



Mr. Jim Prom
Bassett Creek Watershed Management Commission
7800 Golden Valley Road
Golden Valley, MN 55427

Page # 1
Invoice # 23270051-2019-8
Project # 23/27-0051
Client # 59
November 8, 2019

Invoice of Account with
BARR ENGINEERING COMPANY

For professional services during the period of
September 28, 2019 through November 1, 2019

ENGINEERING

TECHNICAL SERVICES

Provide Crane Lake historical water level data to Minnetonka staff and communications with city's consultant regarding OHWL, NWL and flood elevations for Crane Lake; provide Ridgedale Pond outlet concept drawings to owner; prepare for, set up Webex, and hold October 3 conference call with administrator and staff from other WMOs regarding MPCA questions about manufactured treatment devices (MTD) and MPCA response to MTD letter, and review/edit administrator's draft responses to the MPCA's MTD questions; Requirements document: finalize document update per administrator's edits/comments, create PDF of document and provide to administrator for posting on BCWMC website; communications with Golden Valley staff regarding landlocked basins in XPSWMM model; Sochacki Park: attend October 3 meeting with TRPD staff and administrator regarding Sochacki Park and subwatershed assessment for South/North Rice and Grimes Ponds, follow up communications with TRPD staff and administrator regarding meeting notes and study scope, communications with TRPD staff regarding monitoring tasks/scope, and develop draft work scope and budget and provide to administrator and TRPD staff for review; locate and provide Borton Volvo historical files to Braun; internal communications regarding storm prediction modeling, minimum building elevation requirements and parking structures, and precision of "no increase in flood level" requirement and FEMA floodway vs. floodplain mapping/extents; communications with Hennepin County staff and administrator in response to county staff questions regarding Atlas 14 and resiliency; conference call with administrator and MPCA staff regarding SWAG funding for 2020-2021 monitoring, follow-up with MPCA staff regarding SWAG funding, and communications with administrator and internal staff regarding MPCA 2020-2021 monitoring/grants and impact on BCWMC 2020 monitoring program; and communications with administrator regarding sharing MTD information with other watersheds.

James P. Herbert, Principal Engineer/Scientist		
12.3 hours @ \$195.00 per hour	\$	2,398.50
Karen L. Chandler, Principal Engineer/Scientist		
32.1 hours @ \$175.00 per hour	\$	5,617.50

Gregory J. Wilson, Consultant/Advisor 8.3 hours @ \$165.00 per hour.....	\$	1,369.50
Daniel M. Tix, Engineer/Scientist/Specialist III 0.4 hours @ \$145.00 per hour.....	\$	58.00
Margaret R. Rattei, Engineer/Scientist/Specialist III 0.3 hours @ \$135.00 per hour.....	\$	40.50
Ross S. Mullen, Engineer/Scientist/Specialist II 1.6 hours @ \$110.00 per hour.....	\$	176.00
Josh P. Phillips, Engineer/Scientist/Specialist II 2.7 hours @ \$95.00 per hour.....	\$	256.50
Technicians/Administrative.....	\$	321.50
Expenses (Mileage)	\$	<u>5.80</u>
<i>Subtotal, Technical Services.....</i>	<i>\$</i>	<i>10,243.80</i>

MONTHLY MEETING PREPARATION

Communications/coordination with administrator and internal staff regarding draft/final agenda and meeting packet for October Commission meeting; review/edit draft September meeting minutes; internal communications regarding Main Stem construction project status/memo for meeting; prepare for October Commission meeting, including pre-meeting conference call with Chair Prom and administrator and review meeting packet; and communications with administrator and internal staff regarding follow-up items from October Commission meeting and upcoming meeting agenda items.

James P. Herbert, Principal Engineer/Scientist 2.4 hours @ \$195.00 per hour.....	\$	468.00
Karen L. Chandler, Principal Engineer/Scientist 12.4 hours @ \$175.00 per hour.....	\$	2,170.00
Technicians/Administrative.....	\$	<u>500.00</u>
<i>Subtotal, Monthly Meeting Preparation.....</i>	<i>\$</i>	<i>3,138.00</i>

TAC PREPARATION

Prepare for October 4 TAC meeting, including internal communications regarding Flood Control Project inspection follow-up maintenance; follow-up from October 4 TAC meeting regarding ordinance updates, including review/edit of administrator's draft email to city staff; review/edit draft TAC monitoring goals from October 4 TAC meeting; review TAC monitoring goals, assess how BCWMC water monitoring program meets high priority goals, provide draft assessment document to administrator, and meeting with administrator regarding how BCWMC water monitoring program meets TAC monitoring goals; develop draft memo regarding TAC water monitoring goals and whether BCWMC monitoring program meets, exceeds or does not meet TAC goals; and communications with administrator regarding draft memo.

James P. Herbert, Principal Engineer/Scientist 1.0 hours @ \$195.00 per hour.....	\$	195.00
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Karen L. Chandler, Principal Engineer/Scientist 10.3 hours @ \$175.00 per hour.....	\$ 1,802.50
<i>Subtotal, TAC Preparation.....</i>	<i>\$ 1,997.50</i>
Subtotal Technical Services	\$ 15,379.30

PLAT REVIEW

Damascus Way Re-Entry Center (2019-20)

Prepare and send approval letter to city staff.

James P. Herbert, Principal Engineer/Scientist 0.5 hours @ \$195.00 per hour.....	\$ 97.50
<i>Subtotal, Damascus Way Re-Entry Center.....</i>	<i>\$ 97.50</i>

Association Free Lutheran Bible School (2019-21)

Review revised submittal; and communications with applicant regarding review comments.

James P. Herbert, Principal Engineer/Scientist 1.0 hours @ \$195.00 per hour.....	\$ 195.00
Josh P. Phillips, Engineer/Scientist/Specialist II 2.6 hours @ \$95.00 per hour.....	\$ 247.00
Tyler A. Olsen, Engineer/Scientist/Specialist I 2.9 hours @ \$85.00 per hour.....	\$ 246.50
<i>Subtotal, Association Free Lutheran Bible School</i>	<i>\$ 688.50</i>

Plymouth Senior Living (2019-24)

Plat review set up.

Technicians/Administrative.....	\$ 47.50
Expenses (Postage)	\$ 0.50
<i>Subtotal, Plymouth Senior Living</i>	<i>\$ 48.00</i>

215 Peninsula Road - WCA

Communications with applicant regarding wetland delineation questions; and schedule and conduct wetland delineation site review of 215 Peninsula Road in Medicine Lake.

Karen S. Wold, Engineer/Scientist/Specialist III 3.0 hours @ \$130.00 per hour.....	\$ 390.00
Expenses (Mileage)	\$ 17.40
<i>Subtotal, 215 Peninsula Road - WCA.....</i>	<i>\$ 407.40</i>
Subtotal Plat Review.....	\$ 1,241.40

PRELIMINARY COMMUNICATIONS AND NON-FEE REVIEWS

PRELIMINARY COMMUNICATIONS

Review three MDNR permit applications on behalf of BCWMC; communications with Minneapolis staff regarding work that did not obtain BCWMC approval; provide historic Carousel auto data; Four Seasons Mall project: communications with administrator, Plymouth staff, developer's consultant and internal staff regarding city review/approval schedule, BCWMC submittal and review, and BCWMC requirements for discharge to the North Branch; and communications with potential applicant regarding project in Medicine Lake.

James P. Herbert, Principal Engineer/Scientist 8.3 hours @ \$195.00 per hour	\$	1,618.50
Karen L. Chandler, Principal Engineer/Scientist 4.2 hours @ \$175.00 per hour	\$	735.00
Josh P. Phillips, Engineer/Scientist/Specialist II 1.7 hours @ \$95.00 per hour	\$	161.50
Subtotal, Preliminary Communications.....	\$	2,515.00

NON-FEE REVIEWS

Bassett Creek Valley

Communications with Wenck regarding project status, XP SWMM model submittal and review, and underground storage/groundwater elevations in Bryn Mawr Park; download and file model zip files; review H&H memo and provide preliminary comments to Wenck, administrator, and Minneapolis staff; internal communications regarding model review and H&H memo; and review Bassett Creek Valley XPSWMM models for seven project scenarios and provide comments to Wenck, administrator, and Minneapolis staff.

Karen L. Chandler, Principal Engineer/Scientist 6.8 hours @ \$175.00 per hour	\$	1,190.00
Ross S. Mullen, Engineer/Scientist/Specialist II 4.7 hours @ \$110.00 per hour	\$	517.00
Michael B. McKinney, Engineer/Scientist/Specialist II 0.2 hours @ \$105.00 per hour.....	\$	21.00
<i>Subtotal, Bassett Creek Valley.....</i>	<i>\$</i>	<i>1,728.00</i>
Subtotal Non-Fee Reviews	\$	1,728.00
Subtotal Preliminary Communications and Non-Fee Reviews	\$	4,243.00

COMMISSION AND TAC MEETINGS

Attend October 4 TAC meeting, and October 17 Commission meeting.

Karen L. Chandler, Principal Engineer/Scientist 5.7 hours @ \$175.00 per hour	\$	977.50
Gregory J. Wilson, Consultant/Advisor 6.0 hours @ \$165.00 per hour	\$	990.00

Margaret R. Rattei, Engineer/Scientist/Specialist III 3.0 hours @ \$135.00 per hour.....	\$ 405.00
Expenses (Mileage)	\$ 29.00
Subtotal, Commission and TAC Meetings.....	\$ 2,421.50

SURVEYS & STUDIES

Water Monitoring Program Review

Finalize presentation regarding past/current water monitoring program for October 4 TAC meeting; meeting with internal staff; and communications with administrator.

Karen L. Chandler, Principal Engineer/Scientist 2.9 hours @ \$175.00 per hour.....	\$ 507.50
Margaret R. Rattei, Engineer/Scientist/Specialist III 4.0 hours @ \$135.00 per hour.....	\$ 540.00
<i>Subtotal, Water Monitoring Program Review.....</i>	<i>\$ 1,047.50</i>
Subtotal Surveys & Studies.....	\$ 1,047.50

WATER QUALITY/MONITORING

Cavanaugh and Northwood Lakes Monitoring

Analyze phytoplankton sample collected from Northwood Lake on September 10; perform computations for zooplankton sample collected from Cavanaugh Lake on September 10; analyze zooplankton sample collected from Northwood Lake on August 6, perform computations and prepare graphs; review lab results and lab quality assurance data, communications with lab, and file the lab report; and lab analysis expenses.

Terri A. Olson, Engineer/Scientist/Specialist III 0.8 hours @ \$140.00 per hour.....	\$ 112.00
Margaret R. Rattei, Engineer/Scientist/Specialist III 5.3 hours @ \$135.00 per hour.....	\$ 715.50
Technicians/Administrative.....	\$ 99.00
Expenses (Pace Analytical Services)	\$ 281.00
<i>Subtotal, Cavanaugh and Northwood Lakes Monitoring</i>	<i>\$ 1,207.50</i>

North Branch Monitoring Year 2

Download and review storm event sample data; collect grab sample on October 24; and review and approve MCES lab fees.

Christopher J. Bonick, Engineer/Scientist/Specialist III 3.5 hours @ \$125.00 per hour.....	\$ 437.50
Heather N. Hlavaty, Engineer/Scientist/Specialist II 1.2 hours @ \$100.00 per hour.....	\$ 120.00

Technicians/Administrative.....	\$	27.00
Expenses (MCES/Verizon Wireless/mileage/2WD vehicle)	\$	<u>1,284.00</u>
<i>Subtotal, North Branch Monitoring Year 2</i>	\$	<i>1,868.50</i>
<i>Subtotal, Water Quality/Monitoring.....</i>	\$	<i>3,076.00</i>

WATER QUANTITY

Review Crane Lake benchmark changes over time and add information to spreadsheet; and measure and review lake level elevations as part of the lake-gauging program.

Technicians/Administrative.....	\$	<u>860.00</u>
<i>Subtotal, Water Quantity.....</i>	\$	<i>860.00</i>

FLOOD CONTROL PROJECT ANNUAL INSPECTION & DOUBLE BOX CULVERT INSPECTION

Annual inspection: communications and coordination with city staff regarding inspection, prepare for and perform annual inspection of flood control project features, and follow up, including uploading inspection photos; Double box culvert inspection: communications and coordination with city staff and USACOE staff regarding inspection, prepare for and perform every-five-year inspection of double box culvert, upload data, prepare report, and subcontractor expenses for emergency standby rescue services (Rescue Resources).

James P. Herbert, Principal Engineer/Scientist 6.7 hours @ \$195.00 per hour	\$	1,306.50
Joseph A. Welna, Engineer/Scientist/Specialist III 39.0 hours @ \$135.00 per hour	\$	5,265.00
Patrick E. Brockamp, Engineer/Scientist/Specialist II 10.7 hours @ \$105.00 per hour	\$	1,123.50
Nathaniel J. Born, Engineer/Scientist/Specialist II 17.5 hours @ \$95.00 per hour	\$	1,662.50
Josh P. Phillips, Engineer/Scientist/Specialist II 10.5 hours @ \$95.00 per hour	\$	997.50
Alec D. Bateman, Engineer/Scientist/Specialist I 17.4 hours @ \$80.00 per hour	\$	1,392.00
Technicians/Administrative.....	\$	1,946.00
Expenses (Rescue Resources/mileage/combust gas indicator/gloves).....	\$	<u>3,434.00</u>

Subtotal, Flood Control Annual Proj Inspect&Dbl Box Culvert \$ 17,127.00

MUNICIPAL PLAN REVIEWS

Review status of Crystal ordinance updates and communications with city staff regarding status; and review Plymouth ordinance updates.

Karen L. Chandler, Principal Engineer/Scientist 1.3 hours @ \$175.00 per hour	\$	227.50
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Sterling 'Greg' Williams, Engineer/Scientist/Specialist III
 7.0 hours @ \$140.00 per hour \$ 980.00
Subtotal, St. Louis Park Plan \$ 1,207.50
Subtotal, Municipal Plan Reviews \$ **1,207.50**

TOTAL ENGINEERING \$ **46,603.20**

WATERSHED OUTLET MONITORING PROGRAM (WOMP)

Prepare for flow measurement.

Christopher J. Bonick, Engineer/Scientist/Specialist III
 0.5 hours @ \$125.00 per hour \$ 62.50
Subtotal, Watershed Outlet Monitoring Program \$ 62.50
TOTAL WOMP \$ **62.50**

APM/AIS WORK

Provide 2019 AIS monitoring result files (including plant lists) to administrator.

Margaret R. Rattei, Engineer/Scientist/Specialist III
 0.7 hours @ \$135.00 per hour \$ 94.50
TOTAL APM/AIS WORK \$ **94.50**

CAPITAL IMPROVEMENT PROJECTS (Funded through tax levy)

FOUR SEASONS AREA WQ PROJECT (NL-2)

Communications with administrator, Plymouth staff, developer's consultant and internal staff regarding city review/approval schedule, BCWMC submittal and review, and BCWMC requirements.

James P. Herbert, Principal Engineer/Scientist
 2.4 hours @ \$190.00 per hour \$ 468.00
 Karen L. Chandler, Principal Engineer/Scientist
 3.4 hours @ \$175.00 per hour \$ 595.00
Subtotal, Four Seasons Area WQ Project (NL-2) \$ **1,063.00**

SCHAPER POND 2018 MONITORING AND REPORTING (SL-3)

Complete report regarding 2018-19 monitoring and carp surveys, prepare presentation for October Commission meeting; and follow up on carp barriers.

Karen L. Chandler, Principal Engineer/Scientist 2.3 hours @ \$175.00 per hour	\$ 402.50
Gregory J. Wilson, Consultant/Advisor 14.6 hours @ \$165.00 per hour	\$ 2,409.00
Subtotal, Schaper Pond 2018 Monitoring and Reporting	\$ 2,811.50

MAIN STEM DREDGING PROJECT FEASIBILITY STUDY (2021) (BC-7)

Prepare agency meeting details and invite list; communications with USACOE staff regarding project concepts; internal meetings regarding sediment testing parameters; prepare wetland delineation figures (desktop review); survey follow up, including updating CAD files; communications with administrator, MPRB staff and internal staff regarding appropriate level of cultural resources for feasibility study; prepare for and conduct sediment sampling (including expenses), and follow up discussions; update XP SWMM model; and prepare and send project email updates.

Karen L. Chandler, Principal Engineer/Scientist 5.8 hours @ \$175.00 per hour	\$ 1,015.00
Jennifer L. Brekken, Consultant/Advisor 1.3 hours @ \$155.00 per hour	\$ 201.50
Terri A. Olson, Engineer/Scientist/Specialist III 1.4 hours @ \$140.00 per hour	\$ 196.00
Shanna R. Braun, Engineer/Scientist/Specialist III 0.5 hours @ \$135.00 per hour	\$ 67.50
John W. Juntilla, Engineer/Scientist/Specialist II 17.6 hours @ \$120.00 per hour	\$ 2,112.00
Kevin D. Menken, Engineer/Scientist/Specialist II 21.5 hours @ \$115.00 per hour	\$ 2,472.50
Patrick E. Brockamp, Engineer/Scientist/Specialist II 7.1 hours @ \$105.00 per hour	\$ 745.50
Lulu Fang, Engineer/Scientist/Specialist II 3.6 hours @ \$95.00 per hour	\$ 342.00
Joshua R. Vosejpk, Engineer/Scientist/Specialist I 1.0 hours @ \$85.00 per hour	\$ 85.00
Tyler A. Conley, Engineer/Scientist/Specialist I 3.0 hours @ \$75.00 per hour	\$ 225.00
Technicians/Administrative	\$ 655.00
Expenses (Mileage/4WD field vehicle/differential GPS system/jon boat/trailer/trolling motor/Vibra-Coring System)	\$ 873.76
Subtotal, Main Stem Dredging Project Feasibility Study	\$ 8,990.76

MOUNT OLIVET STREAM STABILIZATION PROJECT (2021)(ML-20) AND PARKERS LAKE DRAINAGE IMPROVEMENT PROJECT (2021)(PL-7) FEASIBILITY STUDY

Mount Olivet Stream Stabilization Project Feasibility Study (2021)(ML-20)

Perform literature review for cultural and historical resources; perform threatened and endangered species review; prepare for topographic survey; and internal meetings to discuss concept options.

Karen L. Chandler, Principal Engineer/Scientist 0.3 hours @ \$175.00 per hour	\$	52.50
Jeffrey D. Weiss, Engineer/Scientist/Specialist III 0.6 hours @ \$130.00 per hour	\$	81.00
Kallie B, Doeden, Engineer/Scientist/Specialist I 3.4 hours @ \$95.00 per hour	\$	323.00
Kaitin B. Hatlestad, Engineer/Scientist/Specialist I 8.8 hours @ \$75.00 per hour	\$	660.00
Tyler A. Conley, Engineer/Scientist/Specialist I 0.2 hours @ \$75.00 per hour	\$	15.00
Technicians/Administrative.....	\$	120.00
Expenses (Mileage)	\$	<u>14.50</u>
<i>Subtotal, Mount Olivet Stream Stabilization Project Feas Study.....</i>		<i>\$ 1,266.00</i>

Parkers Lake Drainage Improvement Project (2021)(PL-7)

Perform literature review for cultural and historical resources; perform threatened and endangered species review; prepare for topographic survey; review P8 modeling; review TRPD chloride data for flows entering Parker's Lake; perform literature review regarding sensitivity of vegetation to chloride concentrations, in consideration of potential irrigation/re-use options; and internal meetings to discuss concept options.

Karen L. Chandler, Principal Engineer/Scientist 0.3 hours @ \$175.00 per hour	\$	52.50
Jennifer A. Koehler, Engineer/Scientist/Specialist III 2.9 hours @ \$140.00 per hour	\$	406.00
Jeffrey D. Weiss, Engineer/Scientist/Specialist III 0.6 hours @ \$130.00 per hour	\$	81.00
Kallie B, Doeden, Engineer/Scientist/Specialist I 2.9 hours @ \$95.00 per hour	\$	275.50
Samantha A. Beck, Engineer/Scientist/Specialist I 0.6 hours @ \$80.00 per hour	\$	48.00
Kaitin B. Hatlestad, Engineer/Scientist/Specialist I 8.7 hours @ \$75.00 per hour	\$	652.50
Tyler A. Conley, Engineer/Scientist/Specialist I 0.3 hours @ \$75.00 per hour	\$	22.50
Technicians/Administrative.....	\$	<u>120.00</u>
<i>Subtotal, Parkers Lake Drainage Improvement Project Feas Study</i>		<i>\$ 1,658.00</i>

**Subtotal, Mt. Olivet Stream Stabilization Project & Parkers
 Lake Drainage Improvement Project Feasibility Study.....\$ 2,924.00**

SWEENEY LAKE WATER QUALITY IMPROVEMENT PROJECT (2020) (SL-8)

Communications with administrator responding to questions from commissioner Harwell, alternate commissioner McDonald Black, Golden Valley staff and residents regarding Sweeney Lake alum treatment, curly-leaf pondweed, wake boats, and aquatic plant surveys; internal communications regarding impacts of alum treatment on curly-leaf pondweed; prepare map of 2017 extents of curly-leaf pondweed in Sweeney Lake; and internal communications regarding 2017 extents of Eurasian watermilfoil.

Gregory J. Wilson, Consultant/Advisor 2.8 hours @ \$165.00 per hour	\$	462.00
Margaret R. Rattei, Engineer/Scientist/Specialist III 1.2 hours @ \$135.00 per hour	\$	162.00
Kelly A. Wild, Engineer/Scientist/Specialist II 2.5 hours @ \$95.00 per hour	\$	237.50
Subtotal, Sweeney Lake Water Quality Improvements.....	\$	861.50

TOTAL CAPITAL IMPROVEMENTS PROJECTS (Tax Levy)\$ 16,650.76

TMDL WORK

TMDL IMPLEMENTATION REPORTING

Update watershed files for Parkers Lake and Plymouth Creek.

Gregory J. Wilson, Consultant/Advisor 1.3 hours @ \$165.00 per hour	\$	214.50
<i>Subtotal, TMDL Implementation Reporting</i>	<i>\$</i>	<i>214.50</i>
TOTAL TMDL WORK	\$	214.50

IMPROVED FEMA FLOODPLAIN MODELING & MAPPING (MDNR)

IMPROVED FEMA FLOODPLAIN MODELING & MAPPING (MDNR)

Hydrologic Analysis

Finalize the model hydrology based on MDNR staff comments.

Ross S. Mullen, Engineer/Scientist/Specialist II 2.3 hours @ \$110.00 per hour	\$	253.00
<i>Subtotal, Hydrologic Analysis.....</i>	<i>\$</i>	<i>253.00</i>

Develop Depth Grids

Prepare model output data for input into the mapping process; and develop Quality Control Plan for verification of mapping of road, culvert, and other hydraulic structures.

Ross S. Mullen, Engineer/Scientist/Specialist II
 18.1 hours @ \$110.00 per hour..... \$ 1,991.00

Joshua R. Vosejka, Engineer/Scientist/Specialist I
 0.5 hours @ \$85.00 per hour \$ 42.50

Subtotal, Develop Depth Grids..... \$ 2,033.50

Develop Project Narrative

Update the project narrative and project documentation to address the MDNR's and the Interagency Hydrology Review Committee's review comments.

Karen L. Chandler, Principal Engineer/Scientist
 0.2 hours @ \$175.00 per hour \$ 35.00

Ross S. Mullen, Engineer/Scientist/Specialist II
 0.6 hours @ \$110.00 per hour \$ 66.00

Subtotal, Develop Project Narrative \$ 101.00

Community Meetings

Review limited detail vs. detailed mapping of waterbodies historically mapped by FEMA as limited detail; and review implications of limited vs. detailed mapping for communities, including different water surface elevations, additional structures impacted, and enforcement of municipal floodplain policies.

Ross S. Mullen, Engineer/Scientist/Specialist II
 5.0 hours @ \$110.00 per hour \$ 550.00

Subtotal, Community Meetings..... \$ 550.00

TOTAL IMPROVED FEMA FLOODPLAIN MODELING & MAPPING (MDNR).....\$ 2,937.50

SUMMARY TOTALS

Total Engineering\$ 46,603.20

Total WOMP.....\$ 62.50

Total APM/AIS Work.....\$ 94.50

Total TMDL Work\$ 214.50

Total Capital Improvement Projects (Tax Levy).....\$ 16,650.76

Total Improved FEMA Floodplain Modeling & Mapping (MDNR).....\$ 2,937.50

TOTAL PAYABLE.....\$ 66,562.96

Barr declares under the penalties of law that this account, claim or demand is just and that no part of it has been paid.


