



# CITY of NOVI CITY COUNCIL

**Agenda Item 2  
June 4, 2012**

**SUBJECT:** Approval to award a construction contract for the 2012 Regional Storm Water System Improvements project to Verdeterre Contracting, Inc., the low bidder, in the amount of \$537,197 (offset by \$189,704 in grant funds).

**SUBMITTING DEPARTMENT:** Department of Public Services, Engineering Division *RAH*  
**CITY MANAGER APPROVAL:** *[Signature]* *BIC*

<b>EXPENDITURE REQUIRED</b>	\$242,991.50	(Leavenworth/Thornton/Lexington Green Basins)
	\$235,904.50	(Brookfarm Park Streambank Eng and Const)
	\$ 12,226.40	(Brookfarm Park Pathway)
	\$ 46,074.10	(NC#2 and White Pines Pathways)
	<b>\$537,196.50</b>	<b>TOTAL</b>
<b>AMOUNT BUDGETED</b>	\$323,000	(Leavenworth/Thornton/Lexington Green Basins)
	\$120,000	(Brookfarm Park Streambank Eng and Const)
	\$ 0	(Brookfarm Park Pathway)
	\$ 0	(NC#2 and Autumn Park Pathways)
	<b>\$395,000</b>	<b>TOTAL</b>
<b>APPROPRIATION REQUIRED</b>	\$ 0	(Leavenworth/Thornton/Lexington Green Basins)
	\$ 0	(Brookfarm Park Streambank Eng and Const)
	\$ 12,226.40	(Brookfarm Park Pathway)
	\$ 46,074.10	(NC#2 and Autumn Park Pathways)
	<b>\$ 58,300.00</b>	<b>TOTAL</b>
<b>LINE ITEM NUMBER</b>	<b>210-211.00-865.687</b>	(Leavenworth/Thornton/Lexington Green Basins)
	<b>210-211.00-869.510</b>	(Brookfarm Park Streambank Eng and Const)
	<b>208-691.00-974.060</b>	(Brookfarm Park Pathway)
	<b>204-204.00-974.429</b>	(NC#2 and Autumn Park Pathways)

**BACKGROUND INFORMATION:**

This project consists of several smaller projects that were combined into one project in an effort to realize cost savings by completing projects that either have similar scopes or work that is in close proximity to another project's location. This project includes the following storm water and non-motorized work:

- Regional Basin Improvements (Leavenworth, Lexington Green and Thornton Regional Detention Basins)
- Sidewalk Gap Construction in Autumn Park Subdivision
- Brookfarm Park Streambank Stabilization
- Brookfarm Park Pathway along Ingersol Creek
- Neighborhood Connector 2 through Brookfarm Park

Detention Basin Improvements (including sidewalk construction work near Thornton Basin)  
 The City of Novi was awarded a Federal grant through the Rouge River National Wet Weather Demonstration Project to improve the Leavenworth, Lexington Green and

Thornton Regional Detention Basins. The Leavenworth Basin is located south of Grand River Avenue between Taft Road and Novi Road; the Lexington Green Basin is located south of Nine Mile Road between Taft Road and Beck Road; and the Thornton Basin is located north of Nine Mile Road between Beck Road and Taft Road (see attached location map). DPS's Engineering Division staff applied for and the City was awarded a 50% matching grant for improvements to the three basins. Improvements to these basins were recommended by the Phase II Storm Water Master Plan completed in 2007. Following this project, all CIP projects recommended in the Storm Water Master Plan will be complete.

The Federal grant is administered by the Rouge Project Office and the Wayne County Department of Environment. The total project cost was estimated to be \$405,000, making the grant amount \$202,500. The interagency agreement (attached) with Wayne County that was required to receive the grant was approved by City Council at the February 7, 2011 meeting, and was also approved by Wayne County.

The goals of the detention basin improvements project are to reduce the frequency of bank-full storm water flows downstream of each basin while also creating habitat and restoring native vegetation. This project included a hydraulic analysis to evaluate attenuation concerns. The recommended improvements are based on the hydraulic evaluation and will include: retrofitting outlet structures to provide additional regional attenuation for high frequency storm events (1-year and 2-year recurrence intervals), removal of invasive species, and planting native vegetation buffers.

During the design process it was determined that since the Thornton Basin improvements portion of the project is near five sidewalk gaps within the Autumn Park subdivision, the sidewalk gaps could be completed along with this project. Completion of these five segments will result in continuous paths along White Pines Drive and Whitehall Drive in this area (see attached location map).

#### Brookfarm Park Improvements

The scope of this award includes two projects identified and funded in the Capital Improvements Program. A project for streambank stabilization near the confluence of Bishop Creek and Ingersol Creek was approved in FY09-10 for a total project budget of \$37,100 (\$6,400 for engineering and \$30,700 for construction). A project for streambank stabilization along Ingersol Creek in Brookfarm Park (upstream of the confluence) was approved for FY10-11 for a total project budget of \$120,000.

The improvements include:

- Streambank stabilization along Ingersol Creek from Willowbrook Dr to Bishop Creek, including at the confluence of Ingersol Creek and Bishop Creek
- Rehabilitation of footings for the existing pedestrian bridge crossing Ingersol Creek
- Construction of Neighborhood Connector #2 pathway between Ripple Creek Road and the pedestrian bridge
- Construction of a pathway along a portion of the Ingersol Creek streambank to be stabilized.

The City owns the property along the north side of Ingersol Creek (Brookfarm Park) and Village Oaks Elementary School is located on and owns the south side of the creek. City staff has contacted the school and will coordinate as necessary with school staff for the work on the south side of the creek.

Five bids were received and opened on May 23, 2012 following a public bid solicitation period. The lowest bidder is Verdeterre Contracting, Inc. Verdeterre's bid is recommended as being in the best interest of the City as it is responsive (i.e. Verdeterre has complied with all requirements of the bidding instructions) and it is the lowest price. (OHM's award recommendation letter including the bid tabulation dated May 29, 2012 is attached.) A summary of the five bids is as follows:

<b>Contractor</b>	<b>TOTAL Bid Price (including Crew Days)*</b>
Verdeterre Contracting, Inc.	\$587,011.50
Stante Excavating Co, Inc.	\$736,275.15
V.I.L. Construction, Inc.	\$764,687.00
Pamar Enterprises Inc.	\$1,285,603.20
Site Development, Inc.	\$1,785,845.00

\*Crew Days are included to compare bids, but are not included in the award.

These projects were included in the FY2011-12 Capital Improvement Program (CIP) in the budgeted amount of \$563,800 for construction and engineering, of which \$171,373 was awarded for design engineering, \$537,197 is now being recommended for award to Verdeterre for construction, and \$32,048 is also recommended for award to OHM for construction engineering services (a separate item on this agenda) for total contract awards in the amount of \$740,618.

Construction engineering services for this project is being recommended for award to OHM as a separate item on this agenda. It is anticipated that the construction of the project will begin this summer and be completed this construction season.

**RECOMMENDED ACTION:** Approval to award a construction contract for the 2012 Regional Storm Water System Improvements project to Verdeterre Contracting, Inc., the low bidder, in the amount of \$537,197 (offset by \$189,704 in grant funds).

	<b>1</b>	<b>2</b>	<b>Y</b>	<b>N</b>
<b>Mayor Gatt</b>				
<b>Mayor Pro Tem Staudt</b>				
<b>Council Member Casey</b>				
<b>Council Member Fischer</b>				

	<b>1</b>	<b>2</b>	<b>Y</b>	<b>N</b>
<b>Council Member Margolis</b>				
<b>Council Member Mutch</b>				
<b>Council Member Wrobel</b>				

May 29, 2012

Mr. Ben Croy, PE  
CITY OF NOVI  
26300 Lee BeGole Drive  
Novi, Michigan 48375



Regarding: **2012 Regional Stormwater System Improvements**  
Letter of Recommendation

Dear Mr. Croy:

On May 23, 2012 at 11:00 am, bids were received for the above referenced project. We received a total of five bids. The results for the bids are as follows:

<b>Contractor</b>	<b>Total Bid Amount</b>
Verdeterre Contracting, Inc.	\$587,011.50
Stante Excavating Co., Inc.	\$736,275.30
V.I.L. Construction, Inc.	\$764,687.00
Pamar Enterprises, Inc.	\$1,285,514.75
Site Development Inc.	\$1,785,845.00

Our Engineer's Opinion of Cost for this project was \$533,797.36 (including anticipated costs for 80 crew days). The project scope under the Contract consists of furnishing all materials, equipment, and labor necessary to perform the proposed work in accordance with the plans and specifications.

Verdeterre Contracting, Inc. out of Canton, Michigan is the apparent low bidder on this project. They have 32 years of experience and their bonding agent has indicated that they would have no issue bonding for a project of this size. In general, they have received satisfactory recommendations from references that have them currently under contract or who have worked with them recently. Based on our findings, we recommend award of this contract to Verdeterre Contracting, Inc. in the amount of \$537,196.50 (bid amount minus crew day line items) based on the bid unit prices.

Digital files of this letter and a corrected, detailed bid tabulation have been emailed to your office. If you have any questions or require additional information, please feel free to contact this office.

Sincerely,  
ORCHARD, HILTZ, & McCLIMENT, INC.

A handwritten signature in black ink, appearing to read "Tim Kuhns", is written over a light gray rectangular background.

Tim Kuhns., P.E.

Cc. Rob Hayes, City of Novi  
Ronald Cavallaro Jr., OHM

Enclosure: Bid tab  
P:\0126\_0165\0163110011\_2011\_Basin\_Projects\EWRG\Bidding\ Bid Recommendation - 2012 Stormwater Improvements.doc

Phone: 734-697-4166

Phone: 248-624-0030

Phone: 586-979-6020

Phone: 586-749-8593

Phone: 248-583-1200

Item No.	Description	Estimated Quantity	Unit Price		Amount		Unit Price		Amount		Unit Price		Amount	
			Price	Amount	Price	Amount	Price	Amount	Price	Amount	Price	Amount		
<b>CATEGORY 1 – Federally Funded</b>														
1)	Mobilization, Max. 10 %	1 LS	\$15,380.00	\$15,380.00	\$38,625.00	\$38,625.00	\$60,000.00	\$60,000.00	\$134,000.00	\$134,000.00	\$125,000.00	\$125,000.00		
2)	Crew Days for Work at Detention Basins	615 \$/day	36	\$22,140.00	23	\$14,145.00	50	\$30,750.00	50	\$30,750.00	40	\$24,600.00		
3)	Erosion Control, Inlet Filter	1 Ea	\$110.00	\$110.00	\$50.00	\$50.00	\$150.00	\$150.00	\$165.00	\$165.00	\$170.00	\$170.00		
4)	Dr Structure, Rem	1 Ea	\$500.00	\$500.00	\$1,320.00	\$1,320.00	\$4,000.00	\$4,000.00	\$550.00	\$550.00	\$3,700.00	\$3,700.00		
5)	Sewer, Rem, Less than 24 inch	55 Ft	\$21.00	\$1,155.00	\$6.85	\$376.75	\$30.00	\$1,650.00	\$32.00	\$1,760.00	\$55.00	\$3,025.00		
6)	Sewer, Rem, 24 inch to 48 inch	12 Ft	\$39.00	\$468.00	\$10.00	\$120.00	\$50.00	\$600.00	\$55.00	\$660.00	\$55.00	\$660.00		
7)	Guardrail, Rem	52 Ft	\$18.00	\$936.00	\$3.00	\$156.00	\$5.00	\$260.00	\$10.00	\$520.00	\$33.00	\$1,716.00		
8)	Masonry and Conc Structure, Rem	1 Cyd	\$1,540.00	\$1,540.00	\$250.00	\$250.00	\$1,000.00	\$1,000.00	\$880.00	\$880.00	\$7,710.00	\$7,710.00		
9)	Subgrade Undercutting, Type II	66 Cyd	\$54.00	\$3,564.00	\$57.50	\$3,795.00	\$50.00	\$3,300.00	\$44.00	\$2,904.00	\$143.00	\$9,438.00		
10)	Station Grading, Roadway	9.6 Sta	\$3,600.00	\$34,560.00	\$7,950.00	\$76,320.00	\$1,250.00	\$12,000.00	\$2,100.00	\$20,160.00	\$2,970.00	\$28,512.00		
11)	Boulder, Relocate	6 Ea	\$87.00	\$522.00	\$75.00	\$450.00	\$50.00	\$300.00	\$345.00	\$2,070.00	\$210.00	\$1,260.00		
12)	Exploratory Excavation	3 Ea	\$1,140.00	\$3,420.00	\$250.00	\$750.00	\$500.00	\$1,500.00	\$330.00	\$990.00	\$1,710.00	\$5,130.00		
13)	Erosion Control, Gravel Access Approach	1 Ea	\$3,220.00	\$3,220.00	\$1,850.00	\$1,850.00	\$2,500.00	\$2,500.00	\$3,450.00	\$3,450.00	\$900.00	\$900.00		
14)	Erosion Control, Silt Fence	1514 Ft	\$2.00	\$3,028.00	\$0.85	\$1,286.90	\$3.00	\$4,542.00	\$4.56	\$6,903.84	\$8.50	\$12,869.00		
15)	Tree Fence, Protection	173 Ft	\$3.50	\$605.50	\$2.00	\$346.00	\$6.00	\$1,038.00	\$9.00	\$1,557.00	\$7.00	\$1,211.00		
16)	Erosion Control, Check Dam, Stone, Modified	19 Syd	\$31.00	\$589.00	\$75.00	\$1,425.00	\$200.00	\$3,800.00	\$65.00	\$1,235.00	\$462.00	\$8,778.00		
17)	Aggregate Base, 6 inch	1740 Syd	\$7.00	\$12,180.00	\$8.00	\$13,920.00	\$9.00	\$15,660.00	\$12.80	\$22,272.00	\$7.50	\$13,050.00		
18)	Culv End Sect, Conc, 42 inch	1 Ea	\$2,600.00	\$2,600.00	\$8,315.00	\$8,315.00	\$4,500.00	\$4,500.00	\$3,267.00	\$3,267.00	\$3,567.00	\$3,567.00		
19)	Culv End Sect, Metal, 12 inch	2 Ea	\$200.00	\$400.00	\$275.00	\$550.00	\$500.00	\$1,000.00	\$129.00	\$258.00	\$2,174.00	\$4,348.00		
20)	Culv, CI A, CSP, 12 inch	59 Ft	\$25.00	\$1,475.00	\$30.00	\$1,770.00	\$30.00	\$1,770.00	\$65.78	\$3,881.02	\$79.00	\$4,661.00		
21)	Culv End Sect, Reset, 42 inch	1 Ea	\$1,140.00	\$1,140.00	\$7,400.00	\$7,400.00	\$12,500.00	\$12,500.00	\$1,250.00	\$1,250.00	\$2,163.00	\$2,163.00		
22)	Structure, Adj	1 Ea	\$650.00	\$650.00	\$755.00	\$755.00	\$400.00	\$400.00	\$556.00	\$556.00	\$1,705.00	\$1,705.00		
23)	Thornton Detention Basin, 10 Year Structure	1 LS	\$22,670.00	\$22,670.00	\$10,205.00	\$10,205.00	\$32,500.00	\$32,500.00	\$62,670.00	\$62,670.00	\$25,000.00	\$25,000.00		
24)	Thornton Detention Basin, 100 Year Structure	1 LS	\$18,900.00	\$18,900.00	\$11,200.00	\$11,200.00	\$23,000.00	\$23,000.00	\$44,278.00	\$44,278.00	\$8,535.00	\$8,535.00		
25)	Lexington Green Detention Basin, 10Year Structure, Modification	1 LS	\$16,665.00	\$16,665.00	\$13,700.00	\$13,700.00	\$36,500.00	\$36,500.00	\$61,650.00	\$61,650.00	\$23,380.00	\$23,380.00		
26)	Leavenworth Sedimentation Basin, Outlet Structure Modification	1 LS	\$3,900.00	\$3,900.00	\$3,950.00	\$3,950.00	\$20,000.00	\$20,000.00	\$74,890.00	\$74,890.00	\$100,000.00	\$100,000.00		
27)	Turf Pavers	1464 Syd	\$43.00	\$62,952.00	\$62.50	\$91,500.00	\$52.00	\$76,128.00	\$54.00	\$79,056.00	\$75.00	\$109,800.00		
28)	Sidewalk, Conc, 6 inch, Modified	120 Sft	\$6.00	\$720.00	\$2.20	\$264.00	\$3.50	\$420.00	\$3.00	\$360.00	\$14.00	\$1,680.00		
29)	Sign, "No Mow"	14 Ea	\$175.00	\$2,450.00	\$50.00	\$700.00	\$100.00	\$1,400.00	\$110.00	\$1,540.00	\$220.00	\$3,080.00		
30)	Riprap, Heavy	38 Syd	\$34.00	\$1,292.00	\$250.00	\$9,500.00	\$200.00	\$7,600.00	\$155.00	\$5,890.00	\$87.00	\$3,306.00		
31)	Thuja occidentalis 'Aurea', #5 cont.	2 Ea	\$285.00	\$570.00	\$150.00	\$300.00	\$250.00	\$500.00	\$65.00	\$130.00	\$102.00	\$204.00		
32)	Sprinkler Line	100 Ft	\$9.00	\$900.00	\$2.00	\$200.00	\$5.00	\$500.00	\$5.00	\$500.00	\$3.40	\$340.00		
33)	Sprinkler Head, Remove and Reset	10 Ea	\$75.00	\$750.00	\$35.00	\$350.00	\$100.00	\$1,000.00	\$45.00	\$450.00	\$34.00	\$340.00		
34)	Sprinkler Head, Replace	5 Ea	\$100.00	\$500.00	\$35.00	\$175.00	\$150.00	\$750.00	\$65.00	\$325.00	\$170.00	\$850.00		
35)	Sprinkler Valve, Relocate and or Replace	5 Ea	\$110.00	\$550.00	\$100.00	\$500.00	\$400.00	\$2,000.00	\$125.00	\$625.00	\$170.00	\$850.00		
36)	Maintaining Pond and Stream Flow, Thornton	1 LS	\$7,960.00	\$7,960.00	\$2,000.00	\$2,000.00	\$17,500.00	\$17,500.00	\$7,650.00	\$7,650.00	\$53,122.00	\$53,122.00		
37)	Maintaining Pond and Stream Flow, Lexington Green	1 LS	\$4,850.00	\$4,850.00	\$1,500.00	\$1,500.00	\$19,500.00	\$19,500.00	\$7,650.00	\$7,650.00	\$53,122.00	\$53,122.00		
38)	Maintaining Pond and Stream Flow, Leavenworth	1 LS	\$4,850.00	\$4,850.00	\$1,000.00	\$1,000.00	\$18,500.00	\$18,500.00	\$7,650.00	\$7,650.00	\$53,122.00	\$53,122.00		
39)	Audio Video Survey	1 LS	\$4,470.00	\$4,470.00	\$2,950.00	\$2,950.00	\$3,500.00	\$3,500.00	\$5,250.00	\$5,250.00	\$4,600.00	\$4,600.00		
TOTAL CATEGORY 1:				<u>\$265,131.50</u>		<u>\$323,969.65</u> <sup>1</sup>		<u>\$424,518.00</u>		<u>\$600,602.86</u> <sup>1</sup>		<u>\$705,504.00</u>		
<b>CATEGORY 2 - Not Federally Funded</b>														
40)	Clearing	0.72 Acre	\$14,200.00	\$10,224.00	\$16,670.00	\$12,002.40	\$20,000.00	\$14,400.00	\$12,000.00	\$8,640.00	\$18,000.00	\$12,960.00		
41)	Tree Removal	7 Ea	\$500.00	\$3,500.00	\$600.00	\$4,200.00	\$500.00	\$3,500.00	\$350.00	\$2,450.00	\$500.00	\$3,500.00		
42)	Cross Vane	1 Ea	\$9,250.00	\$9,250.00	\$14,600.00	\$14,600.00	\$13,500.00	\$13,500.00	\$3,909.71	\$3,909.71	\$99,000.00	\$99,000.00		
43)	Crew Days for Work at Brookfarm Park	615 \$/day	45	\$27,675.00	40	\$24,600.00	40	\$24,600.00	53	\$32,595.00	20	\$12,300.00		
44)	Erosion Control, Inlet Filter	5 Ea	\$110.00	\$550.00	\$50.00	\$250.00	\$150.00	\$750.00	\$165.00	\$825.00	\$170.00	\$850.00		
45)	Detail A, Boulder Toe Protection	200 Ft	\$156.00	\$31,200.00	\$105.00	\$21,000.00	\$175.00	\$35,000.00	\$292.82	\$58,564.00 <sup>2</sup>	\$185.00	\$37,000.00		
46)	Detail B, Coir Fiber Bank Stabilization (Cut Area)	46 Ft	\$110.00	\$5,060.00	\$151.00	\$6,946.00	\$105.00	\$4,830.00	\$542.29	\$24,945.34 <sup>2</sup>	\$492.00	\$22,632.00		
47)	Detail C, Coir Fiber Bank Stabilization (Fill Area)	415 Ft	\$98.00	\$40,670.00	\$110.00	\$45,650.00	\$95.00	\$39,425.00	\$264.54	\$109,784.10 <sup>2</sup>	\$352.00	\$146,080.00		
48)	Detail D, Coir Block Bank Stabilization with Bankfull Shelf	755 Ft	\$110.00	\$83,050.00	\$171.00	\$129,105.00	\$110.00	\$83,050.00	\$340.29	\$256,918.95 <sup>2</sup>	\$309.00	\$233,295.00		
49)	Woody Debris Removal	4 Ea	\$820.00	\$3,280.00	\$400.00	\$1,600.00	\$1,000.00	\$4,000.00	\$1,143.71	\$4,574.84	\$510.00	\$2,040.00		
50)	End Section Protection	3 Ea	\$440.00	\$1,320.00	\$250.00	\$750.00	\$600.00	\$1,800.00	\$1,518.42	\$4,555.26	\$3,365.00	\$10,095.00		
51)	Pavt, Rem	80 Syd	\$7.00	\$560.00	\$4.00	\$3,200.00	\$12.00	\$960.00	\$21.34	\$1,707.20	\$19.50	\$1,560.00		
52)	Sidewalk, Rem	29 Syd	\$13.00	\$377.00	\$15.00	\$435.00	\$6.00	\$174.00	\$19.88	\$576.52	\$48.00	\$1,392.00		
53)	Station Grading, Sidewalk	9.7 Sta	\$700.00	\$6,790.00	\$3,140.00	\$30,458.00	\$500.00	\$4,850.00	\$770.00	\$7,469.00	\$31,000.00	\$300,700.00		
54)	Soccer Field Earthwork and Restoration	1273 Cyd	\$29.00	\$36,917.00	\$54.00	\$68,742.00	\$35.00	\$44,555.00	\$56.89	\$72,420.97	\$77.00	\$98,021.00		
55)	Tree Fence, Protection	457 Ft	\$3.50	\$1,599.50	\$2.00	\$914.00	\$6.00	\$2,742.00	\$9.00	\$4,113.00	\$7.00	\$3,199.00		
56)	Erosion Control, Check Dam, Stone, Modified	9 Syd	\$31.00	\$279.00	\$75.00	\$675.00	\$200.00	\$1,800.00	\$55.00	\$495.00	\$594.00	\$5,346.00		
57)	Dr Structure, 48 inch dia	1 Ea	\$1,880.00	\$1,880.00	\$2,985.00	\$2,985.00	\$4,500.00	\$4,500.00	\$3,265.00	\$3,265.00	\$2,105.00	\$2,105.00		
58)	Structure, Adj	7 Ea	\$350.00	\$2,450.00	\$615.00	\$4,305.00	\$300.00	\$2,100.00	\$556.00	\$3,892.00	\$985.00	\$6,895.00		
59)	Bishop Detention Basin, 10 Year Structure, Modification	1 LS	\$9,520.00	\$9,520.00	\$5,890.00	\$5,890.00	\$9,000.00	\$9,000.00	\$47,259.00	\$47,259.00	\$9,643.00	\$9,643.00		
60)	Conc Pavt with Integral Curb, Nonreinf, 8 inch	80 Syd	\$59.00	\$4,720.00	\$54.00	\$4,320.00	\$60.00	\$4,800.00	\$50.00	\$4,000.00	\$67.00	\$5,360.00		
61)	Sidewalk, Conc, 6 inch, Modified	96 Sft	\$3.50	\$336.00	\$5.00	\$480.00	\$3.50	\$336.00	\$3.00	\$288.00	\$14.00	\$1,344.00		
62)	Sidewalk Ramp, Conc, 6 inch, Modified	102 Sft	\$6.50	\$663.00	\$12.00	\$1,224.00	\$6.00	\$612.00	\$5.50	\$561.00	\$16.50	\$1,683.00		
63)	Sidewalk, Conc, 4 inch, Modified	12895 Sft	\$3.10	\$39,974.50	\$2.15	\$27,724.25	\$3.00	\$38,685.00	\$2.40	\$30,948.00	\$4.80	\$61,896.00		
64)	Riprap, Heavy													

# City of Novi

## RPO Round X - Part B

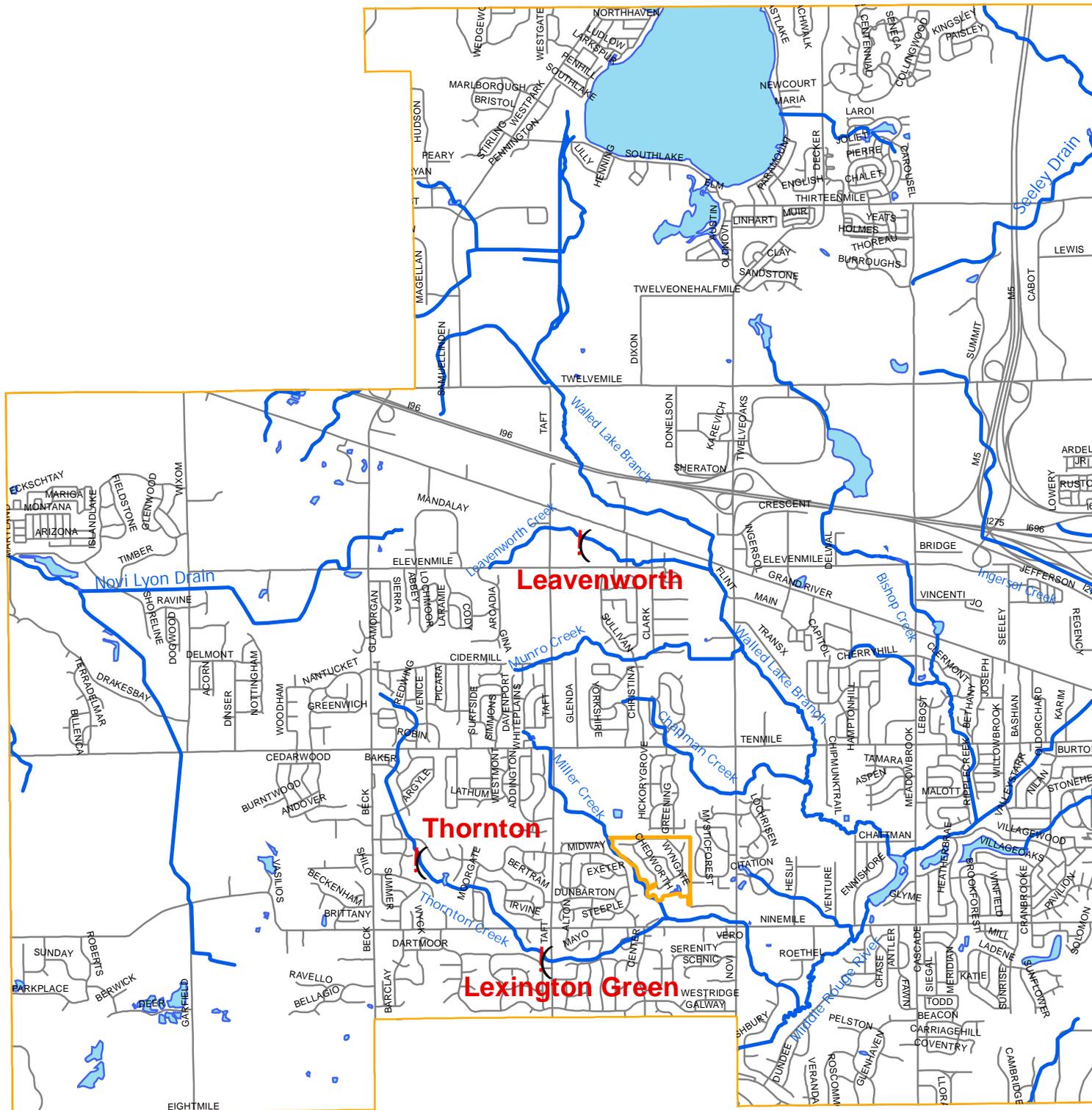
### Regional Basin Retrofits for Water Quality Improvements

#### Site Location Map

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-  Detention Basin Location
-  Streams
-  Open Water
-  City of Novi Boundary

0 0.5 1 Miles



# City of Novi

## RPO Round X - Part B

### Regional Basin Retrofits for Water Quality Improvements

#### Site Location Map Leavenworth Basin



-  Streams
-  Open Water



City of Novi

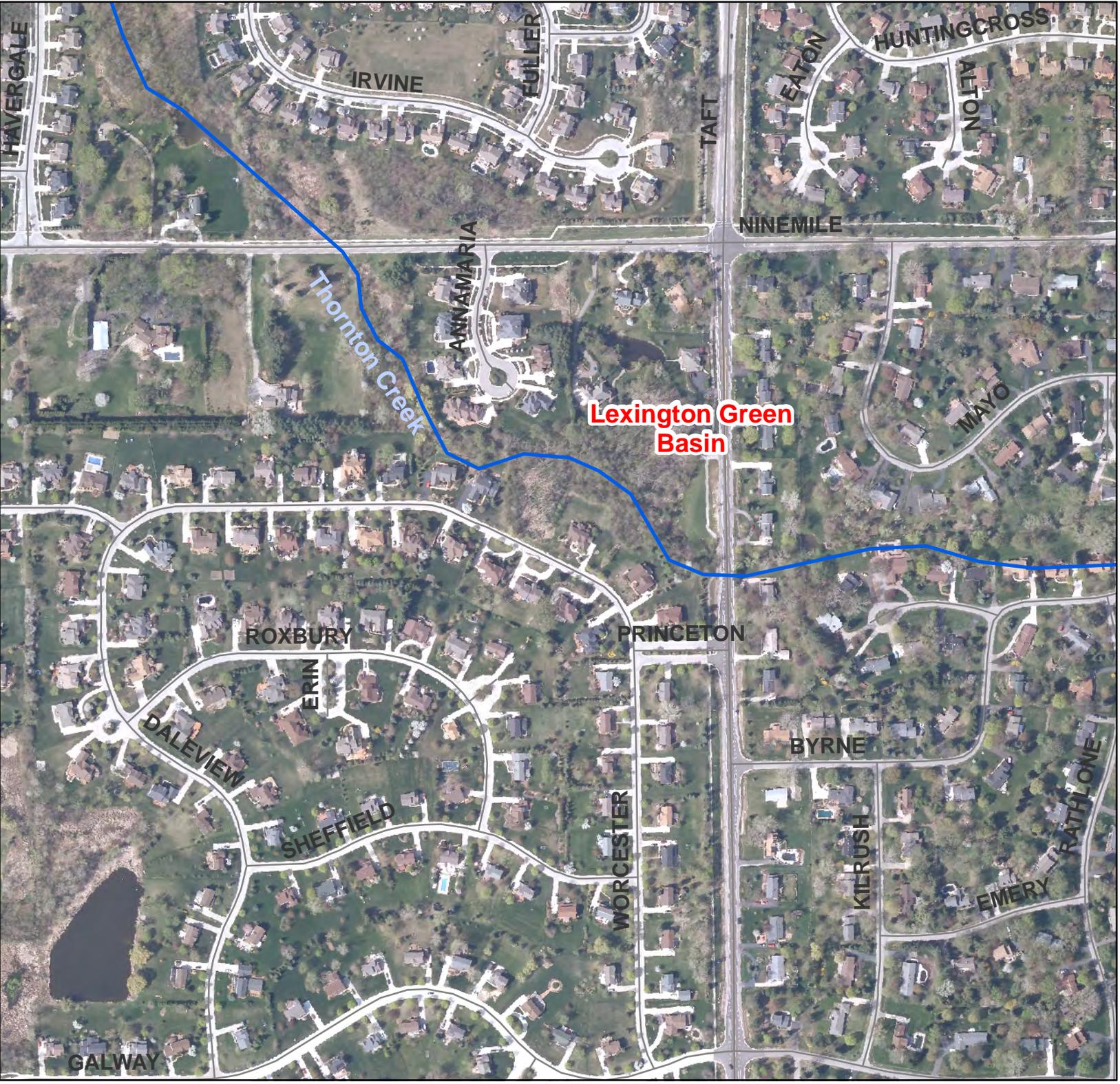
RPO Round X - Part B

Regional Basin  
Retrofits for Water  
Quality Improvements

Site Location Map  
Lexington Green Basin



-  Streams
-  Open Water



City of Novi

RPO Round X - Part B

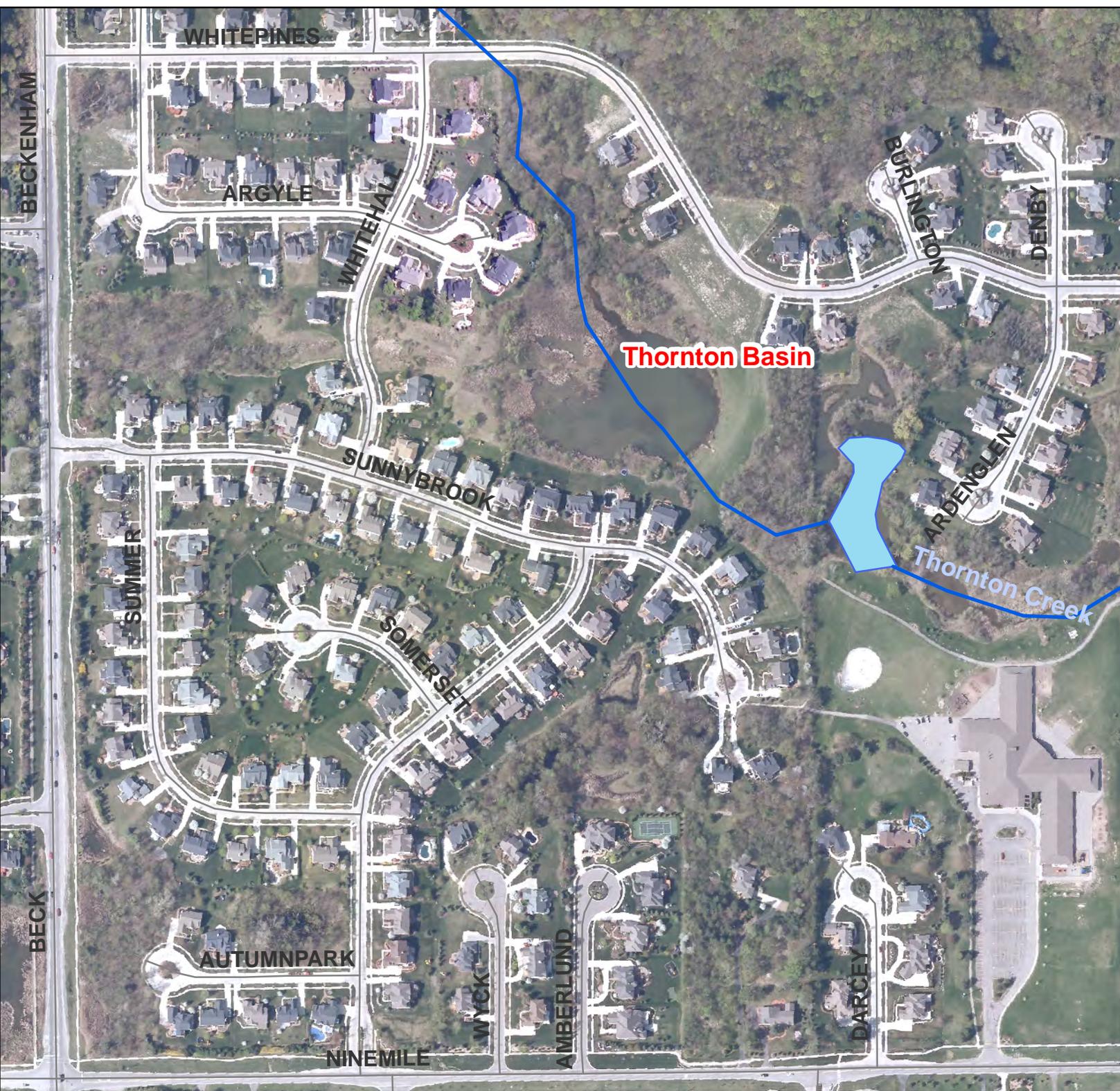
Regional Basin  
Retrofits for Water  
Quality Improvements

Site Location Map  
Thornton Basin

—

-  Streams
-  Open Water

0 250 500  
Feet



# White Pines/Whitehall Sidewalk Gaps

(Constructed with Thornton Basin Improvements)

Location Map

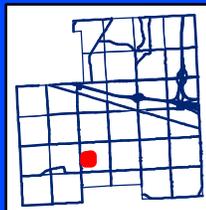


Map Author: Croy  
Date: 5/29/12  
Project: 2012 Stormwater Improvements  
Version #: v1.0



## Map Legend

Proposed Sidewalk



## City of Novi

Engineering Division  
Department of Public Services  
26300 Delwal Drive  
Novi, MI 48375  
cityofnovi.org



1 inch = 125 feet

### 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.

# Brookfarm Park



Brookfarm Park Pathway

Neighborhood Connector 2

LEGEND



Map Produced Using the  
City of Novi, Michigan  
Internet Mapping Portal



Date: 11/30/2011



### MAP INTERPRETATION NOTICE

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PAVED PATH

POTENTIAL FUTURE PATH

INGERSOL CREEK

11/9/11  
11/29/11 REV.

BBB



Robert A. Ficano  
County Executive

March 25, 2011

Mr. Benjamin Cory, P.E.  
Department of Public Services-Engineering Division  
City of Novi  
Field Services Complex  
26300 Delwal Drive  
Novi, MI 48375

**RE: Rouge River National Wet Weather Demonstration Project  
Round X, Part "B" Grant Program for Storm Water General Permit Activities  
Regional Basin Retrofits for Water Quality Improvements Project (RXB-13)**

Dear Mr. Cory:

Please find enclosed executed copy of the Inter-Agency Agreement (IAA) with associated attachments for the project indicated above. This agreement will provide funds for the Round X Project "Regional Basin Retrofits for Water Quality Improvements". Note that reports on expenditures and project status are required quarterly.

Please contact Mr. Razik Alsaigh at (313) 967-2283 regarding any issues for this project. Thank you for your participation in the Round X Projects. We look forward to continuing our support of your efforts to help restore the beneficial uses of the Rouge River.

Sincerely,

Kelly A. Cave, P.E.  
Director, Water Quality Management Division

cc: Razik Alsaigh, WCWQMD

**ROUGE RIVER NATIONAL WET WEATHER DEMONSTRATION PROJECT  
ROUGE RIVER GENERAL PERMIT PROJECTS  
GRANT AGREEMENT  
BETWEEN THE COUNTY OF WAYNE AND  
THE CITY OF NOVI**

THIS AGREEMENT is entered into this 15<sup>th</sup> day of MARCH, 2011, between the County of Wayne, Michigan, a body corporate and Charter County ("County") and City of Novi ("**Entity**").

**RECITALS**

WHEREAS, the County is the recipient of, and is responsible for the administration of certain federal grant funds referred to as the Rouge River National Wet Weather Demonstration Project Grant ("Grant").

WHEREAS, the United States Environmental Protection Agency ("USEPA") has established Grant conditions and regulations that require the County to act as the responsible party with respect to the Grant, including those provisions described within 40 CFR § 31.

WHEREAS, the USEPA will supervise the Grant and Grant conditions in order that the Grant be used in accordance with the requirements of the law.

WHEREAS, the parties have agreed to follow certain administrative procedures and cooperate on the various tasks to be undertaken in order for the County to comply with the Grant's requirements and objectives.

WHEREAS, the Rouge River National Wet Weather Demonstration Project ("Rouge Project") is a comprehensive watershed-wide program addressing wet weather pollution problems ranging from controlling combined sewer overflows ("CSO") to storm water runoff in the Rouge River.

WHEREAS, one of the purposes of the Grant is to enable the County and local units of government within the Rouge River Watershed to evaluate alternative approaches for controlling sources of water pollution.

WHEREAS, implementing the activities and projects for investigating and controlling CSOs and sanitary sewer overflows will further the Grant's goal to protect public health and improve water quality in the Rouge River.

WHEREAS, implementing the National Pollutant Discharge Elimination System (NPDES) Wastewater Discharge General Permit for Storm Water Discharges from Municipal Separate Storm Water Drainage Systems (MS4s) – Watershed General Permit (Permit No. MIG619000) or the NPDES Wastewater Discharge General Permit for Storm Water Discharges from MS4s –

Jurisdictional General Permit (Permit No. MIS049000) (“Storm Water General Permits”) issued by the Michigan Department of Natural Resources and Environment (“MDNRE”) for the local unit will further the Grant’s goal to improve water quality and recreational use of the Rouge River.

WHEREAS, illicit discharge elimination, public education and subwatershed management plan implementation are considered examples of the types of activities included in the Storm Water General Permits which will assist in restoring the water quality of the Rouge River.

WHEREAS, the *Regional Basin Retrofits for Water Quality Improvements Project*, set forth in this Agreement would further the goals of the Grant.

NOW, THEREFORE, IN CONSIDERATION OF THE MUTUAL COVENANTS CONTAINED HEREIN, the parties hereby agree as follows:

## **ARTICLE I SCOPE OF PROJECT**

1.1 The County will provide a portion of the Grant to *Entity* to enable the *Entity* to do the activities described in Attachment “A.”

1.2 The budget presented in Attachment “A” along with the scope of work presented in Attachment “A” specify the performance of the work as anticipated at the time the contract is signed.

1.3 The *Entity* agrees to submit a Final Project Summary Report at the project end to assist the County in the grant close-out process. The Final Project Summary Report should generally include:

- A. A summarized clear description of the project. In addition to the project description, the report should include the following: project objectives; major elements of the project; project products completed (project products are listed in Attachment “A”); and project highlights.
- B. Comments on how the completion of this project benefited or is projected to improve the Rouge River.
- C. A written set of recommendations to other local governments and agencies that evaluates the benefits and cost effectiveness of the project. The evaluation should consider the total project cost. The recommendations should also summarize how the project was evaluated and the evaluation results of the effectiveness of the project.
- D. Comments on how the results of this project are transferable to other communities or agencies.
- E. List of all task products completed. The list should include the official name of the products.

## **ARTICLE II SCHEDULE OF WORK**

2.1 The time frame for completion of the project milestones is contained in Attachment “A.”

**ARTICLE III  
FINANCIAL PROVISIONS AND BUDGET**

3.1 The detailed budget is contained in Attachment "A" and will be considered an approximation based on the best information available at the time of this Agreement. The internal distribution of the monies allocated among project elements may be modified by the *Entity* up to a total cumulative transfer among direct cost categories not to exceed 10% of the total budget without written approval by the County. Other modifications to the budget will be only upon written Agreement between the County and the *Entity*.

3.2 The County will provide funds from the Grant to partially fund the approved, allowed, and eligible costs for activities outlined in Attachment "A." The total amount to be provided by the County from the Grant for this project shall not exceed \$202,500.00. The *Entity* shall provide a minimum match of \$202,500.00 or 50 percent of approved costs, which may be satisfied by demonstrating either cash or in-kind services from non-federal sources.

3.3 The County will hold the final 10 to 20 percent of the total federal funds allowable to the *Entity* until the completion of the project as identified in Attachment "A" by the *Entity*. Upon completion of all the tasks by the *Entity*, the approval of the *Entity's* task products by the County, and the approval of the *Entity's* submittal of the documentation of the final project cost by the County, the remaining 10 to 20 percent of the federal funds will be reimbursed to the *Entity*.

**ARTICLE IV  
CONTRACT ADMINISTRATION AND PAYMENT**

4.1 This Agreement will be administered on a cost reimbursement basis. The *Entity* shall submit to the County project status reports and invoices on standard forms provided by the County.

4.2 All reports and invoices shall be submitted at least quarterly, no more than forty (40) days after each quarter end date. Reimbursements shall not be allowed without a status report submission.

4.3 Invoices must clearly identify:

- A. Total program outlays to the date of the invoice;
- B. The non-federal share of amount expended;
- C. The federal share of amount expended;
- D. The federal payments previously received;
- E. The reimbursements requested for the billing period;
- F. Project work element detail;
- G. Project direct costs and outside services;
- H. Time sheets for hourly employees and labor distribution sheets for salaried employees; and
- I. Documentation of all contractor costs.

4.4 The invoices must be certified for completeness and correctness by an appropriate **Entity** official.

4.5 All invoices will be paid by the County within thirty (30) days of receipt of funds from the USEPA.

4.6 The **Entity** will provide documentation to the County that demonstrates compliance with federal and state regulations before payments will be processed. The **Entity** will prepare all cost estimates for implementation of the planned activities, including a breakdown of eligible and ineligible cost items, with respect to grant funding. These cost estimates will be provided in a format to be established by the County.

4.7 The **Entity** will exercise the necessary contract oversight and administration of any subcontracts. These duties include, but are not limited to construction inspection and negotiating and executing change orders (where construction is to occur), monitoring project progress, responding to subcontractor or citizen complaints, coordinating between different subcontracts, and overseeing subcontractors' compliance with the approved project plans and specifications. These activities are to be done in accordance with procedures established by the Grant and by 40 CFR § 31.1, *et seq.*

4.8 All reports, invoices, and work products required under this Agreement will be transmitted to the Director of Water Quality Management Division, Department of Public Services, Wayne County, care of Mr. Razik Alsaigh, 400 Monroe Street, Suite 400, Detroit, Michigan 48226.

## ARTICLE V AUDIT AND ACCESS TO RECORDS

5.1 The **Entity** will maintain and retain financial records and supporting documentation in accordance with generally accepted accounting procedures and in accordance with the requirements of federal and state regulations.

5.2 The **Entity** will cooperate with and assist the County with respect to federal or state audit review related to the use of Grant funds. This cooperation shall include preservation of the necessary documentation and access to the records until federal and/or state audit resolution processes have been completed and notification of records disposal has been received by the County. The **Entity** will cooperate with the County with respect to evaluating audit findings of this Agreement.

5.3 The **Entity** will be responsible for the reimbursement of any funds required to be returned to the USEPA due to **Entity** actions or omissions, as determined by audit findings, and hold the County harmless from any repayment therefrom.

**ARTICLE VI  
GENERAL PROVISIONS**

6.1 This Agreement is expected to be funded in part with funds from the USEPA. The *Entity* will not enter into any agreements with either the United States or any of its departments, agencies, or employees, which are or will be a party to this Agreement or any lower tier sub-agreement for monies related to this specific project. This Agreement is subject to regulations contained in 40 CFR. § 31 in effect on the date of the assistance award for this project.

6.2 The *Entity* understands that the County has no funds other than the Grant funds to pay for the project costs. All costs other than the Grant funds associated with the activities which are the subject matter of this Agreement will be the responsibility of the *Entity*.

6.3 The *Entity* will cooperate with the County to ensure timely completion of the tasks undertaken as part of the project. Cooperation includes, but is not limited to sharing information and records, participation in applicable committees, and assisting in development and evaluation of water quality improvement alternatives.

6.4 The *Entity* warrants that it will comply with the provisions of 40 CFR § 31 and, as applicable, all provisions contained in the Grant. In the event there are any conflicts between the provisions of this Agreement and the terms of the Grant, the Grant terms will prevail. The fair share goals for the Grant as identified in that letter are as follows:

3% Minority Business Enterprise (MBE)    5% Woman Business Enterprise (WBE)

6.5 The *Entity* is responsible for securing all necessary permits from regulatory agencies and is responsible for obtaining any professional services necessary for the project activities. The *Entity* will act at all times in accordance with applicable federal, state, and local regulations, and will secure any permits and negotiate the terms of agreements in accordance with those requirements.

6.6 If the *Entity* secures any interest in lands, including easements, these acquisitions will be in accordance with applicable federal law and regulations including 49 CFR § 24 and state statutes related to the taking of interests in land.

6.7 With respect to construction projects, the *Entity* is responsible for conducting post-project evaluation and certifying that any construction meets the approved design criteria. These certifications will be submitted to Wayne County and the USEPA and MDNRE, where appropriate, in accordance with the Grant requirements and applicable regulations. If the project does not meet the design criteria, the *Entity* will be responsible for taking the necessary corrective measures.

6.8 The ownership of any facilities and/or infrastructure constructed and/or improved under this Agreement will remain with the *Entity*. The *Entity* agrees to operate and maintain the facility and/or infrastructure constructed and/or improved under this Agreement consistent with the Grant project goals and in accordance with the Grant conditions and requirements of applicable federal, state, and local ordinances, statutes and regulations.

6.9 The **Entity** warrants that it will comply with the provisions of 40 CFR § 31.32 relating to any equipment including computers and peripheral computer equipment purchased as part of this Grant assistance project.

6.10 Any amendment to this Agreement must be in writing, and signed and acknowledged by a duly authorized representative of each party.

6.11 The **Entity** warrants that it will comply with the provisions of 40 CFR § 31.36(d) relating to procurement of services as part of this Grant assistance project. For construction contracts the **Entity** shall use bid type contracts. For consulting contracts, the **Entity** shall use any of the four procurement procedures in the 40 CFR § 31. For most of the consulting contracts, the RFQ or RFP procurement procedure is the applicable one. The selection of the consultant can be based on qualification or on qualification and cost proposal. Upon consultant selection, procurement documentation must be submitted to the County. The procurement documentation should include:

- a. Rationale for method of procurement;
- b. Copy of advertisement, where it was published and for how long;
- c. Number of proposals received;
- d. Description of selection process (e.g., pre-established criteria of qualification, cost, or both); and
- e. Selection of type of contract to be used.

6.12 The **Entity** warrants that it will comply with the provisions of 40 CFR § 31.36(f) relating to contract cost or price of services as part of this Grant assistance project. Price/cost analysis must be performed by the **Entity** prior to award of any type of contract. The selected contractor must submit a cost proposal to the **Entity**, with cost identified by task. The cost proposal should consist of the following categories:

- a. Direct labor (with backup that establish this cost (hours and personnel));
- b. Overhead (backup to establish this rate);
- c. Other Direct Expenses (backup to establish this item);
- d. Subconsultant;
- e. Subconsultant Administrative Charge (if applicable);
- f. Total; and
- g. Fee (Fixed for a fixed fee contract).

The cost analysis consists of the **Entity** determining the reasonableness of the selected contractor's proposed cost (i.e., is the allowable overhead rate used, are correct pay rates used for employees, are expense charges accurate). Price analysis consists of the **Entity** comparing proposed prices received with other proposals submitted for this job, an independent estimate from the **Entity's** experience or cost estimate from existing master plan. Copies of price/cost analysis documentation should be submitted to the County. After completing the price/cost analysis, any type of the contracts indicated below can be executed:

- a. Cost plus fixed fee contract;
- b. Fixed price (lump sum) contract;
- c. Catalog price contracts (e.g., geotechnical investigations where the price of the tests are established in the market); or
- d. For certain contracts where the above types are not applicable, the County will allow contracts with proscribed billing rates (per diem contracts), which establishes pay rates for professional categories (e.g., Engineer I, Engineer II, Project Engineer, Field Technical Help, etc.).

These above types of contracts are applicable for the main contractor and for sub-contractors. "Cost plus a percentage of cost" and "percentage of construction cost" methods of contracting shall not be used.

## **ARTICLE VII WAIVER OF BREACH**

7.1 No failure by a party to insist upon the strict performance of any term of this Agreement or to exercise any term after a breach, constitutes a waiver of any breach of the term. No waiver of any breach affects or alters this Agreement, but every term of this Agreement remains effective with respect to any other existing or subsequent breach.

## **ARTICLE VIII TERMINATION**

8.1 This Agreement will terminate after the final audit and final resolution of any issues related thereto as described within 40 CFR §104.1, *et seq.*

8.2 This Agreement may be terminated in whole or in part in writing by the County for its convenience and/or if the **Entity** does not remain a Member in good standing (if eligible) or Cooperating Partner of the Alliance of Rouge Communities (ARC), for any reason for the duration of this Agreement. The **Entity** must be given: (1) not less than thirty (30) calendar days written notice of intent to terminate; and (2) an opportunity for consultation with the County prior to termination.

8.3 This Agreement may be terminated in whole or in part in writing by the **Entity** for its convenience. The County must be given: (1) not less than thirty (30) calendar days written notice of intent to terminate; and (2) an opportunity for consultation with the **Entity** prior to termination.

8.4 If termination is effected by the County or the **Entity**, an equitable adjustment in the Agreement price will be made. The equitable adjustment for any termination will provide for payment to the **Entity** for services rendered and expenses incurred prior to termination. Equitable adjustment also will include termination settlement costs reasonably incurred by the **Entity** and approved by the County, relating to personnel hired specifically for activities related to this Agreement, provided such costs are eligible and allowable under the terms of the Grant.

8.5 Upon receipt of a termination notice pursuant paragraphs 8.2 or 8.3, above, the **Entity** will:

(1) promptly discontinue all services affected (unless the notice directs otherwise), and (2) deliver or otherwise make available to the County all data, drawings, specifications, reports, estimates, summaries, and such other information and materials as may be accumulated by the *Entity* in performing this Agreement, whether completed or in process.

8.6 Upon termination pursuant to paragraphs 8.2 or 8.3, above, the County may take over the work and prosecute the same to completion by Agreement with another party or otherwise.

8.7 All notices of termination will be sent certified mail, postage prepaid and return receipt requested as follows:

If to the County:

Attn.: Director, Water Quality Management Division  
Wayne County Department of Public Services  
400 Monroe, Suite 400  
Detroit Michigan 48226

If to the *Entity*:

Attn.: City Engineer  
City of Novi  
26300 Delwal Drive  
Novi, MI 48375

**ARTICLE IX  
LIABILITY**

9.1 All liability, loss, or damage as a result of claims, demands, costs, or judgments arising out of activities of the *Entity* will be the sole responsibility of the *Entity* and not the responsibility of the County. Nothing herein will be construed as a waiver of any governmental immunity by the *Entity*, its agencies, or employees have as provided by statute or modified by court decisions.

9.2 All liability, loss, or damage as a result of claims, demands, costs, or judgments arising out of activities of the County will be the sole responsibility of the County and not the responsibility of the *Entity*. Nothing herein will be construed as a waiver of any governmental immunity by the County, its agencies, or employees have as provided by statute or modified by court decisions.

9.3 The provisions of Article IX shall survive the expiration or any termination of this Agreement for a period of three (3) years.

**ARTICLE X  
INSURANCE**

10.1 The *Entity* or its contractors', at its expense, must maintain during the term of this Agreement the following insurance:

- A. Professional Liability/Errors and Omissions coverage with minimum limits of One Million Dollars (\$1,000,000.00) on a claims made basis and Two Million Dollars (\$2,000,000.00) aggregate with three year tail insurance coverage.
- B. Workers' Compensation Insurance which meets Michigan statutory requirements.
- C. Commercial General Liability Insurance with minimum limits of One Million Dollars (\$1,000,000.00) per occurrence and One Million Dollars (\$1,000,000.00) aggregate for bodily injury and property damage.
- D. Commercial Automobile Liability Insurance (including hired and non-owned vehicles) with minimum limits for bodily injury of One Million Dollars (\$1,000,000.00) per occurrence and with minimum limits for property damage of Five Hundred Thousand Dollars (\$500,000.00) per occurrence.

10.2 The insurance must be effected under valid and enforceable policies, issued by recognized, responsible Michigan insurers which are well-rated by national rating organizations. Commercial General Liability and Commercial Automobile Liability Insurance policies must name the County as an additional named insured. The additional insured coverage shall be primary, non-contributory coverage and must not be canceled or materially changed without at least thirty (30) days prior notice from the *Entity* to the County. The *Entity* must submit certificates evidencing the insurance to County prior to commencing project services, and at least thirty (30) days prior to the expiration dates of expiring policies.

## ARTICLE XI NON-DISCRIMINATION

11.1 In connection with the performance of project services under this Agreement, the *Entity* must comply with:

- A. Titles VI and VII of the Civil Rights Act (42 U.S.C. §§ 2000d et. seq.) and the United States Department of Justice Regulations (28 C.F.R. Part 42) issued pursuant to those Titles.
- B. The Age Discrimination Act of 1985 (42 U.S.C. §6101-07).
- C. Section 504 of the Rehabilitation Act of 1973 (29 U.S.C. §794).
- D. The Americans with Disabilities Act of 1990 (42 U.S.C. §12101 et. seq.) and its associated regulations.
- E. The Michigan Civil Rights Act (P.A. 1976 No. 453) and the Persons With Disabilities Civil Rights Act (P.A. 1976 No. 220).

F. The anti-discrimination provisions of the Wayne County Code governing “Ethics in Public Contracting.”

11.2 *Entity* must notify any contractor of the obligations relative to non-discrimination under this Agreement when soliciting the contractor. *Entity* will include the provisions of this Article in any subcontract agreement.

11.3 The *Entity* is responsible for complying with all federal and state laws and regulations regarding competitive bidding.

## **ARTICLE XII ASSIGNABILITY**

12.1 This Agreement will be binding upon and inure to the benefit of the parties hereto and their respective heirs and assigns.

12.2 Neither of the parties hereto may assign this Agreement without the prior written consent of the other.

## **ARTICLE XIII VALIDITY**

13.1 If any provision of this Agreement or the application to any person or circumstance is, to any extent, judicially determined to be invalid or unenforceable, the remainder of the Agreement, or the application of the provision to persons or circumstances other than those as to which it is invalid or unenforceable, is not affected and is enforceable, provided the invalid provision does not substantially alter the Agreement or make execution impractical.

## **ARTICLE XIV ENTIRE AGREEMENT**

14.1 This document, including any attachments, contains the entire Agreement between the parties.

14.2 Neither party has made any representations except those expressly set forth herein.

14.3 No rights or remedies are, or will be acquired, by either party by implication or otherwise unless set forth herein.

## **ARTICLE XV PATENTS, COPYRIGHTS, AND RIGHTS IN DATA**

15.1 If this Agreement involves research, developmental, experimental, or demonstration work and any discovery or invention arises or is developed in the course of, or under this Agreement, the

*Entity* and the County shall retain joint authority to patent or license.

15.2 The parties agree that any plans, drawings, specifications, computer programs, technical reports, operating manuals, and other work submitted, or which are specified to be delivered under this Agreement, or which are developed or produced and paid for under this Agreement are subject to the rights of both parties and both parties shall retain an irrevocable license to reproduce, publish and use in whole or in part and to authorize others to do so.

15.3 This Agreement is funded in part by the USEPA and is therefore subject to the reporting and rights provisions of 40 CFR § 30 Subpart D including Appendix B and Appendix C.

15.4 This clause shall be included in all subcontracts.

**ARTICLE XVI  
JURISDICTION AND GOVERNING LAW**

16.1 This Agreement, and all actions arising from it, must be governed by, subject to, and construed according to the law of the State of Michigan.

**ARTICLE XVII  
EFFECTIVE DATES**

17.1 This Agreement becomes effective and shall allow for billing of costs incurred immediately upon signing by both parties. This Agreement, unless extended by mutual written agreement, expires on October 30, 2012. Should the USEPA require reimbursement by the County of funds transferred to the *Entity* for costs incurred prior to this Agreement, the *Entity* shall be responsible for any such reimbursement.

17.2 This Agreement may be executed in counterparts, each of which will be deemed an original but all of which together will constitute one Agreement.

**ARTICLE XVIII  
PARTY REPRESENTATIVES**

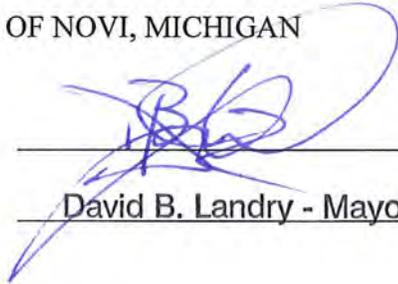
18.1 The County's representative for this Agreement is the Director of Water Quality Management Division, Department of Public Services, Wayne County. The *Entity* representative for this Agreement is the City Engineer for City of Novi. Either party may assign alternate representatives upon written notification of the other party.

IN WITNESS WHEREOF, the parties have caused this Agreement to be signed on the date first above written.

COUNTY OF WAYNE, MICHIGAN

By:   
Its: ROBERT A. FICANO  
Wayne County Executive

CITY OF NOVI, MICHIGAN

By:   
Its: David B. Landry - Mayor

## ATTACHMENT "A"

**Rouge River National Wet Weather Demonstration Project  
Round X – Part B Funding  
Regional Basin Retrofits for Water Quality Improvements (RXB-13 Sub-grant)  
City of Novi**

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### **1. PROJECT PURPOSE AND OBJECTIVES**

The Middle One Subwatershed Management Plan identifies high flow variability, sediment loading, and loss of habitat as key concerns of this Rouge River subwatershed. The goals of the detention basin improvements project are to reduce the frequency of bank full events downstream of the Leavenworth, Lexington Green, and Thornton regional storm water detention basins while also creating habitat and restoring native vegetation.

The proposed project involves designing and constructing detention basin retrofits at the Leavenworth, Lexington Green, and Thornton regional detention basins in the City of Novi. Maps of each site are attached. The Leavenworth Basin is located along Leavenworth Creek, which is tributary to the Walled Lake Branch of the Middle Rouge River. The Lexington Green and Thornton Basins are both located along Thornton Creek, which is also tributary to the Middle Rouge River. This project will include a topographic survey, a hydraulic analysis to evaluate attenuation concerns, and design and construction of improvements. The recommended improvements will be based on the hydraulic evaluation and will also include retrofitting outlet structures to provide additional regional attenuation for the more frequent events (1-year, 2-year recurrence intervals), dam modifications, habitat creation, removal of invasive species, and planting native vegetation buffers.

The lack of attenuation varies based on the storm event and is also specific to each basin. The outlet control structures for each basin will be redesigned to provide attenuation at high frequency events (i.e. 1, 2 and 10-year). By reducing the frequency of bank full events, the stream banks downstream of each basin will naturally reestablish vegetation. As vegetation is reestablished, stream banks will be impacted less by larger storm events. Water quality will be improved for both basins and their associated streams due to a decrease in unnatural sedimentation.

#### **Anticipated Impact/Benefits of the Project to the River/Subwatershed/Watershed**

The anticipated benefit of this project is to reduce the excessive storm water flows in order to reduce erosion and sedimentation while increasing habitat for fish and macroinvertebrates. Implementation of the retrofits for each basin will reduce the bank full events which will allow the banks to naturally reestablish vegetation. This will decrease erosion and sedimentation in downstream reaches of each stream. This project should also reduce the high sediment levels that contribute to the degradation of aesthetics and limit light to aquatic plants. By encouraging retrofit applications to existing detention basins, this project will be a showcase for other regional detention basins that are not performing as originally designed.

#### **Project's Consistency with the Goals and Objectives of the Subwatershed and Watershed Management Plans**

The Middle One Subwatershed Management Plan (April 2001) identifies high flow variability, sediment loading, and loss of habitat as key concerns of the subwatershed. The goals of the detention basin improvements project are to reduce the frequency of bank full events downstream of the Leavenworth, Lexington Green, and Thornton regional detention basins while also creating habitat and restoring native vegetation. More specifically, this project is focused on addressing the following goals of the Middle One Subwatershed Management Plan:

- Reduce flow variability
- Reduce nutrient loading, especially with regard to all impoundments of the Middle Rouge River
- Reduce soil erosion and sedimentation
- Protect and mitigate the loss of natural features
- Increase public understanding of their role in protecting water quality

This project also supports the following goals of the overall Rouge River Watershed Management Plan (Draft January 2009):

- Goal II: Reduce runoff impacts through sustainable storm water management strategies and programs.
- Goal III: Inform and educate the public to become watershed stewards.
- Goal IV: Protect, restore and /or enhance natural features to maintain/improve river and watershed ecosystems
- Goal V: Maximize community assets related to the watershed.

Through the efforts of the Rouge River National Wet Weather Demonstration Project, it was determined that habitat restoration, erosion control, and flow variability are some of the many factors that need to be controlled before full restoration of the river can be achieved throughout the watershed. The regional basin retrofits work towards improving these factors, thereby providing a positive impact to the watershed.

This project also fulfills an action identified in the City of Novi's Stormwater Pollution Prevention Initiative (SWPPI). Page 8 of the SWPPI states the following action: *Construction of New Detention Basins, Dredging, or Retrofitting of Existing Basins.*

### **Cooperative, Innovative, or Demonstrative Nature of the Project**

Since the project involves retrofitting three regional detention basins, it will provide a positive impact not only at each site location, but also on downstream reaches of the Middle Rouge River and its tributaries. This project is unique in that the goal is to not only provide attenuation for higher frequency flow events, but to also provide additional native vegetation and in-stream habitat improvements. At the end of the project, the City will complete a closeout report that documents the project activities, including lessons learned and before and after photographs with the intent that other communities can use this information to help them successfully implement similar projects in the future.

## **2. TASK DESCRIPTION**

### **Task #1 – Project Administration, External Coordination and Reporting**

The purpose of this task is to provide proper oversight and administration of the project in accordance with this Rouge Project subgrant agreement. Under this task, the City will procure professional services of an engineering consultant to provide design as well as construction administration and engineering services. The City of Novi will conduct the following to procure the consultant:

- Acquire a consultant as required by 40 CFR 31 (Code of Federal Regulations Volume #40, Part 31), and
- Evaluate responses according to a predetermined selection process and select the service provider based on qualifications.

Also as part of Task #1, Novi will provide quarterly progress reports with invoice documentation to Wayne County, describing each activity by task along with its status of completion.

**Deliverables:** Quarterly progress reports to Wayne County, documentation of selection procedures for the engineering consultant.

### **Task #2 – Field Investigation and Topographic Survey**

Under this task, the City of Novi and consultants will perform a field investigation at each detention basin as well as a stream bank inventory upstream and downstream of each basin. Specific work efforts include:

- Visit each basin and conduct a habitat assessment downstream of the Leavenworth, Lexington Green, and Thornton detention basins. Existing site conditions will be documented in field notes and digital photographs.
- Obtain topographic survey cross sections upstream and downstream of the three basins as well as at each basin.

**Deliverables:** Results of habitat assessment, field notes, digital photographs, topographic survey.

### **Task #3 – Conceptual Design**

Under this task, the City, with assistance from a Consultant, will evaluate the data obtained in Task #2 and develop preliminary plans for the basin retrofits at Leavenworth, Lexington Green, and Thornton Basins. The City and their Consultant will meet with the Michigan Department of Natural Resources and Environment (MDNRE) and other interested parties to obtain input during the conceptual design process. Specific work efforts include:

- The Consultant will develop conceptual design plans for improvements at the Leavenworth, Lexington Green, and Thornton detention ponds which may include retrofitting outlet structures, dam modifications, habitat creation, removal of invasive species, and planting native vegetation buffers. The City will also incorporate “no mow” signs into the design. For the Leavenworth basin, it is anticipated that the design will include corrections to the sedimentation basin and sedimentation basin outlet structure located along 11 Mile Road. Modifications to the basin outlet control structure may be warranted based on the results of the hydraulic analysis. For the Thornton Basin we anticipate the majority of the work to encompass total rebuilding of the outlet control structure. The work on the Lexington Green Basin will primarily involve minor modifications to the outlet control structure.
- The most recent MDNRE inspection reports for the Thornton and Leavenworth basins will be reviewed and comments will be addressed in the design, if applicable.
- The conceptual plans will be provided to project partners, Wayne county, regulatory agency personnel and stakeholders. The plans will be revised based on input and submitted to the MDNRE for initial comments.
- The Consultant will develop preliminary construction cost estimates for all construction elements.

**Deliverables:**

- Conceptual plans for improvements to the Leavenworth, Lexington Green, and Thornton regional detention basins,
- Initial cost estimates for the proposed improvements, and
- Summaries of meetings.

#### **Task #4 – Hydrologic and Hydraulic Analysis**

Under this task, the Consultant will develop a hydraulic model of the existing and proposed conditions at each of the three regional detention basins to determine the sizing of the basin outlet retrofits. Water surface elevations and hydraulic data will be computed to support the project design and permitting process. Stage-discharge relationships will be developed for each existing structure. The proposed retrofits will maximize attenuation by picking the smallest retrofitted outlet size that shows decreased flow rates for the smaller storms (e.g. 1-year, 2-year, 10-year) while maintaining the stage for the 100-year flow. Specific work efforts include:

- The City’s Consultant will develop a hydraulic model of the basins and the upstream/downstream channel slated for restoration for both the existing and proposed conditions. The analysis will be developed for the 1, 2, 10, 50 and 100-year storm events.
- Based on the hydraulic results, the Consultant will determine the appropriate channel and floodplain size, channel slope, in-stream habitat structures and sizes of created wetland areas and associated control structure modifications.

#### **Deliverables:**

- Completed hydrologic/hydraulic analysis for the Leavenworth, Lexington Green, and Thornton detention basins, under existing conditions and the proposed improved conditions, and
- Summary report of analysis.

#### **Task #5 – Regulatory Coordination and Permitting**

Under this task, the City, with assistance of a Consultant, will coordinate activities with the appropriate regulatory agencies. Coordination and regular meetings will be held with regulatory agencies as needed to facilitate close communication. Specific work efforts include:

- Meet with the MDNRE, Wayne County and project partners to set timetables and discuss initial concepts prior to initiating the design.
- Meetings will be held as needed to facilitate communication with the MDNRE.
- Based on the agreed upon conceptual design, the City Consultant will prepare and submit for permits.
- The Consultant will prepare permit application materials as necessary and obtain necessary construction permits.

**Deliverables:** Approved permits from all applicable agencies for construction of the improvements to the Leavenworth, Lexington Green, and Thornton regional detention basins

#### **Task #6 – Final Engineering Design and Preparation of Contract Documents**

Under this task, the Consultant will prepare a final design and contract documents to competitively bid construction of the project. Specific work efforts include:

- The Consultant will finalize the engineering design and apply for necessary permits;
- The Consultant will prepare final engineering plans and contract documents;
- The City of Novi will review the engineering plans and contract documents;
- The Consultant will incorporate City comments into the plans;
- The Consultant will forward engineering plans and contract documents to the MDNRE and Wayne County for review and comment;

- The Consultant will revise engineering plans and contract documents based on MDNRE and Wayne County’s comments;
- The Consultant will develop an Engineer’s Estimate of project costs;
- The City will advertise and bid the project for construction; and
- The Consultant will provide a recommendation of award, and the City will award the construction contract.

**Deliverables:** Permits and easements required for construction, final plans and contract documents, Engineer’s Estimate

**Task #7 – Project Construction and Construction Administration**

Under this task, the contractor will construct the improvements to the Leavenworth, Lexington Green, and Thornton regional detention basins. The City, with assistance of a Consultant, will administer and observe construction of the project. Specific work efforts include:

- Once a contractor is accepted by the City, contracts will be processed, and a pre-construction meeting will be conducted and documented;
- Contractor constructs the project per the bid plans and specifications;
- During construction, the City and Consultant will coordinate critical activities and meetings with residents, contractors, and government agencies; and
- The City and Consultant will provide appropriate construction administration and inspection services including maintenance of appropriate construction documentation and provision of overall project supervision.

**Deliverables:** Completed construction of improvements to the Leavenworth, Lexington Green, and Thornton regional detention basins.

**Task #8 – Final Project Report**

Under this task, the City, with assistance of a Consultant, will develop a final grant closeout report. The report will include a summary of the project, lessons learned, and before- and after-construction photographs.

**Deliverables:** One electronic copy of all before- and after-construction photos  
Electronic and paper copy of final project report.

**3. PROJECT COST**

The estimated total project cost for this work is \$405,000. The maximum Rouge Project federal grant funding for this project is \$202,500. A summary of the tasks with associated costs is shown in Table 1.

**Table 1: Projected Budget, Regional Basin Retrofits for Water Quality Improvements**

Task Number and Description		Task Cost	Type of Effort
1	Project Administration, External Coordination and Reporting	\$15,000	Planning
2	Field Investigation & Topographic Survey	\$12,000	Planning
3	Conceptual Design	\$10,000	Design
4	Hydrologic and Hydraulic Analysis	\$14,000	Design
5	Regulatory Coordination and Permitting	\$10,000	Design
6	Final Engineering Design and Preparation of Contract Documents	\$21,000	Design
7	Project Construction	\$260,000	Construction
8	Construction Administration	\$40,000	Oversight
9	Final Project Report	\$7,000	Evaluation
<b>Total Project Cost*</b>		<b>\$405,000</b>	
<b>Funding Percentage</b>		<b>50%</b>	
<b>Maximum Federal Grant Funds</b>		<b>\$202,500</b>	

\*Note: Total project cost includes a 4% contingency.

#### 4. LOCAL MATCH

Local match for the federal grant funds will be provided by the City of Novi through their existing Drain Fund. The minimum amount of local match provided will be 50% of the total project cost or \$202,500.

#### 5. PROJECT SCHEDULE

The project is expected to have a duration of approximately 16 months from authorization to begin work (anticipated to be April 1, 2011) with final grant reporting completion in July 2012. The detailed project schedule by task is shown in Table 2 below.

**Table2: Project Schedule, Regional Basin Retrofits for Water Quality Improvements**

Month:	Apr 2011	May 2011	Jun 2011	Jul 2011	Aug 2011	Sept 2011	Oct 2011	Nov 2011	Dec 2011	Jan 2012	Feb 2012	Mar 2012	Apr 2012	May 2012	Jun 2012	Jul 2012
Task 1: Project Administration, External Coordination and Reporting	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Task 2: Field Investigation & Topographic Survey	■	■														
Task 3: Conceptual Design		■	■													
Task 4: Hydrologic and Hydraulic Analysis		■	■													
Task 5: Regulatory Coordination and Permitting		■	■	■												
Task 6: Final Engineering Design and Preparation of Contract Documents			■	■	■	■										
Task 7: Project Construction and Construction Administration							■	■	■	■	■	■	■	■	■	■
Task 8: Final Project Report															■	■

# City of Novi

## RPO Round X - Part B

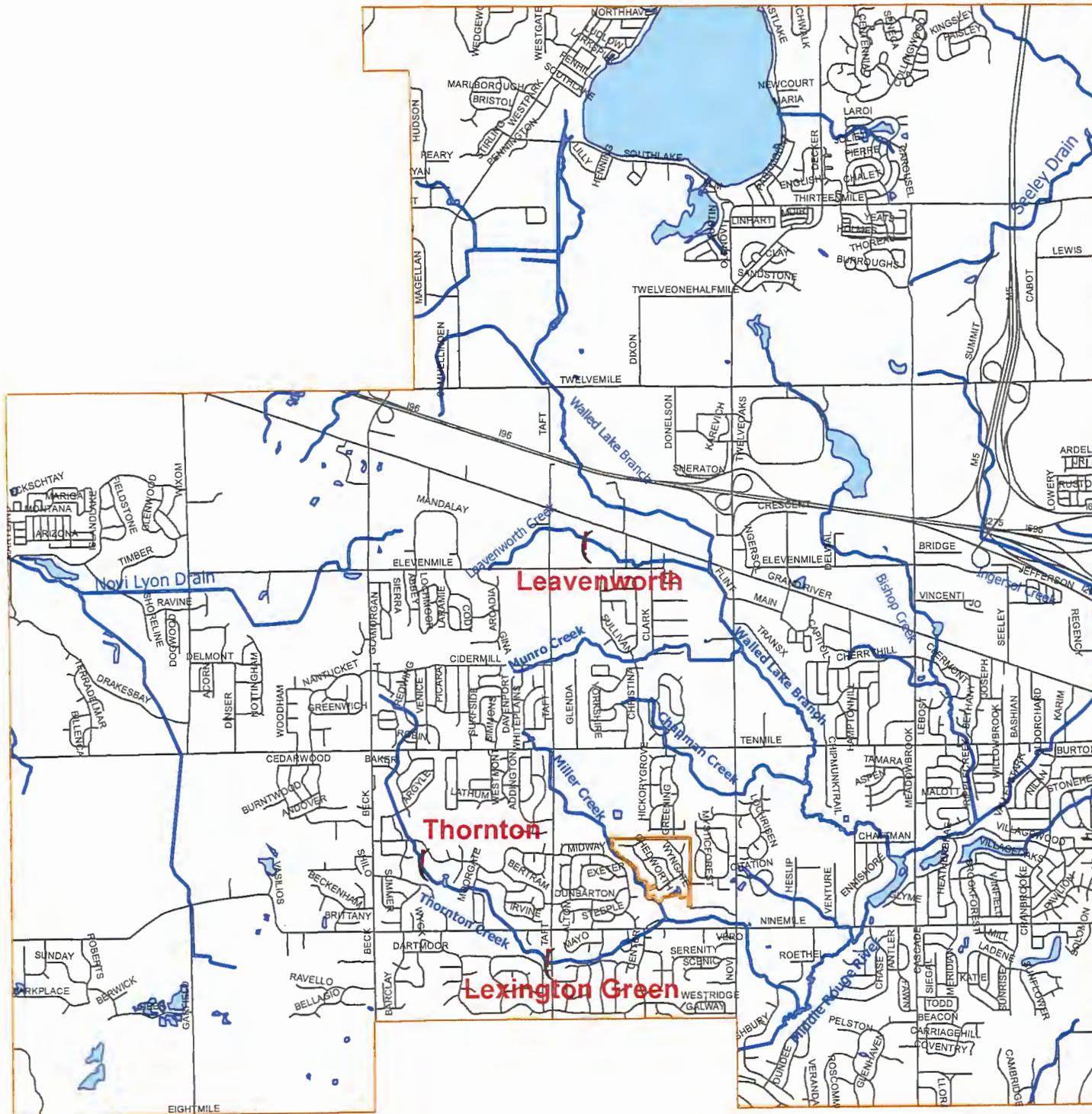
### Regional Basin Retrofits for Water Quality Improvements

#### Site Location Map

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-  Detention Basin Location
-  Streams
-  Open Water
-  City of Novi Boundary

0 0.5 1 Miles



City of Novi

RPO Round X - Part B

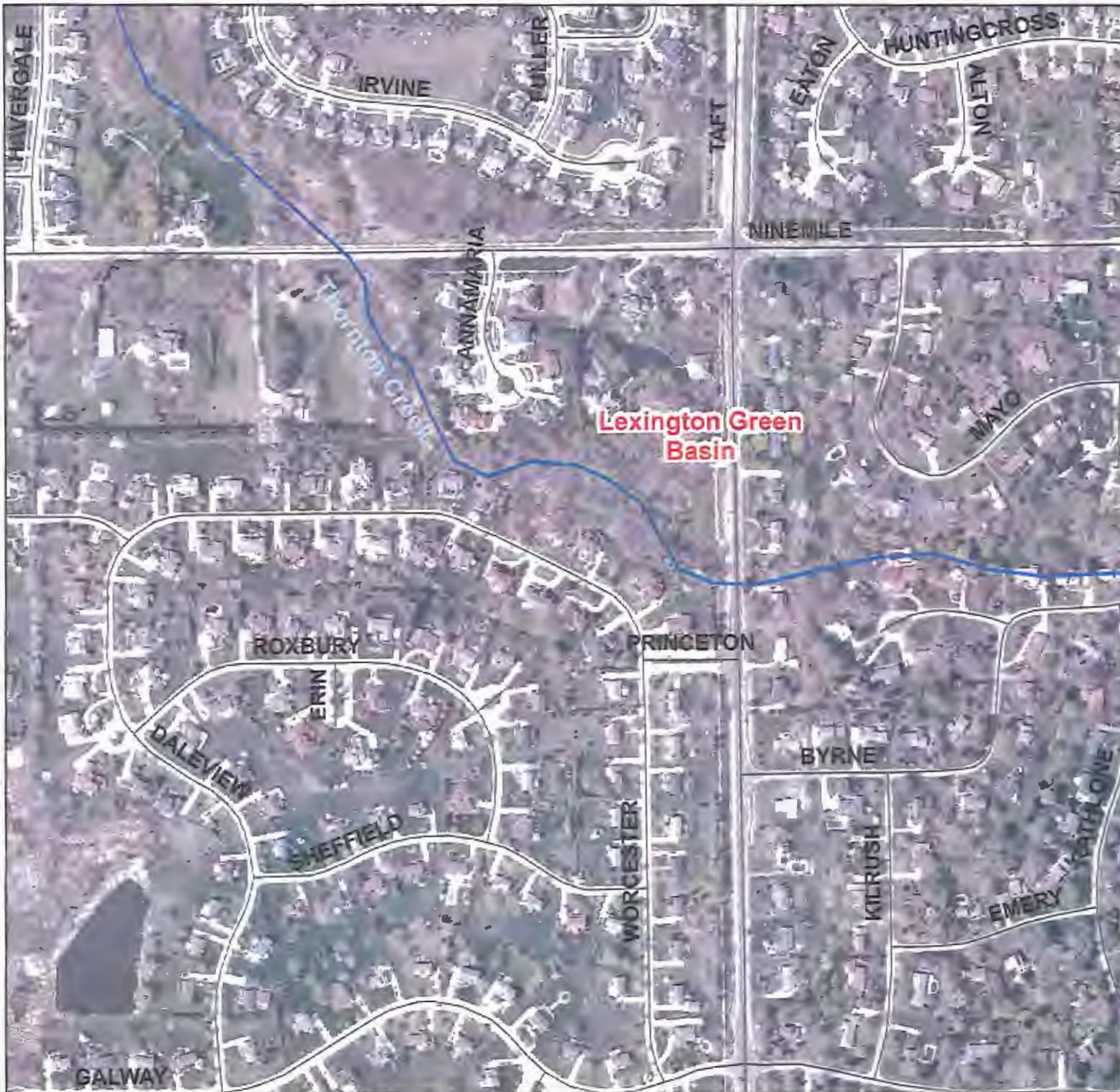
Regional Basin  
Retrofits for Water  
Quality Improvements

Site Location Map  
Leavenworth Basin



- Streams
- Open Water

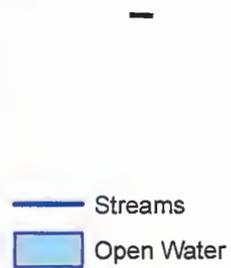


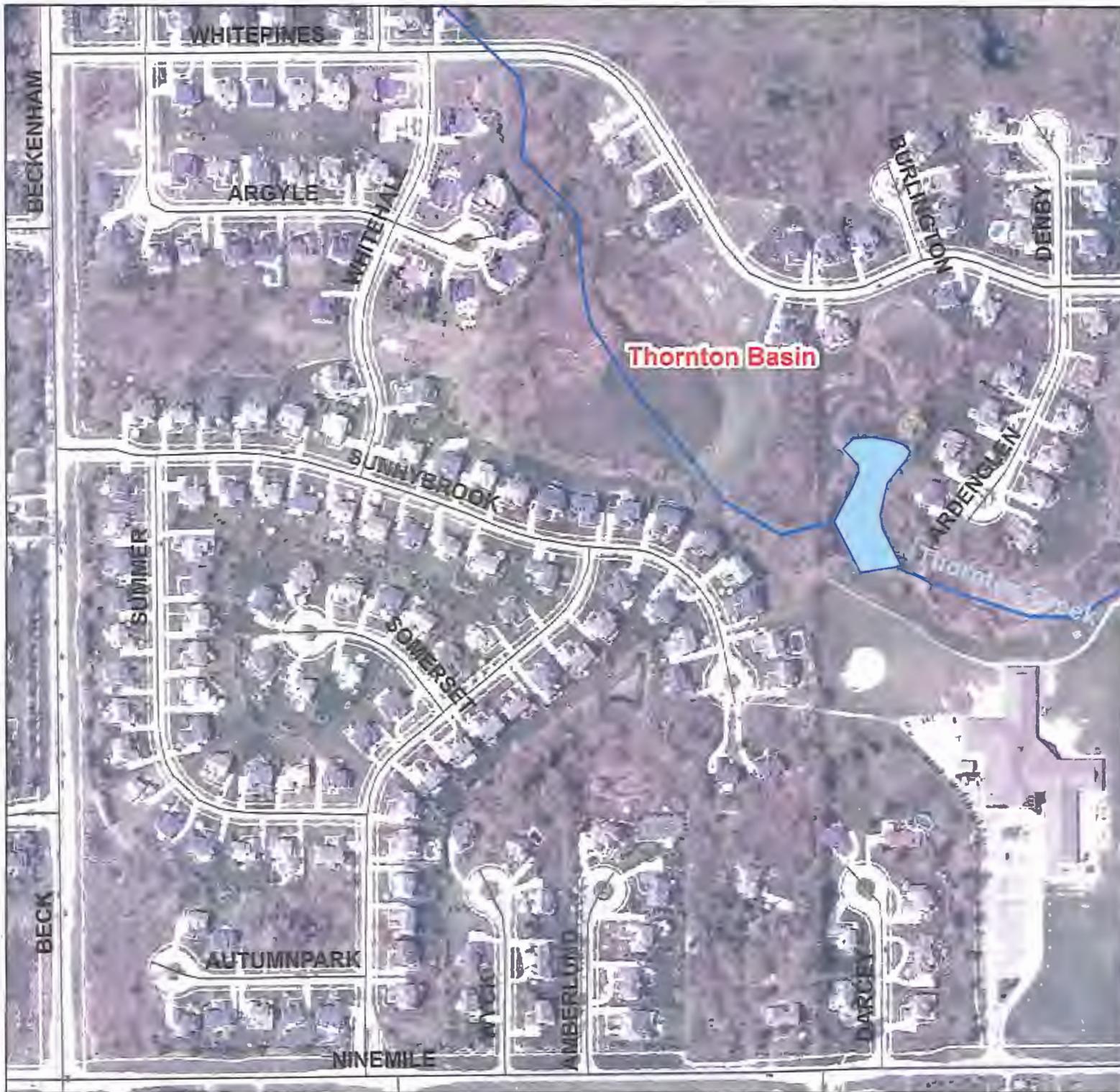


**City of Novi**  
**RPO Round X - Part B**

**Regional Basin**  
**Retrofits for Water**  
**Quality Improvements**

Site Location Map  
Lexington Green Basin





City of Novi

RPO Round X - Part B

**Regional Basin  
Retrofits for Water  
Quality Improvements**

Site Location Map  
Thornton Basin

—

- Streams
- Open Water

