

Transportation



Transportation

Introduction to the Transportation Element
Bicycle and Pedestrian Report
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Introduction to the Transportation Element



Transportation in Monterey is tied to issues of economic development, housing, land use, and community development. As in many small towns, Monterey depends largely upon a small number of local roads for local and regional access. The Community Development Plan, Transportation Element addresses specific modes of transportation with regards to the roadways in Monterey. BRPC developed a Bike/Ped study, which addresses issues of walking and cycling in town.

The study measures the suitability of existing road conditions for bicycling and walking and identifies the corridors of highest potential demand for such activities in the Town of Monterey. The study also identified undeveloped or underdeveloped areas and corridors that make sense as attractive possible settings and routes for Monterey cyclists and pedestrians. While the terms “bicycling” and “walking” are used, the facilities addressed in this report are intended to accommodate all non-motorized uses, including rollerblading, jogging, etc.

The study recommendations are intended to balance recreational value, transportation utility and development feasibility.

Bike and Pedestrian Trail Report

Town of Monterey, Massachusetts



Prepared By

Berkshire Regional
Planning Commission

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January 2004

1.0 INTRODUCTION

The Berkshire Regional Planning Commission (BRPC) conducted a study of bicycling and pedestrian (bike/ped) pathway development in the Town of Monterey, Massachusetts as part of the transportation element of the Town's Community Development Plan. The study measured the suitability of existing road conditions for bicycling and walking and identified the corridors of highest potential demand for such activities in the Town of Monterey. The study also identified undeveloped or underdeveloped areas and corridors that make sense as attractive possible settings and routes for Monterey cyclists and pedestrians. While the terms "bicycling" and "walking" are used, the facilities addressed in this report are intended to accommodate all non-motorized uses, including rollerblading, jogging, etc.

The study recommendations are intended to balance recreational value, transportation utility and development feasibility. Special attention was paid to routes that connect the Town's primary residential and commercial areas to its recreational sites. The Town's four prominent open space and scenic areas—Beartown State Forest, Lake Garfield (including the town beach), the Appalachian Trail corridor, and the Konkapot River valley—present particularly attractive areas for walking and perhaps bicycling access enhancements. These enhancements most likely would involve renewal or more likely networking of trails in the areas as well as improvements to the roads and sidewalks that lead to them. BRPC recognizes that the Town does not generally control development within federally or state owned facilities and that this may be a source of frustration for Town citizens. Bike/ped enhancements to routes leading to and from these facilities—routes that *are* controlled by the Town—will help Monterey citizens reclaim a certain measure of local direction of recreational facility access and use. Local residents and tourists alike will benefit from a well-organized network of bike lanes, sidewalks and pathways, connecting Monterey's principal attractions, residences and places of business. The recommendations aim to help alleviate growing traffic congestion, encourage recreation, direct tourism, and improve the Town's overall quality of life.

The final objective of the plan is to provide possible routes for a regional bike and pedestrian path through the Town of Monterey. Groups in Berkshire County such as the Berkshire Bikepath Council and the Berkshire Regional Planning Commission are committed to the development and construction of a contiguous multi-use path system, envisioned as a central backbone with local ribs, from the Connecticut to the Vermont border. With the recommended bike/ped enhancements, the Town of Monterey could be well integrated into the proposed regional network.

2.0 EXISTING BIKE/PED ROAD COMPATIBILITY

BRPC analyzed existing data on the roads, shoulders, sidewalks and traffic markings along key sections of Monterey thoroughfares, then field checked various locations for conditions compatible with safe, enjoyable walking and bicycling. The following sections describe the methodology used to assess priority for bicycling and pedestrian development along Monterey's roads.

2.1 BICYCLING COMPATIBILITY

The Federal Highway Administration (FHWA) has devised a comprehensive measure of bicycling suitability for roads throughout the nation: the Bicycle Compatibility Index (BCI). In December 2003, BRPC published a guide to bike/ped development in Berkshire County, *The Berkshire Bicycling and Walking Transportation Plan*, relying on the BCI as one basis of ranking bicycling development priorities for roads throughout the Berkshires. The BCI weighs factors such as shoulder width, traffic flow, road markings, speed limits, and roadside parking. BCI scores range from 0.0 to 6.0, with *higher* totals indicating *worse* compatibility and *lower* totals indicating *better* compatibility. Roads with BCI scores of 1, for example, have extremely high bike compatibility, while roads with BCI scores of 5.5 have extremely low bike compatibility. BCI scores are correlated to a measure called bicycle level of service (LOS), a concept based on the Federal Highway Administration’s vehicle level of service, which gauges operational road conditions based on motor vehicle volume and road capacity. Bicycling LOS grades of A indicate an extremely high bicycling suitability and LOS grades of F indicate extremely low bicycling suitability. Roads with LOS grades of C or better (equivalent to BCI scores of 3.40 or lower), which correspond to “moderately high” bicycling compatibilities or better, are deemed the minimum standard for bicycling suitability. The bicycle level of service can be thought of as a barometer of bicyclists’ comfort, convenience and freedom to maneuver along a given stretch of road.

The *Berkshire Bicycling and Walking Plan* does not rely solely on the BCI and LOS for bicycling development prioritization. The *Plan’s* priority rankings also take into account roadside land use (namely residential and commercial), road crash rates, road topography, and transportation demands along a given route (i.e. households with no cars, access to schools, shopping, recreational facilities, heavy truck use, etc.).

In effect, BRPC prioritized a road’s bicycling development potential according to its demand and condition, with roads in high demand and poor bicycling condition ranking highest in development priority. In other words, roads with higher BCI scores—that is, *lower* bike compatibility—and heavier demand generally get *higher* development priority in the regional bike plan.

The following table (Table 1) shows the bicycling priority rankings for all roads in Monterey. These are based on traffic counts, census, land use and other data and provided only a preliminary sorting of roads’ bicycling development priorities. BRPC used this initial sorting for field checking purposes. The final recommendations in this report rely only in part on these initial priority rankings and in part on field observations.

TABLE 1. Bicycling Development Priorities for All Monterey Roads

CSN 2000	Street Name	Residential	Commercial	Accident	SLOPE 2-0	OTHER DESTS	PARK	0 CAR	SCHOOLS	BCI	LOS	Bicycling Compatibility	
												Level	Priorities
173300	ROUTE 23	0.00	0.00	1	1	0.00	0.50	0	0.50	4.25	D	Moderately Low	7.25
178400	STRATFORD LANE	0.50	0.00	0	2	0.00	0.50	0	0.50	3.73	D	Moderately Low	7.23
178500	BUCKINGHAM LANE	0.50	0.00	0	2	0.00	0.50	0	0.50	3.73	D	Moderately Low	7.23

TABLE 1. Bicycling Development Priorities for All Monterey Roads

ASN 2000	Street Name	Residential	Commercial	Accident	SLOPE 2-0	OTHER DESTS	PARK 0	CAR	SCHOOLS	BCI	LOS	Bicycling Compatibility Level	Priorities
178600	ARGYLE LANE	0.00	0.00	0	2	0.00	0.50	0	0.50	3.79	D	Moderately Low	6.79
178700	SURREY LANE	0.00	0.00	0	2	0.00	0.50	0	0.50	3.79	D	Moderately Low	6.79
178800	RUGBY LANE	0.00	0.00	0	2	0.00	0.50	0	0.50	3.79	D	Moderately Low	6.79
178000	TYRINGHAM ROAD	0.00	0.00	0	2	0.00	0.50	0	0.50	3.62	D	Moderately Low	6.62
178300	LAKE SHORE LANE	0.00	0.00	0	2	0.00	0.50	0	0.50	3.49	D	Moderately Low	6.49
173500	ROUTE 23	0.00	0.00	0	2	0.00	0.50	0	0.50	3.41	C	Moderately High	6.41
181310	ROYAL HEMLOCK ROAD	0.00	0.00	0	2	0.00	0.00	0	0.00	4.26	D	Moderately Low	6.26
173100	ROUTE 23	0.00	0.00	0	2	0.00	0.50	0	0.50	3.25	C	Moderately High	6.25
178100	TYRINGHAM ROAD	0.00	0.00	0	2	0.00	0.50	0	0.50	3.23	C	Moderately High	6.23
181100	LAUREL BANKS LANE	0.50	0.00	0	2	0.00	0.00	0	0.00	3.73	D	Moderately Low	6.23
181305	ROYAL HEMLOCK ROAD	0.00	0.00	0	2	0.00	0.00	0	0.00	4.11	D	Moderately Low	6.11
180600	SACKMAN WAY	0.50	0.00	0	2	0.00	0.00	0	0.00	3.43	D	Moderately Low	5.93
179700	HARMON ROAD	0.00	0.00	0	2	0.00	0.00	0	0.00	3.79	D	Moderately Low	5.79
180800	WEST ROAD	0.00	0.00	0	2	0.00	0.00	0	0.00	3.79	D	Moderately Low	5.79
176500	GOULD ROAD	0.00	0.00	0	2	0.00	0.50	0	0.00	3.15	C	Moderately High	5.65
176910	ART SCHOOL ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	4.10	D	Moderately Low	5.60
180700	HEBERTS COVE	0.50	0.00	0	1	0.00	0.00	0	0.00	4.04	D	Moderately Low	5.54
173400	ROUTE 23	0.00	0.00	0	1	0.00	0.50	0	0.50	3.52	D	Moderately Low	5.52
177800	TYRINGHAM ROAD	0.00	0.00	0	2	0.00	0.00	0	0.00	3.49	D	Moderately Low	5.49
178200	LIME ROCK LANE	0.00	0.00	0	1	0.00	0.50	0	0.50	3.49	D	Moderately Low	5.49
175610	SWAN ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.95	D	Moderately Low	5.45
174200	BLUE HILL ROAD	0.00	0.00	0	2	0.00	0.50	0	0.00	2.94	C	Moderately High	5.44
175900	FAIRVIEW ROAD	0.00	0.00	0	2	0.00	0.50	0	0.00	2.94	C	Moderately High	5.44
173600	ROUTE 23	0.00	0.00	0	1	0.00	0.50	0	0.50	3.41	C	Moderately High	5.41
175510	BEARTOWN MOUNTAIN ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	4.40	D	Moderately Low	5.40
175800	FAIRVIEW ROAD	0.00	0.00	0	2	0.00	0.50	0	0.00	2.88	C	Moderately High	5.38
177100	HUPI ROAD	0.00	0.00	0	1	0.00	0.50	0	0.50	3.34	C	Moderately High	5.34
175400	BEARTOWN MOUNTAIN ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.79	D	Moderately Low	5.29
175700	FAIRVIEW ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.79	D	Moderately Low	5.29
176810	CARRINGTON ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.79	D	Moderately Low	5.29
176900	ART SCHOOL ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.79	D	Moderately Low	5.29
176600	GOULD ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.70	D	Moderately Low	5.20
176700	WELLMAN ROAD	0.00	0.00	0	1	0.00	0.50	0	0.50	3.19	C	Moderately High	5.19
180100	ROCKWELL ROAD	0.00	0.00	0	2	0.00	0.00	0	0.00	3.19	C	Moderately High	5.19
180400	BOAT RAMP	0.00	0.00	0	2	0.00	0.00	0	0.00	3.19	C	Moderately High	5.19
180500	CAMP HALF MOON ROAD	0.00	0.00	0	2	0.00	0.00	0	0.00	3.19	C	Moderately High	5.19
181300	TOWER ROAD	0.00	0.00	0	2	0.00	0.00	0	0.00	3.19	C	Moderately High	5.19
175500	BEARTOWN MOUNTAIN ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	4.10	D	Moderately Low	5.10
175300	BEARTOWN MOUNTAIN ROAD	0.00	0.00	0	1	0.00	0.50	0	0.50	3.09	C	Moderately High	5.09
176000	CURTIS ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.54	D	Moderately Low	5.04
176400	GOULD ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.54	D	Moderately Low	5.04
177700	EATON ROAD	0.00	0.00	0	1	0.00	0.50	0	0.50	3.03	C	Moderately High	5.03
179400	ELEPHANT ROCK ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	4.00	D	Moderately Low	5.00
177000	GRISWOLD ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.49	D	Moderately Low	4.99

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ASN 2000	Street Name	Residential	Commercial	Accident	SLOPE OTHER		PARK	CAR	SCHOOLS	BCI	LOS	Bicycling Compatibility Level	Priorities
					2-0	DESTS							
179300	ELEPHANT ROCK ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.49	D	Moderately Low	4.99
174100	BLUE HILL ROAD	0.00	0.00	0	2	0.00	0.50	0	0.00	2.48	C	Moderately High	4.98
177900	TYRINGHAM ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.47	D	Moderately Low	4.97
172800	CHESTNUT HILL ROAD	0.00	0.00	0	2	0.00	0.00	0	0.00	2.88	C	Moderately High	4.88
178900	SYLVAN ROAD	0.00	0.00	0	1	0.00	0.50	0	0.50	2.88	C	Moderately High	4.88
180300	NORTHEAST COVE	0.00	0.00	0	2	0.00	0.00	0	0.00	2.88	C	Moderately High	4.88
181315	BRACE	0.00	0.00	0	2	0.00	0.00	0	0.00	2.88	C	Moderately High	4.88
176800	CARRINGTON ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.34	C	Moderately High	4.84
175600	SWAN ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	3.79	D	Moderately Low	4.79
179800	ROBINSON ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	3.79	D	Moderately Low	4.79
171900	NEW MARLBORO ROAD	0.00	0.00	0	1	0.00	0.50	0	0.50	2.78	C	Moderately High	4.78
174300	BLUE HILL ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.24	C	Moderately High	4.74
177300	HUPI ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	3.70	D	Moderately Low	4.70
174900	OLD BENEDICT POND ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	3.64	D	Moderately Low	4.64
179900	UNNAMED ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	3.09	C	Moderately High	4.59
174500	BLUE HILL ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	3.57	D	Moderately Low	4.57
176200	GOULD ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	3.49	D	Moderately Low	4.49
171800	NEW MARLBORO ROAD	0.00	0.00	0	1	0.00	0.50	0	0.50	2.48	C	Moderately High	4.48
172000	NEW MARLBORO ROAD	0.00	0.00	0	1	0.00	0.50	0	0.50	2.48	C	Moderately High	4.48
173200	ROUTE 23	0.00	0.00	0	1	0.00	0.50	0	0.50	2.48	C	Moderately High	4.48
177200	HUPI ROAD	0.00	0.00	0	0	0.00	0.50	0	0.50	3.47	D	Moderately Low	4.47
172400	SANDISFIELD ROAD	0.00	0.00	0	2	0.00	0.00	0	0.00	2.45	C	Moderately High	4.45
181325	FOX HILL ROAD	0.00	0.00	0	1	0.00	0.50	0	0.50	2.45	C	Moderately High	4.45
173790	ROUTE 23	0.00	0.00	0	1	0.00	0.00	0	0.00	3.41	C	Moderately High	4.41
173800	ROUTE 23	0.00	0.00	0	1	0.00	0.00	0	0.00	3.41	C	Moderately High	4.41
173000	ROUTE 23	0.00	0.00	0	1	0.00	0.00	0	0.00	3.33	C	Moderately High	4.33
174600	BENEDICT POND ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	3.32	C	Moderately High	4.32
174700	OLD BENEDICT POND ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	3.32	C	Moderately High	4.32
177500	MOUNT HUNGER ROAD	0.00	0.00	0	0	0.00	0.50	0	0.00	3.79	D	Moderately Low	4.29
174000	PIXLEY ROAD (ROUTE 57)	0.00	0.00	0	1	0.00	0.00	0	0.00	3.26	C	Moderately High	4.26
172100	NEW MARLBORO ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	3.19	C	Moderately High	4.19
172500	CRONK ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	3.19	C	Moderately High	4.19
176300	GOULD ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	2.63	C	Moderately High	4.13
176100	RIVER ROAD	0.00	0.00	0	0	0.00	0.50	0	0.00	3.55	D	Moderately Low	4.05
173700	ROUTE 23	0.00	0.00	0	0	0.00	0.50	0	0.00	3.41	C	Moderately High	3.91
172300	SANDISFIELD ROAD	0.00	0.00	0	1	0.00	0.50	0	0.00	2.38	C	Moderately High	3.88
175200	MOUNT WILCOX ROAD EXT.	0.00	0.00	0	1	0.00	0.00	0	0.00	2.88	C	Moderately High	3.88
177600	BIDWELL ROAD	0.00	0.00	0	1	0.00	0.00	0	0.00	2.88	C	Moderately High	3.88
172600	CRONK ROAD	0.00	0.00	0	0	0.00	0.00	0	0.00	3.79	D	Moderately Low	3.79
181110	LAUREL BANKS LANE	0.50	0.00	0	0	0.00	0.00	0	0.00	3.19	C	Moderately High	3.69
174800	OLD BENEDICT POND ROAD	0.00	0.00	0	0	0.00	0.00	0	0.00	3.64	D	Moderately Low	3.64
172200	WALLACE HALL ROAD	0.00	0.00	0	0	0.00	0.00	0	0.00	3.49	D	Moderately Low	3.49
172700	CHESTNUT HILL ROAD	0.00	0.00	0	0	0.00	0.00	0	0.00	3.49	D	Moderately Low	3.49
179600	NORFOLK ACRES ROAD	0.00	0.00	0	0	0.00	0.00	0	0.00	3.49	D	Moderately Low	3.49

TABLE 1. Bicycling Development Priorities for All Monterey Roads

CSN 2000	Street Name	Residential	Commercial	Accident	SLOPE 2-0	OTHER DESTS	PARK	0 CAR	SCHOOLS	BCI	LOS	Bicycling Compatibility Level	Priorities
174400	BLUE HILL ROAD	0.00	0.00	0	0	0.00	0.00	0	0.00	3.47	D	Moderately Low	3.47
172900	CHESTNUT HILL ROAD	0.00	0.00	0	0	0.00	0.00	0	0.00	3.19	C	Moderately High	3.19
175100	BRETT ROAD	0.00	0.00	0	0	0.00	0.00	0	0.00	3.19	C	Moderately High	3.19
177400	MOUNT HUNGER ROAD	0.00	0.00	0	0	0.00	0.00	0	0.00	3.19	C	Moderately High	3.19
175000	BRETT ROAD	0.00	0.00	0	0	0.00	0.50	0	0.00	2.48	C	Moderately High	2.98

2.2 BICYCLING COMPATIBILITY FIELD WORK

In the summers of 2002 and 2003, BRPC staff visited Monterey to field check roads in town that initially ranked highest in development priority. While the best available databases were used, they inevitably contain errors. In the past, we had found that the results of plugging existing data into the BCI formula (mostly MassHighway Road Inventory File, UMass Land Use and 2000 U.S. Census data) did not always reflect all pertinent considerations for real-world bike/ped development. In Monterey's case, however, the priority rankings were generally consistent with real-world needs. On occasion, BRPC staff found that Monterey roads initially ranking high in priority were minor residential streets, some of them dead ends. We focused on roads such as Route 23 and Tyringham Road, which had similar development priority rankings but were obviously more relevant from a development standpoint: they carry the bulk of the traffic in Monterey but often don't have sidewalks, and in places lack wide shoulders or clear pavement markings.

The following is a synopsis of BRPC's field reports for Monterey, including a photographic inventory of town roads with high bicycling development potential and need. The alphanumeric codes in parentheses after road names are County Serial Numbers (CSNs) that identify specific segments of roads in Berkshire County, with each CSN corresponding to nearly fifty road-related measurements (primarily from the 2000 MassHighway Road Inventory File), including shoulder width, posted speed limit, roadside land use (based on a 1997 BRPC update of the UMass Land Use survey), roadside parking and other bicycling-relevant parameters (see Table 1). The text accompanying the photographs describes BRPC staff impressions and observations about bicycling-specific factors for each road in question. These real-world observations were used for the regional bike/ped plan to validate the initial ranking of bicycling development priorities for roads throughout Berkshire County, including those in Monterey.

Methodology:

When performing this field research, BRPC took the following parameters into account:

- The width of the sidewalks and shoulders
- The approximate curb lane width (CLW) of the road
- The speed limit

- How much use the road seems to get
- If the section has primarily commercial or residential development
- Whether or not there is parking in the shoulder of the road
- The width of the road in number of lanes

Overview:

The busiest roads in Monterey appear to be Route 23, which runs generally East-West through the downtown area, and Tyringham Road, which runs generally North-South to Tyringham past Lake Garfield and the Town beach. In Monterey, some of the highest priorities for investment also happen to coincide with poor BCIs, and almost all of the highest priorities occur along main roads. Some of the poorest BCI roads are small residential dirt roads that probably do not see enough car traffic to justify investing in them for the sake of local pedestrians.

Route 23 and Tyringham Road appear to be the most critical candidates for investment in Monterey. Many people desire access to Lake Garfield for recreational purposes and the downtown area for practical purposes. Therefore, the corridors that provide access to these areas and indeed connect them deserve highest priority, both for transportation and recreational purposes.

Monterey (CSN 174200) Blue Hill Rd

Rt. 23 ↔ End of cemetery



Photo 1: Blue Hill Road looking North

Town-wide or regional network of bike and pedestrian routes connecting multiuse paths and other trails, such as those in Beartown State Forest.

Monterey (CSN 173500) Rt. 23

Fire Department ↔ Town Hall

On this 2-lane section of Rt. 23, the speed limit is 25 mph. There is no parking in the

There is no speed limit posted on this 2-lane road, but one assumes that it is 25 mph due to the quiet nature of the road. It does not seem to see much traffic, though this may depend on the season, as the road is one of the primary access routes to Beartown State Forest. There are no shoulders or sidewalks on either side of the street, which poses a risk to bikers and pedestrians. This road may be a good candidate for bike and pedestrian enhancements. It may be an important link in the development of a



Photo 2: Rt. 23 West, 4-foot shoulders

4-foot wide shoulders on both sides of the road, and there is no sidewalk. This road sees the most traffic in Monterey, as it runs through the downtown area, and is close to a school and a park, as well as many other significant destinations. This makes it a high priority for investment, especially because it runs to downtown from residential areas.



Photo 3: Rt. 23 looking east, parking in shoulder

Monterey (CSN 173400) Rt. 23
Town Hall ↔ Tyringham Rd

On this 2-lane section of Rt. 23 running through the heart of Monterey center, there are 6-foot wide shoulders on both sides of the road, and parking in them. There are no sidewalks on either side, and the speed limit is 25 mph. It is a high priority for investment because it is near a school and the downtown, which is a destination for residents and visitors.

Monterey (CSN 173300) Rt. 23
Tyringham Rd. ↔ Marlboro Rd

The Monterey School is located on the north side of this section of road, which makes it a high priority. The speed limit is 25 mph and the road is 2-lanes wide. On the south side of the street there is a 2-foot wide shoulder, and on the north side there is a 1-foot wide shoulder, giving this section a LOS of D and the poorest BCI in Monterey, 4.25. Since the school is located here, it would be a good area for investment because it is unsafe, as it is now, for children to walk to and from school.



Photo 4: Rt. 23 East—1-foot shoulder on north side of road

Monterey (CSN 173100) Rt. 23
Sandisfield Rd ↔ Lakeshore Terrace



On this 2-lane section of Rt. 23 the speed limit changes from 25 mph to 45 mph as it heads away from downtown Monterey. There are 1-foot wide shoulders on both sides and no sidewalks, making it relatively unsuitable for walking and biking. It is a high priority for investment because it is near a school, park and downtown.

Photo 5: Rt. 23 looking east. 1-foot wide shoulders



Photo 6: Tyringham Rd, looking south

**Monterey (CSN 178100) Tyringham Rd
Rt. 23 ↔ Rugby Ln**

The speed limit on this 2-lane stretch is 25 mph. There are no sidewalks and the shoulder width varies from 1 to 4-feet wide, with an average width of approximately 1-foot. This road seems like one of the most heavily traveled ones in Monterey, so this, coupled with the fact that the Monterey Public Beach is located on it, makes it a high priority for investment.



Photo 7: Tyringham Rd, looking south

**Monterey (CSN 178000) Tyringham Rd
Rugby Ln ↔ End of dirt road**

This section of Tyringham Rd is not paved, and therefore has no paved shoulders or sidewalks. It has a wider CLW than most unpaved roads (approximately 12 feet), but has no lines marking the lanes or the shoulders. The speed limit is 35 mph, and it is close to a park and a school, which makes it dangerous for bikers and pedestrians, and makes it the highest priority in Monterey.

**Monterey (CSN 177800) Tyringham Rd
End of dirt road ↔ Tyringham Town Line**

On this section, the road becomes paved once more and the speed limit changes back down to 30 mph as Tyringham road descends some fairly steep hills. The shoulder width varies, but averages about 1 foot. There are no sidewalks in this section, and the bicycling LOS is D. Because the steep hill might be discouraging to bikers, and because it is rather removed from the downtown, this would be a sensible area to invest after other areas have been improved.



Photo 8: Tyringham Rd, looking south



Photo 9: Art School Rd, narrow CLW

Monterey (CSN 176910) Art School Rd Tyringham Rd ↔ Bidwell House

This segment of Art School Rd has one of the poorest BCIs in the town of Monterey because it is a narrow dirt road with no shoulders or sidewalks. There is no speed limit posted, but one assumes that it is 25 mph due to the narrow CLW (approximately 8'). It is also a rather hilly and curvy road,

which poses an added threat to bikers and pedestrians because it obscures the visibility of drivers. The Bidwell House is located on it, which may make it a higher demand area, and therefore could be a good place for investment.

Appendix A, *Bicycling Facility Standards and Guidelines*, summarizes in some detail the parameters deemed safe and convenient for cyclists by two national authorities concerned with such parameters: the Federal Highway Administration (FHWA) and the American Association of State Highway Transportation Officials (AASHTO). The appendix describes both the intricacies of the FHWA's BCI and the guidelines laid out in AASHTO's authoritative *Guide to the Development of Bicycle Facilities*.

2.3 WALKING COMPATIBILITY

There is no systematic index, like the Federal Highway Administration's BCI, to determine walking development priorities in towns around the nation. There are, however, many well-established, common sense measures for making pedestrian travel safer and more pleasant. The first among these is sidewalks, or some equivalent walking path separate from the motor traffic right-of-way. In rural towns, such as Monterey, wide (3 feet or more), well-maintained, well-graded shoulders are also considered desirable, reasonable multi-use facilities, sufficient for carrying bicyclists, joggers and walkers. Other measures include traffic calming devices such as crosswalks, pedestrian crossing signage, pavement markings and speed limit reductions. Appendix B, *Walking Facility Standards and Guidelines*, discusses these and other measures in greater detail. Currently, these measures generally appear in Monterey only near the Town center, where pedestrian traffic is highest, mostly on account of people walking to places of business from cars parked nearby.

Members of Monterey's Community Development Advisory Committee have expressed interest in extending pedestrian considerations beyond the town center so that younger and older members of the community, or any without regular access to motor vehicles, could safely and enjoyably walk from one residence to another or into town and back. This will require upgrading, substantial in some places, of existing road conditions and

possibly construction of new sidewalks or enhancement of shoulders along roads extending from the town center.

Possible alternatives to sidewalks or road-related pedestrian network enhancements are off-road walking trails or multi-use paths. Monterey, as host to Beartown State Forest and the Appalachian Trail, already has the framework in place for a comprehensive trail system that may be expanded to serve the needs of both recreational walkers and joggers and residential and tourist pedestrians.

2.4 BICYCLING COMPATIBILITY FIELD WORK

Route 23

BRPC staff observed this road in the summer of 2003 in relation to this bike and pedestrian trail report. Route 23 is the primary east-west corridor through the Town of Monterey, and it is the road which also serves as the main street running through the village center. As a major state route, this road carries substantial traffic flow, often at high speeds through the Town of Monterey. It was apparent to BRPC staff that, while bicyclists could navigate with relative safety and comfort along the 2-3 feet wide shoulders either east or west of the village center, the stretch through the village center was rather treacherous. It was clear that motorists opening their doors or motor vehicles pulling off the road to park at the local store, the post office, or other Town buildings in the village pose serious safety risks to any bicyclists traveling through that busy corridor.

At an August 18, 2003, meeting with the Monterey Community Development Plan committee, BRPC staff raised the issue of bicycling safety concerns along Route 23, particularly in the village center. Committee members suggested bicyclists be provided with an alternative route, relying on some of the quieter roads to detour around the Town center. They seemed to prefer the idea of bicyclists walking their bikes through town over the idea of posting "Share the Road" or bike route signs, alerting vehicular traffic to increased bicycle traffic. Members put forward the idea of producing a bicycle touring map with a designated alternate route around the village. Recognizing that even given an alternative route many bicyclists will likely continue to travel through the village along Route 23, the BRPC staff recommended for the sake of safety that the Town consider "Share the Road" or bike route signs for the road.

Tyringham Road

BRPC staff site-checked this road both in the Town of Monterey and in the Town of Tyringham (which, as part of its Community Development Plan, also conducted a bike and pedestrian study in 2003). Some Monterey committee members did show interest in enhancing the width of shoulders along Tyringham Road in order to enhance bicycling safety and level of comfort. They noted that it is the only access route to the Town beach on Lake Garfield, a principal recreational destination in the Town. It is BRPC's understanding from several residents in the Town of Tyringham as well as members of the Berkshire Cycling Association that this road also represents one leg of a popular

bicycling circuit running from Main Road in Tyringham to Route 23 to the village of Monterey and back to Main Road in Tyringham via Tyringham Road. In summer 2003, the portion of Tyringham Road north of the Monterey Town beach was resurfaced and, at the time of the August 18, 2003, Community Development Plan meeting, it had yet to be repainted with a center line and shoulder markings. The committee discussed the possibilities of widening the shoulders during the repainting process but recognized the limitations of road width and land availability along the road sides as well as the disadvantages of narrowing the motor vehicle lanes. In the end, the Town repainted the lines, allowing for 2-3 feet wide shoulders where possible. In the future, BRPC recommends the Town consider widening the paved surface of the road, if possible, and use the added pavement for extra shoulder width.

Blue Hill Road and the Regional Bike/Ped “Backbone”

Blue Hill Road may not seem like a high priority target for bicycling or pedestrian enhancements, but because it serves as one of the primary access routes to Beartown State Forest, one of Monterey’s principal recreational destinations, it deserves to be higher priority. In the summer of 2003, BRPC staff observed Blue Hill Road to be relatively lightly traveled but found that it also lacked many of the basic road safety enhancements, such as speed limit signs, shoulder markings or center lines, that make travel safer for motor vehicles, bicyclists and pedestrians alike.

From a regional planning standpoint, Blue Hill Road may represent an important link between the municipal and residential centers of the Towns of Monterey, Great Barrington and Stockbridge and the already existing hiking, bicycling and other multi-use trails in Beartown State Forest. As the transportation network exists now, the majority of people who visit Beartown State Forest are local to southern Berkshire County but the vast majority of them drive to the State Forest, even if their aim is to walk or ride bicycles. One of the main goals of BRPC’s Regional Bicycling and Walking Plan, published December 2003, is to better interconnect municipal and residential centers with recreational venues by means of safe and attractive alternative transportation, such as walking, bicycling or multi-use paths.

In conjunction with the Berkshire Bikepath Council, which has spearheaded the development of the successful Ashuwillticook Rail Trail in northern Berkshire County, the BRPC is working to encourage the extension of a regional bike/ped “backbone” into southern Berkshire County. The mission of the Berkshire Bikepath Council is to create a multi-use path through the heart of Berkshire County from the Connecticut to the Vermont border. As stated in the Berkshire Regional Bicycling and Walking Plan, BRPC supports this endeavor. Southern Berkshire towns such as Lenox, Lee, Stockbridge and Tyringham are actively pursuing plans for such bike/ped development, principally through the Community Development Plan process. The most likely contribution the Town of Monterey can make to this regional bike/ped “backbone” is to pursue a connection between the developing regional network and the trail system of Beartown State Forest.

2.5 WALKING COMPATIBILITY FIELD WORK

Appalachian Trail

This well-known hiking trail features prominently in the life of Monterey. Residents, tourists, and through-hikers alike take advantage of the trail's easy access close to the center of Town. According to some Appalachian Trail guidebooks, the Town of Monterey is also a convenient post-office supply drop. Considering the trail itself and the corridor directly surrounding it are federally owned and controlled, the Town may wish to consider pedestrian enhancements that aid Town access to and from the trail, or perhaps make it more convenient or safer. BRPC recommended possible enhancements including sidewalks along Route 23 from the intersection of the highway and trail to the post office and center of town. Currently, only paved shoulders—and not sidewalks—exist along this heavily traveled route.

At the August 18, 2003 Community Development Plan meeting, committee members agreed that the Town could use a new sidewalk from Fox Hill Road at the western end of Rt. 23 through the village to Sandisfield Road at the eastern end.

Tyringham Road Sidewalk/Enhanced Shoulders/Walking Path to Town Beach

This route is the primary corridor serving access between the Town center and the Town Beach on Lake Garfield. Currently, there are no sidewalks available for pedestrians walking to the recreational facilities on Lake Garfield, and Tyringham Road offers only 1-foot shoulders on either side of its heavily traveled right-of-way.

At the Community Development Plan meeting with BRPC staff on August 18, 2003, committee members agreed that the Town could use a path from the end of Tyringham Road in the village center to the Town beach at Lake Garfield. Some committee members suggested that because of space limitations on the side of Tyringham Road, an alternative walking path, separated by small pillars or perhaps removed a small distance off the road, may be better than a conventional sidewalk.

2.6 TRANSIT ENHANCEMENTS

The main topic of discussion at the August 18, 2003, Community Development Plan meeting on transportation was not in fact bicycling and pedestrian planning, but something inherently related: community transit. The details of that topic go beyond the scope of this report, which was agreed upon earlier by the Town of Monterey, BRPC and the various state agencies that funded the Community Development Plan.

Because it was a topic of particular interest and concern to Monterey Community Development Plan committee members, BRPC felt a mention of the Town's support for transit development should be incorporated into this bike and pedestrian report, as it pertains to the safe transportation of people who don't have access to cars or the ability to drive, notably the youth and the elderly of the community. Committee members were very interested in the idea of a small-scale sub-regional bus or van transit model, particularly to

serve the needs of youth and others wishing to travel to nearby Gt. Barrington or to the Mall in Lee, for example. They also raised the idea of approaching local stores and supermarkets, such as Price Chopper and Abbott's, for financial support for such a transit model.

While this bicycling and walking report will not address the topic of transit in the Town of Monterey further, it should be noted that BRPC Executive Director Nat Karns and senior traffic planner Zoe Neaderland have made provisions for a southern Berkshire transit study to be conducted in 2004. This may likely address the wishes of the Monterey CDP committee.

3.0 RECOMMENDATIONS

3.1 BICYCLING RECOMMENDATIONS

- Alternative bicycling route circumventing busy Route 23 in village center
- Bicycling signage, shoulder upgrades along Route 23
- Bicycling signage, pavement marking upgrades, shoulder enhancements along Tyringham Road
- Interconnection between Town municipal and residential center, Beartown State Forest, and developing regional bike/pedestrian "backbone," with sign, shoulder and line marking enhancements to Blue Hill Road

3.2 WALKING RECOMMENDATIONS

- Sidewalk from Fox Hill Road at the western end of Rt. 23 through Town center to Sandisfield Road at the eastern end
- Sidewalks or other pedestrian path on Tyringham Road near town beach and along Route 23 to connect center of town to Appalachian Trail network

4.0 APPENDICES

Appendix A, *Bicycling Facility Standards and Guidelines*, provides greater specifics for cycling enhancements, based on FHWA and AASHTO guidelines. Appendix B, *Walking Facility Standards and Guidelines*, does the same, but for walking facilities. Appendix C, *Approximate Costs*, lays out a series of cost estimates for various bicycling and pedestrian enhancements, based on numerous planning and transportation sources from around the country. Appendix D, *MassHighway Policy on Bicycle & Pedestrian Facilities*, discusses the Commonwealth of Massachusetts' official statements of support for bicycling and pedestrian planning and design, including one policy directive (P-98-003) and one engineering directive (E-98-003). Appendix E, *Planning Issues & Model Bylaws*, provides an overview of land use considerations that may encourage or hinder bicycling and walking. And finally Appendix F, *Potential Sources of Funding*, outlines potential federal, state and local funding sources for bicycle and pedestrian facilities, based on information excerpted from the *Pioneer Valley Regional Bicycle and Pedestrian Transportation Plan*.

APPENDIX A: Bicycling Facility Standards and Guidelines

This section provides standards and guidelines to both public and private entities for the development of bicycle facilities throughout Monterey. These design standards apply both to new construction and to reconstruction projects. Situations may arise where the standards herein cannot be rigidly applied. Under special circumstances, some flexibility of the standards will be necessary to develop a project within the constraints of the transportation system. Such projects should be evaluated on a case-by-case basis.

The Federal Highway Administration BCI Implementation Manual (Publication No. FHWA-RD-98-095) details the parameters that make roads bike/ped friendly. The manual offers handy schematic drawings that summarize the guidelines for improving a road’s BCI and bicycling level of service. The following illustrations give basic depictions of road measurements and design, including some crucial features Monterey may want to consider when implementing bike/ped enhancements.

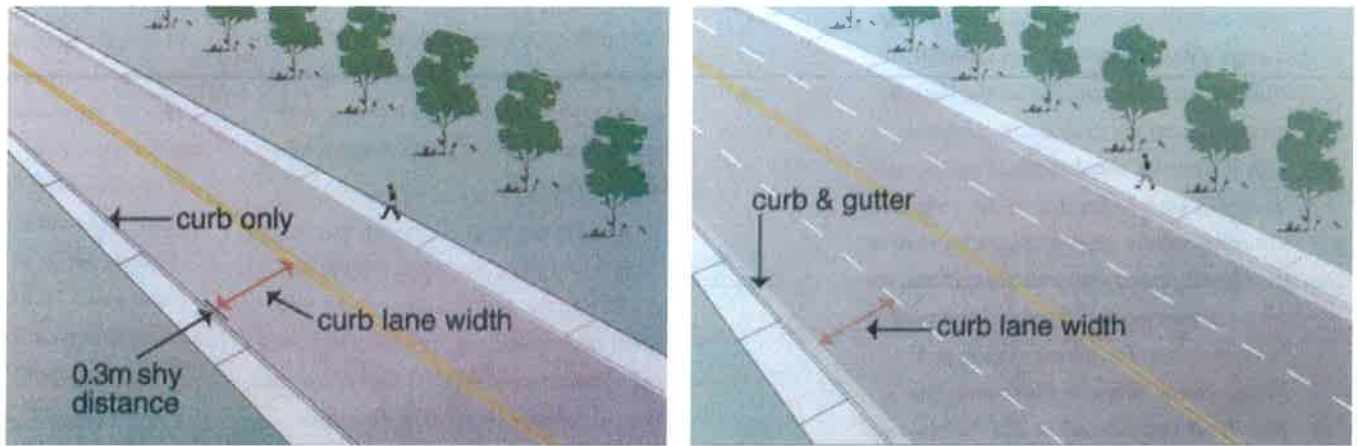


Figure 1: Curb lane width (CLW) measurements when there is no bicycle lane, no paved shoulder and no roadside parking. The left image shows a road with no gutter, for which CLW measurements require a 0.3-meter (1 foot) allowance, the space bicyclists typically leave between the bike and the curb. The right image shows a road with a gutter pan. CLW measurements in this case are made from the road/gutter seam to the center of the lane line.



Figure 2: Bicycle lane or paved shoulder width measurements with and without gutter pans. **NOTE:** The American Association of State Highway Transportation Officials (AASHTO) recommends **1.5 meter (5 feet) widths** for bike lanes or paved shoulders when there is no gutter pan and **1.2 meters (4 feet)** when there is a gutter pan. **The FHWA BCI model treats paved shoulders of acceptable width as equivalents to bike lanes.** Recent research has shown that both types of facilities result in virtually identical levels of service enhancements for both motorists and bicyclists.

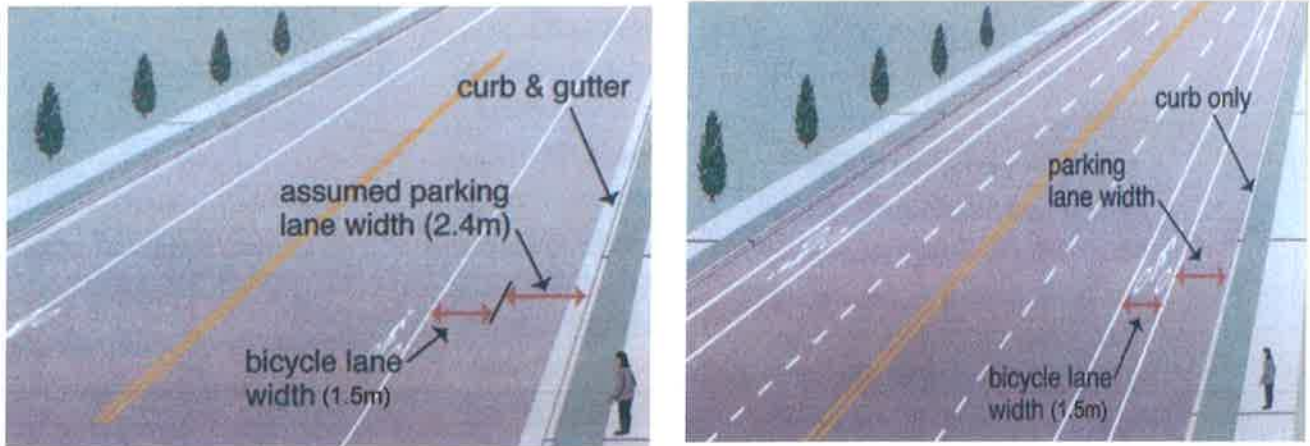


Figure 3: Bike lanes or paved shoulders with and without marked parking lanes and with and without gutter pans. Where parking lanes are not marked, the **parking space** is considered the width of the shoulder measuring **2.4 meters (7.9 feet) out from the curb**. For paved shoulders where parking is allowed, an additional 1.5 meters (5 feet), or no less than 1.2 meters (4 feet), of shoulder width should be available for bicyclists.

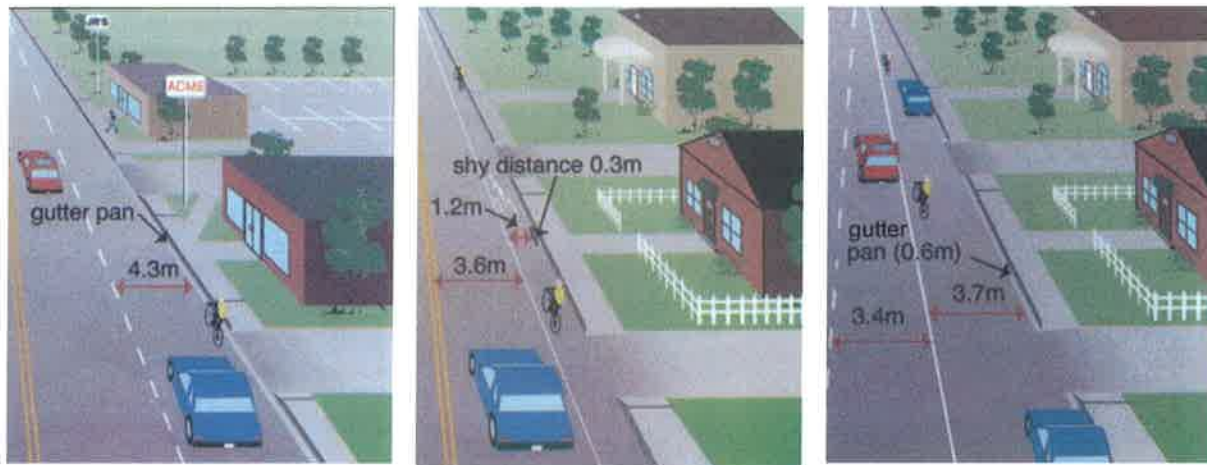


Figure 4: The three illustrations above most likely represent the most common types of operational scenarios found in Monterey. *Left* Roads with no paved shoulder or bike lane and no roadside parking (e.g. commercial strips) should ideally have at least 4.3 meters (14 feet) curb lane width for safe, comfortable bicycling and vehicle travel. *Middle* Roads with a bike lane or paved shoulder and no roadside parking (e.g. quiet residential streets) should ideally have at least 3.6 meters (11.8 feet) of curb lane width in addition to at least 1.2 meters (4 feet) of bike lane

width. *Right Roads* with curbside parking (e.g. busy residential street) should ideally have a paved shoulder width of at least 3.7 meters (12.1 feet) for comfortable bicycling.

BICYCLE FACILITY STANDARDS

The standards described in this document are recommended for all bicycle facilities constructed in Monterey. These design standards are to be used in conjunction with national bicycle facility standards as set forth by the American Association of State Highway Transportation Officials' (AASHTO) *Guide to the Development of Bicycle Facilities*. These standards apply to the facilities proposed in this report as well as to any local facility requests. Five primary types of bicycle facilities are defined in this section: bicycle lanes, paved shoulders, bicycle routes, wide curb lanes and multi-use trails. The following sections provide standards for each facility type and describe the type of bicyclists they serve.

1. Bicycle Lanes

Bicycle lanes encourage bicycling by providing a visible reminder that provisions have been made to a particular roadway to accommodate bicyclists. Bicycle lanes offer the bicyclist more space than other on-road bikeways, thereby addressing the need for increased maneuverability for novice and child bicyclists.

Standard application: Bicycle lanes are always one-way facilities and carry bicycle traffic in the same direction as adjacent motor vehicle traffic. On two-way streets, bicycle lanes should always be located on both sides of the road. Bicycle lanes should be installed on the right-hand side of one-way streets, unless installing the lane on the left-hand side can reduce conflicts. The standard width of bicycle lanes in Monterey should be 1.5 meters (5 feet) wide, with 1.2 meters (4 feet) being the minimum width allowable (exclusive of the gutter pan). The recommended width is a function of motor vehicle speeds, volumes and traffic mix. Bike lane pavement and sub-base should always have the same depth and quality as the adjacent roadway. Bike lanes are not required to have curb and gutter.

Signage Requirements: The FHWA's *Manual on Uniform Traffic Control Devices* (MUTCD) specifies standard signage for bicycle lanes. According to section 9B-8, "the R3-16 sign should be used in advance of the beginning of a marked designated bicycle lane to call attention to the lane and to the possible presence of bicyclists. The R3-16 and R3-17 signs should be used only in conjunction with the Preferential Lane symbol pavement marking and erected at periodic intervals along the designated bicycle lane and in the vicinity



R3-16 24" x 30"



R3-17 24" x 30"

of locations where the preferential lane symbol is used".

According to Section 9B-11, "Where it is necessary to restrict parking, standing, or stopping in a designated bicycle lane, appropriate signs as described in sections 2B-31 through 2B-33 may be used, or signs R7-9 or R7-9a shall be used".

NOTE: MassHighway has issued a policy directive on Bicycle Route and Share the Road signage stipulating new steps municipalities must take to secure Preferential Lane signs along roadways. The policy directive is appended to this report (Appendix D) and is also available as a .pdf file at www.state.ma.us/mhd/engdir/policy/p_98_003.pdf.

Striping Requirements: Bicycle lane strips should be solid, six to eight inch wide white lines. Care should be taken to use pavement striping that is skid resistant.

The diamond-shaped preferential lane symbols should be installed on the pavement in bicycle lanes. Symbols should be installed at regular intervals (no more than 350 feet between symbols), immediately after intersections, and at areas where bicycle lanes begin. Bicycle-shaped pavement symbols, pavement letters that spell "ONLY BIKE," and arrows are optional.

One aspect of bicycle lane development that deserves special attention is pavement striping at intersections. Traffic has a tendency to mix at intersections (i.e., bicyclists turning left, motorists moving into the far right-hand lane to turn right). Standard striping solutions are presented in AASHTO's *Guide to the Development of Bicycle Facilities* and the MUTCD.

Maintenance Requirements for Bicycle Lanes: It is essential to design, construct and maintain bicycle lanes to the highest standards. A bicycle lane that has collected broken glass and debris is rendered useless and puts the bicyclist in a dangerous situation. The installation of bicycle lanes in Monterey should be accompanied by an inspection and maintenance commitment. Regular bicycle lane sweeping and pavement patching will be necessary.

2. Paved Shoulders

Paved shoulders for bicycles serve the needs of all types of bicyclists in rural areas. Paved shoulders may be preferable for advanced bicyclists on arterial roadways with high speeds (over 50 mph).

Standard Application: When designed to national standards for bicycle facilities, paved shoulders can be signed as bicycle routes. There is no special "bicycle shoulder" sign. Shoulders should be a **minimum of four to six feet wide** to accommodate bicyclists. The ideal width should be dependent upon traffic volumes, speed limit and amount of truck traffic. As with bicycle lanes, paved shoulders should have the same pavement thickness and sub-base as the adjacent

roadway, should have the same cross slope as the adjacent roadway, and should be regularly swept and kept free of potholes. Paved shoulders should not be signed as bicycle routes unless they can be adequately maintained for bicycle use.

3. Wide Curb Lanes

Outside lanes that are wider than the standard 12 foot travel lane can provide more space for bicyclists and easier passing for motorists. Wide curb lanes best accommodate Group A (advanced) bicyclists, as these riders are more comfortable operating directly in traffic.

Wide curb lanes can serve as an interim bicycle facility on roadways where the adequate width for a bicycle lane is not yet achievable (every effort should be made to develop standard bicycle lanes where possible). It can be helpful to erect bicycle route signage on wide curb lanes, since some bicyclists may not otherwise be aware that provisions have been made to improve these roadways.

Standard Application: The **wide curb lane** is always the furthest right-hand lane, and **should optimally be 14 feet wide**. Wide curb lanes should never be more than 15 feet wide, as additional width may allow motorists to pass on the right. The wider lane will likely also encourage faster motor vehicle speeds.

Wide curb lanes are not required to have curb and gutter. In order to achieve the extra space needed for the 14 foot wide outside lane, the roadway may either be physically widened or re-stripped to reduce the lane width of inner lanes and increase the width of outside lanes.

4. Multi-Use Trails

Multi-use trails are physically separated from motor vehicle traffic and built either within an independent right-of-way (such as a utility or railroad right-of-way) or along specially acquired easements across private lands. Such trails cater to a variety of users, including bicyclists, pedestrians, joggers, rollerbladers and skateboarders. Possible conflicts between these user groups must be considered during the design phase, as bicyclists often travel at a faster speed than other users.

Multi-use paths can help bicyclists and pedestrians avoid congested roadways, although they sometimes do not allow access to desired destinations in congested areas. Off-road trails offer a convenient and pleasant alternative, as well as an opportunity for a novice bicyclist to get some riding experience in a less threatening environment. Although multi-use trails usually attract a higher percentage of novice and child bicyclists, advanced bicyclists can also benefit from their application.

Standard Application: The **minimum width for off-road multi-use trails is 10 feet** (per AASHTO standards for bicycle facilities), however 12 feet and 14 feet

widths are preferred where heavy traffic is expected. Due to the popularity of off-road trails, centerline stripes should be considered for paths that generate substantial amounts of traffic, and speed limits or cautionary signs should be posted. Trail etiquette signage should clearly state that bicycles should give an **audible** warning before passing pedestrians. Safety considerations such as these will insure that greenways and rail-trails are successful as both transportation and recreation facilities.

Intersection Design: Additional measures at trail/roadway intersections can provide for more predictable movements of trail users. There are usually two main considerations at trail/roadway intersections: 1) keeping out unauthorized motor vehicle uses; and 2) physical design of the trail crossing to reduce conflicts with motor vehicle traffic.

The following basic elements can be used to achieve safer junctions: segregated trail user lanes, stop signs and stop bars, entrance bollards, pedestrian crosswalk striping, and warning signage for motorists. The design reduces conflict by encouraging the trail user to use caution when crossing the roadway, encouraging the motorist to be prepared for the crossing, generally reducing the confusion that is often a problem at intersections through a logical structure for trail users.

5. Bicycle Routes

A bicycle route is a "suggested way" for a bicyclist to get from a point of origin to a destination. Such a route can be preferable for bicycling for a number of reasons including directness, scenery, less congestion and lower speed limits. Bicycle routes may be used by all types of bicyclists and can include all of the previously described facility types.

Standard Application: A street does not necessarily have to be physically widened in order to be designated as a bicycle route. A road with standard 12-foot wide lanes (or less) can be designated as a bike route with the appropriate signage, given that each condition below is met:

In its present state, the roadway should have sufficient width to accommodate bicyclists (ideally, wide outside lanes or smooth paved shoulders). The road should also have traffic volumes that generally fall below 2000 vehicles per day. The road should have no blind curves, and good pavement conditions. Traffic should not regularly exceed posted speed limits.

All bicycle hazards must be removed from the roadway or otherwise remedied, including uneven pavement and potholes, vegetation that affects site distance, unsafe drainage grates, bottlenecks where lane width is reduced (such as over bridges), and angled railroad crossings.

The bicycle route should be designated as one segment within an interconnected system of bicycle facilities. Multi-use trails and roadways with bicycle lanes, paved shoulders, and wide curb lanes are good candidates to include with a bicycle route network.



D11-1 24" x 18"

M1-8 12" x 18"

M1-9 18" x 24"

Bicycle Route Signage

Source: MUTC

Signage requirements: Bicycle route signs should be placed at all areas where new traffic enters the roadway. The distance between signs should not be greater than two miles. In built-up sections of Monterey, it is helpful to include directional arrows at intersections to clarify whether the bicycle route continues through the intersection or turns right or left.

Bicycle Support Facilities

1. Bicycle Parking

Convenient bicycle parking and storage is essential in order to encourage bicycle commuting. Bicycle parking should be provided at grocery stores, park and recreation facilities, office and employment centers, shopping centers, public and private schools, museums, libraries, transit stations, housing complexes, colleges, universities, technical schools, civic buildings (city/town halls) and entertainment complexes such as stadiums and movie theaters.

Bicycle racks and bicycle lockers are an effective solution for long-term bicycle parking needs, such as at bus stations or employment centers. Bicycle "banks" allow storage of helmet and other personal items, while bicycle lockers allow storage of the entire bicycle as well as personal items. In recent years, a number of manufacturers have begun to produce bicycle racks, bike "banks" and bicycle lockers.

It is important to choose a bicycle rack design that is simple to operate and located in close proximity to the entrance that bicyclists use. Bicycle racks should be designed to allow use of a variety of lock types. It may be difficult initially to determine the number of bicycle parking spaces needed. Bicycle racks should be situated on-site so that more racks can be added if bicycle usage increases.

2. Signage

Bicycle signage is standardized throughout the United States, both for on-road and off-road facilities. Information on appropriate signage is provided in the *Manual of Uniform Traffic Control Devices* (MUTCD). Warning signs should be placed far enough in advance of a condition to allow the bicyclist to prepare for the dangerous area.

The Bicycle Crossing Sign is a special warning sign that should be used wherever a bicycle trail crosses a roadway, and should be placed 250' in advance of the intersection in urban residential or business areas, and 750' in advance of the crossing in rural areas or places where vehicle speeds are higher.

When developing bicycle facility plans and design specifications for both on-road and off-road bicycle projects in Monterey, complete signage and marking plans should also be produced for review by traffic engineers. These plans should indicate the location and position of all signs, referencing the MUTCD sign number and size of proposed sign. Dimensions should be given between the sign and the upcoming intersection or hazard.

3. Lighting

Some commuting bicyclists will make use of the transportation system before sunrise and after sunset. The Illuminating Society of North America (IES) recommends that bikeways and walkways be lighted to 1.0 foot-candles, and pedestrian/bicycle underpasses be lighted to 4.0 foot-candles.

Lighting of on-road bicycle facilities is a very important consideration, especially those routes that are frequently used by bicycle commuters. However, due to liability concerns, many off-road bicycle paths are closed at night (and therefore unfit). Bicycle facility lighting should be considered on a case-by-case basis, with full consideration of the maintenance commitment.

4. Bicycle Hazards

Unsafe conditions for bicyclists are generated not only by congested and narrow urban roads, but also because of poorly maintained travel lanes and other obstacles. Bicycles are much more vulnerable to surface irregularities than motor vehicles. Bicyclists rely on very narrow, highly pressurized tires and most

bicycles have no suspension. A simple pothole that might cause a slight jarring to the passengers of a car can cause a serious crash for a bicyclist.

Potholes are not the only hazard bicyclists must deal with every day: Bumps, corrugations, seams, rumble strips, unraveled pavement, bridge expansion joints and recessed manhole covers and drainage grates can cause a bicyclist to lose balance and swerve. Rocks, glass, dead animals, dirt, leaves, or other debris swept to the road edges can cause bicycle crashes. Some roadway drainage grate designs trap bicycle wheels (those with inlet slots that are parallel to the curb). Signposts, mailboxes, utility poles, and other objects that are placed close (less than one foot) to the edge of the roadway can catch the handlebars. Railroad crossings create a trap for bicycle wheels and can cause damage to bicycle tires. Temporary roadway construction/improvements such as milled pavement and sudden pavement changes due to roadway resurfacing are very hazardous to bicyclists. Signage should warn of any temporary surface irregularities.

5. Roadway Maintenance

Many bicycle hazards are due to poor roadway maintenance. Debris that collects within a bicycle lane, for example, renders the lane useless for bicyclists, who must swerve into the travel lane to avoid the obstacle (and may simply continue to ride in the travel lane so as not to be suddenly faced with another hazard in the bicycle lane). The responsibility for maintenance and management of a bicycle facility should be agreed upon prior to its construction. The following practices insure better conditions for bicyclists.

Roadway maintenance typically focuses on the travel path of motor vehicles. The focus of maintenance programs should shift to include the edges and shoulders of roadways. High priority should be given to those streets with designated bicycle facilities. Maintenance schedules should be adjusted to provide more frequent sweeping and debris removal for bicycle lanes and bicycle routes. It will be necessary to institute new maintenance procedures for bicycle facilities as a policy change. Maintenance manuals should be revised and public works personnel should be instructed of these new responsibilities.

Pavement markings should be highly visible and should be replaced when they fade. Per the recommendations of this report, pavement markings on bicycle facilities should ideally consist of preformed plastic tape. Re-painting of crosswalks and pavement symbols should be included in the standard re-painting schedule.

A complete maintenance program should be developed for off-road bicycle trails. Paths should be swept regularly, and edges should be maintained to prevent crumbling. Potholes and pavement cracks should be repaired with wide asphalt patches that are even and level with the surrounding pavement. Tree and shrub

clearing should provide a minimum of eight-foot vertical and three-foot horizontal clearance for on-road and off-road bikeways.

Local engineering departments should review roadway improvement plans and resurfacing projects, particularly for those roads with designated bicycle facilities, to insure that no hazards are created. All new surfaces should be milled to a smooth and even grade, with no recessed drainage grates or manhole covers.

General Bike/Ped Recommendations

1. Network

- Complete the recommended network of bikeways, including wide curb lane facilities, paved shoulders, bicycle lanes, and off-road bicycle paths.
- Complete the recommended pedestrian enhancements.
- Create interfaces between the regional trails and regional sidewalk networks.

2. Facilities

- Implement Americans with Disability Act requirements.
- Promulgate model bicycle facility development guidelines.
- Mark bicycle ways with appropriate signage and surface striping.
- Provide adequate bicycle storage capacity at key destinations in Monterey.
- Adequately maintain Monterey bicycle and pedestrian facilities.
- Promulgate model pedestrian facility design guidelines.
- Provide pedestrian seating facilities along pedestrian ways and at bus stops.

3. Planning

- Revisit and amend (as required) the Monterey Bicycle and Pedestrian Plan on an annual basis.

4. Education and Safety

- Develop and distribute a Users' Map of the regional bicycle network.
- Develop "Safe Biking" programs in the region's schools.
- Promote bicycling to employees and employers.
- Develop "Safe Walking" programs for elementary school students in the region.

5. Environment

- Promote bicycling and walking as "environmentally-friendly" travel alternatives.

APPENDIX B: Walking Facility Standards and Guidelines

This appendix provides standards and guidelines to both public and private entities for the development of pedestrian facilities. These design standards apply both to new construction and to reconstruction projects. Situations may arise where the standards herein cannot be rigidly applied. Under special circumstances, some flexibility of the standards will be necessary to develop a project within the constraints of the existing transportation system. Such projects should be evaluated on a case-by-case basis.

SAFE SHOULDERS and SIDEWALKS

Well-planned shoulders and sidewalks are a vital need in Monterey. It is important to remember that a person's decision to walk is as much a factor of convenience as it is the perceived quality of the experience.

In most **rural areas**, such as Monterey, the low volume of pedestrians does not warrant sidewalk construction. In most cases, paved shoulders can provide an adequate area for pedestrians to walk on rural roadways, while serving the needs of cyclists at the same time. A **minimum four feet wide paved shoulder** serves the purposes of both bicycles and pedestrians in rural areas.

There are some notable exceptions where isolated developments such as schools, ballparks, or housing communities create more pedestrian use. For example, motorists might regularly park along a rural road (Tyringham Road or Route 23, in Monterey's case) to access a nearby ballpark or beach. A sidewalk may be warranted in this circumstance so that pedestrians can walk separately from traffic. Sidewalks in rural areas should be provided at a width based on anticipated or real volume of pedestrians, with five feet being the minimum width.

In situations where Monterey deems sidewalks preferable to safe shoulders, the Town should keep the following design factors in mind:

ADA Compliance: Compliance with the *Americans with Disabilities Act* (ADA) design criteria must be met and necessary changes should be part of any new development or roadway project.

Street trees: Street trees are one of the most essential elements in a high quality pedestrian environment. Not only do they provide shade for cyclists and walkers, they also give a sense of enclosure to the sidewalk environment.

Sidewalks with adequate separation from motor vehicle traffic: High volume and/or high speed (greater than 35 mph) motor vehicle traffic creates threatening and uncomfortable conditions for pedestrians. Physical (and perceptual) separation can be achieved through a combination of methods: a grassy planting strip with street trees, a raised planter on the sidewalk bicycle lanes, on-street parallel parking and awnings.

Sufficient space: Sidewalks should accommodate two-way traffic and anticipated volumes based on adjacent lane uses.

Pedestrian-scale amenities: Large highway-scale signage reinforces the general notion that the pedestrian is out of place. Signage should be designed to be seen also by the pedestrian. Street lighting should likewise be scaled to the level of the pedestrian, instead of providing light poles that are more appropriate on high-speed freeways.

Connections to destinations with no gaps: Pedestrian facilities are often discontinuous, particularly when private developers are not encouraged to link on-site pedestrian facilities to adjacent developments and nearby sidewalks or street corners. New development should be designed to encourage pedestrian access from nearby streets. Existing gaps in the system should be placed on a prioritized list for new sidewalk construction.

Sidewalks in good repair: Facility maintenance is an important aspect of creating adequate and comfortable facilities for pedestrians. A crumbling sidewalk is not only an eyesore but also a hazard to pedestrians -- and often a barrier to the disabled. Regular maintenance protects the public investment in pedestrian facilities and keeps them in working order. The Town should adopt a periodic inspection schedule for pedestrian facilities. Crosswalks will need re-striping on a regular schedule, based on the material used in the striping. A general maintenance budget should be allocated for use on a yearly basis, perhaps combined with a maintenance budget for bicycle facilities.

General construction practices for sidewalks: Sidewalks and roadside pathways should be constructed of a solid, debris-free surface. Many sidewalks in Monterey are asphalt. If asphalt is used to construct sidewalks, they must be installed to withstand adequate load requirements. Standard depth of pavement should be based on site-specific soil conditions, and should therefore be left to local discretion.

Vertical clearance above sidewalks for landscaping, trees, signs and similar obstructions should be at least eight feet. In commercial areas and the downtown Monterey business district, the vertical clearance for awnings should be nine feet. The vertical clearance for building overhangs that cover all or a portion of the sidewalk should be 12 feet.

Width and Setback Standards for Sidewalks: The following descriptions provide cross-sections for sidewalks in Monterey. It is important to note that there are special areas (with higher volumes of pedestrians) that warrant wider sidewalks than the minimum (e.g., between downtown Monterey and BM).

The minimum width of sidewalks on **arterial and collector streets in a commercial area outside of the downtown should be six feet.** For all new roadway construction, the sidewalk should be set back from the curb and gutter by a minimum of eight feet. For roadway widening projects with right-of-way limitations (and other such "retrofit" projects with inadequate

shoulder space for sidewalks), a minimum of a two-foot wide planting strip should be installed. If no planting strip is possible, the minimum width of the sidewalk should be seven feet.

The minimum recommended width for **residential sidewalks is five feet for urban and suburban arterial and collector streets**. For all new roadway construction, the sidewalk should be set back from the curb and gutter by a minimum of eight feet. For roadway widening projects with right-of-way limitations (and other such "retrofit" projects with inadequate shoulder space for sidewalks), a minimum of a two-foot wide planting strip should be installed.

On **local streets in residential areas**, sidewalk width should be based on the number of units per acre. For multifamily developments and single-family homes with densities that exceed 4 units per acre, the sidewalk should be a **minimum of six feet wide** with a minimum setback of 4.5 feet (new construction) or two feet (retrofit). For densities up to four dwelling units per acre, the sidewalk should be a minimum of five feet wide with a minimum setback of 4.5 feet (new construction) or two feet (retrofit).

The setback requirements described above are based on roadway cross-sections that include curb and gutter. Sidewalks located adjacent to "ribbon pavement" (pavement with no curb and gutter) have a greater setback requirement, depending on roadway conditions.

CROSSWALKS

Marked crosswalks should be provided at all intersections in Monterey with significant pedestrian crossings, or where newly installed sidewalks are likely to generate more pedestrian traffic.

Crosswalks can serve to channel pedestrian traffic through an intersection, as well as heighten the awareness of motorists of possible pedestrian crossing movements. It is important to note that although crosswalks are an important element in intersection design, a crosswalk alone does not insure the safety of a pedestrian. Too often, crosswalks are the sole provision for pedestrians at intersections when other safety measures are also needed.

The optimum width of crosswalks in Monterey is 10 feet wide with a minimum width (as set by the *Manual on Uniform Traffic Control Devices*, or MUTCD) of six feet wide. Wider crosswalks should be installed at locations with higher pedestrian volumes. At intersections with stop bars, a minimum separation of four feet is necessary between the stop bar and edge of the crosswalk.

A deciding factor in the location and design of crosswalks is the placement of curb ramps at street corners. Curb ramps should always be placed so to lead the pedestrian directly into a striped crosswalk area. Corners should either include two curb ramps or one broad ramp that serves both crosswalks. Curb ramps should always be provided with a matching ramp on the opposite side of the road as well as ramps at pedestrian refuge islands.

EDUCATION AND SAFETY

To understand the importance of bicycle and pedestrian safety education programs, it is important to understand how and why accidents occur. Many pedestrians (children and adults) walk in violation of traffic laws and regulations. Pedestrian incidents include crossing at mid-block with no crosswalk and attempting to cross when vehicles are already moving through an intersection.

Pedestrian accidents often occur due to poor judgment. Children in particular must be trained to "read" traffic and judge distances between vehicles or "gaps." The size of the gap required will vary considerably with vehicle speed.

NEW SITE DEVELOPMENT OR REDEVELOPMENT

Monterey should require a "Pedestrian and Bicycle Mobility Plan" during the site plan review process. This plan should provide an inventory of all existing and proposed land uses adjacent to the site, and illustrate a logical circulation plan for pedestrians and bicycles within the development and between adjacent land uses. The questions below can help architects and engineers in creating site plans that are sensitive to the needs of pedestrians.

Pedestrian Site Plan Checklist

Overall Pedestrian System

- > Does the plan meet or exceed ADA standards?
- > Are utilitarian paths direct? Do they provide for connections to pedestrian magnets nearby? Can pedestrians take advantage of "shortcut paths," connections between adjacent developments that encourage walking instead of driving?
- > Does the pedestrian system consider the type and probable location of future development on adjacent or nearby parcels of land? Is there flexibility to provide direct connections to adjacent parcels, should that be desired in the future?
- > Are building entrance areas convenient to the pedestrian? Are they clearly evident through design features, topography, signing or marking?
- > Are walkways along the street separated and buffered from traffic as much as possible?
- > Is both utilitarian and recreational walking considered in the plan?
- > Do pathways take advantage of unique or scenic site features where possible?

Safety and Security

- > Are crossings of wide expanses of the parking lot held to a minimum?
- > Are pathways generally visible from nearby buildings and free from dark, narrow passageways?
- > Is adequate pedestrian-scale lighting provided for nighttime visibility? Are pedestrians able to see on-coming traffic, given typical speeds?
- > Do pathways lead to road crossing points with the least conflict?
- > In general, are pedestrian/vehicle conflict points kept to a minimum?
- > Are pedestrians given adequate time to cross the road at intersections?

Walking Surfaces and Amenities

- Are walking areas scaled to the pedestrian?
- Are the walking surfaces skid-resistant and sloped for drainage, but less than 1:12?
- Are provisions made for curb ramps and are they properly designed?

Commercial and Office Developments

Development and site design should be done to ensure that comfortable and convenient pedestrian access is provided. Buildings adjacent to sidewalks should be inviting and non-threatening to pedestrians. Buildings should be placed as close as practicable to the roadway and sidewalk to decrease site access distances for the pedestrian.

Building entrances should connect directly to the street and to sidewalks within the public right-of-way. Buildings should be sited to minimize the distance between the sidewalk and the entrance. Parking lots should be located at the side and/or rear of the lot.

All building entrances on the site should be connected by walkways to encourage walking between buildings and to provide a safe means of travel for pedestrians.

Sidewalks between the budding edge and parking lots should allow pedestrians safe and convenient access to building entrances without having to walk within driving aisles of parking lots.

Sidewalks should connect uses on the development site to adjacent activity centers to encourage walking instead of driving between uses.

Pedestrian-scale lighting should be designed to light the walkway, instead of the parking lot, to enhance pedestrian safety.

Direct pedestrian access to public transit should be provided by clustering buildings near transit stops, and orienting building entrances towards transit stops.

Mixed land uses and higher development densities should be encouraged because they foster more concentrated pedestrian activity.

Parking Lots Within Commercial Developments

Parking lots with fifty spaces or more should be divided into separate areas with walkways and landscaped areas in between that are at least ten feet in width. Distinct pedestrian paths can be provided by striping or use of a different surface material within the parking lot. Pedestrian-paths should be designed with minimal direct contact with traffic. Where pedestrian paths cross the traffic stream, raised speed tables that slow cars while providing an elevated pedestrian walkway, should be provided.

Other suggestions to improve conditions for pedestrians in parking lots:

Parking lot location: Keep parking on one or two sides of the shopping center, oriented away from the side that will generate most pedestrian access. This pedestrian access point could be an office park, restaurant, or a residential area.

Direct pedestrian paths: Provide a direct pedestrian path from parking lots and parking decks into the shopping center. Clearly delineate this path with striping, different paving materials, or by situating the path through the center of a series of strategically placed parking islands.

Use of landscaping: Use landscaping in a parking lot to channel and organize the traffic flow as well as provide pedestrian refuge. Avoid open parking lots that allow cars to move in any direction.

Mixed Use Development: Mixed use developments offer the highest potential for pedestrian activity. In areas where higher density development is feasible, mixed land-use should be a preferred development type in Monterey. Mixed-use development is usually conducive to walking due to the proximity of residential, commercial and office areas. By locating these land uses closer to one another, people can be encouraged to walk between them for utilitarian trips.

Residential Areas

Walking is a popular activity in residential areas, mainly as a recreational activity and occasionally for home to school trips. Sidewalks are an essential ingredient in successful pedestrian spaces in residential areas. However, the "walkability" of a neighborhood is also a factor of the width and configuration of the roadway, and hence the speed of traffic.

While neighborhoods can be posted with lower speed limits, this is rarely sufficient to convince motorists to actually reduce their speeds. Speed Limit signs are too easily ignored. The most effective deterrent to high-speed traffic is to design the street cross-section to require low speed travel.

"Traffic calming" is a term that applies to a variety of methods to reduce automobile speeds in residential areas. Example methods include speed humps, intersection neck-downs, lane width reductions, and traffic circles. A successful traffic calming program can accomplish the following objectives:

- reduce the speed of motor vehicle traffic
- encourage motorists to be more cautious of pedestrians and cyclists
- encourage the use of alternative modes of transportation
- reduce through-traffic in residential areas
- provide a balanced transportation system (with dedicated spaces in the right-of-way for all users).

Appendix C: Approximate Costs

The table below shows approximate costs of a variety of bicycling and/or walking improvements for the purpose of preliminary bike/pedestrian planning. More precise data would need to be gathered before a specific project is planned. Costs that may add to a project budget include the broader planning that should precede any such project, notifying and involving the public, any right-of-way acquisition, and legal fees.

Table 1: Rough Costs of Bicycling & Walking Improvements

Category	Item	Unit	Cost	Notes	Source
General	Striping-4" wide	Linear Foot	\$1.80	9,500 per mile	NYSDOT-Region 8, 1994 in e-mail from Jim Ercolano (NYSDOT), 3/12/02
General	Signs	Each	\$200	varies with size	NYSDOT Bicycle/Pedestrian Program, 1994 used in "Bicycle and Pedestrian Plan (PDCTC, 1996)
General	Design costs	Project	17%	PVPC has found on several bike/ped projects-mainly trails-that design costs are roughly 17% of build costs	Jeff McCullough, Pioneer Valley Planning Commission, phone 8/01
Road Shoulder	Construction	Mile	\$189,000	5' each side of road pavement extension	Florida DOT, 1999 in e-mail from Jim Ercolano (NYSDOT) 3/12/02
Road Shoulder	Construction-Rural	Mile	\$102,000	5' per side	Florida DOT, 1999 in e-mail from Jim Ercolano (NYSDOT) 3/12/02
Road Shoulder	Resurfacing	Mile	\$25,000		Florida DOT, 1993 used in the "Bicycle and Pedestrian Plan" (PDCTC, 1996)
Safety	Walk/Don't Walk Signal System	4 Corners	\$3,700 - \$250,000		Florida DOT, 1999 in e-mail from Jim Ercolano (NYSDOT) 3/12/02
Safety	Pedestrian Activated Flashing Lights Built into Crosswalk	Crosswalk	\$30,000	Installed on Rt.2 in Williamstown 6/02	"Electronic Crossing Guard Will be on Duty in Williamstown" Advocate, 5/22/02.
Safety	Speed Tables	Unit plus signage	\$1,500 - \$2,000	These are a safer and less jarring version of speed bumps, roughly 4-6 feet in travel distance	D-Table 1: Traffic Calming Device Costs, "Berkshire Access Management Guidelines" (Fuss & O'Neill/BRPC) 4/02
Safety	Crosswalk Pavement Treatments	Crosswalk	\$5,000 - \$20,000	Different paving texture and color to permanently demarcate crosswalks	D-Table 1: Traffic Calming Device Costs, "Berkshire Access Management Guidelines" (Fuss & O'Neill/BRPC) 4/02
Safety	Pedestrian Refuge Islands	Island plus signage	\$8,000 - \$15,000	Island in the middle of a major street to improve pedestrian safety	D-Table 1: Traffic Calming Device Costs, "Berkshire Access Management Guidelines" (Fuss & O'Neill/BRPC) 4/02

Category	Item	Unit	Cost	Notes	Source
Sidewalk	Construction-Asphalt	Square Foot	\$1.50	4 feet wide, no curb	Vt DOT in 1996, in e-mail from Jim Ercolano, NYSDOT, 3/12/02
Sidewalk	Construction-Concrete	Square Foot	\$3.33	6' wide	Vt DOT in 1996, in e-mail from Jim Ercolano, NYSDOT, 3/12/02
Sidewalk	Construction-Concrete	Mile	\$320,000	stand-alone project, shoulders both sides, sign relocation, signal modification, minor drainage/utility work	NYSDOT-Region V, 2000 Gregory Szewczyk by way of e-mail from Jim Ercolano 3/12/02
Trail	Construction-Asphalt paving	Mile	\$200-300,000	Life span 7-15 years	"Trails for the 21st Century" (Rails-to-Trails Conservancy, 2001) per e-mail Jim Ercolano, NYSDOT 3/12/02
Trail	Construction-Asphalt paving	Mile	\$150,000	as part of other projects	NYSDOT-Region V, 2000 Gregory Szewczyk re e-mail from Jim Ercolano 3/12/02
Trail	Bridge for bicyclists/pedestrians	Bridge	\$60,000	This is an estimate for a prefab bridge to cross 15-20' of water (30' long x 12' wide). This includes piles & trucking	Echo Bridge, Inc. estimate (8/01)
Trail	Maintenance for a trail	Mile	\$6,500	Includes drainage maintenance, sweeping/blowing, trash pick-up, mowing 3' grass shoulder, vegetation management, minor repairs to amenities/safety features, maintenance supplies	"Trails for the 21st Century" (Rails-to-Trails Conservancy, 2001), p. 157, per e-mail Jim Ercolano, NYSDOT 3/12/02
Trail	Resurfacing Asphalt trail	Linear Foot	\$10 (\$5 to overlay with top coat)		"Trails for the 21st Century" (Rails-to-Trails Conservancy, 2001) per e-mail Jim Ercolano, NYSDOT 3/12/02
Trail	Connecticut Riverwalk (MA)	Mile	\$250,000	On existing rail bed, no structures to build. Costs triple going through wetlands for retaining walls, catch basins, etc.	Jeff McCullough, Pioneer Valley Planning Commission, phone 8/01
Trail	Ashuwillticook Trail	Mile	\$152,000 - \$350,000	The lower number was for Phase 1 with few culverts or bridge work, higher is Phase 2	MassHighway & newspaper articles, 2000/2001

Appendix D: MassHighway Policy on Bicycle & Pedestrian Facilities

The Commonwealth of Massachusetts supports walking and bicycling as transportation and for recreation. Following are three key specific expressions of this support.

Vision of Bike Plan

The Massachusetts Statewide Bicycle Transportation Plan (1998) states the following:

The vision of the Statewide Bicycle Transportation Plan is recognition of bicycling as a viable means of transportation and reasonable accommodation of the needs of bicyclists in policies, programs, and projects. Greater recognition and accommodation of the needs of bicyclists will lead to a more balanced transportation system with greater modal choice and improvements in bicycle safety. Such actions will enhance the environment and quality of life in the Commonwealth, and improve personal mobility.'(p. 3)

Mission Statement of Walking Plan

The Massachusetts Pedestrian Transportation Plan utilizes a mission rather than a vision statement. Its mission statement is:

The Massachusetts Pedestrian Transportation Plan will serve as a guide to state, regional, and local transportation planning to better serve walkers. The plan's recommendations aim at developing a more pedestrian-focused transportation system throughout the state through government and private sector actions. The intended result is safe, convenient, continuous, coherent, and comfortable walking networks. The plan will provide strategies to improve pedestrian conditions in urban, suburban, and rural areas throughout Massachusetts. Strategies will include physical improvements appropriate to the setting, local and statewide encouragement and education programs, increased adherence to laws, and improvements in the processes that set policy and plan facilities. (p. 1-1)

Directive E-98-003

It should be noted that bicyclists and pedestrians are allowed on all roads in Massachusetts except those, such as the Massachusetts Turnpike, where design considerations and posted signs prohibit these uses. However, to further the safety and use of these modes, Engineering Directive E-98003 (in response to MGL Ch 8 Acts of 1996), requires that:

Project design engineers shall use sound engineering practice in making reasonable provisions to accommodate bicycles and pedestrians in project designs. This generally includes assuring continuous paths of travel with smooth surfaces without obstructions or impediments. This Directive must be addressed on all projects at the 2% design level.

The Directive goes on to recognize some of the differences in reasonable accommodations for bicyclists and for pedestrians and cite specific standards for each.

Directive P-98-003

This MassHighway directive is a policy directive rather than an engineering one. It addresses the state highway department's commitment to Bicycle Route and Share the Road signage. The directive lays out the criteria towns must meet for MassHighway to issue such signs for particular routes throughout the Commonwealth.

Appendix E: Planning Issues & Model Bylaws

Generally it is more efficient and legally supportable to work toward consensus on a community's vision, adopt it in the form of regulations, and provide guidelines to assist future developers (private or public) than to retrofit after the fact or comment on each proposed site plan.

Having a current adopted plan is an important first step. A natural follow-up step would be for interested people in a community to review what their plan(s) says about bicycling or walking facilities. Plans are important for the process of public participation and consensus building that should go into them and for documenting the results. Especially in smaller towns, they need not be full-sized traditional master plans, but a set of agreed-upon goals is important. After that the goals generally need to be incorporated into regulations, such as zoning bylaws, to have a real effect.

A review of community goals regarding bicycling and walking might appropriately be led by a planning board or a town-authorized group of interested citizens and members of various boards. This group would also be well-suited to take the lead on recommending any improvements, projects, or changes in procedures within the town to make use of such modes safer and more pleasant. Coordinating with and educating boards that will eventually have to give approvals is likely to be helpful in having an effect. Residents of those communities may wish to participate, and those communities may have experience to share with other communities.

A low cost approach most communities could adopt is guidelines or bylaws to shape future development. These can be done through modifications of existing language or new items. They may be incorporated in zoning bylaws, general municipal bylaws, subdivision regulations, operating regulations (such as of planning boards or departments of public works) or by the adoption of recommended voluntary guidelines.

The following table was prepared as part of the *Pioneer Valley Regional Bicycle and Pedestrian Transportation Plan* by the Pioneer Valley Planning Commission (PVPC) for the region adjoining southeastern Berkshire County. The items listed here may serve as a useful starting point for discussion.

Table 1: Land-use Measures that Impact Levels of Bicycle & Pedestrian Use

Municipal Regulations	How They Can Affect Bicycle & Pedestrian Travel
Dimensional	Maximum setbacks of 30 feet or less bring buildings close to pedestrians, for a more comfortable and appealing streetscape. Zero lot lines foster pedestrian-scale development by reducing the distances between uses.
Traffic Control	Requirements for large development projects to include traffic studies can lead to the identification and mitigation of negative impacts on cyclists and pedestrians.
Site Plan Approval	Requirements for approval may include provisions for safe and attractive pedestrian and bicycle circulation (i.e. paths leading to main building entrances, pedestrian and bicycle access to adjacent uses).
Parking Regulations Parking Regulations (continued)	As with a Site Plan Approval Bylaw, parking regulations may require pedestrian and bicycle accommodations, including:

Municipal Regulations	How They Can Affect Bicycle & Pedestrian Travel
	<ul style="list-style-type: none"> • Bicycle parking • Marked pedestrian and bicycle paths through the parking facility • Connections with adjacent parking lots, sidewalks, and off-site trails • Requirements that parking be in the rear of buildings • Rear parking also allows uses to be closer together, reducing distances • Regulations can minimize the amount of land devoted to parking by setting limits on the amount of space which can be developed, encouraging uses to share parking lots, and promoting the development of parking garages • Landscaping requirements for parking lots to increase the attractiveness of an area for pedestrians and cyclists.
Phased Growth Bylaws	Phased growth bylaws may be structured to reward developments that facilitate bicycle and pedestrian travel. Growth management can encourage compact development.
Subdivision Regulations	Regulations may include requirements for bicycle and pedestrian accommodations, such as sidewalks or walkways, off-road bicycle paths and on-road bicycle lanes, street grids or connections between cul-de-sacs, connections with adjacent uses, and road, sidewalk and path grades of 5 % or less.
Mixed Use Development Bylaws	Bringing living, working, shopping, and entertainment areas into close proximity increases the practicality of bicycle and pedestrian travel.
Density Zoning Measures	Increased density reduces the distances between uses and the development and maintenance of sidewalks is more feasible in densely settled areas. (Examples of density zoning include upzoning, density bonuses, and accessory apartments.)
Transit Overlay Districting	The provisions in a transit overlay zoning district are designed to increase densities and pedestrian access within a 1/4-mile radius (i.e. walking distance) of a transit stop.

Appendix F: Potential Sources of Funding

(excerpted from the *Pioneer Valley Regional Bicycle & Pedestrian Transportation Plan*, Pioneer Valley Planning Commission, 2000)

The following is an outline of potential federal, state and local funding sources for bicycle and pedestrian facilities. The table below lists various types of bike-pedestrian assistance and shows corresponding sources of potential funding. Following the table is a description of each funding source. Sources marked with an asterisk (e.g. STP*) are part of the 1997 Transportation Equity Act for the 21st Century (TEA-21). Only bicycle and pedestrian facilities used principally for transportation rather than recreation are eligible for TEA-21 funds. The current federal transportation bill (TEA-21) runs out September 30, 2003. It is not known at this time what provisions the next bill will be. The new bill is scheduled to go into effect in October 2003, pending passage by Congress.

According to the Metropolitan Planning Organization regulations, projects seeking state or federal transportation funding must be included in the Regional Transportation Plan (RTP) and the Transportation Improvement Program (TIP) to be considered for funding.

Type of Assistance	Source of Funding
Brochures related to safe bicycle use	STP*, CMAQ*
Construction	NHS*, CMAQ*, STP*, STP/E*, DCS-Urban, Self Help, L&WCF
Easement acquisition	DCS -Urban Self Help, L&WCF
Land acquisition	DCS -Urban Self Help, L&WCF, STP/E*
Planning or design	DCS -Self Help, DEM Greenways
Public service announcements related to safe bicycle use	STP*, CMAQ*
Route maps related to safe bicycle use	STP*, CMAQ*
Transit access and other facilities (lockers and racks)	Federal Transit Section 5309*

Description of Federal Funding Sources and Other Areas of Assistance:

Congestion Mitigation and Air Quality (CMAQ)* Program Funds—“may be used for either the construction of bicycle transportation facilities and pedestrian walkways, or non-construction projects (such as brochures, public service announcements and route maps) related to safe bicycle use.”

Massachusetts New and Innovative Transportation Demand Management Program (TDM) Funded under the Congestion Mitigation and Air Quality program, the TDM program is a \$1.8 million statewide program that provides funds for low-cost, new and innovative TDM projects. The goals of the program are to help the Commonwealth achieve its air quality and traffic congestion objectives (State Implementation Plan) by changing the behavior of motorists, encouraging them to use alternatives to driving alone and supporting strategies that promote the use of these alternatives. Bicycle and pedestrian projects previously funded under this program include PVTA’s Rack & Roll Program (includes bicycle lockers, bicycle racks on buses, and bicycle parking racks) and the Northampton Sheldon Field Park & Ride Project (includes bicycle

lockers and parking racks). Other examples of bicycle and pedestrian strategies that may be eligible for funding under this program include:

- Developing new shared ride services, including bike and ride services;
- Making transit more attractive through operational improvements;
- Developing programs that encourage the use of alternative modes, or reduce psychological impediments to their use;
- Devising alternative work hours;
- Implementing parking management strategies;
- Disseminating information and marketing alternatives.

Section 5307 Transit Funds—The funds are channeled through the regional transit agencies and are used for capital expenditures. Transit authorities can work with their member communities to develop pedestrian and bicycle friendly transit stops or add bicycle racks to buses. Berkshire Regional Transportation Authority (BRTA) buses currently have bike racks.

Department of Environmental Management (DEM)—has the ability to acquire abandoned rights-of-way.

Department of Environmental Management Greenways Program (DEM Greenways)—has a grants program for the planning and development of trails. The project amounts range from \$5,000-\$10,000.

Division of Conservation Services Self Help Program (DCS -Self Help)—reimburses up to 70% of the total project cost for the acquisition of land for conservation and passive recreation purposes.

Division of Conservation Services, Urban Self Help Program (DCS -Urban Self Help)—reimburses up to 70% of allowable costs towards the acquisition of land, undertaking of new construction or rehabilitation of land for park or outdoor recreation purposes.

Federal Lands Highway Funds—“may be used to construct pedestrian walkways and bicycle facilities in conjunction with roads, highways and parkways at the discretion of the department charged with administration of such funds.”

Federal Land and Water Conservation Fund (L&WCF)—reimburses projects up to 50% of the total project cost, up to \$150,000 for the acquisition, development or renovation of park, recreation and conservation areas.

Federal Transit Title III, Section 25* Funds—“allows transit funds to be used for bicycle and pedestrian access to transit facilities, to provide shelters and parking facilities in or around transit facilities, or to install racks or other equipment for transporting bicycles on transit vehicles.”

Governor’s Highway Safety Bureau (GHSB) Funds—(Federal NHTSA Section 402) “can be used for small scale physical improvements and bicycle safety programs.”

MassHighway Department (MHD)*—can fund projects designed primarily for transportation. Priority is given to projects that have engineering design completed and all permits acquired by the impacted community(s). The community is responsible for design and permitting costs.

Scenic Byways Program Funds—(administered through MassHighway) may be used for planning activities and promotion of Tourism on designated routes.

National Highway System (NHS) Funds*—“may be used to construct bicycle transportation facilities and pedestrian walkways on land adjacent to any highway on the National Highway System (other than the Interstate System).”

National Park Service (NPS) Rivers and Trails Assistance Program—provides staff services to groups for organization building, education, planning and technical assistance. There are no direct funds available.

National Recreational Trails Funds (NRTF)*—may be used to create trails for use by motorized and/or non-motorized users. Funds under this category are very limited.

Surface Transportation Program (STP) Funds*—“ may be used for either the construction of bicycle transportation facilities and pedestrian walkways, or non-construction projects (such as brochures, public service announcements and route maps)related to safe bicycle use.”

Transportation Enhancements (STP/E) Funds*—may be used for “ provision of facilities for bicyclists and pedestrians ” and “preservation of abandon railway corridors (including the conversion and use thereof for pedestrian or bicycle trails).”

Bicycle Registration Fees—Communities can establish a bicycle registration program which charges a fee for each bicycle registered. The revenue from the fees can be earmarked for bicycle-related projects and services.

Sidewalk Accounts—Communities can obtain funding for sidewalks using municipal bonds, or special accounts established to hold contributions from developers of new developments. Rather than requiring sidewalks in places that may not need them, a developer can be asked to donate what would have been spent to the special municipal account for sidewalks. The community can then use the funds for sidewalks where they are needed.

Environmental Impact Review Measures—Localities can ask project proponents whose projects have environmental impacts to consider bicycle and pedestrian improvements as mitigation measures.

Local Support through Volunteers, Schools, Business Groups—Although not a funding source, volunteerism is one of the greatest resources available to cities and town. There are civic clubs, schools, police departments, bike shops, bike accessory manufacturers, medical professionals, youth groups, service organizations, bicycling clubs, and business groups who are willing to take on projects to improve community public space or assist in injury prevention programs. Success in bringing volunteers together is witnessed through Adopt-a-Trail groups,




local bicycle advisory committees, and bicycle safety programs. (Resource: Community Bike Safety Idea Bank, MA Department of Public Health, Western MA Safe Kids, Kawanis Pediatric Trauma Institute (Guide to Bicycle Rodeos).)

Baystate Roads Program—Not a funding source but a resource, The Baystate Roads Program provides public works and engineering staff of local governments and municipalities with information and training on current design practices, and technologies for managing public investments in local roads, bridges, sidewalks, and structures. The Baystate Roads Workshops are provided through a cooperative effort of the Federal Highway Administration, Massachusetts Highway Department, and the University of Massachusetts.(Baystate Roads Program 413-545-5403) Examples include the 2000 Massachusetts Statewide Pedestrian Conference, 1998 Statewide Bike Workshops, September 2000 Bicycle Safety Workshop.

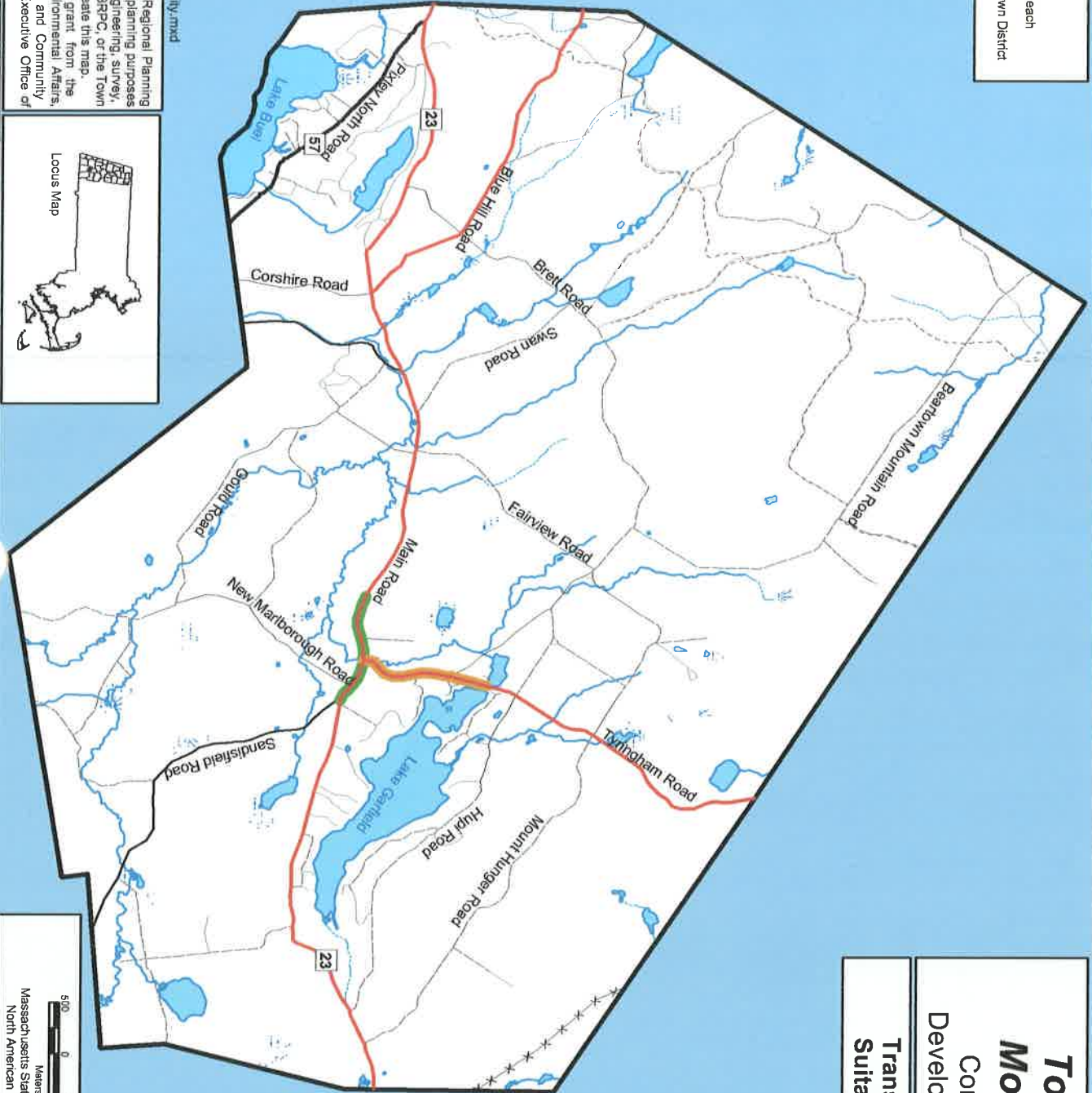
Other State Funding Programs

Community Development Block Grants (CDBG)—The Executive Office of Communities and Development (EOCD) awards CDBG funds that are appropriated by the federal government. Communities must apply for the grant. The CDBG funds can be used for many different projects and can be used as incentives to property owners and developers if approved by the municipality.

Public Works Economic Development Program Grants (PWED)—The State established this fund for assistance to communities in the design and construction/reconstruction of roadways, sidewalks, lighting systems, bridges, traffic control and service facilities, drainage systems, and other transportation related projects deemed by a municipality to be necessary for economic development. Municipalities must petition the Executive Office of Transportation and Construction (EOTC), which reviews projects according to set criteria.

-  Cycling Enhancements
-  Walking Trail to Town Beach
-  Sidewalk Along Downtown District

**Town of
Monterey**
Community
Development Plan
Transportation
Suitability Map



December 29, 2003
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This map was created by the Berkshire Regional Planning Commission and is intended for general planning purposes only. This map shall not be used for engineering, survey, legal, or regulatory purposes. MASSGIS, BRPC, or the Town provided all of the data layers used to create this map.

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