

## Preliminary Alternatives Summary

Preliminary alternatives for the proposed shared-use path connections to the future Putnam Bridge walkway in Wethersfield and Glastonbury were presented to the study Advisory Committee on April 4, 2013. These alternatives, which are summarized in this document and illustrated in the accompanying exhibits (hyperlinks are provided within the following text), address the project goals of maximizing year-round transportation/recreational utility and minimizing environmental impacts to varying degrees.

### Wethersfield Alternatives (click [HERE](#) for exhibits)

Three shared-use path alternatives were developed to connect the Putnam Bridge walkway to the proposed path terminus at the intersection of Great Meadow Road and the I-91 Exit 25 off ramp in Wethersfield. These alternatives include:

- **Alternative 1**, the most gradual transition from the walkway down to the terminus. Grades are 5% or less and the path curvature meets the design standards established for the project. The path is longer than the other alternatives to accommodate the lesser grades and standard curvature, but this layout will have wetland and floodplain impacts.
- **Alternative 2**, the shortest connection from the walkway to the terminus, generally located within the limits of the temporary haul road that will be constructed for the Putnam Bridge Rehabilitation Project. This location will minimize new clearing impacts in the project area, but it requires sharper curvature and the use of steeper grades that are up to 8% (for 200 feet). No wetland or floodplain impacts are anticipated with this alternative.
- **Alternative 3**, an intermediate path location that maintains grades of 5% or less from the walkway to the terminus. The path uses the sharper curvature of Alternative 2 and is slightly longer, but avoids the floodplain impacts of Alternative 1 and minimizes potential wetland impacts.

All three Wethersfield alternatives incorporate improvements at the intersection of Great Meadow Road and the Exit 25 off ramp. These improvements include reduced corner radii to minimize vehicular turning speeds and crosswalks to improve motorist awareness and visibility of pedestrians and bicyclists at the path terminus.

Additionally, all three alternatives could include parking accommodations either on-street, or off-street in a new parking area located proximate to the path terminus. Different parking options are illustrated for each alternative, though any of these options could be applied to all three of the alternatives.

A tabular summary of the Wethersfield alternatives is provided on the next page. The table provides additional details about the general characteristics, potential impacts, other considerations, and estimated construction costs associated with each alternative.

See page 3 for a summary of the Glastonbury Alternatives.

**Wethersfield  
Alternatives Comparison Matrix**

**Putnam Bridge Multimodal Trail Connections Feasibility Study**

	Alternative		
	Wethersfield 1	Wethersfield 2	Wethersfield 3
<b>General Characteristics</b>			
Total Length	1125 ft	510 ft	660 ft
Maximum Grade	5%	8%	5%
Geometric Constraints	None	> 5% Grade; Radius < 60 ft	Radius <60 ft
		8% Grade for 200 ft	Radius = 30 ft
		Radius = 30 ft	
<b>Environmental Impacts</b>			
Wetlands (Delineated)	4600 SF	0 SF	350 SF
Within 100-year Floodplain Boundary?	Yes, partially	No	No
Approximate Fill below 100-year Flood Elevation	0 <sup>1</sup>	0	0
Above 10-year Flood Elevation?	Yes	Yes	Yes
<b>Property Impacts</b>			
Total Properties Impacted	0	0	0
Total ROW Needs (ac)	0	0	0
<b>Other Impacts/Considerations</b>			
Utilities	May require lighting relocation	May require lighting relocation	May require lighting relocation
Structures	May require sign structure relocation	May require sign structure relocation	May require sign structure relocation
Sight Distance	-	Raised path could potentially restrict sight distance for vehicles turning from exit ramp	-
<b>Construction Costs<sup>2</sup></b>			
Estimated 2013 \$	\$500,000	\$350,000	\$450,000

Notes:

<sup>1</sup> Based on available topographic data, all fill for Alternative 1 would be placed above the 100-year flood elevation of approximately 28 ft. There is an apparent discrepancy between the FEMA-mapped boundary of the 100-year floodplain and areas where existing ground elevations are above the 100-year flood elevation; consequently a portion of Alternative 1 is shown within the mapped boundary. This discrepancy will be addressed during alternative refinement.

<sup>2</sup> Construction cost estimates do not include environmental mitigation, utility relocation, or property acquisition costs.

### Glastonbury Alternatives (click [HERE](#) for exhibits)

Five shared-use path alternatives were developed to connect the Putnam Bridge walkway to the proposed path terminus at Naubuc Avenue in Glastonbury. These alternatives include:

- **Alternative 1**, following the northbound side of Route 3 along the top of the roadway embankment for most of its length to maximize the path elevation (relative to the 100-year flood elevation) and to minimize the potential for flooding. The path will be separated from the Route 3 shoulder by a concrete barrier and fence providing approximately 13 ft of separation distance between path users and vehicular traffic. A retaining wall will be used along the right side of the path to minimize new embankment fill within the floodplain and to minimize the potential for wetland impacts.
- **Alternative 2**, following the northbound side of Route 3 along the roadway embankment at an elevation at or above the 10-year flood elevation. This elevation allows for greater separation (approximately 25-30 ft) between path users and Route 3 traffic and helps lessen the impact of traffic noise. No retaining wall will be used to reduce costs, but there will be considerable embankment fill within the floodplain and there will be potential wetland impacts along the bottom of the new path embankment.
- **Alternative 3**, following the northbound side of Route 3 along the roadway embankment at an elevation at or above the 10-year flood elevation and cut into the side of the existing embankment slope. This path location will have less separation (approximately 18-20 ft) from Route 3 traffic than Alternative 2, but the elevation below the roadway will help lessen the impact of traffic noise. A retaining wall (assumed to be sheet piling) will be required along the roadway side to accommodate construction of the path inside the existing embankment slope. There will be a net reduction in the amount of fill in the floodplain as existing embankment will be removed, and potential wetland impacts are anticipated to be minor.
- **Alternative 4**, providing significant separation (up to 100 ft or more) between path users and Route 3 traffic by diverging from Route 3 and running on the northbound side of the road outside of the existing roadway embankment for most of its length. This path location will minimize the effect of traffic on the user experience and will provide the most natural trail environment, but will be most susceptible to flooding. This alternative will also require considerable new embankment fill within the floodplain and wetland impacts will be the greatest of the alternatives.
- **Alternative 5**, looping from the walkway to the southbound side of Route 3 and following along the top of the Route 3 roadway embankment for most of its length. Similar to Alternative 1, the location will maximize the path elevation (relative to the 100-year flood elevation) and minimize the potential for flooding. The path will be separated from the Route 3 shoulder by a concrete barrier and fence providing approximately 13 ft of separation distance between path users and vehicular traffic. A retaining wall will be used along the left side of the path to minimize new embankment fill within the floodplain and to minimize the potential for wetland impacts.

All five Glastonbury alternatives will cross Keeney Cove over top of the existing Route 3 culvert, requiring some modifications to the structure. All of the alternatives will also incorporate improvements on Naubuc Avenue to provide pedestrian and bicycle connectivity from the path terminus to Putnam Boulevard and Glastonbury Boulevard. These improvements are generally illustrated the same for each alternative and could include new sidewalks on the east and west sides of Naubuc Avenue, new crosswalks at the intersection of Putnam Boulevard, and a new mid-block crosswalk on Naubuc Avenue.

Additionally, all five alternatives could include parking accommodations within existing commercial parking areas (subject to property owner agreement), or new parking accommodations provided in the vicinity of Naubuc Avenue (possible locations to be further investigated).

A tabular summary of the Glastonbury alternatives is provided on the next page. The table provides additional details about the general characteristics, potential impacts, other considerations, and estimated construction costs associated with each alternative.

	Alternative				
	Glastonbury 1	Glastonbury 2	Glastonbury 3	Glastonbury 4	Glastonbury 5
<b>General Characteristics</b>					
Total Length	4400 ft	4400 ft	4400 ft	4400 ft	5300 ft
Maximum Grade	4%	5%	5%	5%	5%
Geometric Considerations	-	~850 ft of path at 5% grade	~400 ft of path at 5% grade	~1600 ft of path at 5% grade	~600 ft of path at 5% grade
Typical Separation - Path to Travel Lanes	13 ft	25-30 ft	18-20 ft	Varies to 100 ft +	13 ft
<b>Environmental Impacts</b>					
Wetlands (Delineated)	Minor	0.5 ac	Minor	2 ac	Minor
Within 100-year Floodplain Boundary?	Yes	Yes	Yes	Yes	Yes
Approximate Fill below 100-year Flood Elevation	2300 CY	21,000 CY	-3500 CY	9900 CY	100 CY <sup>1</sup>
Above 10-year Flood Elevation?	Yes	Yes (minimum 22 ft in some sections)	Yes (minimum 22 ft in some sections)	No (~2600 ft of trail below)	Yes
<b>Property Impacts</b>					
Total Properties Impacted	0	0	0	0	0
Total ROW Needs (ac)	0	0	0	0	0
<b>Other Impacts/Considerations</b>					
Utilities	May require lighting relocation along most of the path	May require lighting relocation in vicinity of the bridge	May require lighting relocation in vicinity of the bridge	May require lighting relocation in vicinity of the bridge	May require lighting relocation along most of the path
Structures	May require guide sign relocation and overhead sign structure relocation	-	May require guide sign relocation	-	May require overhead sign structure relocations
Miscellaneous	Snow from Route 3 may be pushed onto path by plows due to close proximity	-	Snow from Route 3 may be pushed onto path by plows due to close proximity	-	Snow from Route 3 may be pushed onto path by plows due to close proximity
	Vehicle noise levels may be higher with this path location, users may experience headlight glare	Path elevation is generally 5 ft or more below the grade of Route 3	Path elevation is generally 5 ft or more below the grade of Route 3	Path elevation is generally 15 ft or more below the grade of Route 3	Vehicle noise levels may be higher with this path location, users may experience headlight glare
<b>Construction Costs<sup>2</sup></b>					
Estimated 2013 \$	\$5.1 million	\$2.5 million	\$2.8 million	\$2.2 million	\$5.3 million
<b>Naubuc Avenue</b>					
Potential Improvements	Extend sidewalks along both sides of Naubuc between Glastonbury Blvd and Putnam Blvd, provide crossings	Extend sidewalks along both sides of Naubuc between Glastonbury Blvd and Putnam Blvd, provide crossings	Extend sidewalks along both sides of Naubuc between Glastonbury Blvd and Putnam Blvd, provide crossings	Extend sidewalks along both sides of Naubuc between Glastonbury Blvd and Putnam Blvd, provide crossings	Extend sidewalks along both sides of Naubuc between Glastonbury Blvd and Putnam Blvd, provide crossings

Notes:

<sup>1</sup> Based on available topographic data, the majority of fill for Alternative 5 is located above the 100-year flood elevation of approximately 28 ft, resulting in a relatively small volume of fill in the floodplain. There is an apparent discrepancy between the FEMA-mapped boundary of the 100-year floodplain and areas where existing ground elevations are above the 100-year flood elevation; consequently a significant portion of Alternative 5 is shown within the mapped boundary. This discrepancy will be addressed during alternative refinement.

<sup>2</sup> Construction cost estimates do not include environmental mitigation, utility relocation, or property acquisition costs.