

Memorandum

To: Randy Anhorn, Nine Mile Creek Watershed District
From: Janna Kieffer
Subject: 2020 Atlas 14 Model Update- Budget Overage
Date: January 14, 2021
Project: 23271819.00

At the NMCWD May 20, 2020 regular meeting, the Nine Mile Creek Watershed District (NMCWD) Board approved a scope of work for Barr to complete updates to the NMCWD’s watershed-wide XP-SWMM model (Phase 1 of the Atlas 14 Flood Risk and Resiliency project). The scope of work included incorporating recent Atlas 14 updates completed by the cities of Edina, Richfield, Bloomington, and Minnetonka into the NMCWD’s watershed-wide model and reviewing and revising model inputs (e.g., watershed divides and storm sewer information) for Eden Prairie and Hopkins (as needed).

Barr staff have completed work on updating the NMCWD’s watershed-wide XP-SWMM model and combining it into one model. A considerable amount of work was completed since late-November (the conclusion of Barr’s Period 11 invoicing period). Unfortunately, the final push to complete the project resulted in us exceeding the overall project budget. The table below summarizes the project expenditures in comparison with the approved project budget, by task. As shown in the table, the cost to complete the work exceeded the project budget, most notably in Task 2 (updating the Eden Prairie portion of the model).

Task	Description of Task	Budget Amount	Amount Spent as of 11/27/20	Amount Spent as of 12/25/20	Amount Spent as of 1/8/20	Budget Overage as of 1/8/20
1	Combine updated “city” models and creek model	\$25,000.00	\$10,042.00 ¹	\$23,054.00 ¹	\$26,042.00 ¹	\$1,042.00
2	Update Eden Prairie portion of the model	\$15,000.00	\$24,407.50	\$35,195.00	\$35,719.00	\$20,719.00
3	Review Hopkins portion of the model and update, as needed	\$5,000.00	\$3,687.50	\$4,427.00	\$4,767.00	(\$233.00)
	Total Estimated Cost	\$45,000.00	\$38,137.00 ¹	\$62,676.00 ¹	\$66,528.00 ¹	\$21,528.00

¹ Reported amount spent excludes \$2,590 which was previously written off due to some project inefficiencies related to evaluating and addressing the inconsistent level of detail of the Richfield model.

Several factors contributed to the budget overage, including some project inefficiencies related to the COVID work-at-home situation and some unanticipated additional work to incorporate the city of Richfield's model information and address some inconsistencies in subwatershed boundaries and overlap in naming conventions for subwatersheds and storm sewer in the watershed-wide model. However, the primary cause of the budget overage is related to the level of effort required to update the model in the Eden Prairie portion of the Nine Mile Creek watershed. At the time of original model development, the elevation and storm sewer data available for the portion of the watershed in Eden Prairie was very limited. As a result, the subwatershed delineations were coarser than in other areas and pond outlets and storm sewer connections throughout the area were often approximated based on historic maps or NMCWD permit files. As part of the 2020 updates, GIS storm sewer information from the City of Eden Prairie was used to refine subwatersheds and better define stormwater conveyance. However, the gaps in storm sewer conveyances along county and state roadways and on many private industrial properties required gathering and careful review of available construction drawings and elevation data, which takes a considerable amount of time. Incorporating the Southwest Light Rail (SWLRT) project into this portion of the model also took more time than anticipated due to the complex nature of these changes as it relates to grading and storm sewer conveyance. The amount of changes related to development that has occurred since building the original model also exceeded expectations, as did the amount of effort to "edge match" and verify subwatershed boundaries along the boundaries with Minnetonka and Edina and the boundary between the Purgatory Creek watershed.

This memo serves to describe the extent and reasons for the project budget overrun and inquire about the NMCWD's willingness to share in the cost of the budget overage. Barr's Period 12 invoice (November 28 – December 25) for this project requested payment of \$6,862.50, which represents the remainder of the original project budget (invoice is attached). First and foremost, we were and are committed to providing the NMCWD with a quality work product that meets the scope of work. Ultimately, we take responsibility for the project overage and underestimating the costs to complete the scope of work. However, if the NMCWD is willing to share a portion of the budget overage, additional expenditures would be included in a future invoice.



INVOICE

Barr Engineering Co.
4300 MarketPointe Drive, Suite 200
Minneapolis, MN 55435
Phone: 952-832-2600; Fax: 952-832-2601
FEIN #: 41-0905995 Inc: 1966

Mr. Randy Anhorn
 Nine Mile Creek Watershed District
 12800 Gerard Drive
 Eden Prairie, MN 55346

December 25, 2020
 Invoice No: 23271819.00 - 7

Total this Invoice	\$6,862.50
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Regarding: NMCWD Atlas 14 Flood Resilience

This invoice is for professional services, which include the following:

- Finalize subwatersheds and storm sewer updates in Eden Prairie
- "Capture" excess runoff in Eden Prairie by adding surface overflows and storage, as needed
- Richfield- converting model to Xp-SWMM, condensing subwatersheds, re-computing hydrologic parameters, capturing water, and adding the areas into the model along boundaries with Edina and Bloomington
- Subwatershed boundary adjustments in Bloomington
- Finish merging all models
- Run merged models and review results
- Prepare 100-year, 24-hour inundation layer in GIS
- Conduct QA/QC checklist reviews and address necessary model revisions

Total Contract Budget	Total Prior Billing	Billing this Invoice	Total Billing to Date	Budget Remaining
\$45,000.00	\$38,137.00	\$6,862.50	\$44,999.50	\$0.50

Professional Services from November 28, 2020 to December 25, 2020

Job: P101 Update XP-SWMM Model
 Task: 101 Combine Models

Labor Charges

	Hours	Rate	Amount
Principal			
Kieffer, Janna	1.10	170.00	187.00
	1.10		187.00
Subtotal Labor			187.00
		Total this Task	\$187.00

Task: 102 Update Hydrology

Labor Charges

	Hours	Rate	Amount
Engineer / Scientist / Specialist I			
Anderson, Edward	.20	90.00	18.00
	.20		18.00
Subtotal Labor			18.00

Total this Task \$18.00

Task: 103 Run Model and QAQC

Labor Charges

	Hours	Rate	Amount	
Principal Kieffer, Janna	4.00	170.00	680.00	
	4.00		680.00	
Subtotal Labor				680.00
				Total this Task \$680.00
				Total this Job \$885.00

Job: P102 Eden Prairie Update

Task: 101 Subwatersheds

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist I Anderson, Edward	.10	90.00	9.00	
	.10		9.00	
Subtotal Labor				9.00
				Total this Task \$9.00

Task: 102 Storm Network

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist II Fang, Lulu	1.70	105.00	178.50	
	1.70		178.50	
Subtotal Labor				178.50
				Total this Task \$178.50

Task: 103 Capture Water

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist II Baker, Kimberly	44.10	105.00	4,630.50	
Fang, Lulu	4.00	105.00	420.00	
	48.10		5,050.50	
Subtotal Labor				5,050.50
				Total this Task \$5,050.50
				Total this Job \$5,238.00

Job: P103 Hopkins Model Review

Task: 103 Model updates

Labor Charges

	Hours	Rate	Amount	
Engineer / Scientist / Specialist II Fang, Lulu	6.70	105.00	703.50	
Engineer / Scientist / Specialist I Anderson, Edward	.40	90.00	36.00	
	7.10		739.50	
Subtotal Labor				739.50
		Total this Task		\$739.50
		Total this Job		\$739.50
		Total this Invoice		\$6,862.50

Thank you in advance for your prompt processing of this invoice. If you have any questions, please contact your Barr Project Manager, Janna M. Kieffer Phone: 952-832-2785 or E-Mail: jkieffer@barr.com.