

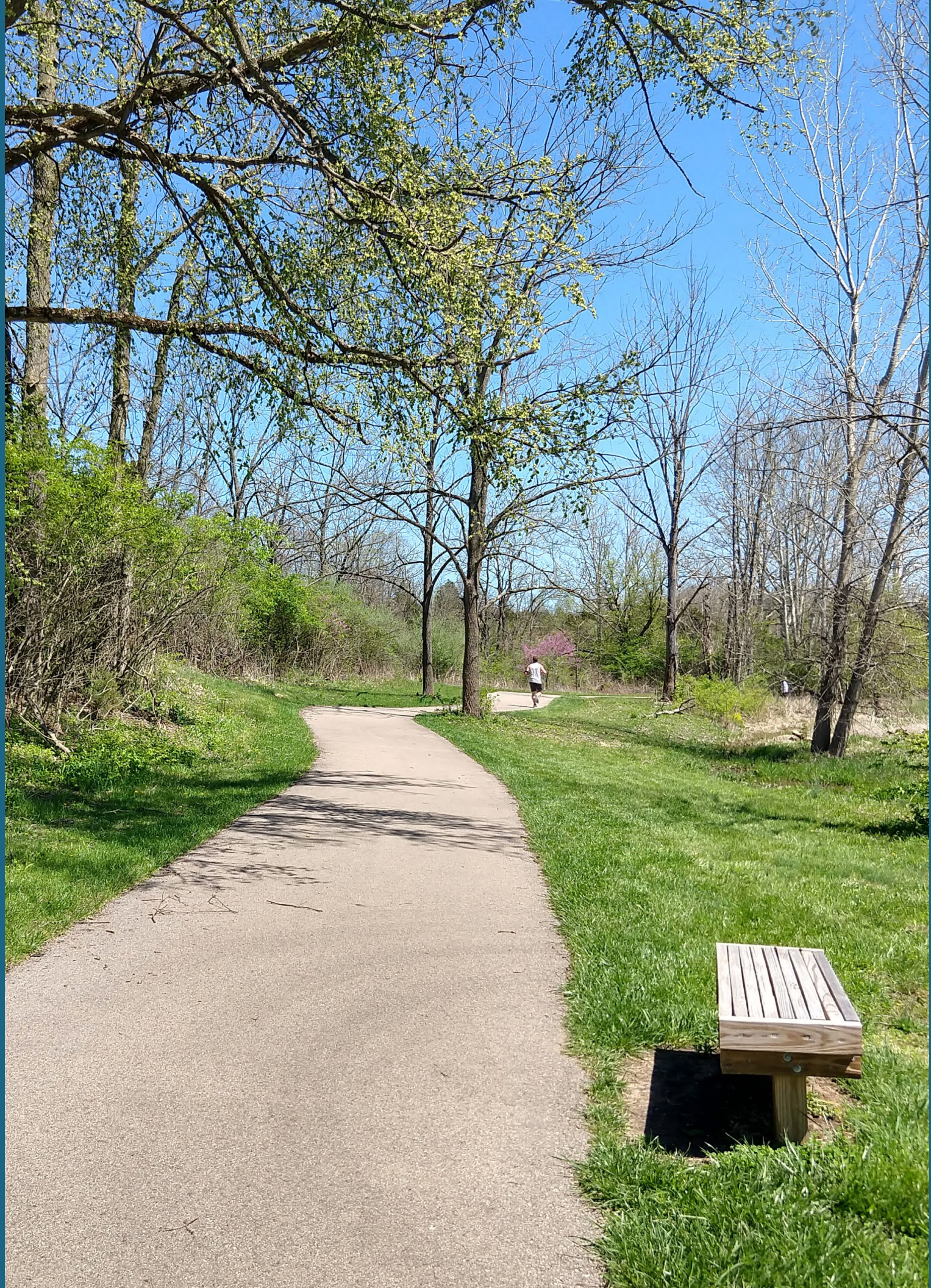
CITY OF SPRINGBORO
BICYCLE AND
PEDESTRIAN
PLAN
UPDATE 2020



CENTRAL GREENWAY PLANNING LEVEL COST ESTIMATES

ADOPTED JULY 2020





CENTRAL GREENWAY PLANNING LEVEL COST ESTIMATES

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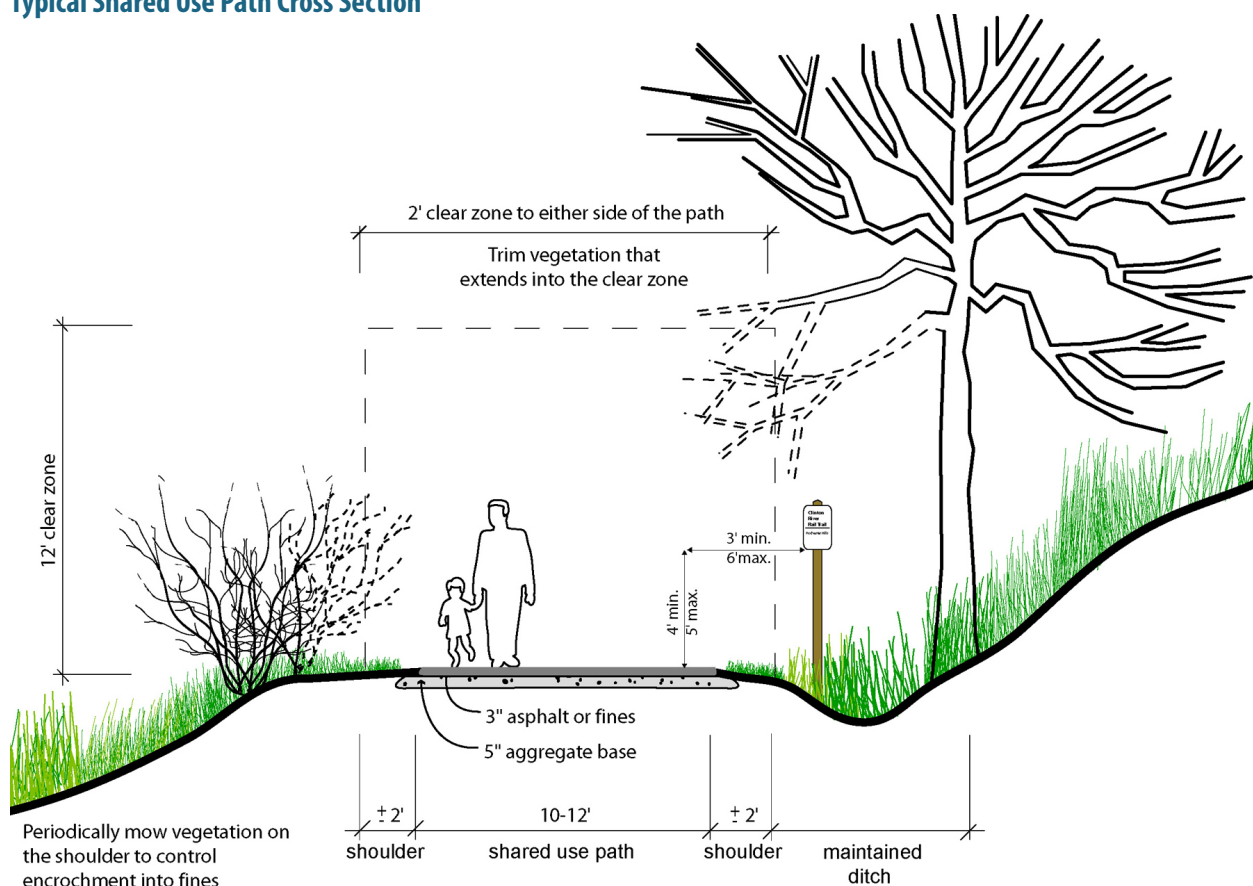
Implementation of the Central Greenway

The Central Greenway has been segmented into 12 parts. For each segment, a preferred route is highlighted, and some alternative routes may be provided. Details on each segments trail alignment are given accompanied by planning level cost estimates for the preferred routes. Please note that lighting has not been included in the cost estimates.

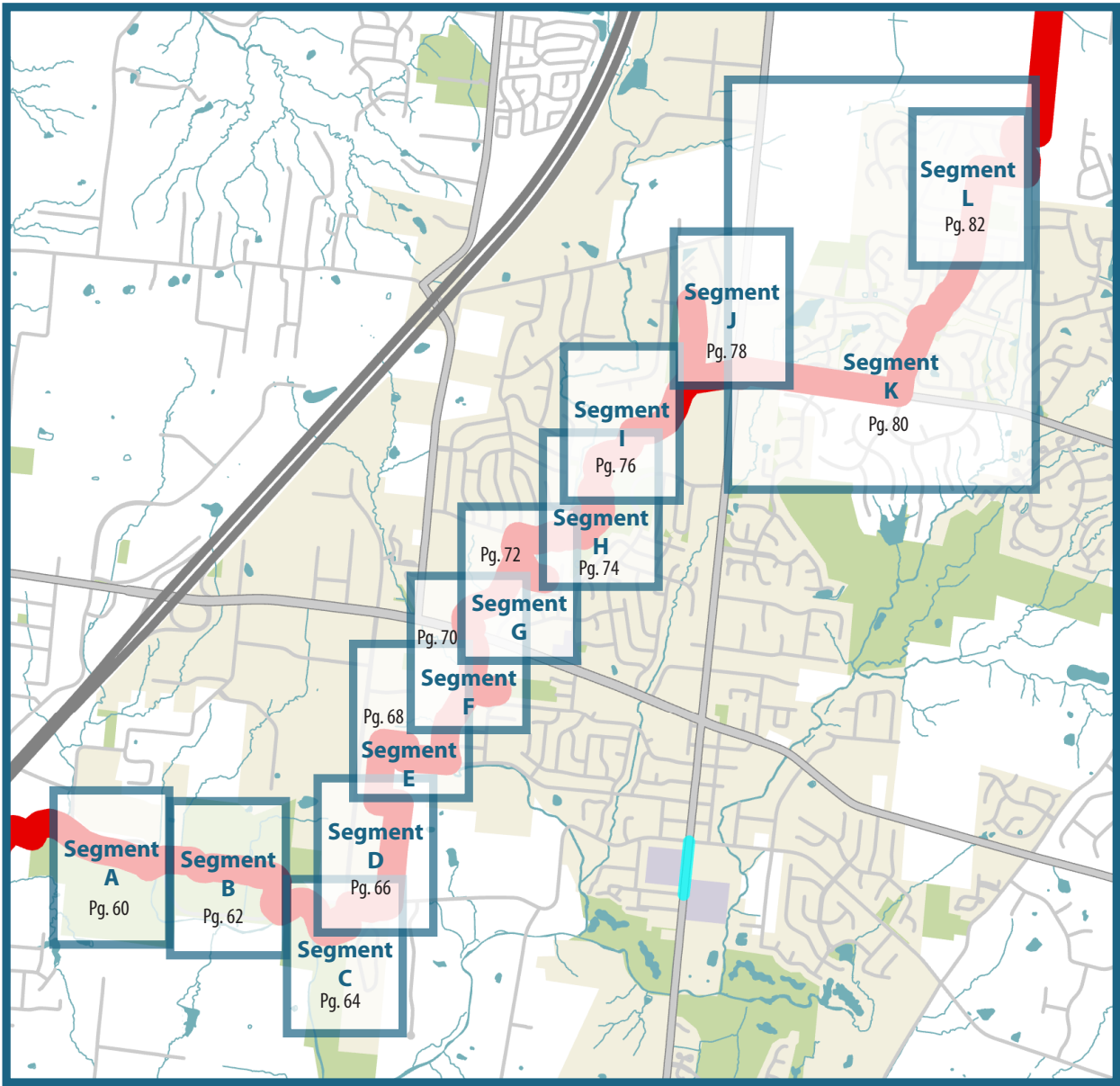
Some of the big ticket items include bridges and boardwalks. Bridges and boardwalks for the Greenway should be a minimum of 14' wide to accommodate bicyclists riding a safe distance from the side rails. They also need to be structurally capable of heavy loads such as a running event, occasional maintenance vehicles, and snow loads. The deck surface has a major impact on long-term maintenance. Wood decking while initially more economical, are difficult to clear snow, leaves, and debris from. They require more frequent maintenance, and often become very slippery when wet. Concrete surfaces while more expensive up-front are much easier to maintain and are less slippery when wet.

Around 85% of the Greenway will be shared use paths. Current guidelines call for a minimum width of 10' with a 2' clear zone on either side of the trail. 11' and 13' wide trails make it easier for two bicyclists to ride side-by-side and pass other users on the trail. The path should be gently graded (5% maximum slope), avoid tight turning radii, and have good visibility at all intersecting driveways and roadways for the safety of the users. The trail surface should drain to either side to avoid puddling water and ice buildup on the trail.

Typical Shared Use Path Cross Section



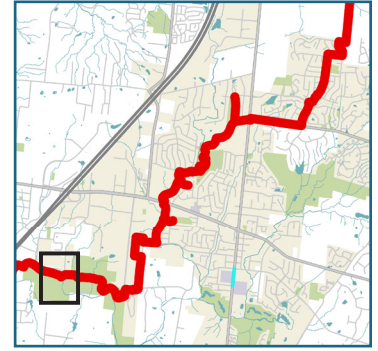
Segment Map of Central Greenway



Segment A: Hazel Woods Park to Clearcreek Park

Two options have been considered for connecting Hazel Woods Park to Clearcreek Park. The preferred route provides a direct connection between both parks by building a bridge over Clearcreek and then providing a rectangular rapid flashing beacon across West Lower Springboro Road.

The alternative route would require easements from private property owners and at least two areas with bridges/boardwalks.



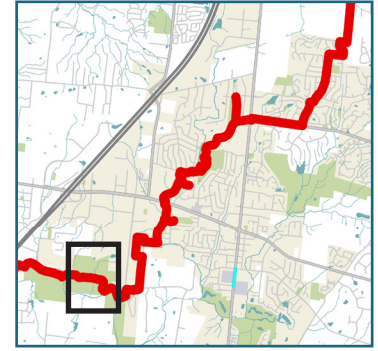
Cost Estimate for Preferred Route

Item	Description	Quantity	Unit	Unit Price	Cost
1	Site Clearing and Rough Grading	200	LF	\$20	\$4,000
2	11' Wide Asphalt Path, Base, and Grading	200	LF	\$75	\$15,000
3	14' Wide Concrete Deck Pedestrian Bridge	100	LF	\$4,000	\$400,000
4	Site Restoration and Landscaping	200	LF	\$10	\$2,000
5	Trail Amenities	200	LF	\$10	\$2,000
6	RRFB Ped. Crossing with Advanced Warning	1	EA	\$50,000	\$50,000
Subtotal of Construction Costs					\$473,000
Contingency				20%	\$94,600
Construction Total					\$567,600
7	Engineering & Design			10%	\$56,760
8	Construction Administration			4%	\$22,704
9	Construction Observation			6%	\$34,056
Subtotal of Total Soft Costs					\$113,520
Total Project Cost					\$681,120



Segment B: Clearcreek Park

Two options have been considered for the Greenway connection through Clearcreek Park. The preferred route recommends building a new 11' wide pathway through the middle of the park with a rectangular rapid flashing beacon at West Lower Springboro Road to E. Milo Beck Park and some minor road crossing at access roads within the park.



The alternative route would include widening the existing asphalt path that follows West Lower Springboro Road around the parks perimeter.

The advantage of the proposed routes is it would complement the existing walking path system giving the park users more walking and running options.

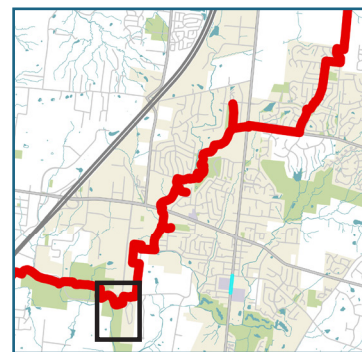
Cost Estimate for Preferred Route

Item Description	Quantity	Unit	Unit Price	Cost
1 Site Clearing and Rough Grading	600	LF	\$10	\$6,000
2 11' Wide Asphalt Path, Base, and Grading	3,000	LF	\$75	\$225,000
3 Culvert Allowance	1	EA	\$5,000	\$5,000
4 Site Restoration and Landscaping	3,000	LF	\$10	\$30,000
5 Trail Amenities	3,000	LF	\$10	\$30,000
6 Crosswalk Markings & Signs	2	EA	\$2,500	\$5,000
Subtotal of Construction Costs				\$301,000
Contingency			20%	\$60,200
Construction Total				\$361,200
7 Engineering & Design			10%	\$36,120
8 Construction Administration			4%	\$14,448
9 Construction Observation			6%	\$21,672
Subtotal of Total Soft Costs				\$72,240
Total Project Cost				\$433,440



Segment C: E. Milo Beck Park

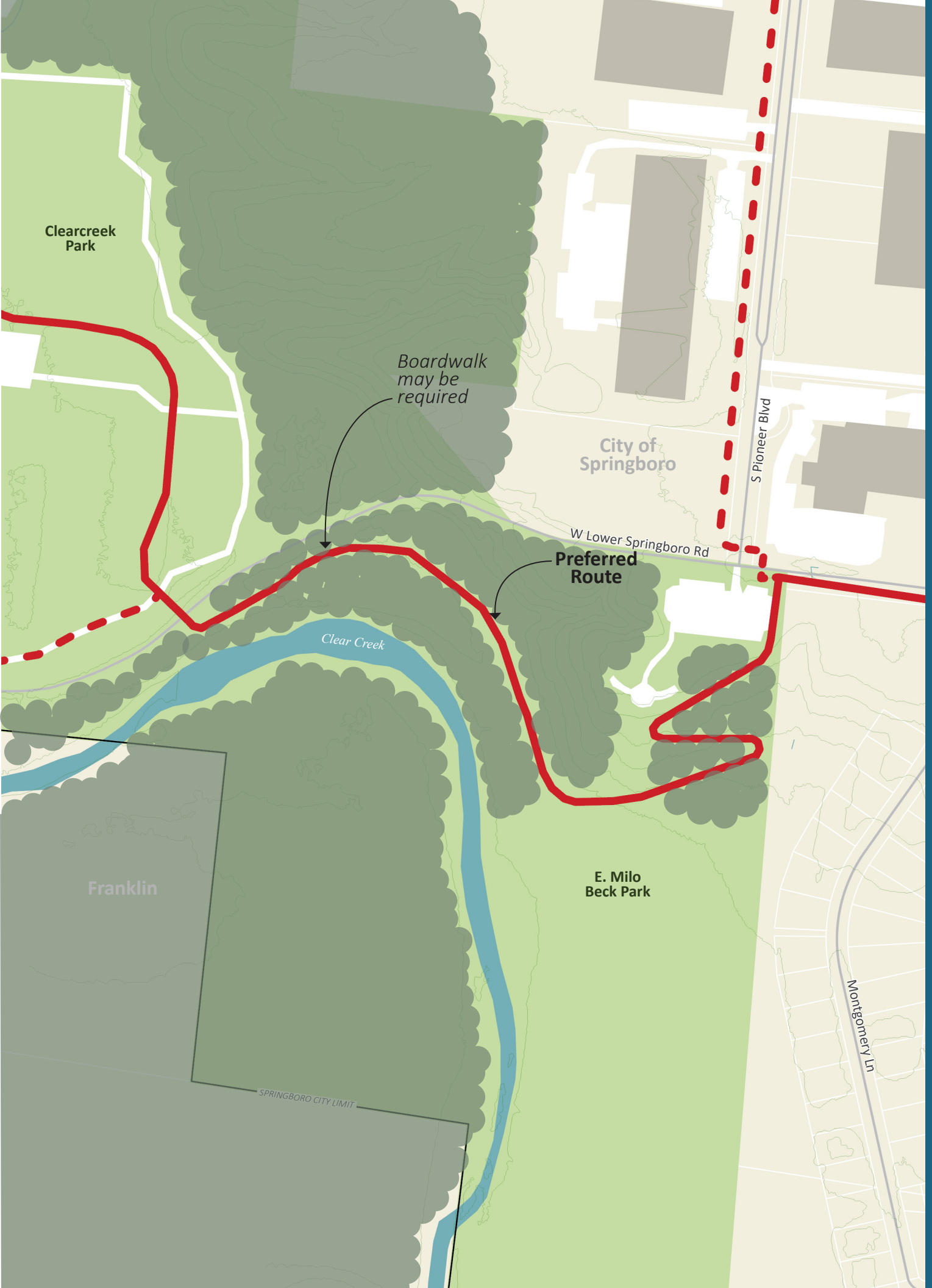
Since the 2013 Plan, the City has explored numerous connections to Clearcreek Park from Advanced Drive, South Pioneer Drive, and along West Lower Springboro Road. After numerous route feasibility studies, site investigations, and discussions with private land owners, these routes were ruled out due to challenging topography, costs, and the inability to obtain the necessary easements. All of these efforts led to the preferred route through E. Milo Beck Park. This route was initially not considered due to development restrictions tied to the grant used in part to purchase the park. Discussions with the State of Ohio concluded that a trail such as is shown would be compliant with the deed restrictions.



The preferred route passes through a low area where boardwalks may be required and then climbs up a hill at a 5% slope to the parking lot area, where the parking lot may need to be realigned to provide trail access through it.

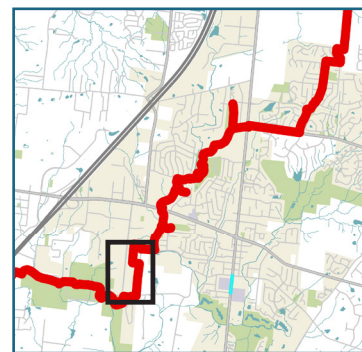
Cost Estimate for Preferred Route

Item	Description	Quantity	Unit	Unit Price	Cost
1	Site Clearing and Rough Grading	2,500	LF	\$40	\$100,000
2	11' Wide Asphalt Path, Base, and Grading	2,350	LF	\$75	\$176,250
3	14' Wide Concrete Plank Boardwalk	75	LF	\$1,000	\$75,000
4	Site Restoration and Landscaping	2,500	LF	\$20	\$50,000
5	Trail Amenities	2,500	LF	\$20	\$50,000
6	RRFB Ped. Crossing with Advanced Warning	1	EA	\$50,000	\$50,000
Subtotal of Construction Costs					\$501,250
Contingency				20%	\$100,250
Construction Total					\$601,500
7	Engineering & Design			10%	\$60,150
8	Construction Administration			4%	\$24,060
9	Construction Observation			6%	\$36,090
Subtotal of Total Soft Costs					\$120,300
Total Project Cost					\$721,800



Segment D: Factory Road /South Pioneer Blvd - South

Numerous connections between E. Milo Beck Park and Community Park have been explored along Factory Road and South Pioneer Blvd. South Pioneer Blvd is a challenging connection due to narrow rights-of-ways, private properties and truck traffic to industrial businesses. Factory Road, paralleling South Pioneer Blvd, carries mostly residential traffic and there are no commercial driveway crossings to contend with.

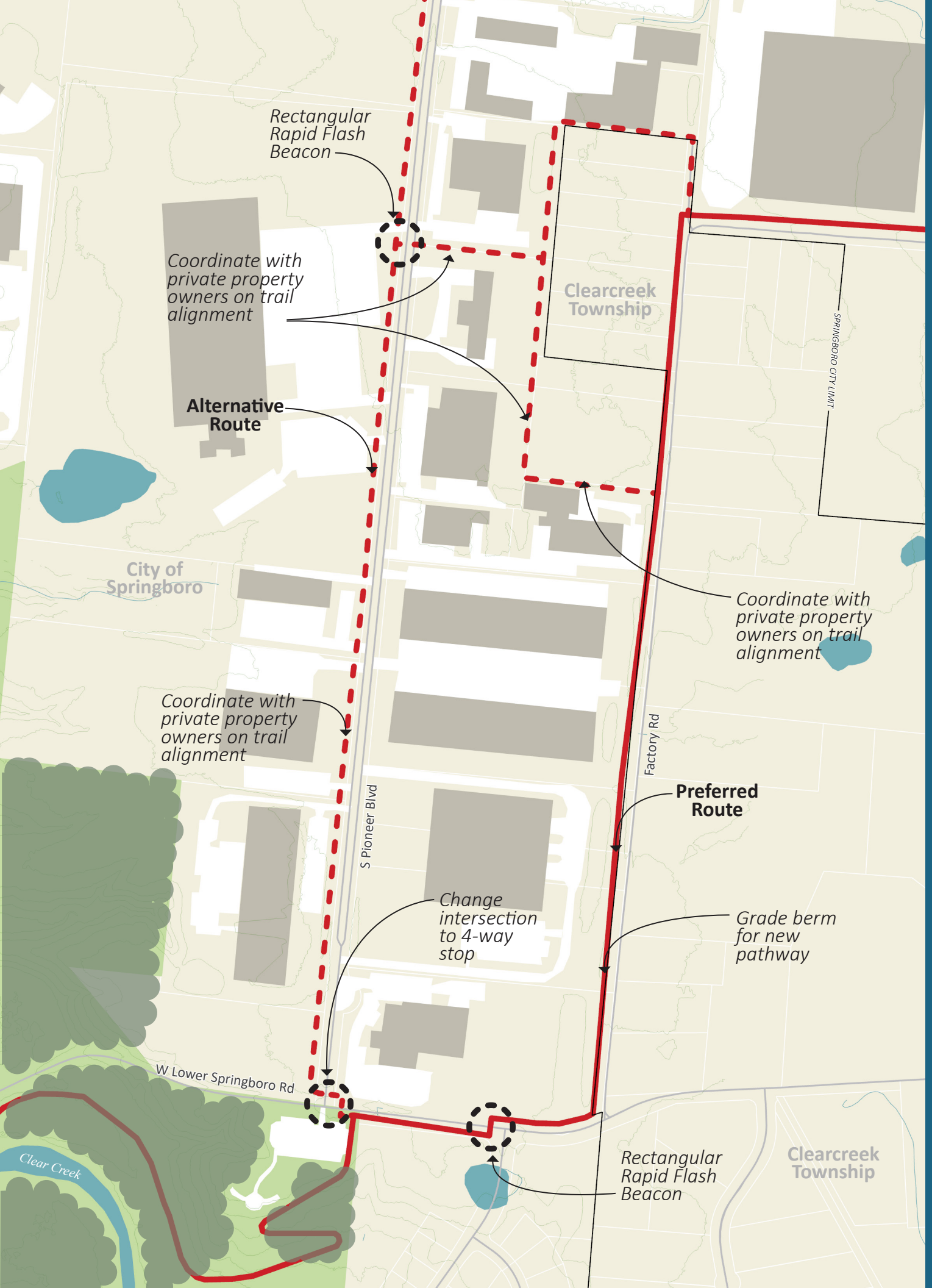


The preferred route follows west side of Factory Road. With some grading, the trail would traverse the top of the existing berm and run along the backside of the industrial buildings.

There is the option to turn the intersection of South Pioneer Blvd and West Lower Springboro Road into a four-way stop to provide a safe road crossing, or place a rectangular rapid flash beacon on West Lower Springboro Road to the west of Montgomery Lane.

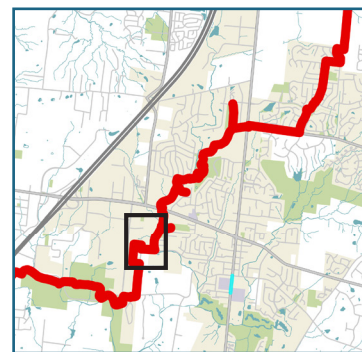
Cost Estimate for Preferred Route

Item	Description	Quantity	Unit	Unit Price	Cost
1	Site Clearing and Rough Grading Berm	2,000	LF	\$30	\$60,000
2	Site Clearing and Rough Grading Other	1,600	LF	\$10	\$16,000
3	11' Wide Asphalt Path, Base, and Grading	2,700	LF	\$75	\$202,500
4	11' Wide Asphalt Path, Base, & Grading (Twp)	900	LF	\$75	\$67,500
5	Site Restoration and Landscaping	3,600	LF	\$20	\$72,000
6	Trail Amenities	3,600	LF	\$10	\$36,000
7	RRFB Ped. Crossing with Advanced Warning	1	EA	\$50,000	\$50,000
Subtotal of Construction Costs					\$504,000
Contingency				20%	\$100,800
Construction Total					\$604,800
8	Engineering & Design			10%	\$60,480
9	Construction Administration			4%	\$24,192
10	Construction Observation			6%	\$36,288
Subtotal of Total Soft Costs					\$120,960
Total Project Cost					\$725,760



Segment E: Factory Road / South Pioneer Blvd - North

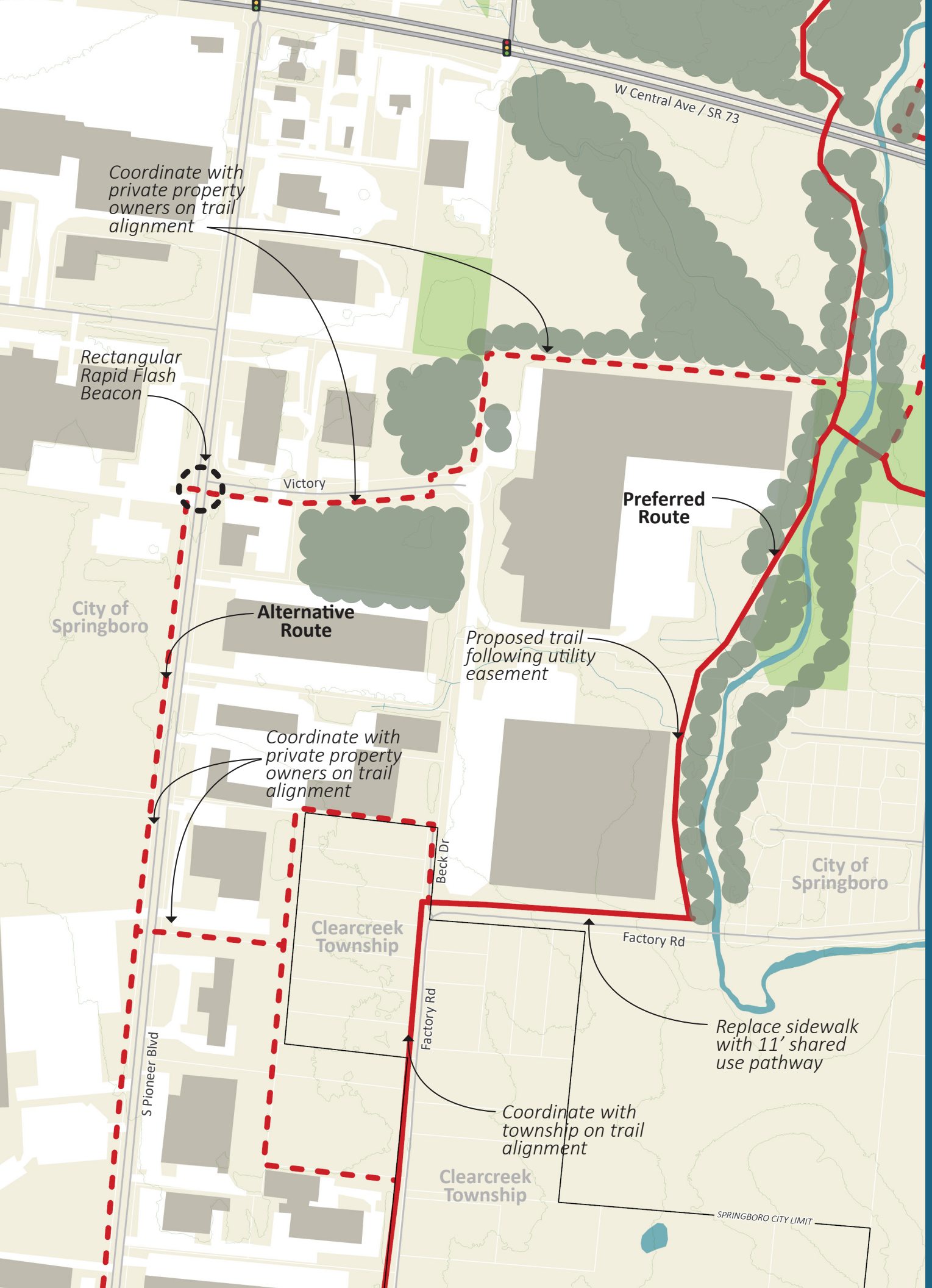
The preferred Greenway route follows Factory Road north where it enters Clearcreek Twp for 7 parcels. This section of the trail requires coordination with Clearcreek Township and its homeowners who live along this section of Factory Road. The route then follows Factory Road to the east, where the existing sidewalk would need to be widened, and then heads north following an existing utility easement along the west side of Twin Creek. Some grading would be required along the utility easement berm.



Alternative routes look at staying within the City Boundary, following S Pioneer Blvd and cutting behind the backside of the businesses on S Pioneer Blvd. Alternative routes would require easements with numerous private property owners and crossing many commercial driveways with heavy truck traffic.

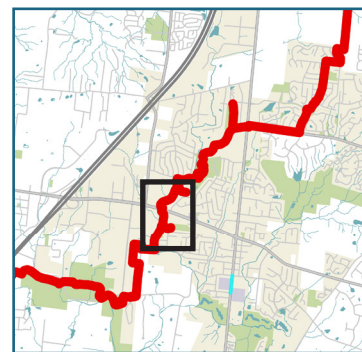
Cost Estimate for Preferred Route

Item	Description	Quantity	Unit	Unit Price	Cost
1	Site Clearing and Rough Grading	2,300	LF	\$30	\$69,000
2	Remove & Dispose Sidewalk	700	LF	\$6	\$4,200
3	11' Wide Asphalt Path, Base, and Grading	3,000	LF	\$75	\$225,000
4	Site Restoration and Landscaping	3,000	LF	\$10	\$30,000
5	Trail Amenities	3,000	LF	\$10	\$30,000
6	Overlooks	2	EA	\$20,000	\$40,000
Subtotal of Construction Costs					\$398,200
Contingency				20%	\$79,640
Construction Total					\$477,840
7	Engineering & Design			10%	\$47,784
8	Construction Administration			4%	\$19,114
9	Construction Observation			6%	\$28,670
Subtotal of Total Soft Costs					\$95,568
Total Project Cost					\$573,408



Segment F: Community Park & SR 73

The connection to Community Park requires a short bridge over Twin Creek. From there, two options have been considered as the Greenway continues north of Community Park. The preferred route follows the utility easement along the west side of Twin Creek to the north through an undeveloped parcel where a Hybrid Pedestrian Beacon with crossing island would be required to cross West Central Ave/SR 73.



The alternative route follows the east side of Twin Creek through an undeveloped private parcel where boardwalks may be required. The benefit of this route is that the existing signalized intersection on West Central Ave/SR 73 could be used as a trail crossing.

The main determining factor of which route to choosing is based on which route is chosen in Segment G.

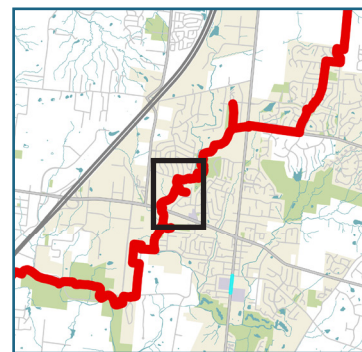
Cost Estimate for Preferred Route

Item	Description	Quantity	Unit	Unit Price	Cost
1	Site Clearing and Rough Grading	250	LF	\$20	\$5,000
2	11' Wide Asphalt Path, Base, and Grading	1,600	LF	\$75	\$120,000
3	Site Restoration and Landscaping	1,600	LF	\$10	\$16,000
4	Trail Amenities	1,600	LF	\$10	\$16,000
5	Crossing Island w/ PHB and Adv. Warning	1	EA	\$175,000	\$175,000
6	14' Wide Concrete Deck Pedestrian Bridge	50	LF	\$4,000	\$200,000
7	Potential Culvert Allowance	1	EA	\$5,000	\$5,000
Subtotal of Construction Costs					\$537,000
Contingency				20%	\$107,400
Construction Total					\$644,400
8	Engineering & Design			10%	\$64,440
9	Construction Administration			4%	\$25,776
10	Construction Observation			6%	\$38,664
Subtotal of Total Soft Costs					\$128,880
Total Project Cost					\$773,280



Segment G: SR 73 to North Park

Two options have been considered as the Greenway continues north of West Central Ave/ SR 73. The preferred route continues along the west side of Twin Creek through an undeveloped parcel. It is recommended the city work with the current development proposal to provide a trail connection along the creek.



The preferred route also includes a bridge connection across Twin Creek to connect neighborhoods between Evergreen Drive with Jacamar Court. Use of the vacant parcel at the end of Jacamar Court is critical to completing this connection. This connection is a priority regardless of which route alternative is used.

The alternative route follows the east side of Twin Creek, along the backside of residential properties. Both routes require coordination with the same property owner.

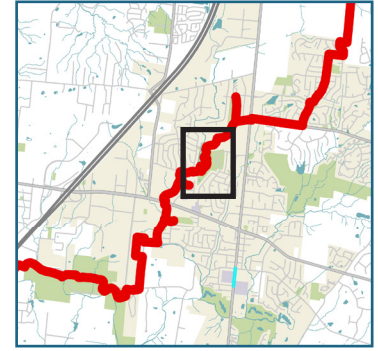
Cost Estimate for Preferred Route

Item	Description	Quantity	Unit	Unit Price	Cost
1	Site Clearing and Rough Grading	2500	LF	\$5	\$12,500
2	11' Wide Asphalt Path, Base, and Grading	2500	LF	\$75	\$187,500
3	Site Restoration and Landscaping	2500	LF	\$10	\$25,000
4	Trail Amenities	2500	LF	\$10	\$25,000
5	Potential Culvert Allowance	1	EA	\$5,000	\$5,000
6	Overlooks	2	EA	\$20,000	\$40,000
7	14' Wide Concrete Deck Pedestrian Bridge	50	LF	\$4,000	\$200,000
Subtotal of Construction Costs					\$495,000
Contingency				20%	\$99,000
Construction Total					\$594,000
7	Engineering & Design			10%	\$59,400
8	Construction Administration			4%	\$23,760
9	Construction Observation			6%	\$35,640
Subtotal of Total Soft Costs					\$118,800
Total Project Cost					\$712,800



Segment H: North Park

Two options have been considered as the Greenway connects to North Park. The preferred route continues along the west side of Twin Creek and connects to Evergreen Drive and Whispering Pines where it becomes a signed bike route for about 900 feet. At that point an easement will be required from a private property owner to make the connection from the end of Whispering Pines Drive/Foliage Lane to North Park. Once in North a new bridge over Twin Creek will be required with a new trail connection that link to the parkways existing pathway network. The existing park pathway along the preferred route should be upgraded to at least t 10' wide.



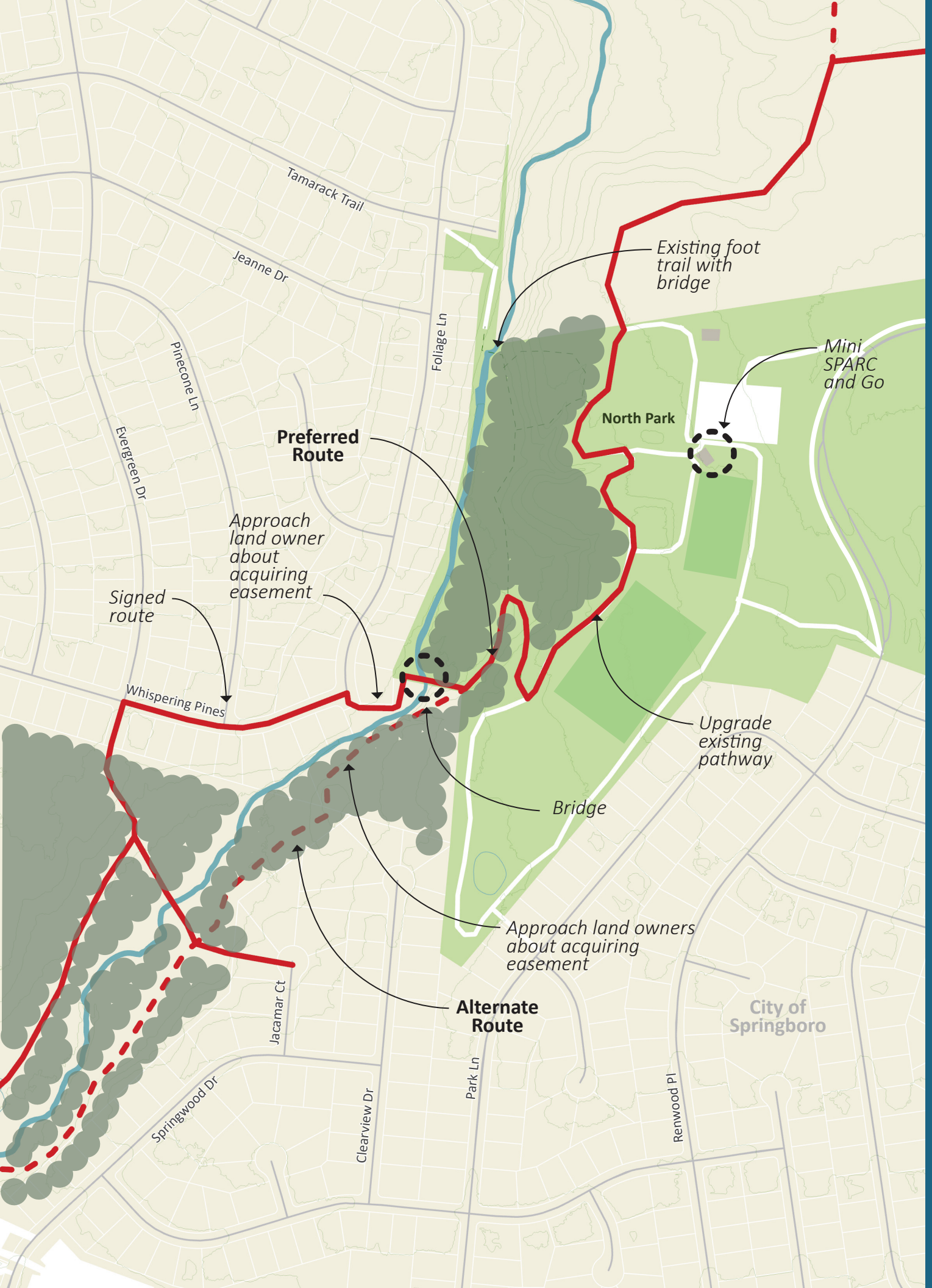
The alternative route follows the east side of Twin Creek through undeveloped property until it reaches North Park. Additional bridge over Twin creek would not be required for this route.

Both route alignments require easements and will be impacted by topography and vegetation.

A “mini” bike hub is proposed to be incorporated into the existing restroom facility. This would include a large system map, bicycle repair station, bike parking, and a bike parts vending machine.

Cost Estimate for Preferred Route

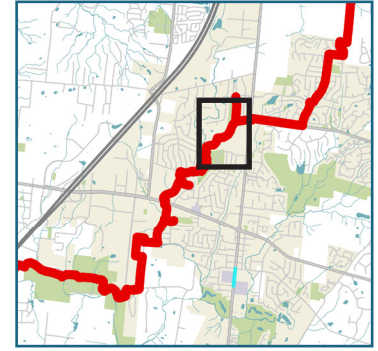
Item	Description	Quantity	Unit	Unit Price	Cost
1	Site Clearing and Rough Grading - Ravine	800	LF	\$40	\$32,000
2	Remove Existing Walkway in Park	1,600	LF	\$5	\$8,000
2	11' Wide Asphalt Path, Base, and Grading	2,400	LF	\$75	\$180,000
4	14' Wide Concrete Deck Pedestrian Bridge	80	LF	\$4,000	\$320,000
5	Site Restoration and Landscaping	2,400	LF	\$10	\$24,000
6	Trail Amenities	2,400	LF	\$10	\$24,000
7	Bike Route Signs	6	EA	\$200	\$1,200
Subtotal of Construction Costs					\$589,200
Contingency				20%	\$117,840
Construction Total					\$707,040
8	Engineering & Design			10%	\$70,704
9	Construction Administration			4%	\$28,282
10	Construction Observation			6%	\$42,422
Subtotal of Total Soft Costs					\$141,408
Total Project Cost					\$848,448



Segment I: North Park to Gardner Park

The preferred route connects North Park to Gardner Park through an undeveloped parcel. It is recommended the City work with the developer to provide a trail connection.

The trail should be integrated into the new development project. Housing, office and retail establishments all benefit by embracing and orienting towards this community asset. Likewise, the trail itself benefits when well integrated into development projects.



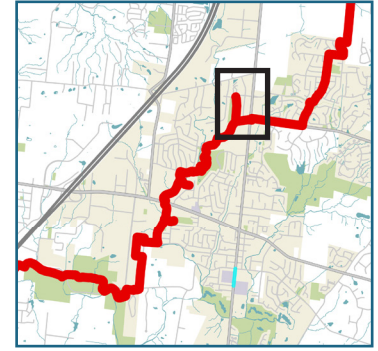
Cost Estimate for Preferred Route

Item	Description	Quantity	Unit	Unit Price	Cost
1	Site Clearing and Rough Grading	2,900	LF	\$10	\$29,000
2	11' Wide Asphalt Path, Base, and Grading	2,900	LF	\$75	\$217,500
3	Site Restoration and Landscaping	2,900	LF	\$10	\$29,000
4	Trail Amenities	2,900	LF	\$10	\$29,000
	Subtotal of Construction Costs				\$304,500
	Contingency			20%	\$60,900
	Construction Total				\$365,400
5	Engineering & Design			10%	\$36,540
6	Construction Administration			4%	\$14,616
7	Construction Observation			6%	\$21,924
	Subtotal of Total Soft Costs				\$73,080
	Total Project Cost				\$438,480



Segment J: Gardner Park / SR 73

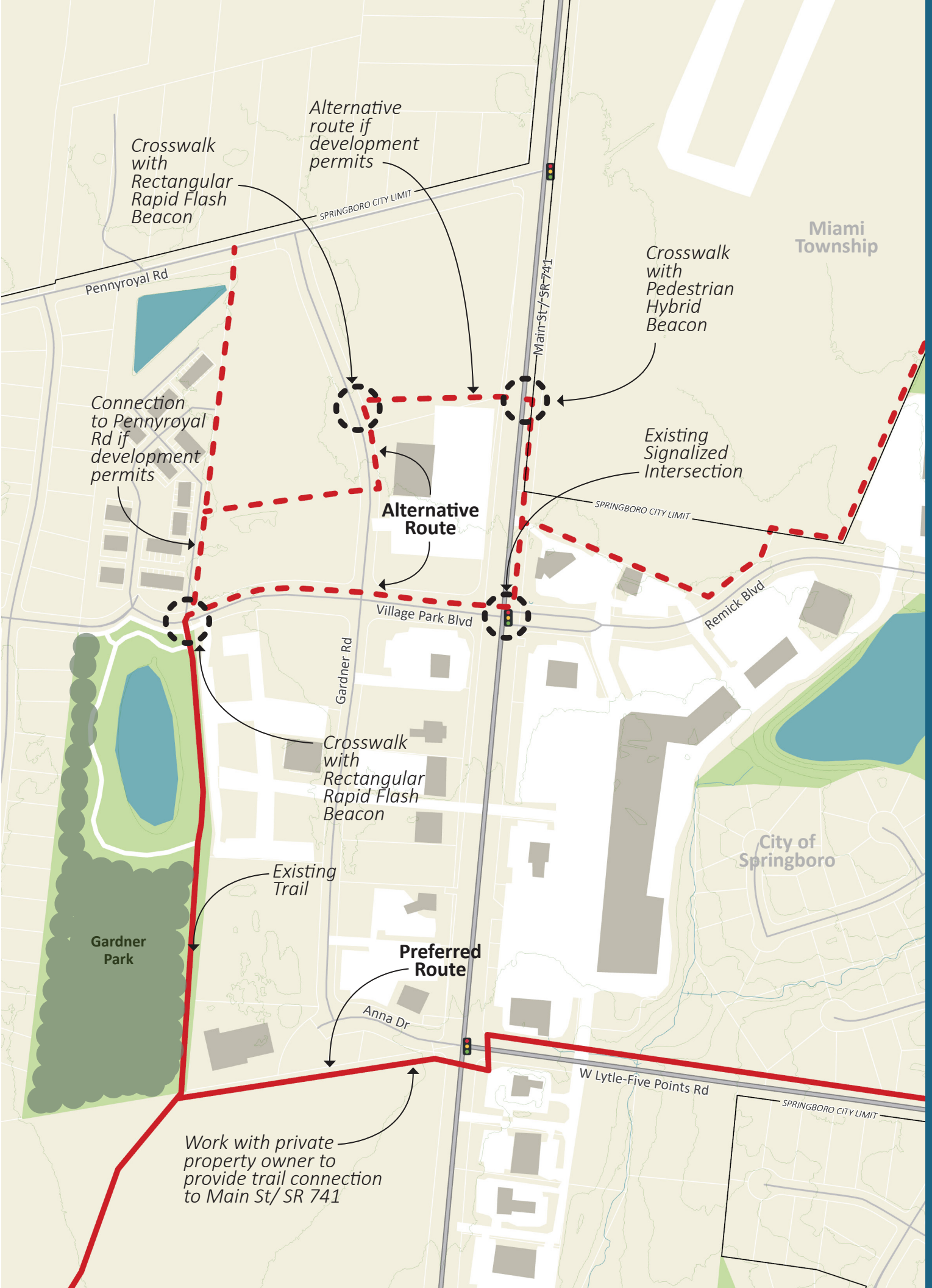
Numerous routes have been explored for connecting to Gardner Park and crossing SR 73. The preferred route provides a link to the existing pathway at the south end of Gardner Park and then follows the northern edge of the undeveloped parcel to the intersection of SR 73 and Anna Drive/West Lytle-Five Points Road. The existing signalized intersection would be used to cross SR 73 and then the trail would continue along the north side of West Lytle-Five Point Road to the east.



The alternative routes look at continuing the trail north through Gardner Park and then crossing SR 73 at Village Park Blvd, or even further north, should opportunities become available with new developments in that area. Once on the east side of SR 73, the key to making this connection successful is coordination with the airport to provide a pathway along the south side of the property.

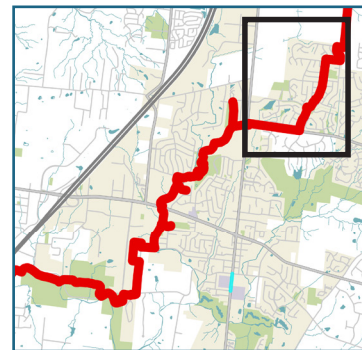
Cost Estimate for Preferred Route

Item	Description	Quantity	Unit	Unit Price	Cost
1	Site Clearing and Rough Grading	900	LF	\$10	\$9,000
2	11' Wide Asphalt Path, Base, and Grading	900	LF	\$75	\$67,500
3	Site Restoration and Landscaping	900	LF	\$10	\$9,000
4	Trail Amenities	900	LF	\$10	\$9,000
	Subtotal of Construction Costs				\$94,500
	Contingency			20%	\$18,900
	Construction Total				\$113,400
5	Engineering & Design			10%	\$11,340
6	Construction Administration			4%	\$4,536
7	Construction Observation			6%	\$6,804
	Subtotal of Total Soft Costs				\$22,680
	Total Project Cost				\$136,080



Segment K: Lytle-Five Points / Settlers Walk Blvd

Two options have been considered for connections to the neighborhood around Settlers Walk. The preferred route continues east as a sidepath along the north side of West Lytle-Five Points Road. Some existing sidewalk will need to be widened to accommodate the bike trail on this segment. The route then heads north on Settlers Walk Blvd where a bike lane could be stripped and existing sidewalks would be upgraded. In the near term, the existing bike lanes and sidewalk on West Lytle-Five Points Rd could provide a temporary connection to a bike route on Settlers Walk Blvd.



The alternative route would require an easement from the airport and along the transmission corridor. If opportunities align this connection would provide an off-trail separate from the roadway with very few road crossings.

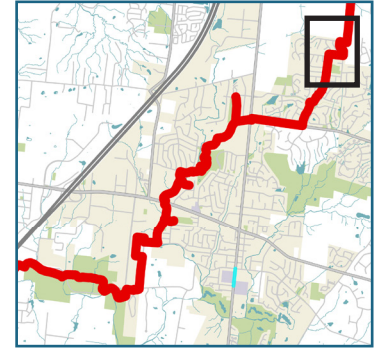
Cost Estimate for Preferred Route

Item	Description	Quantity	Unit	Unit Price	Cost
1	Remove & Dispose Existing Path	3,200	LF	\$15	\$48,000
2	11' Wide Asphalt Path, Base, and Grading	3,200	LF	\$75	\$240,000
3	Upgrade Existing Walkways (both sides)	10,000	LF	\$40	\$400,000
4	Bike Lanes	10,000	LF	\$6	\$60,000
5	Site Restoration and Landscaping	8,200	LF	\$10	\$82,000
6	Trail Amenities	8,200	LF	\$10	\$82,000
	Subtotal of Construction Costs				\$912,000
	Contingency			20%	\$182,400
	Construction Total				\$1,094,400
7	Engineering & Design			10%	\$109,440
8	Construction Administration			4%	\$43,776
9	Construction Observation			6%	\$65,664
	Subtotal of Total Soft Costs				\$218,880
	Total Project Cost				\$1,313,280



Segment L: Settlers Walk Blvd/Utility Corridor

There are multiple options for continuing the Greenway north into Miami Township and Washington Township. The preferred route continues to bike lanes and upgraded sidewalks along Settlers Walk Blvd and then requires an easement along the transmission corridor (about 800') for a new trail connection to Stanton Road. A signed bike route would then route trail users along Stanton Drive and Kitty Hawk Drive. At the end of Kitty Hawk Drive the route would continue north to the Great Little Trail with a new pathway through the City of Dayton Property.



Alternative routes include continuing the bike lanes and upgraded sidewalks up Settlers Walk Blvd, then providing a signed bike route on Kitty Hawk Drive, or continuing the trail along the transmission corridor to the west and then north, along the backside of residences on Stanton Road.

There may also be potential to continue the trail along the transmission corridor to the east, but it would require coordination and easements with a variety of neighborhood associations and property owners.

Cost Estimate for Preferred Route

Item Description	Quantity	Unit	Unit Price	Cost
1 Site Clearing and Rough Grading	900	LF	\$20	\$18,000
2 11' Wide Asphalt Path, Base, and Grading	900	LF	\$75	\$67,500
3 Pathway Grading	900	LF	\$30	\$27,000
4 Site Restoration and Landscaping	900	LF	\$10	\$9,000
5 Trail Amenities	900	LF	\$10	\$9,000
6 Bike Route Signs	8	EA	\$200	\$1,600
Subtotal of Construction Costs				\$132,100
Contingency			20%	\$26,420
Construction Total				\$158,520
7 Engineering & Design			10%	\$15,852
8 Construction Administration			4%	\$6,341
9 Construction Observation			6%	\$9,511
Subtotal of Total Soft Costs				\$31,704
Total Project Cost				\$190,224

