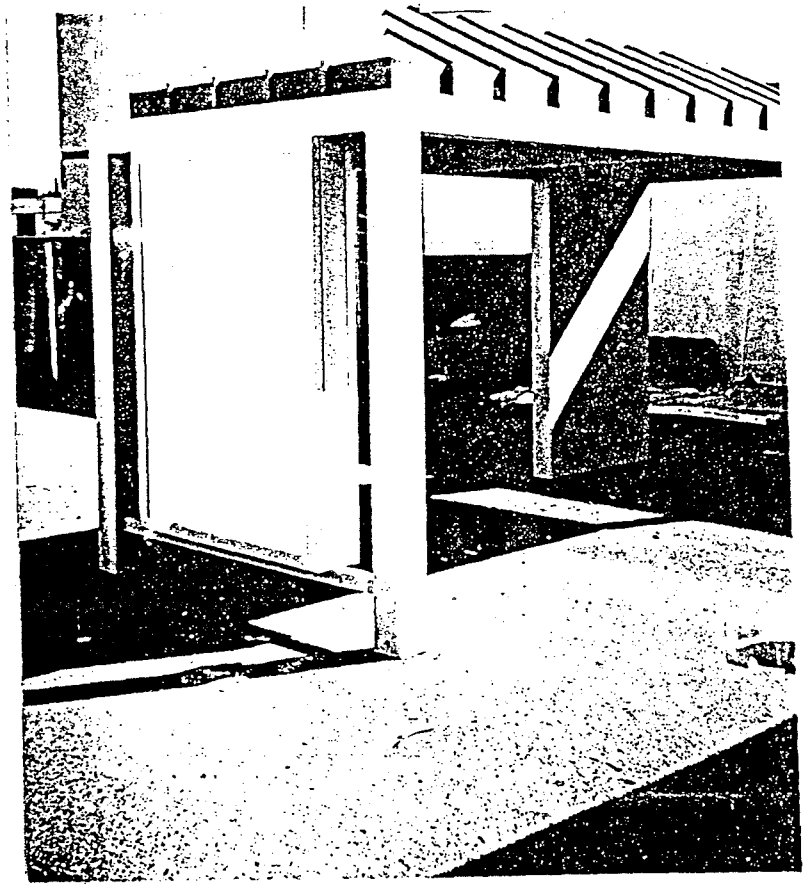
lengths of the corridor where there is no right-of-way space, the city is encouraged to seek easements or purchase parcels to place shelters. Shelters should be placed near street lights but not directly below them as a shadow will be cast by the shelter roof. Opportunities exist for lighting this prototype shelter in a vandal proof manner which would add to its appeal and visibility from the roadway. Due to lack of funds for adapting and maintaining fixtures, lights are not recommended at this time but should be considered at a later date when funds are available.





DETAILS

1. Adjustable Footing Base (FOUR BOLTS)
2. Fiberglass Bench & Pedistals (5')
3. 6"x 6"x.190" Alum. Posts
4. 6"x 6"x.190 Roof Beam & Truss
5. 6"x 6"x.190 Fascia Frame/Structure
6. .090 Aluminum Pitched Roof with mullions
7. 4'x 6' Aluminum AD-Box or Poster Case (NON-ILLUMINATED w/CORK BOARD) (R)



The most positive impact of bus shelters installed along the bus route may be to increase the visibity of the CCTA and make the public more aware of the availability of bus service. They will also provide a "statement " to the rider that they have a place in the transportation corridor that is devoted just to them. The shelters will have display space for posting bus schedules to keep riders informed.

Unfortunately there are presently no funds available for maintaining the shelters. It is recommended that funds be sought for this use. If Public Transit is to succeed, its image and appeal need to be given priority. A rundown bus shelter will have a negative affect on that image and the ridership.

- **Near Side-Far Side Bus Stops** - The options of near and far side stops were considered with respect to advantages for the rider and bus driver. There appeared to be positive and negative aspects to each option depending on the site in question. Given the constraints to finding adequate bus stop locations in the study area it was concluded that the bus stop sites should be selected according to other criteria and not driven by nearside or farside systems.

- **Pre-emption Signals** - It is possible to allow bus drivers to pass through intersections using a device that pre-empts traffic signals. This method of giving priority to bus traffic is especially useful where far-side bus stops are common. It is recommended that this device be seriously studied especially on Shelburne Road where far-side stops will be the norm south of Imperial Drive.

Site specific recommendations are shown on the accompanying plans. These recommendations are shown as typical solutions for sections of the roadway corresponding to those described in the existing conditions section.

CONCLUSION

Providing for the transit user, the pedestrian and the cyclist requires more than simply adding a length of asphalt or concrete. These users are affected by the entire design and condition of the transportation corridor and even the site design of adjacent land uses. To properly address the needs of alternative transportation users and to truely encouage those users, the City of South Burlington and the Regional Planning Commission will need to examine issues of pedestrian ammenities in conjuction with good roadway design and land use planning.

The traditional solutions to traffic congestion that have lead to widening roads further have diminished other transportation options and resulted in harsh highway environments not inviting to either cars or pedestrians.

An intergrated transportation system of attractive roadways that serve diverse modes of transportation and a compact land use pattern is the direction that South Burlington should pursue.

What kind of a City will South Burlington be in twenty years ? Although South Burlington started as a suburb, it continues to grow and will become increasingly urban. Do South Burlington residents have a vision of what their city will be? Will it have a thriving center of active businesses, large and small parks throughout, pleasant residential neighborhoods close to the commercial center and civic buildings that host a variety of cultural activities? This is the vision endorsed by many residents as part of the City Center Plan.

The transportation choices South Burlington makes now will have a big impact on the realization of that plan. If it endorses more private automobile access to businesses on Williston and Shelburne Roads at the expense of alternative modes, it will encourage development out on the strip rather than in the center. And by encouraging sprawl, it will preclude the type of compact development that makes alternative transportation workable.

Transit users, pedestrians and cyclist are out there on Shelburne and Williston Roads daily. They deserve respect and encouragement.

PART III: COSTS

Implementation of the recommendations has associated costs which are herein categorized as short-term and long-term. The short-term improvements ONLY are included in this cost estimate. Long-term improvements have been shown in "concept" form, and considerable refinement in actual design would be required before realistic cost estimates can be prepared.

A. SIDEWALKS (See plans for locations; Key "E" and "F" for extensions/additions, Key "D" for up-grading work.)

1)	Shelburne Road	
	•Replace ramps at curbs, etc.	
	± 660 linear feet at $24 per linear foot	$15,840
	•Extensions, additions	
	± 4770 linear feet at $14 per linear foot	$66,780
2)	Williston Road	
	•Extensions, additions	
	± 3200 linear feet at $14 per linear foot	$44,800
	Sidewalks Sub-total	$127,420

B. SIGNALS

•Up-grade, add pedestrian phase, WALK-DON'T WALK signals, $6,000 lump sum	
•Shelburne Road - 2 locations:	
Baldwin Avenue and Brewer Parkway	$12,000
•Williston Road - 2 locations:	
White Street and Kennedy Drive	$12,000
Signals Sub-total	$24,000

C. PAVEMENT MARKINGS AND SIGNS

•Stripe cross-walks with durable lines;	
12 intersections with ± 200 feet each	
Both roads, 2400 linear feet at $ .90 per linear foot	$2,200
•Replace and add pedestrian signs, posts;	
100 each 2'x 2', 50 each 3'x 3', plus special	
Both roads, 896 square feet at $25 per square foot	$22,400
Pavement Marking and Signs Sub-total	$24,600
SUB TOTAL	$176,020
Contingencies	$26,480
Probable TOTAL CONSTRUCTION COST	$202,500

Unit Price Source: *Unit prices used above are adjusted from recent highway bid prices, intending to include related indirect costs.*

APPENDIX

VERMONT

Monday, July 12, 1993 ■ Metro Editor: Rob Eley, 660-1862

Section B
Deaths: 2B
State meetings: 2B
Town meetings: 2B
+ • • •

Study: Rail link could work

U.S. 7 bypass may hit $9 million

By Matt Sutkoski
Free Press Staff Writer

A commuter rail link between Charlotte and Burlington could work but would cost close to $9 million to start up, a rail feasibility study indicates.

The commuter rail would be used initially to divert commuters from U.S. 7 when the road is rebuilt between the LaPlatte River in Shelburne and Imperial Drive in South Burlington.

The U.S. 7 reconstruction is expected to create traffic tie-ups as the already congested highway is torn up and blocked by equipment during the work.

Proponents of the commuter rail want it to be operating by the time construction begins on U.S. 7, probably in 1996 or 1997.

The analysis of the potential commuter railway is contained in the final report of the Vermont Rail Feasibility Study, which was completed in March.

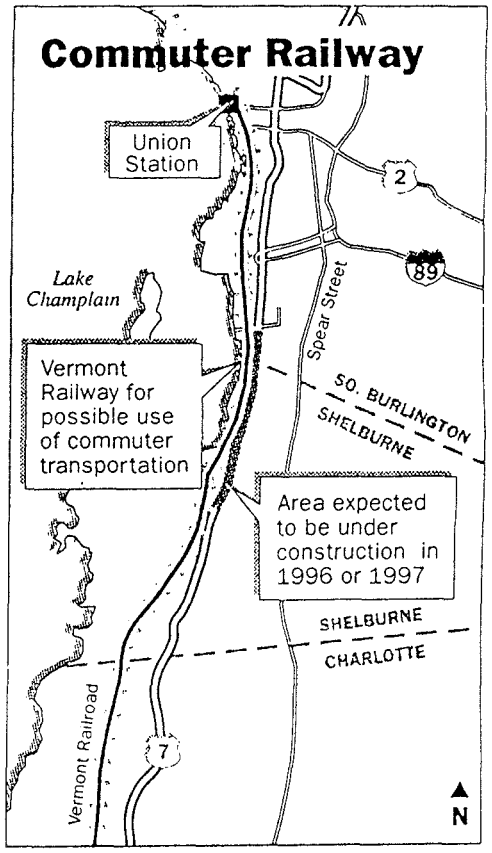
The report was compiled by a council appointed by Gov. Howard Dean in 1992 to make recommendations on whether Vermont's 700 miles of railroad track should be upgraded.

Members of the Vermont Rail Council generally supported the Charlotte-Burlington rail link; some of the panel members had some reservations about it. "The consensus was to recommend to the governor that it be further considered," said State Rep. William Cimonet-

See **RAIL,** *3B*

ADAM PIKE RIESNER, *Free Press*

(From left) Karin Beij of the Chittenden County Regional Planning Commission, consultant Kathleen Ryan, David Smith of the State Agency of Transportation and Chris Greenman of the Chittenden County Transportation Authority study ways to make travel more palatable. **Story, Page 3B**



TRICIA BARRY, *Free Press*

Consultants work to pave way for those in high-traffic areas

By Matt Sutkoski
Free Press Staff Writer

As ways to improve mobility on U.S. 7 are studied, consultants hired by South Burlington are finding ways to make the roads more palatable for pedestrians and bicyclists.

The consultants, Julie Campoli and Kathleen Ryan, led city and county officials last month on walks along Shelburne and Williston Roads to demonstrate the difficulties pedestrians have.

Ryan pointed out a number of spots on Shelburne Road between Talbot's Plaza and the Outlet Center Mall that rendered the area dangerous to pedestrians. Sidewalks were cracked and heaved — dangerous for elderly pedestrians. The angles of traffic lights were such that pedestrians had difficulty telling when the light was green.

Sidewalks were often close to high-speed traffic. At one point, near the Service Merchandise plaza, there was a wide grassy strip between sidewalk and road. "This much green space lets you begin to be in your own environment," Ryan said.

At another spot, weeds had grown to make pedestrians crossing a street invisible to motorists. "I don't have the sense they know I'm here," Ryan said, dodging traffic as she crossed the street.

One of those walking, David Smith of the state transportation agency planning department, said different groups would have to cooperate to get people out of cars and into mass transportation or walking. "Sooner or later, businesses are going to have to get with any program to get people out of their cars," he said.

Campoli said their report will be submitted to South Burlington officials by Sept. 1.

Final Presentation : Comments from City Council Meeting 9/20/93

The Final Draft of the Study was presented at the September 20th meeting of the South Burlington City Council. The following issues were raised:

• There was a discussion about the portion of the study area that falls under the jurisdiction of the City of South Burlington. South Burlington does not take responsibility for the area of the right-of-way between Queen City Park Road and Proctor Ave. where the city line falls on the eastern side of the Shelburne Street . This is a problem that needs to be resolved especially at the intersection of Shelburne Road and I- 189. Lack of maintenance of the landscaped area will continue to be a problem for pedestrians .

• The consultants were questioned about their recommendations for on road bike lanes. One of the Council felt strongly that for safety reasons, bikeways should be provided off the roadway, next to the sidewalk . The consultants stated that the request from serious bikers of the community was for on road bike lanes. Bike lanes provide them the fastest most efficient routes to work and to their other destinations. The consultants stated that because these people were using their bikes for real transportation and by doing so are relieving vehicular congestion on the road, they should be encouraged. There was a debate about this issue for several minutes but no resolution was formed.

• The topic of four leg pedestrian crossings at intersections was discussed. At least one member of the Council was supportive of this recommendation. As a member of Shelburne Road Committee, he had suggested this design for the intersections on Shelburne Road but the design solution was turned down by the AOT. There was discussion about the reasons for the AOT's preference for a three leg design but no conclusions were drawn.

• One council member mentioned the problem of right turn on red and conflicts with pedestrian traffic. Bob Alexander from Pinkham Engineering suggested that " no right on red " signs, education and awareness were ways to resolve these potential conflicts.

• The Consultants were asked their opinion of the viability of a pedestrian overpass on Williston Road. They responded that this type of solution has not been successful in the past in other urban areas and that the separated grade crossing at U.V.M., while having a design with very good potential, has been only minimally successful.

REFERENCES

1. South Burlington Masterplan for Alternative Transportation Routes - Revised Draft 8/10/93
   T.J. Boyle and Associates

2. Chittenden County Alternative Transportation Paths - Alternative Transportation Study -
   June 1993 Resource Systems Group, Norwich Vermont

3. Route 7 Advisory Committee Report to the South Burlington City Council and the Shelburne Selectboard. - August 1993

4. Williston Road Study Committee - Final Report - July 1990

5. National Bicycling and Walking Study - Final Case Study FINAL DRAFT
   U.S. Department of Transportation, Federal Highway Administration
   prepared by: Greenway Inc., 121 Edinburg South- Suite 107
   MacGregor Park, Cary, North Carolina 27511
   (919) 380-0127

6. Guide for the Development of Bicycle Facilities - August 1991
   AASHTO Task Force on Geometric Design

7. Pedestrian Planning & Design Training Manual - Pilot Training Course. 1992 - draft
   Florida Department of Transportation.- Edited by : Dan Burden and Michael Wallwork

8. A Policy on Geometric Design of Highways and Streets - American Association of Highway and Transportation Officials

9. Vermont Urban and Community Foresry Manual - Agency of Natural Resouces, Dept of Forest, Parks and Recreation. Urban and Community Forestry Program - 1992

10. Bicycle Facilities Planning &Design Manual - The Division of Planning, Florida Department of Transportation. Revised - revised1982

11. Manual on Uniform Traffic Control Devices- 1988 edition - U.S. Department of Transportation , Federal Highway Administration.

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Transmittal To: Chittenden County Regional Planning Commission

Michael Flaherty, Chair, South Burlington City Council
Joe Welth, Planning Director, City of South Burlington
Peter Keating, Transportation Planner, CCRPC
Ken Pinkham, President, Pinkham Engineering Associates, Inc.
Kathleen Ryan, Landscape Architect
Julie Campoli, Landscape Architect

Report Title:

Changes to the Physical Accessibility Components of the Transit, Bicycle, and Pedestrian Improvement Study for Williston and Shelburne Roads

Summary:

At the request of the authors of the "*Transit, Bicycle, and Pedestrian Improvement Study for Williston and Shelburne Roads*", The Disability Council's Susan Deacon, Technical Director, and Stan Marshall, Policy Director, have reviewed the TBPI Study to determine what changes were required to address physical accessibility issues. The attached report contains the necessary changes.

Some of these changes are needed to reflect existing state and federal legal requirements, while others reinforce the need to consciously incorporate standards-complying physical access from the outset of all planning and design work.

CHANGES

TO THE

PHYSICAL ACCESSIBILITY COMPONENTS

OF THE

Transit, Bicycle, and Pedestrian Improvement Study for Williston and Shelburne Roads

Prepared For The

Chittenden County Metropolitan Planning Organization
and the
City of South Burlington

Prepared By

Susan S. Deacon, Technical Director
and
Stan L. Marshall, Policy Director

September 30, 1993

THE DISABILITY COUNCIL
C/O 83 BARLOW STREET, #205,
WINOOSKI, VT 05404,

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CHANGES TO THE PHYSICAL ACCESSIBILITY COMPONENTS OF THE
Transit, Bicycle, and Pedestrian Improvement Study for Williston and Shelburne Roads

Introduction:

The Disability Council became involved in the "*Transit, Bicycle, and Pedestrian Improvement Study for Williston and Shelburne Roads*" ["TBPI Study"] after being contacted by TBPI Study co-author Julie Campoli at the suggestion of the Regional Planning Commission staff. This report is being issued as a separate document (with the full knowledge and support of the TBPI Study's authors) as there was insufficient time before the final submission of the TBPI Study for the Disability Council to provide the changes required to address the accessibility issues involved.

Some of the changes to the TBPI Study are needed in order to reflect existing state and federal legal requirements, while others reinforce the need to consciously incorporate standards-complying physical access from the outset of all planning and design work.

Most importantly, and notwithstanding the specific changes made to the TBPI Study, it must always be remembered that the provision of physical accessibility is a fundamental human and civil right of all citizens, and nothing less than full compliance is acceptable. It must also be remembered that while access is discussed relative to meeting certain standards, since these standards are the absolute minimums, even standards-complying access does not provide a barrier free environment.

The Council is compelled to make this point because of some of the statements that were made during the September 20th presentation to the South Burlington City Council. The statement that is most illustrative of the Disability Council's concern came in reference to the curb ramps at the I-189 bridge:

> **"The 189 bridge was handicapped accessible, it doesn't fully meet the standards, which are rather strict, but at least the drop curbs are in there, the sidewalks are present, [and] the grades are reasonable...." [Bob Alexander, Pinkham Engineering, member of the TBPI Study team; quoted from Channel 17 videotape of the September 20, 1993, South Burlington City Council Meeting].**

Not only does this type of statement undermine the statutory obligation to *insure* that *all* legally required standards are fully met - whether those standards involve curb ramps, or bridge deck load-bearing requirements - but for the majority of the disabled community, the 'it's good enough, the grades are reasonable' approach is very much the same type of less-than-equal treatment that many women feel was encompassed in the views of those who were willing to allow women to visit the Ethan Allen Club, but not to become members.

Population:

Based on 1990 population estimates, there are approximately 12,800 people with disabilities residing in Chittenden County. This number must be considered a minimum estimate of the population with disabilities, as it is based upon people who self-identified themselves as having a permanent disability. It does *not* include people with 'temporary' disabilities (i.e., healable injuries), 'social' factors such as mainstreaming or those unwilling to identify themselves as having a disability (such as someone with a heart condition), or tourists, students, commuters, shoppers and other temporary or non-resident individuals.

Accessibility Standards:

The first nationally recognized accessibility standards were issued 32 years ago by the American National Standards Institute ["ANSI"]. While additions have been made to these, and other standards have been issued under a variety of laws, the standards that sidewalks and curb ramps are required to meet today are almost identical to those issued by ANSI in 1961.

Unfortunately, the Vermont Agency of Transportation's "Sidewalk Ramps" standard C-3 has never met the minimum standards for curb ramps required by federal law and regulation; specifics include cross slopes that are too steep, and texturing options that federal requirements prohibit using outdoors. Hence, any curb ramps constructed to VAoT specifications are, by definition, non-complying, inaccessible curb ramps that must be reconstructed.

The federal standards required today, although still not creating a barrier free environment, are the Americans with Disabilities Act Accessibility Guidelines ["ADAAG"], issued

by the U. S. Architectural and Transportation Barriers Compliance Board. Additionally, certain non-fixed items such as trash receptacles and construction barricades, while not specifically covered under the ADAAG, are covered under the U.S. Department of Justice rules regarding the maintenance of accessible features (28 CFR §35.133).

Scope:

While the TBPI Study is concerned with road, pedestrian, and transportation linkages within the Williston and Shelburne Road corridors, the sidewalks and curb ramps within the study area cannot be looked at as isolated elements within these transportation corridors.

Under Title III of the Americans with Disabilities Act ["ADA"], no individual can be denied access to any commercial facility or place of public accommodation, and it is the sidewalks and curb ramps within a transportation corridor that provide pedestrians their 'connection' to these commercial and public facilities.

Specifically, the provision of physical access to facilities in accordance with the ADAAG accessibility standards requires that at least one Accessible Route, "...shall be provided from public transportation stops...and public streets or sidewalks to the accessible building entrance they serve." [ADAAG §4.3.2(1)]. However, if the sidewalks and curb ramps are not accessible, then the required Access Route is non-existent, the involved facilities lose business, and their owners / operators become vulnerable to legal action for noncompliance with the ADA.

Notes to the Changes:

The changes and comments that follow, which cover only those aspects related to physical accessibility for people with disabilities, are derived solely from the text material contained within the TBPI Study report prepared by Kathleen Ryan and Julie Campoli for the City of South Burlington through the Metropolitan Planning Organization. The Council has not been able to undertake field verification of any data, and did not have either the final version of the TBPI Study report, or the drawings and plans referenced as being included in the Study's appendix, to work from.

Specific Changes to the TBPI Study

Format of Changes:

Location of: Item

"[Bracketed material to be deleted;] underlined text to be substituted / added."

COMMENT: author's comment; not intended for inclusion in the actual text of the TBPI Study.

Process:

Page 3, ¶3:

"..., [a representative from the Disabilities] The Disability Council,..."

Page 4, ¶4:

"..., and Stan Marshall [an advocate for the disabled] and Susan Deacon, The Disability Council."

Williston Road:

Page 5, ¶7: Dorset Street toward Burlington

"Six of the eight interstate ramps have no handicapped curb ramps, and the other 2 curb ramps do *not* meet minimum specifications."

COMMENT: The Vermont Agency of Transportation's "Sidewalk Ramps" standard C-3 does not meet the minimum requirements for curb ramps required by federal law and regulation, including cross slopes that are too steep and texturing options that are prohibited outdoors. Hence, any curb ramps constructed to VAoT specifications are, by definition, non-complying, inaccessible curb ramps that must be reconstructed.

Page 6, ¶5: Dorset Street to Hinesburg Road

Add, as the last sentence of this paragraph:

"Both the pedestrian crossing signals and crosswalks must be verified for accessibility compliance, including auditory signals and crossing time, and all deficiencies corrected."

Page 6, ¶8: Hinesburg Road to Mills Avenue

"However, the four lanes of traffic effectively cuts this neighborhood in half. With no marked crosswalks or signals along this 1/2 mile section of Williston Road, it is quite difficult to cross the street, and it is, in all likelihood, inaccessible."

Page 7, ¶1: Mills Avenue to Williston

"All sidewalks end east of the Air Guard Road with no provision for pedestrians along the road, making the rest of Williston Road totally inaccessible to people with disabilities."

Page 7, ¶3: Mills Avenue to Williston

"There are no signals after Kennedy Drive. Pedestrian crossings are difficult at slow traffic times and close to impossible at rush hour. For people with disabilities, unsignalized intersections are dangerous at best, and likely to be unusable because of traffic hazards."

Shelburne Road:

Page 7, ¶6: Home Avenue to Proctor Avenue

"Sidewalks are intermittent and....The pedestrian route is defined by...dirt trails and a few crosswalks painted on asphalt parking lots, resulting in a complete lack of accessibility for people with disabilities."

Page 7, ¶8: Sears to Queen City Park Road

"[With the exception of adequate curb ramps for the handicapped, r] Recent construction of the I-189 bridge failed to address the needs of pedestrians or cyclists...."

COMMENT: The Vermont Agency of Transportation's "Sidewalk Ramps" standard C-3 does not meet the minimum requirements for curb ramps required by federal law and regulation, including cross slopes that are too steep and texturing options that are prohibited outdoors. Hence, any curb ramps constructed to VAoT specifications are, by definition, non-complying, inaccessible curb ramps that must be reconstructed.

Page 8, ¶2: Queen City Park Road to Imperial Drive

"The pedestrian actuated signal at Queen City Park Rd. provides the only link between the Burlington and South Burlington bike paths[,]. Both the pedestrian crossing signals and crosswalks must be verified for accessibility compliance, including auditory signals and crossing time, and all deficiencies corrected.

[however] At this writing another pedestrian signal is being installed at the McIntosh Avenue intersection; the accessibility compliance of this signal will also need field verification and any deficiencies corrected."

Pedestrian and Bicycle Trips:

Page 9, ¶s1 - 5:

COMMENT: With respect to the RSG survey noted in the TBPI Study, there is no indication as to whether physical accessibility was included, surveyed, or considered; or how potential respondents were selected. If respondents were selected only from licensed drivers, the study would not be valid for transportation users in general, and would significantly underrepresent the disabled population.

Adequate Pedestrian Access Is the Law:

Page 10, ¶3:

"[ADEQUATE] PEDESTRIAN ACCESS IS THE LAW"

Page 10, ¶3:

Strike the existing paragraph in its entirety and replace it with the following language:

"The Americans with Disabilities Act requires that municipalities provide sidewalks, curb ramps and crossings that are fully accessible, and which can be negotiated by all people regardless of disability. The failure to upgrade pedestrian facilities to ADA standards is likely to result in legal action."

COMMENT: The reference to buses has been relocated to the section entitled, "ADA".

Prospects:

Page 12, ¶4:

"Although the needs of pedestrian and transit users have long been neglected in the study area, our survey concludes that there are many areas where the pedestrian experience is good, amenities exist and there is room for future improvement. However, the reality for people with disabilities is that no areas are 'good', i.e., accessible / usable."

Design Solutions:

Page 14, ¶3: Site Furnishings

"Pedestrian scale accessible amenities...make the pedestrian environment more comfortable, [and] appealing, and usable for everyone.

Page 14, ¶4: Frequent Crossings

"Provide fully access-compliant crosswalks and pedestrian signals at all intersections and at all four legs of the intersection."

Page 14, ¶5: Refuge Islands

Add a new 2nd paragraph as follows:

"Refuge Islands, while technically allowed under the ADAAG, are *not* accessible in Vermont because winter conditions prevent the required path across the island from being kept clear, i.e., the lack or incomplete removal of snow and ice."

Page 14, ¶6, last sentence: Curb Radii

"[Where a large turning radius is unavoidable a refuge island should be installed as has been done] The refuge island installed at Dorset Street near Howard Johnsons must be removed."

Page 15, ¶3: Visible and Accessible Signals

"Visible [and Accessible] Signals"

Page 15, ¶4: Adequate Crossing Time

"All [P]pedestrian signals [should] must be timed to allow [the slower walker to cross in comfort] adequate time for a manual wheelchair user to safely cross an intersection, as required by Vermont state law."

Page 15, ¶6: Pedestrian Signals

"All [These] signals [should] must be located no further than [an arms length] 36 inches from the sidewalk in a place that is consistent at all crossings. Signal buttons must be accessible to those using [wheel chairs] wheelchairs and in a place easily located by the visually impaired. Pedestrian signals [should] must, as required by Vermont state law, include an[d] auditory signal as well."

Page 16, ¶1: ADA

Strike the existing paragraph in its entirety and replace it with the following language:

"Accessible routes and curb ramps have been mandated for twenty-five years, with the 1990 enactment of the Americans with Disabilities Act being the latest statute to require municipalities to provide sidewalks, curb ramps and crossings that are fully accessible, and which can be negotiated by all people regardless of disability.

This requires a standards-complying Accessible Route which includes, among other elements, components such as standards-complying drain grates, a continuous surface clear of obstructions, curb ramps with level-landing areas, detectable warnings, and slopes that do not exceed the allowed maximums. Pedestrian signals must be timed to provide sufficient crossing time for a manual wheelchair user, with accessible signal buttons as well as an auditory signal. The condition of the sidewalk surface is especially critical for wheelchair users, including fully compliant grades, and sidewalks without gaps (which render sidewalks noncompliant and unusable as Accessible Routes)."

Bus systems are required to be accessible, including accessible bus stops, wheelchair lifts on buses, timetables and communications available in alternate formats, and paratransit service for those patrons unable to use an accessible fixed route bus system. While CCTA's operations and fleet meet these requirements, one of the most significant barriers to using the bus system remains the lack of accessible sidewalks and curb ramps to and from buses.

The failure to upgrade pedestrian facilities to fully comply with ADA standards is likely to result in legal action."

Page 16, ¶2: Level of Service

"None of the study area is accessible to the visually impaired, [and very little of it is accessible to wheelchair users] virtually none is accessible to wheelchair users, and there are significant barriers to people with other types of disabilities, including those with hearing and sensory impairments."

Transmittal To:

Michael Flaherty, Chair, South Burlington City Council

Joe Weith, Planning Director, City of South Burlington

Peter Keating, Transportation Planner, CCRPC

Ken Pinkham, President, Pinkham Engineering Associates, Inc.

Kathleen Ryan, Landscape Architect

Julie Campoli, Landscape Architect

Report Title:

PLANS ADDENDUM TO THE DISABILITY COUNCIL'S REPORT,

'CHANGES TO THE PHYSICAL ACCESSIBILITY COMPONENTS OF THE TRANSIT, BICYCLE, AND PEDESTRIAN IMPROVEMENT STUDY FOR WILLISTON AND SHELBURNE ROADS'

Summary:

The Disability Council did not have the "*Existing Conditions Plans*" and "*Recommendations Plans*" that accompanied the TBPI Study to use in writing its original Report, "*Changes to the Physical Accessibility Components of the Transit, Bicycle, and Pedestrian Improvement Study for Williston and Shelburne Roads*". Having now received and reviewed these Plans, this Report contains The Council's comments on the design typicals and sidewalk evaluations submitted with the original TBPI Study.

Given the general lack of understanding and compliance with accessibility standards, and the 'its good enough' attitude prevalent in many construction projects, it is The Council's position that until the changes contained in both of The Council's Reports are incorporated into the "*Transit, Bicycle, and Pedestrian Improvement Study for Williston and Shelburne Roads*", the TBPI Study should not be accepted.

Introduction:

As stated in The Disability Council's original Report, "*Changes to the Physical Accessibility Components of the Transit, Bicycle, and Pedestrian Improvement Study for Williston and Shelburne Roads*", ["Changes to the TBPI Study"], The Council did not have the "*Existing Conditions Plans*" and "*Recommendations Plans*" that accompanied the TBPI Study to use in writing its Report. Having now reviewed the road design typicals and sidewalk condition evaluations, The Council is concerned about several accessibility components in these plans.

Sidewalk Levels Of Service:

In a meeting prior to the writing of the TBPI Study, the key point made by The Council to the TBPI Study's authors was that when dealing with accessibility reviews and design, an element either meets the standards and is therefore accessible, or it doesn't, in which case it is not accessible. When dealing with access, there is no middle ground.

The Council is therefore at a loss to understand most of the designations of the Levels of Service assigned in the TBPI Study ["*Sidewalk Conditions Plan*", Sheet 1 of 3].

"A. BARRIER FREE DESIGN" - as stated in the Changes to the TBPI Study, "...even standards-complying access does not provide a barrier free environment." Thus, even where sidewalks and curb ramps fully comply with all ADA requirements, the area is ***not*** going to be a barrier free route.

"B. WHEELCHAIR ACCESSIBLE" - it is unacceptable to claim something as 'wheelchair accessible' if it doesn't ***fully*** comply with ***all*** of the ADA standards which govern a particular element. For example, a curb ramp that doesn't meet the requirements for detectable warnings is not an accessible curb ramp, wheelchair or otherwise (a person with a mobility impairment might also be visually impaired and need the detectable warning).

It is also unacceptable, discriminatory, and illegal to segregate people with disabilities by disability type. If "wheelchair accessible" is one category, do we then have "blind and visually impaired accessible", or perhaps, "sensory impaired accessible"?

"C. NO SIGNIFICANT IMPEDIMENTS" - to state that a walkway doesn't meet ADA standards, but is without 'significant impediments' is a contradiction in terms. As an example, a person using a walker may be totally unable to negotiate any size 'step' (i.e., curbing), and thus any sidewalk without a curb ramp is indeed a significant impediment ["*Shelburne Road #1, Sidewalk Conditions*", Sheet 1 of 3, contains several examples of sidewalks without curb ramps which are rated as Level 'C'].

Another example of sidewalks rated as Level 'C' but which, as a practical matter, pose 'significant impediments', are those roadway segments with gaps in their sidewalks. Such gaps are significant impediments not only to people with mobility impairments, but also to people with shopping carts, baby strollers, three-wheeled cycles, etc. .

"E. ACCESSIBLE ONLY TO WALKERS" - this particular category is perhaps the most disturbing, as it seems to imply a distinction between pedestrians that borders on the prejudicial; i.e., these sidewalk segments would be *usable* (not "accessible") only by people without a physical disability. Designating a walkway in such a manner is reminiscent of entrances, restrooms, and water fountains "for whites only".

In addition to deciding how the various Levels of Service might be classified, it is also imperative to remember the context within which the sidewalks and curb ramps in the TBPI Study are being evaluated. For these are not individual, isolated segments, but rather, part of the ADA-required access routes that provide pedestrians their connection to the commercial and public facilities along the transportation corridor.

For this reason, The Council maintains it is not permissible to evaluate the sidewalks and curb ramps as separate elements; e. g., if a sidewalk meets the ADA requirements, but has a non-complying curb ramp, then that sidewalk is, by definition, inaccessible.

Given these two factors - the need to fully comply with all accessibility standards, and, that the sidewalks and curb ramps within the TBPI Study serve the ADA-required purpose of access routes to commercial and public facilities - it is The Council's position that the sidewalk Levels of Service be revised as follows:

A. ACCESSIBLE - fully complies with all ADA required accessibility standards.

N. NOT ACCESSIBLE - fails to meet one or more of the accessibility standards.

U. UNSAFE CONDITIONS - as written on the TBPI "*Sidewalk Condition*" sheets.

I. IMPASSABLE - as written on the TBPI "*Sidewalk Condition*" sheets.

Note: The Council has deliberately avoided the hierarchical listing of the Levels of Service in the traditional 'A', 'B', 'C', 'D' style to avoid the implication that the second or third ranked Level, while not excellent, would nonetheless be acceptable (which is often how a grading of 'C' is interpreted).

With these changes to how the sidewalk Levels of Service are defined, The Council strongly recommends that the evaluations represented on the "*Sidewalk Conditions*" plan sheets be redone using these revised Levels of Service criteria.

Road Design Typicals:

Turning lane islands, pedestrian refuge islands, traffic circles and similar structures are options that are often perceived as a way of enhancing traffic flow and reducing pedestrian - vehicle conflicts. While the goal is worthy, the methods used to achieve it are almost universally a barrier to access.

As stated in The Council's original Report,

> "Refuge Islands, while technically allowed under the [ADA Accessibility Guidelines], are ***not*** accessible in Vermont because winter conditions prevent the required path across the island from being kept clear, i.e., the lack or incomplete removal of snow and ice." [Changes to the TBPI Study, 'Design Solutions', page 6.]

Even when the pathway across such an island is cleared of snow, the entrances to the island become blocked the next time the roadway is plowed; as was the situation recently on Dorset Street following the November 1st snow storm.

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This is not to say that traffic control or pedestrian refuge constructs cannot be designed in such a way that they both serve the desired purpose and insure accessibility. One such design, "Pedestrian Refuge Space", which is a modification to the "Plan ▫ Typical Intersection ▫ Imperial Drive to I-189 Bridge" design shown on the "*Recommendations*" Plan, Sheet 1 of 2, is attached to this narrative.

The Council is also concerned by the designs proposed for the "*Sears Plaza ▫ Outlet Mall*" on Shelburne Road, and along the Williston Road Service Road shown on the "*Dorset to Hinesburg Road Diagrammatic Plan*" [both being shown on the "*Recommendations*" Plan, Sheet 2 of 2]. A summary of these concerns follows.

Sears Plaza ▫ Outlet Mall:

1. As drawn, all four islands will become barriers to access as discussed above.

2. In addition to being located on the 'inaccessible' islands, the bus shelters shown do not have sufficient space for a wheelchair user to embark or debark from the buses' wheelchair lift.

3. It would seem that the principal users of the two bus stops shown at this location are shoppers, yet to get to these stops, pedestrians would have to traverse large parking areas, which could be a barrier to using the buses (especially when dealing with packages, children, etc.). The Council would recommend that the buses turn into the two shopping areas, as is currently done at University Mall.

4. There would seem to be potential hazards and conflicts for bicyclists, both from buses pulling over against the islands where the bus stops are currently shown, and from vehicles using the turning lanes into and out of the two shopping areas (the bike lane is initially on the curb edge of the road, but upon approaching the islands, it crosses over the vehicle turning lane).

Williston Road Service Road: While supporting the concept of the Service Road (one of The Council's suggested solutions), the specific drawing does not show accessible parking spaces or access routes, both of which are required by the ADA and must meet very specific accessibility requirements. The applicable specifications cover such elements as surface slopes and conditions, vertical clearances, signage, and access

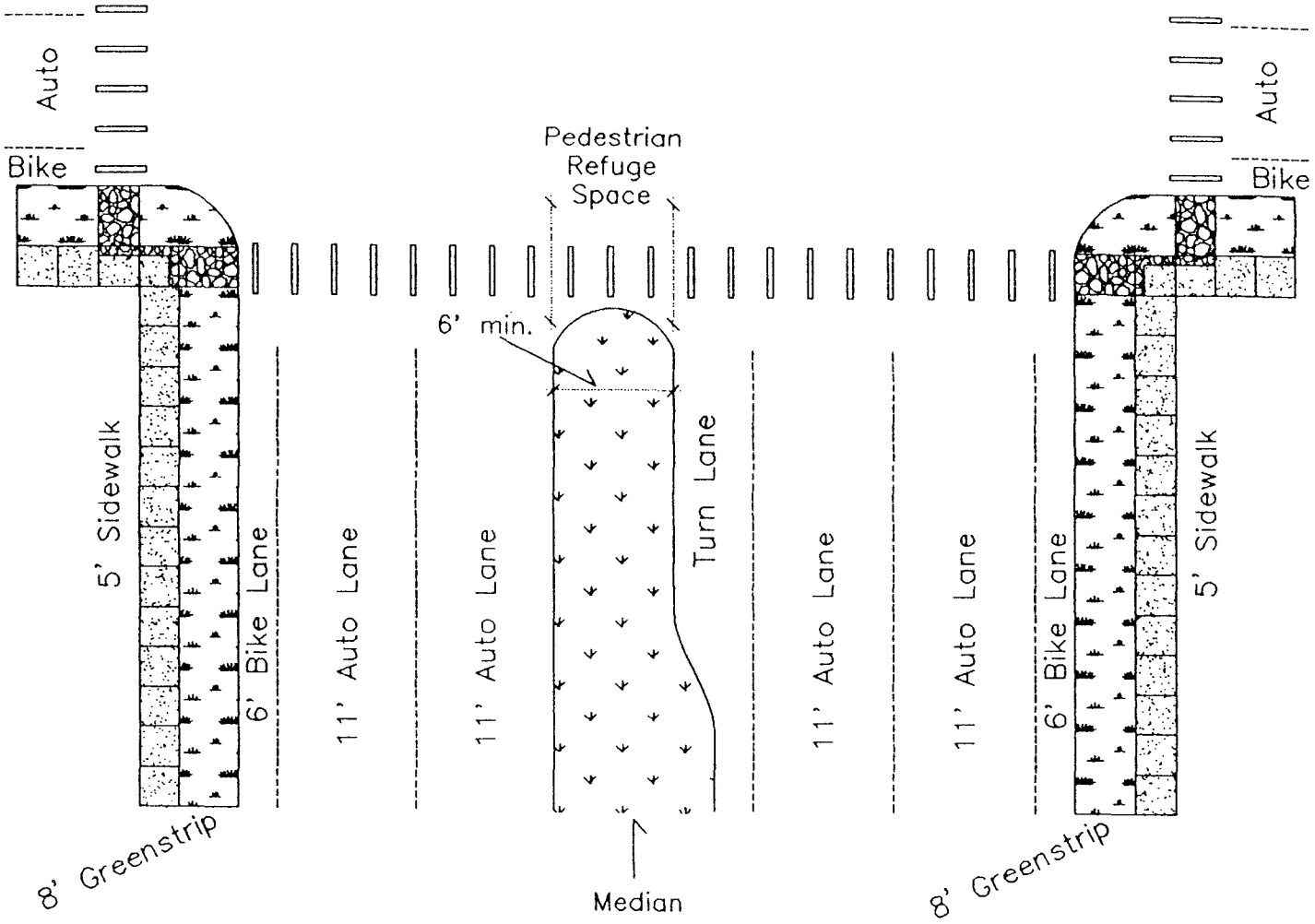
aisles (which allow for entering / exiting a lift-equipped van, or transferring from and to a vehicle from a wheelchair or other mobility aid).

Conclusion:

Until the accessibility concerns expressed in The Disability Council's original Report are addressed, sidewalk conditions are re-evaluated using the revised Levels of Service, and all of the applicable accessibility specifications are accurately reflected in the design concepts and typicals, The Council must recommend that the *"Transit, Bicycle, and Pedestrian Improvement Study for Williston and Shelburne Roads"* not be accepted.

Pedestrian Refuge Space

[Accessible Alternative to Refuge Islands]



NOTE: This drawing illustrates an accessible alternative to pedestrian refuge islands only. It is not intended to show all of the details necessary for accessible pedestrian spaces at an intersection, i.e., it does not show pedestrian activated signals, bus stops and shelters, drain grates, etc.

= Exposed Aggregate Curb Ramp & Detectable Warning Surfaces

The Disability Council	
Drawn By:	Stan Marshall
For:	CCRPC
Date:	Nov. 5, 1993
Page:	1 of 1

Not to Scale

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