

MEMORANDUM



TO: CLAY PEARSON, CITY MANAGER
FROM: BRIAN COBURN, P.E.; SENIOR CIVIL ENGINEER ^{BTC}
BEN CROY, P.E.; CIVIL ENGINEER
SUBJECT: PROPOSED REGIONAL PATHWAY SYSTEM
ITC COMMUNITY SPORTS PARK TO PROVIDENCE PARK
DATE: AUGUST 3, 2010

The Community Development Department has worked with the Walkable Novi Committee to identify several alternatives for a 4.5 mile long north-south regional pathway. The pathway would connect ITC Community Sports Park to the Providence Park Campus. We have evaluated the proposed routes to identify the most cost-effective and feasible alternative for the development of a preliminary design and cost estimate.

Proposed Phasing

Due to the length of the path being proposed, a phased approach to design and construction would be likely. The attached map shows the general location of the pathway, and designates three phases. Phase 1 of the pathway would begin at the ITC Community Sports Park, continue along the ITC corridor, cross near the Garfield and Nine Mile intersection, continue north again in the ITC corridor and end at the parking lot of Fire Station No. 4, where a parking area could be located. Phase 2 would be located along Wixom and Eleven Mile Roads, utilizing the existing path for the majority of that length, with some additional path and minor upgrades necessary. Phase 3 would connect the path from Eleven Mile to Beck Road using the ITC Corridor and Providence Park property. Another parking area near Beck Road may be possible at the Lanny's Pump Station on Beck Road.

Proposed Alignment

Phase 1 of the project is approximately 2.25 miles long and about 70 percent of the pathway in this phase is proposed within the ITC property. The specific location of the path within the ITC corridor would have to follow ITC's strict requirements, such as locating the path at the outer edge of their easement/property and only crossing under the electric transmission lines at specific locations. This phase also traverses a vast area of wooded wetlands not only on ITC property but also within the Novi property south of Fire Station 4. After walking a portion of the proposed route, it is apparent that a large length of boardwalk is required through not only the wetland system, but several other areas where poor soils exist.

The second phase of the project is 1.5 miles long and follows existing pathways along the west side of Wixom Road and the north side of 11 Mile Road to connect Fire Station 4 to the ITC corridor north of 11 Mile Road. The existing pathway along Wixom Road is only 8 feet wide (the proposed design width is 10 feet) and there are few gaps of

several hundred feet that would need to be constructed. The existing pathway along 11 Mile Road is only 5 feet wide and therefore would require reconstruction to a minimum of 8 feet, if not 10 feet wide, to accommodate the proposed users.

The third phase of the project is 0.75 miles long and utilizes the ITC corridor and an existing sanitary sewer easement on Providence Park property to make the connection to Beck Road from 11 Mile Road. This phase could also connect the regional path to Wildlife Woods Park and Providence Park's trail system by constructing spurs from the regional pathway. This phase requires coordination with the Medilodge site (located east of the ITC corridor on 11 Mile Road), which is in review with Community Development for a Planned Rezoning Overlay. The concept plan for Medilodge includes construction of a portion of the regional pathway. This phase also requires coordination with Providence Park Hospital which must grant additional easements for the proposed alignment through the site and potential parking at Beck Road.

Construction Techniques and Challenges

Staff has investigated two potential types of construction materials for paving the pathway. The first is the traditional asphalt path with aggregate base. The second involves the use of compacted limestone fines (particles of limestone smaller than 3/8 inch in diameter). This material has not yet been used in Novi, but was recently used on a similar project in Southfield (see photos, right) and is less expensive, provides a firm stable surface that works well for pedestrians and bicyclists, and meets Americans with Disability Act requirements when installed properly. Additionally, the limestone material presents a more natural appearance in a natural setting than asphalt. Staff is researching the use of compacted limestone fine for path construction in other communities, but based on initial discussions, it appears to be a viable method of construction. Limestone path construction appears to require some additional effort during construction (the specification for the limestone material is critical to the design, and therefore can be difficult to control during construction), and may require more maintenance immediately following construction where repairs may be needed (e.g over bad soils, water damage, etc.).



However, once a stable and firmly compacted path is achieved it appears that this type of path would prove to be durable for many years. This type of path has been installed in many locations in surrounding areas with reported success. The limestone path would most likely require an annual maintenance program that amounts to more than required for an asphalt path (limestone reshaping, leaf blowing, vegetation removal), but these costs may be offset in the future by the repairs typically required of an aging asphalt path.

Staff is also investigating other alternatives for the construction of the boardwalk through the wetlands. One option is to fill the wetlands and construct equalization culverts under the pathway; however the difficulty of hauling in fill over unstable soils to complete the work and the remote likelihood that a permit would be issued by MDNRE for this work makes this option unattractive. We will continue to discuss options with other communities as we discuss the use of limestone material.

Easements

The proposed alignment was developed to incorporate the fewest number of easements from the fewest number of property owners. As proposed, easements would be required from ITC, Providence Park Hospital, Lawrence Schmidt (property owner on Wixom Road), and Medilodge. The remainder of the alignment is located within the right-of-way, existing highway or pathway easements, or on City owned property. Easement acquisition should begin at the time of preliminary design and should be completed before final design is completed.

Preliminary Construction Cost Estimates

The enclosed preliminary construction cost estimates were developed with very limited amount of field work and should therefore be used only for budgetary purposes. Without conducting a topographic survey, several assumptions were made in the development of the estimates. These assumptions are identified below:

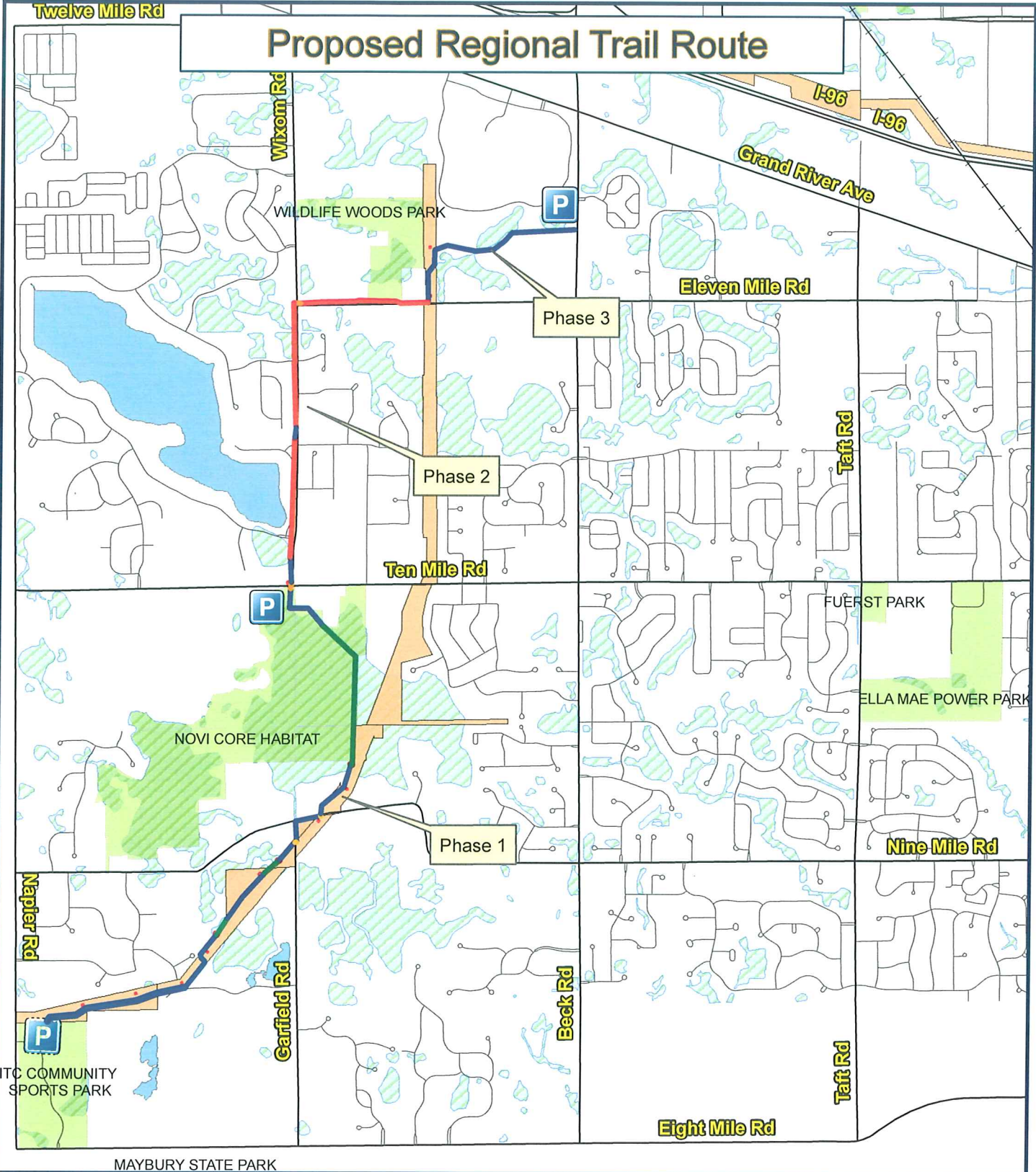
- The presence of wetlands and poor soils will require approximately 3,500 feet of 10-foot wide boardwalk for Phase 1 at a cost of \$1,000,000.
- The use of the compacted limestone fines is suitable for the pathway construction in Phase 1.
- The use of the existing 8-foot pathway along Wixom Road is acceptable.
- The replacement of the existing 5-foot sidewalk with an 8 foot or 10 foot wide pathway is required along 11 Mile Road.
- All easements will be granted at no cost.
- The proposed signal upgrade at 10 Mile Road and Wixom Road (scheduled for fall 2010 completion) will meet the requirements for the pathway and there will be no additional signal work required with this project.
- The pathway in Phase 3 will be asphalt and constructed to support trucks because it will be co-located on ITC's service road and within the city's sanitary sewer easement which requires occasional access by large vehicles.
- A contingency of 20% is included until topographic survey is complete.

Given these assumptions, the construction cost estimates are summarized as follows:

Phase/Description	Construction	Engineering, Legal & Administrative	Contingency	Total Estimate
Phase 1 (ITC Sports to Fire Station 4)—Limestone	\$1,646,000	\$411,000	\$329,000	\$2,386,000
Phase 2 (Fire Station 4 to ITC Corridor on 11 Mile)—Asphalt	\$80,000	\$20,000	\$16,000	\$116,000
Phase 3 (11 Mile to Beck via Providence Park)—Asphalt	\$267,000	\$67,000	\$53,000	\$387,000
Potential Parking at Fire Station 4	\$26,000	\$7,000	\$5,000	\$38,000
Potential Parking at Beck Road	\$26,000	\$7,000	\$5,000	\$38,000
Grand Total	\$2,045,000	\$512,000	\$408,000	\$2,965,000

Copies of the detailed construction cost estimates are attached for your reference. The estimates for the asphalt surface for Phase 1 and the limestone surface for Phase 3 are also included, but are not referenced above. The cost of the preferred methods and materials are included in the above table.









cc: Rob Hayes, P.E.; Director of Public Services/City Engineer
 Nancy Cowan, Acting Director of Parks, Recreation and Cultural Services
 Barbara McBeth; Deputy Community Development Director
 Mark Spencer, City Planner



Map Author: Nathan Bartlett
 Date: 8/02/10
 Project: Engineering ITC Trail Route
 Version #: 1.2

MAP INTERPRETATION NOTICE
 Map information depicted is not intended to replace or substitute for any official or primary source. This map was intended to meet National Map Accuracy Standards and use the most recent, accurate sources available to the people of the City of Novi. Boundary measurements and area calculations are approximate and should not be construed as survey measurements performed by a licensed Michigan Surveyor as defined in Michigan Public Act 132 of 1970 as amended. Please contact the City GIS Manager to confirm source and accuracy information related to this map.

Legend

	Parkland		Existing Pathway
	ITC Property		Proposed Pathway
	WETLAND		Proposed Boardwalk
	POTENTIAL PARKING		Proposed Road Crossing

City of Novi

Engineering Division
 Department of Public Services
 45175 W Ten Mile Rd
 Novi, MI 48375
 cityofnovi.org



0 315630 1,260 1,890 2,520
 Feet

1 inch = 2,500 feet



**PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS
PROJECT DESCRIPTION**

ITC Pathway - Phase 1 Asphalt Pathway (ITC Sports Park to Ten Mile Rd)

DATE: July 28, 2010

No.	Description	Unit	Estimated Quantity	Unit Price	Total
1	Soil Erosion Control	LF	17050	\$ 1.50	\$ 25,575.00
2	Maintaining Traffic	LSUM	1	\$ 1,000.00	\$ 1,000.00
3	Tree Removal	EA	245	\$ 500.00	\$ 122,500.00
4	Clearing and Grubbing	LF	2000	\$ 8.00	\$ 16,000.00
5	Pathway Grading	LF	8525	\$ 15.00	\$ 127,875.00
6	21AA Aggregate Base (6")	SY	10420	\$ 7.00	\$ 72,940.00
7	Undercutting of Soils	CY	1705	\$ 24.00	\$ 40,920.00
8	Asphalt (3")	SY	9472	\$ 16.00	\$ 151,555.56
9	10' wide boardwalk	LF	3500	\$ 300.00	\$ 1,050,000.00
10	Mid-Block Crossing	EA	2	\$ 4,000.00	\$ 8,000.00
11	Restoration	SY	18944	\$ 2.00	\$ 37,888.89
12	Mobilization (5%)	LSUM	1	\$ 82,712.72	\$ 82,712.72
CONSTRUCTION TOTAL					\$ 1,736,967.17
Engineering, Legal and Administrative (25%)					\$ 434,241.79
Contingency (20%)					\$ 347,393.43
BUDGET TOTAL					\$ 2,518,602.39

NOTES:

This estimate was based on the City GIS drawings/aerial photography. Cost may be strongly effected by soil types, existing water courses, etc.
 Estimate established using best cost information at the time. Cost of pavement and construction may increase.
 All pathways were estimated as 10' in width using a 3" bituminous over 6" aggregate cross section.

Cost per LF	\$ 209.45
-------------	-----------

By: Lindon Ivezaj

**PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS
PROJECT DESCRIPTION**

ITC Pathway - Phase 1 Compacted Limestone (ITC Sports Park to Ten Mile Rd)

DATE: July 28, 2010

No.	Description	Unit	Estimated Quantity	Unit Price	Total
1	Soil Erosion Control	LF	17050	\$ 1.50	\$ 25,575.00
2	Maintaining Traffic	LSUM	1	\$ 1,000.00	\$ 1,000.00
3	Tree Removal	EA	245	\$ 500.00	\$ 122,500.00
4	Clearing and Grubbing	LF	2000	\$ 8.00	\$ 16,000.00
5	Pathway Grading	LF	8525	\$ 15.00	\$ 127,875.00
6	10' Crushed Limestone Pathway	LF	8525	\$ 19.00	\$ 161,975.00
7	Undercutting of Soils	CY	695	\$ 24.00	\$ 16,680.00
8	10' wide boardwalk	LF	3500	\$ 300.00	\$ 1,050,000.00
9	Mid-Block Crossing	EA	2	\$ 4,000.00	\$ 8,000.00
10	Restoration	SY	18944	\$ 2.00	\$ 37,888.89
11	Mobilization (5%)	LSUM	1	\$ 78,374.69	\$ 78,374.69
CONSTRUCTION TOTAL					\$ 1,645,868.58
Engineering, Legal and Administrative (25%)					\$ 411,467.15
Contingency (20%)					\$ 329,173.72
BUDGET TOTAL					\$ 2,386,509.45

NOTES:

This estimate was based on the City GIS drawings/aerial photography. Cost may be strongly effected by soil types, existing water courses, etc.
 Estimate established using best cost information at the time. Cost of pavement and construction may increase.
 All pathways were estimated as 10' in width using a compacted limestone surface.

Cost per LF	\$	198.46
-------------	----	--------

By: Lindon Ivezaj

**PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS
PROJECT DESCRIPTION**

ITC Pathway - Phase 2 (Ten Mile and Wixom Rd to Eleven Mile Rd and ITC Easement)

DATE: July 28, 2010

No.	Description	Unit	Estimated Quantity	Unit Price	Total
1	Soil Erosion Control	LF	1575	\$ 1.50	\$ 2,362.50
2	Removal of Ex. Pavement	SY	555	\$ 7.00	\$ 3,885.00
3	Pathway Grading	LF	1575	\$ 15.00	\$ 23,625.00
4	Asphalt Pathway (4" Bit/6" 21AA Agg.)	SY	1400	\$ 28.00	\$ 39,200.00
5	Restoration	SY	3500	\$ 2.00	\$ 7,000.00
6	Mobilization (5%)	LSUM	1	\$ 3,803.63	\$ 3,803.63
CONSTRUCTION TOTAL					\$ 79,876.13
Engineering, Legal and Administrative (25%)					\$ 19,969.03
Contingency (20%)					\$ 15,975.23
BUDGET TOTAL					\$ 115,820.38

NOTES:

This estimate was based on the City GIS drawings/aerial photography. Cost may be strongly effected by soil types, existing water courses, etc.
 Estimate established using best cost information at the time. Cost of pavement and construction may increase.
 All pathways were estimated as 8' in width using a bituminous asphalt pavement.
 Phase 2 includes two segments along Wixom Rd, a new 515' section at the northwest corner as well as removal and replacement of a 160' segment of 3' wide sidewalk further north. The Phase 2 also includes removal of a 900' segment of concrete sidewalk along Eleven Mile Rd and replacing it with 8' wide asphalt pathway.

Cost per LF	\$	73.54
-------------	----	-------

By: Lindon Ivezaj

**PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS
PROJECT DESCRIPTION**

ITC Pathway - Phase 3 Asphalt Pathway (Eleven Mile Rd to Beck Rd)

DATE: July 28, 2010

No.	Description	Unit	Estimated Quantity	Unit Price	Total
1	Soil Erosion Control	LF	8000	\$ 1.50	\$ 12,000.00
2	Clearing and Grubbing	LF	1000	\$ 8.00	\$ 8,000.00
3	Pathway Grading	LF	3930	\$ 15.00	\$ 58,950.00
4	21AA Aggregate Base (6")	SY	1285	\$ 7.00	\$ 8,995.00
5	21AA Aggregate Base (8")	SY	3520	\$ 9.00	\$ 31,680.00
6	Undercutting of Soils	CY	820	\$ 24.00	\$ 19,680.00
7	Asphalt (3")	SY	3200	\$ 16.00	\$ 51,200.00
8	Asphalt (4")	SY	1170	\$ 22.00	\$ 25,740.00
9	Boardwalk (10')	LF	70	\$ 300.00	\$ 21,000.00
10	Restoration	SY	8740	\$ 2.00	\$ 17,480.00
11	Mobilization (5%)	LSUM	1	\$ 12,736.25	\$ 12,736.25
CONSTRUCTION TOTAL					\$ 267,461.25
Engineering, Legal and Administrative (25%)					\$ 66,865.31
Contingency (20%)					\$ 53,492.25
BUDGET TOTAL					\$ 387,818.81

NOTES:

This estimate was based on the City GIS drawings/aerial photography. Cost may be strongly effected by soil types, existing water courses, etc.
 Estimate established using best cost information at the time. Cost of pavement and construction may increase.
 All pathways were estimated as 10' in width using a 4" bituminous over 8" aggregate cross section in the ITC easement and 3" bituminous over 6" aggregate outside of the ITC easement.

Cost per LF	\$ 96.95
-------------	----------

By: Lindon Ivezaj

PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS
PROJECT DESCRIPTION
ITC Pathway - Phase 3 Compacted Limestone Pathway (Eleven Mile Rd to Beck Rd)

DATE: July 28, 2010

No.	Description	Unit	Estimated Quantity	Unit Price	Total
1	Soil Erosion Control	LF	8000	\$ 1.50	\$ 12,000.00
2	Clearing and Grubbing	LF	1000	\$ 8.00	\$ 8,000.00
3	Pathway Grading	LF	3930	\$ 15.00	\$ 58,950.00
4	10' Crushed Limestone Pathway	LF	2880	\$ 19.00	\$ 54,720.00
5	Asphalt (4")	SY	1170	\$ 22.00	\$ 25,740.00
6	21AA Aggregate Base (8")	SY	3520	\$ 9.00	\$ 31,680.00
7	Boardwalk (10')	LF	70	\$ 300.00	\$ 21,000.00
8	Undercutting of Soils	CY	410	\$ 24.00	\$ 9,840.00
9	Restoration	SY	8740	\$ 2.00	\$ 17,480.00
10	Mobilization (5%)	LSUM	1	\$ 11,970.50	\$ 11,970.50
CONSTRUCTION TOTAL					\$ 251,380.50
Engineering, Legal and Administrative (25%)					\$ 62,845.13
Contingency (20%)					\$ 50,276.10
BUDGET TOTAL					\$ 364,501.73

NOTES:

This estimate was based on the City GIS drawings/aerial photography. Cost may be strongly effected by soil types, existing water courses, etc.
Estimate established using best cost information at the time. Cost of pavement and construction may increase.
All pathways were estimated as 10' in width using a compacted limestone surface outside of the ITC easement.
Pathways within the ITC eaement were estimated as 4" bituminous asphalt over 8" of

Cost per LF	\$ 91.13
-------------	----------

By: Lindon Ivezaj

**PRELIMINARY OPINION OF PROBABLE CONSTRUCTION COSTS
PROJECT DESCRIPTION**

ITC Pathway - Asphalt Parking Lots (Fire Station 4 and Beck Rd Lift Station)

DATE: July 28, 2010

No.	Description	Unit	Estimated Quantity	Unit Price	Total
1	Soil Erosion Control	LF	500	\$ 1.50	\$ 750.00
8	Asphalt Pathway (4" Bit/6" 21AA Agg.)	SY	800	\$ 28.00	\$ 22,400.00
11	Striping	LF	684	\$ 1.50	\$ 1,026.00
13	Restoration	SY	270	\$ 2.00	\$ 540.00
14	Mobilization (5%)	LSUM	1	\$ 1,235.80	\$ 1,235.80
CONSTRUCTION TOTAL					\$ 25,951.80
Engineering, Legal and Administrative (25%)					\$ 6,487.95
Contingency (20%)					\$ 5,190.36
BUDGET TOTAL					\$ 37,630.11

NOTES:

This estimate was based on the City GIS drawings/aerial photography. Cost may be strongly effected by soil types, existing water courses, etc.
 Estimate established using best cost information at the time. Cost of pavement and construction may increase.
 Both parking lots were estimated on a 60' x 60' pavement section to accomedate 10 parking spaces each.

By: Lindon Ivezaj