

**Indianapolis North, White River
2012 vs 2013 Alternative Cost Changes**

Alternative	2012 Draft SEIS Alternative Cost Estimate	2013 Final SEIS Alternative Cost Estimate	Difference in Costs	Increase or Decrease
Westfield Blvd	\$14,400,000	\$11,612,000	\$2,788,000	Decrease *
Westfield Blvd Variation Canal Gate Structure Relocation	\$16,500,000	\$14,578,000	\$1,922,000	Decrease *
Westfield Blvd Variation Removable Wall	\$15,300,000	\$13,868,000	\$1,432,000	Decrease *
56th Street	\$14,300,000	\$11,266,000**	\$3,034,000	Decrease *
56th Street Variation Illinois Street	-----	\$13,774,000	-----	-----
Rocky Ripple	\$50,300,000	\$45,093,000	\$5,207,000	Decrease *

*Cost decreases are attributed to the following:

- Decreased Planning Engineering and Design (PED) costs and Construction Management (CM) costs arising from re-evaluation and lowering of PED and CM percentages applied to estimated construction costs.
- Decreased estimated cost for I-Wall and Pump Stations based on recent awarded contracts in the Central Indiana area.

**Reference Section 3.1, Table 1, of the Final SEIS Report. The alternative cost for the 56th Street Alternative should be \$11,266,000. This minor discrepancy does not impact consideration of the Proposed Actions. Any necessary corrections will be addressed in the final Record of Decision.

**Indianapolis North, White River
Comparison of Alternative Costs**

	Westfield Blvd	Westfield Blvd Variation Canal Gate Structure Relocation	Westfield Blvd Variation Removable Wall	56th Street	56th Street Variation Illinois St	Rocky Ripple
Levee Completion*	\$3,986,000	\$3,986,000	\$3,986,000	\$3,986,000	\$0	\$3,986,000
Alternative Cost	\$11,612,000	\$14,578,000	\$13,868,000	\$11,266,000	\$13,774,000	\$45,093,000
TOTAL	\$15,598,000	\$18,564,000	\$17,854,000	\$15,252,000	\$13,774,000	\$49,079,000

*The remainder of the levee to be constructed behind the Riviera Club adjacent to the White River will need to be completed prior to certification of the project by the Corps' Levee Safety Officer.

**Indianapolis North, White River
Comparison of Alternative Costs**

	Westfield Blvd	Westfield Blvd Variation Canal Gate Structure Relocation	Westfield Blvd Variation Removable Wall	56th Street	56th Street Variation Illinois St	Rocky Ripple
Lands and Damages	\$197,000	\$197,000	\$197,000	\$112,000	\$414,000	\$5,035,000
Borrow Site	\$0	\$0	\$0	\$0	\$0	\$325,000
Utility Relocations	\$109,000	\$109,000	\$109,000	\$405,000	\$229,000	\$849,000
Earthen Levee	\$0	\$0	\$0	\$0	\$0	\$4,462,000
I-wall	\$5,852,000	\$4,979,000	\$7,820,000	\$1,804,000	\$4,184,000	\$1,292,000
T-wall	\$0	\$3,445,000	\$0	\$1,994,000	\$1,994,000	\$16,254,000
Closure	\$0	\$0	\$0	\$1,366,000	\$1,140,000	\$674,000
Gatewell Structure	\$607,000	\$607,000	\$607,000	\$146,000	\$146,000	\$897,000
Demolition	\$58,000	\$73,000	\$58,000	\$188,000	\$100,000	\$1,427,000
Canal Gate Structure	\$3,037,000	\$3,037,000	\$3,037,000	\$3,037,000	\$3,037,000	\$3,037,000
Lift/Pump Station	\$228,000	\$228,000	\$228,000	\$228,000	\$228,000	\$1,036,000
Stream Bank Protection	\$0	\$0	\$0	\$0	\$0	\$2,368,000
Construction Management	\$692,000	\$873,000	\$830,000	\$642,000	\$774,000	\$2,261,000
Planning Engineering & Design	\$832,000	\$1,030,000	\$982,000	\$1,344,000	\$1,528,000	\$5,176,000
TOTAL	\$11,612,000	\$14,578,000	\$13,868,000	\$11,266,000	\$13,774,000	\$45,093,000

Westfield Boulevard Alternative		
Item	Cost	Notes
Lands and Damages	\$197,000	From Real Estate Division documentation
Borrow Site	\$0	not applicable for this alternative
Utility Relocations	\$109,000	400 LF of 36" RCP sanitary sewer
Earthen Levee	\$0	not applicable for this alternative
I-wall	\$5,852,000	4220 LF; 3 ft average height above grade; Along canal from N Capitol Ave and W Westfield Blvd intersection to high ground near Butler University Hinkle Field house; With toe drain
T-wall	\$0	not applicable for this alternative
Closure	\$0	not applicable for this alternative
Gatewell Structure	\$486,000	1 EA - For 84" storm sewer pipe (slip lined to 72") running under the canal; North of Canal Blvd and Ripple Rd intersection (#3)
	\$121,000	1 EA - For 36" sanitary sewer pipe running along east side of the canal; at 52nd St Bridge (#4)
Demolition	\$58,000	Existing tress, shrubs and improvements within the proposed floodwall construction limits
Canal Gate Structure	\$3,037,000	64' Wide; Near N Capitol Ave and W Westfield Blvd intersection
Lift Station	\$0	Assume required for 36" Broad Ripple Interceptor Sewer Line
Pump Stations	\$228,000	2 EA For toe drains
Stream Bank Protection	\$0	not applicable for this alternative
Construction Management	\$692,000	Estimated at 10% of the construction cost of the project components.
Planning Engineering & Design	\$832,000	Estimated at 5% of the construction cost of the project elements plus 75,000 for Agency Technical Review plus 1.9% of the construction cost for Independent External Peer Review.
TOTAL	\$11,612,000	

Westfield Boulevard Variation - Canal Gate Structure Relocation

Item	Cost	Notes
Lands and Damages	\$197,000	From Real Estate Division documentation
Borrow Site	\$0	not applicable for this alternative
Utility Relocations	\$109,000	400 LF of 36" RCP sanitary sewer
Earthen Levee	\$0	not applicable for this alternative
I-wall	\$4,979,000	3590 LF; 3 ft average height above grade; Along canal from Graceland Ave and W Westfield Blvd intersection to high ground near Butler University Hinkle Field house; With toe drain (total length of wall section is 4,220 LF). Approx. 340 LF will be located West of the canal for the Variation.
T-wall	\$3,445,000	430 LF adjacent to canal, Founded on steel H-piling; Steel sheet piling seepage cutoff wall; With toe drain (total length of wall section is 4,220 LF).
Closure	\$0	not applicable for this alternative
Gatewell Structure	\$486,000	1 EA - For 84" storm sewer pipe (slip lined to 72") running under the canal; North of Canal Blvd and Ripple Rd intersection (#3)
	\$121,000	1 EA - For 36" sanitary sewer pipe running along east side of the canal; at 52nd St Bridge (#4)
Demolition	\$73,000	Existing trees, shrubs and improvements within the proposed floodwall construction limits
Canal Gate Structure	\$3,037,000	64' Wide; Near N Capitol Ave and W Westfield Blvd intersection
Lift Station	\$0	Assume required for 36" Broad Ripple Interceptor Sewer Line
Pump Stations	\$228,000	2 EA - For toe drains
Stream Bank Protection	\$0	not applicable for this alternative
Construction Management	\$873,000	Estimated at 10% of the construction cost of the project components.
Planning Engineering & Design	\$1,030,000	Estimated at 5% of the construction cost of the project elements plus 75,000 for Agency Technical Review plus 1.9% of the construction cost for Independent External Peer Review.
TOTAL	\$14,578,000	

Westfield Boulevard Variation - Removable Wall

Item	Cost	Notes
Lands and Damages	\$197,000	From Real Estate Division documentation
Borrow Site	\$0	not applicable for this alternative
Utility Relocations	\$109,000	400 LF of 36" RCP sanitary sewer
Earthen Levee	\$0	not applicable for this alternative
I-wall	\$7,820,000	4220 LF*; Removable Wall 3 ft average height above grade; Along canal from N Capitol Ave and W Westfield Blvd intersection to high ground near Butler University Hinkle Field house; With toe drain; Incl Storage Containers
T-wall	\$0	not applicable for this alternative
Closure	\$0	not applicable for this alternative
Gatewell Structure	\$486,000	1 EA - for 84" storm sewer pipe (slip lined to 72") running under the canal; North of Canal Blvd and Ripple Rd intersection (#3)
	\$121,000	1 EA - for 36" sanitary sewer pipe running along east side of the canal; at 52nd St Bridge (#4)
Demolition	\$58,000	Existing tress, shrubs and improvements within the proposed floodwall construction limits
Canal Gate Structure	\$3,037,000	64' Wide; Near N Capitol Ave and W Westfield Blvd intersection
Lift Station	\$0	Assume required for 36" Broad Ripple Interceptor Sewer Line
Pump Stations	\$228,000	2 EA - For toe drains
Stream Bank Protection	\$0	not applicable for this alternative
Construction Management	\$830,000	Estimated at 10% of the construction cost of the project components.
Planning Engineering & Design	\$982,000	Estimated at 5% of the construction cost of the project elements plus 75,000 for Agency Technical Review plus 1.9% of the construction cost for Independent External Peer Review.
TOTAL	\$13,868,000	

*Reference Section 3.1.4.2 of the Final SEIS Report. The length of the full height removable wall should be 4,220 linear feet. This minor discrepancy does not impact consideration of the Proposed Actions. Any necessary corrections will be addressed in the final Record of Decision.

56th Street Alternative		
Item	Cost	Notes
Lands and Damages	\$112,000	From Real Estate Division documentation
Borrow Site	\$0	not applicable for this alternative
Utility Relocations	\$405,000	8" water main, 135 LF to be relocated adjacent to T-wall alignment between Kenwood Ave and Westfield Blvd
		2-20" sanitary sewer lines to be adjusted on existing alignment with penetration collars, 20 LF each, total 40 LF (Kenwood Ave and Westfield Blvd) with gatewell structure on each
		36" sanitary sewer relocation on Westfield Blvd, 195 LF
		8" water line adjust on existing alignment on Kenwood Ave with penetration collar, 20 LF
		16" gas line relocation on Westfield Blvd, 195 LF
		Electric line relocation on Westfield Blvd, 720 LF; electric line relocation on 56th Street 647 LF
Earthen Levee	\$0	not applicable for this alternative
I-wall	\$523,000	132 LF located between canal and Westfield Blvd, cost includes sheet pile cut-off wall, and added cost for confined work area
	\$667,000	350 LF, located adjacent to 56th Street, includes added cost for traffic control
	\$614,000	70 LF removable wall adjacent to 56th Street, includes added cost for traffic control
T-wall	\$1,695,000	310 LF adjacent to canal, Founded on steel H-piling; Steel sheet piling seepage cutoff wall; With toe drain
	\$299,000	82 LF, located between Westfield Blvd and Kenwood Ave
Closure	\$85,000	25' gate closure at CVS Pharmacy Parking Lot Entrance
	\$221,000	40' gate closure at Kenwood Ave
	\$330,000	50' gate closure at Westfield Blvd
	\$710,000	75' gate closure at Illinois St
	\$20,000	Pedestrian closure at the canal towpath
Gatewell Structure	\$146,000	sluice needed on 36" sanitary sewer line and 2-20" sanitary sewer lines, positive cut-off
Demolition	\$188,000	Remove existing concrete and pavement, work also includes repair of local streets, sidewalks, driveways caused by damage from construction work
Canal Gate Structure	\$3,037,000	64 Ft Wide; Near Graceland Ave and W Westfield Blvd intersection
Pump Stations	\$228,000	2 EA - For toe drains

Lift Station	\$0	Assume required for 36" Broad Ripple Interceptor Sewer Line
Stream Bank Protection	\$0	not applicable for this alternative
Construction Management	\$642,000	Estimated at 7% of the construction cost of the project components.
Planning Engineering & Design	\$1,344,000	Estimated at 15% of the construction cost of the T-Walls, Gate Closure Structures, Pipe Gate Wells and Lift/Pump Stations; 10% of the construction cost of I-Walls; Demolition, and Utility Relocations; 5% of the construction cost of Relocated Canal Gate Structure plus 75,000 for Agency Technical Review plus 1.9% of the construction cost for Independent External Peer Review.
TOTAL	\$11,266,000	

56th Street Variation - Illinois Street		
Item	Cost	Notes
Lands and Damages	\$414,000	From Real Estate Division documentation
Borrow Site	\$0	not applicable for this alternative
Utility Relocations	\$229,000	8" water main, with penetration collar; 20 LF at Westfield Blvd 2 EA 20" sanitary sewer lines to be adjusted on existing alignment with penetration collars, 20 LF each, total 40 LF Riviera Club Entrance and commercial entrance at Westfield Blvd). 1 EA 36" sanitary sewer line to be adjusted on existing alignment with penetration collars, 20 LF at Westfield Blvd (Broad Ripple Interceptor Sewer). 6" gas line adjust on existing alignment with penetration collar, 20 LF (Westfield Blvd) 2" gas line adjust on existing alignment with penetration collar, 20 LF (Riviera Club Entrance) Electric line relocation on Illinois St 300 LF; electric line relocation along Westfield and canal, 200 LF
Earthen Levee	\$0	not applicable for this alternative
I-wall	\$2,297,000	580 LF, 10-ft high; located north and east of Riviera Club tennis courts and added cost for confined work area
	\$1,193,000	425 LF, 7-ft high; located on IPL property
	\$211,000	75 LF; 7 ft high; located between Illinois Avenue and the Canal
	\$408,000	200 LF, 5-ft high; located north of commercial property at intersection of Illinois St and Westfield Blvd
	\$75,000	85 LF, 2-ft high average; Located north of commercial property at intersection of Illinois St and Westfield Blvd
T-wall	\$1,695,000	310 LF adjacent to canal, H-Pile foundation required, Founded on steel H-piling; Steel sheet piling seepage cutoff wall; With toe drain
	\$299,000	82 LF, located between Westfield Blvd and Kenwood Ave
Closure	\$330,000	50' gate closure at Illinois St
	\$810,000	80' gate closure at Westfield Blvd
Gatewell Structure	\$146,000	sluice needed on 36" sanitary sewer line and 2-20" sanitary sewer lines, positive cut-off
Demolition	\$100,000	Remove existing concrete and pavement, work also includes repair of local streets, sidewalks, driveways caused by damage from construction work
Canal Gate Structure	\$3,037,000	64 Ft Wide; Near Graceland Ave and W Westfield Blvd intersection

Pump Stations	\$228,000	2 EA - For toe drains
Lift Station	\$0	Assume required for 36" Broad Ripple Interceptor Sewer Line
Stream Bank Protection	\$0	not applicable for this alternative
Construction Management	\$774,000	Estimated at 7% of the construction cost of the project components.
Planning Engineering & Design	\$1,528,000	Estimated at 15% of the construction cost of the T-Walls, Gate Closure Structures, Pipe Gate Wells and Lift/Pump Stations; 10% of the construction cost of I-Walls; Demolition, and Utility Relocations; 5% of the construction cost of Relocated Canal Gate Structure plus 75,000 for Agency Technical Review plus 1.9% of the construction cost for Independent External Peer Review.
TOTAL	\$13,774,000	

Rocky Ripple Alternative

Item	Cost	Notes
Lands and Damages	\$5,035,000	From Real Estate Division documentation
Borrow Site	\$325,000	Assume 10 acres required at \$30k/acre; approximately 11 core borings needed with Geotechnical Investigations report \$25,000
Utility Relocations	\$849,000	5,600 LF of 8" sanitary sewer; Package sewage treatment plant; 600 LF 4" force main to White River; Demolish existing septic tanks and lateral fields
Earthen Levee	\$4,462,000	3,200 LF; 12 ft average height above grade; 68,000 cy embankment
I-wall	\$369,000	160 LF; Along canal; 6 ft average height above grade; Steel sheet piling seepage cutoff below grade; With toe drain
	\$923,000	400 LF; Along White River near intersection of Canal Blvd and Ripple Rd; 6 ft average height above grade; Steel sheet piling seepage cutoff below grade; With toe drain; Interspersed along T-Wall
T-wall	\$904,000	310 LF; Along canal; 9'6" average height above grade; Founded on steel H-piling; Steel sheet piling seepage cutoff wall; With toe drain
	\$15,350,000	5265 LF; Along White River near intersection of Canal Blvd and Ripple Rd to near intersection of W 52rd St and Riverview Dr; Average height 12 ft above grade; With toe drain
Closure	\$295,000	30 ft wide; In levee at Riverview Dr (Incl 225 sf closure parts storage building)
	\$295,000	30 ft wide; In levee at Lester St (Incl 225 sf closure parts storage building)
	\$84,000	3 ea, 8 ft wide; In floodwall; At three locations to be determined for local access to the White River shoreline (Includes closure parts storage buildings)
Gatewell Structure	\$413,000	1 ea for 72" storm sewer pipe running under the Canal; North of Canal Blvd and Ripple Rd intersection
	\$121,000	1 ea for 36" sanitary sewer pipe running along east side of the Canal; Near Holcomb Carillion at Butler University
	\$363,000	Assume 3 ea, 36" storm pipes in Rocky Ripple community
Demolition	\$437,000	15,000 cy of existing levee embankment
	\$990,000	43 buildings; 22 residences with outbuildings
Canal Gate Structure	\$3,037,000	64 ft wide; Ties into Levee at Butler University athletic fields levee south of West 51st St
Pump Station	\$1,036,000	3 Total, (2 ea at 150/200 GPM); (1 ea at 300/400 GPM); (2 ea at 400/600 GPM); for 9,335 LF of protection

Lift Station	\$0	Assume required for 36" Broad Ripple Interceptor Sewer Line
Stream Bank Protection	\$2,368,000	6000 LF along banks of White River; 8,000 cy of 18-in rip rap stone on 6-in aggregate base
Construction Management	\$2,261,000	Estimated at 7% of the construction cost of the project components.
Planning Engineering & Design	\$5,176,000	Estimated at 15% of the construction cost of the T-Walls, Gate Closure Structures, Pipe Gate Wells and Lift/Pump Stations; 10% of the construction cost of I-Walls; Demolition, and Utility Relocations; 5% of the construction cost of Relocated Canal Gate Structure plus 75,000 for Agency Technical Review plus 1.9% of the construction cost for Independent External Peer Review.
TOTAL	\$45,093,000	