

**Waterbody and Watershed Quality Category**

| <p style="color: #4F81BD;">Impaired Waters – High Priority</p>   |   |   |  |  |
|--|---|---|--|--|
| <p><b>Issue Statement:</b> Some lakes and streams within the Bassett Creek watershed do not meet State water quality standards; some are listed as impaired for aquatic life function and recreational use due to pollutants such as nutrients, chloride, bacteria, and other stressors.</p> |   |   |  |  |
| Desired Future Condition   | Goal (10-year)  | Strategy, Action, or Task (some potential examples; <b>highlight</b> = new activity) – estimated costs in 2023 dollars  | Notes/Timeframe/ Discussion Items  | Plan TAC comments  |
| <p>Water quality in priority waterbodies meets or is better than applicable State water quality standards</p>  | <p>Achieve State eutrophication standard in Medicine Lake (see table)</p> | <ul style="list-style-type: none"> <li>- Assess TMDL implementation status and existing conditions (\$ TBD; scope being developed)</li> <li>- Manage curly-leaf pondweed in Medicine Lake (\$14,000)</li> <li>- Assess feasibility/perform alum treatment to manage sediment TP load - CIP</li> <li>- Identify and implement stormwater treatment projects in tributary subwatersheds – CIP</li> <li>- Provide education to lake homeowners including shoreland restoration workshops – <b>new activity (\$5,000)</b></li> <li>- Encourage/fund buffers on private lakeshore property – <b>new activity (\$10,000)</b></li> <li>- Monitor Medicine Lake water quality (\$14,000 every 3 years)</li> <li>- Review development and redevelopment projects for compliance with BCWMC standards (fee for service)</li> <li>- Ensure compliance with BCWMC standards (enforce/inspect) – <b>new activity (\$ unknown)</b></li> </ul> | <p>Discussion about including values in goal statement at 10/4 PSC meeting; consensus decision to reference a table as there are multiple standards and they may change.</p> <p>Reminder to review overall water monitoring and schedule during discussion of implementation tasks.</p> <p>Ensure compliance w/ standards could include: confirming SOPs w/cities for meeting MS4 requirements; Commission inspections when needed or requested;</p> | <p>BWSR – What about unimpaired waters? They might deserve their own issue so that protection actions can be included. Also need to think about prioritizing “nearly/barely” impaired waters – those within 10% of impairment threshold.</p> <p>[We don’t have any “nearly/barely” nutrient impairments]</p> |

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| Desired Future Condition   | Goal (10-year)   | Strategy, Action, or Task (some potential examples; <b>highlight</b> = new activity) – estimated costs in 2023 dollars   | Notes/Timeframe/ Discussion Items  | Plan TAC comments   |
|  |  |  | annual meeting w/ each member city   |   |
|  | <p>Make statistically significant improvement in water quality toward achieving State eutrophication standards (see table) in:</p> <ul style="list-style-type: none"> <li>- Northwood Lake</li> <li>- Lost Lake</li> </ul> | <ul style="list-style-type: none"> <li>- Perform subwatershed analyses for Lost and Northwood Lakes (or cooperate on TMDL) – <b>new activity (one time \$50,000 possible estimate)</b></li> <li>- Identify and implement stormwater treatment projects in tributary subwatersheds – CIP</li> <li>- <b>Provide education to lake homeowners including shoreland restoration workshops <b>new activity (\$5,000)</b></b></li> <li>- Encourage/fund buffers on private lakeshore property - <b>new activity (\$10,000)</b></li> <li>- Monitor water quality of Lost and Northwood (\$71,000 every 3 years)</li> <li>- Review development and redevelopment projects for compliance with BCWMC standards – fee for service</li> <li>- Ensure compliance with BCWMC standards (enforce/inspect) – <b>new activity (\$ unknown)</b></li> </ul> | <p>Discussion at 10/4 PSC meeting to add, but not define, “significant” to goal text; significant could mean a statistically significant improving trend is identified.</p> <p>Consider implementing a cost-share grant program for shoreline buffers (Dakota SWCD has good example).</p> <p>Reminder to review overall water monitoring and schedule during discussion of implementation tasks.</p> | <p>MCES – What does “significant” mean? Consider changing to percent toward WQ goal. – Staff: Without SWA or TMDL, can’t assign load reduction goal</p> <p>BWSR – Consider changing metric to pollutant load reduction due to lag time in seeing water quality results. – Staff: Without SWA or TMDL, can’t assign load reduction goal</p> <p>GW/Barr – Consider statistically significant improving trend?</p> |

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| <p><b>Issue Statement:</b> Some lakes and streams within the Bassett Creek watershed do not meet State water quality standards; some are listed as impaired for aquatic life function and recreational use due to pollutants such as nutrients, chloride, bacteria, and other stressors.</p> |   |   |   |  |
| Desired Future Condition   | Goal (10-year)  | Strategy, Action, or Task (some potential examples; <b>highlight</b> = new activity) – estimated costs in 2023 dollars  | Notes/Timeframe/ Discussion Items   | Plan TAC comments  |
|  | <p>Maintain current conditions or improve water quality in priority lakes currently meeting State eutrophication standards:</p> <ul style="list-style-type: none"> <li>- Cavanaugh Pond, Crane Lake, Parkers Lake, Sweeney Lake, Twin Lake, Westwood Lake, Wirth Lake,</li> </ul> | <ul style="list-style-type: none"> <li>- Monitor water quality of priority waterbodies (\$30,000/lake every 1 to 3 years)</li> <li>- Cooperate on any future TMDLs – <b>new activity (\$ unknown)</b></li> <li>- Review development and redevelopment projects for compliance with BCWMC standards – fee for service</li> <li>- <b>Ensure compliance with BCWMC standards (enforce/inspect) – new activity (\$ unknown)</b></li> <li>- Education and outreach to watershed residents (\$46,000 current education programs)</li> </ul> | <p>Reminder to review overall water monitoring and schedule during discussion of implementation tasks.</p>            | <p>BWSR – “Maintain or improve” language is interesting; cost/level of effort differs to maintain versus improve waters.</p> <p>MCES – Take this to mean that work in these subwatersheds wouldn’t be priority but opportunistic.</p> <p>Staff: Use adaptive mgmt.; watch trends; Twin Lake good example of protective actions</p> |
|  | <p>Reduce sources of bacteria to Bassett Creek Main Stem, North Branch Bassett Creek, Plymouth Creek, and Sweeney Branch Bassett Creek</p>  | <ul style="list-style-type: none"> <li>- Establish baseline of bacteria concentrations – <b>new activity (\$20,000 possible estimate)</b></li> <li>- Identify possible sources – <b>new activity (\$20,000 possible estimate)</b></li> <li>- Install signage regarding pet waste and other best practices to reduce bacterial loading - \$0 (city expense)</li> <li>- Identify and implement projects to improve shoreline integrity along priority streams (indirect benefit) – CIP</li> </ul>                                       | <p>Check Bacteria TMDL for other implementation ideas</p> <p><b>Consider banning new dog parks in floodplains</b></p> | <p>BWSR – Consider changing metric to address frequency or number of chronic exceedances. Consider focusing on fewer streams.</p> <p>MPLS – Bacteria is ubiquitous; consider focusing goal on desired</p>  |

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| <p><b>Issue Statement:</b> Some lakes and streams within the Bassett Creek watershed do not meet State water quality standards; some are listed as impaired for aquatic life function and recreational use due to pollutants such as nutrients, chloride, bacteria, and other stressors.</p> |   |   |                                   |  |
| Desired Future Condition   | Goal (10-year)  | Strategy, Action, or Task (some potential examples; <b>highlight</b> = new activity) – estimated costs in 2023 dollars  | Notes/Timeframe/ Discussion Items | Plan TAC comments  |
|  |   | <ul style="list-style-type: none"> <li>- Continue to participate in the Metropolitan Council’s watershed outlet monitoring program (WOMP) (\$27,000)</li> <li>- Education and outreach to watershed residents (\$46,000 current education programs)</li> <li>- Promote goose management (coordinates with lakeshore management)</li> </ul>  |                                   | <p>outcomes (e.g., public health)</p> <p>MDH – studies have found that pet waste is not as big a contributor to bacteria concentrations as expected; goal may be too ambitious; consider revising goal to focus on understanding or (MPRB suggestion) identifying human health issues.</p> |
|  | <p>Maintain or improve water quality in priority streams to achieve State eutrophication standards (see table) – Bassett Creek Main Stem, North Branch Bassett Creek, Plymouth Creek, and Sweeney Branch Bassett Creek.</p> | <ul style="list-style-type: none"> <li>- Identify and implement projects to improve shoreline integrity along priority streams - CIP</li> <li>- Identify and implement watershed stormwater treatment projects - CIP</li> <li>- Continue to participate in the Metropolitan Council’s watershed outlet monitoring program (WOMP) (\$27,000)</li> <li>- Review development and redevelopment projects for compliance with BCWMC standards – fee for service</li> </ul> | -                                 | No specific comments.  |

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| <b>Issue Statement:</b> Some lakes and streams within the Bassett Creek watershed do not meet State water quality standards; some are listed as impaired for aquatic life function and recreational use due to pollutants such as nutrients, chloride, bacteria, and other stressors. |  |   |  |  |
| Desired Future Condition  | Goal (10-year)   | Strategy, Action, or Task (some potential examples; <b>highlight = new activity</b> ) – estimated costs in 2023 dollars   | Notes/Timeframe/ Discussion Items  | Plan TAC comments  |
|   |  | <ul style="list-style-type: none"> <li>- Ensure compliance with BCWMC standards (enforce/inspect) – <b>new activity (\$ unknown)</b></li> <li>- Education and outreach to watershed residents (\$46,000 current education programs)</li> </ul>  |  |  |
|   | Maintain total phosphorus loading to the Mississippi River of 0.35 lb/acre/year or less (as defined in the Lake Pepin TMDL)  | <ul style="list-style-type: none"> <li>- Identify and implement watershed stormwater treatment projects - CIP</li> <li>- Continue to participate in the Metropolitan Council’s watershed outlet monitoring program (WOMP) (\$27,000)</li> <li>- Review development and redevelopment projects for compliance with BCWMC standards - fee for service</li> <li>- Ensure compliance with BCWMC standards (enforce/inspect) – <b>new activity (\$ unknown)</b></li> </ul> | <ul style="list-style-type: none"> <li>- Lake Pepin TMDL</li> <li>- Clarify in plan on who is responsible for this outcome. It’s likely a city MS4 permit requirement</li> </ul> | No specific comments.  |
|   | Maintain or improve macroinvertebrate indices of biological integrity (MIBI) in priority streams (see table) – Bassett Creek Main Stem, North Branch Bassett Creek, Plymouth Creek, and Sweeney Branch Bassett Creek | <ul style="list-style-type: none"> <li>- Encourage/fund buffers on private riparian property – <b>new activity (\$10,000)</b></li> <li>- Identify and implement projects to stabilize degraded riparian areas – CIP/channel maintenance funds</li> <li>- Continue MIBI monitoring (\$8,000)</li> <li>- Data review to identify areas/zones where specific stressors are most significant – <b>new activity (\$10,000 possible estimate)</b></li> </ul>                | <ul style="list-style-type: none"> <li>-</li> </ul>  | MPCA – This goal makes sense; so many impacts it’s difficult to meet stds. Stressor identification study is in process.<br><br>Henn Co – Stressor identification info could help prioritize streams closer to meeting std. |

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| <p><b>Issue Statement:</b> Some lakes and streams within the Bassett Creek watershed do not meet State water quality standards; some are listed as impaired for aquatic life function and recreational use due to pollutants such as nutrients, chloride, bacteria, and other stressors.</p> |  |   |  |  |
| Desired Future Condition   | Goal (10-year)   | Strategy, Action, or Task (some potential examples; <b>highlight</b> = new activity) – estimated costs in 2023 dollars  | Notes/Timeframe/ Discussion Items  | Plan TAC comments  |
|  |  | <ul style="list-style-type: none"> <li>- Incorporate elements to improve in-stream habitat or address stream impairment stressors on all stream-focused BCWMC capital improvement projects - CIP</li> <li>- Review development and redevelopment projects for compliance with BCWMC standards – fee for service</li> <li>- Ensure compliance with BCWMC standards (enforce/inspect) – <b>new activity (\$ unknown)</b></li> </ul> |  | <p>KC/Barr – suggested that the goal tie into stream restoration projects.</p> |
|  | <p>Maintain or improve lake floristic quality indices (FQIs) and number of species towards achieving State standards for aquatic vegetation in Cavanaugh Pond, Crane Lake, Lost Lake, Medicine Lake, Northwood Lake, Parkers Lake, Sweeney Lake, Twin Lake, Westwood Lake, and Wirth Lake (see table).</p> | <ul style="list-style-type: none"> <li>- Vegetation surveys of priority lakes (\$1,500)</li> <li>- In-lake aquatic plant management (e.g., AIS treatment) (see AIS issue below)</li> <li>- Education and outreach to watershed residents (\$46,000 current education programs)</li> </ul>   | <p>New item not included at 10/4/23 PSC meeting</p>  | <p>BWSR – this goal may also be related to the lakeshore erosion issue.</p>    |
|  | <p>Maintain or improve fish index of biologic integrity for applicable priority lakes</p>  |   | <p>Med Lake on 2024 draft impaired list for fish bioassessments. Need to determine for which lakes this standard applies</p> |  |

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Summary of Priority Lake Eutrophication Data vs. State Standards

| Priority Lake                    | State Std<br>TP (ug/L) | Current Condition<br>TP (ug/L) <sup>1</sup> | State Std<br>Chl a (ug/L) | Current Condition<br>Chl a (ug/L) <sup>1</sup> | State Std<br>Secchi (m) | Current Condition<br>Secchi (m) <sup>1</sup> |
|----------------------------------|------------------------|---|---------------------------|--|-------------------------|--|
| Cavanaugh Pond                   | 60                     | 39  | 20                        | 9.1  | ≥1.0                    | 1.8  |
| Crane Lake                       | 60                     | 28  | 20                        | 7.0  | ≥1.0                    | 0.9 <sup>4</sup>                             |
| <b>Lost Lake</b>                 | 60                     | <b>95</b>                                   | 20                        | <b>50</b>                                      | ≥1.0                    | <b>0.8</b>                                   |
| <b>Medicine Lake<sup>2</sup></b> | 40                     | <b>54</b>                                   | 14                        | <b>30</b>                                      | ≥1.4                    | 1.8  |
| <b>Northwood Lake</b>            | 60                     | <b>223</b>                                  | 20                        | <b>72</b>                                      | ≥1.0                    | <b>0.7</b>                                   |
| Parkers Lake                     | 40                     | 27  | 14                        | 11   | ≥1.4                    | 2.8  |
| Sweeney Lake <sup>3</sup>        | 40                     | 34  | 14                        | 14   | ≥1.4                    | 1.6  |
| Twin Lake                        | 40                     | 15  | 14                        | 3.6  | ≥1.4                    | 3.5  |
| Westwood Lake                    | 60                     | 32  | 20                        | 4.9  | ≥1.0                    | 1.3  |
| Wirth Lake                       | 40                     | 28  | 14                        | 8.1  | ≥1.4                    | 2.8  |

TP = total phosphorus; Chl a = chlorophyll a; SD = Secchi disc transparency

Red = does not meet standard/goal

(1) Based on summer average data collected 2013-2022

(2) Main basin

(3) North basin

(4) Crane Lake Secchi disc depth is limited due to dense aquatic plant growth impeding travel of the Secchi disc

Summary of Priority Stream Water Quality Data vs. State Standards

| Priority Stream              | State Std<br>TP (ug/L) | Current<br>Condition<br>TP (ug/L) <sup>1</sup> | State Std<br>TSS<br>(mg/L) | Current<br>Condition<br>TSS (mg/L) | State Std<br>E. coli<br>(#/100 mL) <sup>2</sup> | Current<br>Condition<br>(#/100 mL) |
|------------------------------|------------------------|--|----------------------------|------------------------------------|---|------------------------------------|
| Bassett Creek Main Stem      | 100                    | <b>195</b>                                     | 30                         | 19.7                               | 126   | <b>168</b>                         |
| North Branch Bassett Creek   | 100                    | 91   | 30                         | <b>73</b>                          | 126   | --                                 |
| Plymouth Creek               | 100                    | <b>227</b>                                     | 30                         | 23.8                               | 126   | <b>853</b>                         |
| Sweeney Branch Bassett Creek | 100                    | <b>101</b>                                     | 30                         | 21.4                               | 126   | <b>257</b>                         |

TP = total phosphorus; TSS = total suspended solids; E. coli = Escherichia coli

Current condition is based on data collected from: 2013-2022 for Main Stem Bassett Creek, 2018 for North Branch Bassett Creek, 2020 for Sweeney Branch Bassett Creek, and 2022 for Plymouth Creek

Red = does not meet standard/goal

(1) based on summer average values (June through September)

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(2) 126 organisms per 100 mL as a geometric mean of not less than five samples within any month, nor shall more than 10% of all samples within a month exceed 1,260 organisms per 100 mL (note that BCWMC monitoring is limited to fewer than 5 samples per month)

(3) A stream is considered impaired if two or more measurements exceed the chronic criterion (230 mg/L ) within a 3-year period or if one measurement exceeds the acute criterion (860 mg/L)

**Summary of Priority Stream Macroinvertebrate Data vs. State Standards**

| Priority Stream              | Location                | State Std MIBI | Current Condition MIBI <sup>1</sup> | Years of Current MIBI |
|------------------------------|-------------------------|----------------|-------------------------------------|-----------------------|
| Bassett Creek Main Stem      | East of Brookridge      | ≥37            | 22.9                                | 2015, 2018            |
| Bassett Creek Main Stem      | Irving Avenue           | ≥37            | 22.0                                | 2015, 2018            |
| Bassett Creek Main Stem      | Rhode Island Avenue     | ≥37            | 17.6                                | 2015, 2018            |
| North Branch Bassett Creek   | 34 <sup>th</sup> Street | ≥37            | 23.0                                | 2015, 2018            |
| Plymouth Creek               | Industrial Park Blvd    | ≥37            | 15.9                                | 2015, 2022            |
| Sweeney Branch Bassett Creek | Woodstock Avenue        | ≥43            | 45.5                                | 2015, 2020            |

MIBI = Macroinvertebrate Index of Biological Integrity

State MIBI standards are based on “general use” category for Class 5 southern high-gradient streams (MIBI = 37) or Class 6 southern forest low-gradient stream (MIBI = 43)

Red = does not meet standard/goal

(1) based on average of listed years

**Summary of Priority Lake Floristic Quality Index (FQI) and Species Richness vs. State Standards**

| Priority Lake  | State Std FQI | Most Recent FQI <sup>1</sup> | 10-year Average FQI <sup>2</sup> | State Std Species Richness | Most Recent Species Richness <sup>1</sup> | 10-year Average Species Richness <sup>2</sup> | Year of Most Recent Data | Years of Average Data  |
|----------------|---------------|------------------------------|----------------------------------|----------------------------|---|---|--------------------------|------------------------|
| Cavanaugh Pond | >17.8         | 25.0                         | 25.0                             | 11                         | 19  | 19  | 2019                     | 2019                   |
| Crane Lake     | >17.8         | 18.6                         | 18.8                             | 11                         | 13.5                                      | 14  | 2021                     | 2016, 2021             |
| Lost Lake      | >17.8         | 20.6                         | 11.8                             | 11                         | 8.0                                       | 14.5  | 2022                     | 2017, 2022             |
| Medicine Lake  | >18.6         | 27.6                         | 25.3                             | 12                         | 21  | 23.5  | 2020                     | 2016, 2020             |
| Northwood Lake | >17.8         | 14.1                         | 14.5                             | 11                         | 11.2                                      | 11  | 2022                     | 2016, 2019, 2022       |
| Parkers Lake   | >18.6         | 19.5                         | 18.9                             | 12                         | 13  | 13  | 2021                     | 2018, 2021             |
| Sweeney Lake   | >18.6         | 25.2                         | 21.7                             | 12                         | 15.3                                      | 19.5  | 2020                     | 2014, 2017, 2019, 2020 |
| Twin Lake      | >18.6         | 28.3                         | 24.7                             | 12                         | 19  | 23  | 2020                     | 2014, 2017, 2019, 2020 |
| Westwood Lake  | >17.8         | 20.1                         | 19.0                             | 11                         | 13.7                                      | 15.5  | 2021                     | 2015, 2018, 2021       |
| Wirth Lake     | >17.8         | --                           | --                               | 11                         | --  | --  | --                       | --                     |



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FQI = Floristic Quality Index; FQI is a measure of the quality of aquatic vegetation

Red = does not meet standard/goal based on 10-year average FQI

- (1) Reflects the average of June and August measurements during the most recent monitoring year
- (2) Reflects average of all measurements in the 10-year period from 2014-2023

| Chloride Loading – High Priority   |  |  |                                   |   |
|--|--|--|-----------------------------------|---|
| <b>Issue Statement:</b> High chloride loading from use of winter deicers across the Bassett Creek watershed negatively impacts lakes streams, and groundwater water quality. |  |  |                                   |   |
| Desired Future Condition   | Goal (10-year)   | Strategy, Action, or Task (some potential examples; <b>highlight</b> = new activity)   | Notes/Timeframe/ Discussion Items | Plan TAC comments   |
| Priority waterbodies meet applicable State chloride standards  | Reduce chloride loading to and concentrations in lakes and streams at risk of chloride impairment and those not meeting State standards. | <ul style="list-style-type: none"> <li>- Perform subwatershed analyses for chloride-impaired lakes to identify pollution hotspots and to target implementation – <b>new activity (\$75,000 possible estimate)</b></li> <li>- Aside from the above, identify waterbodies and/or subwatersheds at greatest risk to chloride pollution or impairment (overlays?) – <b>new activity (\$10,000 possible estimate)</b></li> <li>- <b>Incentivize/require Smart Salt training – new activity (\$2,000)</b></li> <li>- <b>Require winter maintenance plans for applicable projects/locations – new activity \$0</b></li> <li>- Develop/identify/require(?) design strategies to minimize salt use – <b>new activity (\$10,000 possible estimate)</b></li> <li>- Update development and redevelopment standards (watershed-wide or select areas?) – <b>new activity (\$ unknown; could do during plan development)</b></li> </ul> |                                   | <p><u>Goals:</u><br/>Consider changing “vulnerable” to “at risk”</p> <p>Henn Co – Or reword to “vulnerable to chloride impairment” and define as a % of standard.</p> <p>MPRB – Could you use trend in the goal?</p> <p><u>Strategies:</u><br/>MPLS – Comes down to public education regarding expectations with snow and ice so client demand can change.</p> <p>Questions about city equipment – brining or</p> |

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|  |   |  |   |   |
|--|---|--|---|---|
|  |   | <ul style="list-style-type: none"> <li>- Develop plans for priority waterbodies similar to Parkers Lake Chloride Reduction Study – <b>new activity (\$45,000 per lake)</b></li> <li>- Education targeted to private applicators – <b>new activity (\$10,000)</b></li> <li>- Monitor chlorides in priority waterbodies (\$ included with monitoring budgets)</li> <li>- Provide or improve methods for residents to report oversalting – <b>new activity</b></li> </ul> |   | <p>certain blades? Could provide \$ for equip upgrades.</p> <p>Plym: noted that chloride load can vary even in high density land uses; SSTS upgrades might be a strategy.</p> |
|  | Reduce average chloride concentrations in Bassett Creek by 10% at the Watershed Outlet Monitoring Program (WOMP) station. | <ul style="list-style-type: none"> <li>- <i>All action items from goal above</i></li> </ul>  | - | See above comments.   |

Summary of Priority Lake Chloride Data vs. State Standards

| Priority Waterbody                           | State Chronic Std Chloride (mg/L) | Current Condition Average Chloride <sup>1</sup> (mg/L) | State Acute Std Chloride (mg/L) | Current Condition Maximum Chloride <sup>2</sup> (mg/L) | Number of Observations |
|--|-----------------------------------|--|---------------------------------|--|------------------------|
| Cavanaugh Pond                               | 230                               | 59   | 860                             | 70   | 12                     |
| <b>Crane Lake<sup>4</sup></b>                | 230                               | 718  | 860                             | 820  | 6                      |
| Lost Lake                                    | 230                               | 31   | 860                             | 33   | 12                     |
| Medicine Lake                                | 230                               | 162  | 860                             | 375  | 318                    |
| Northwood Lake                               | 230                               | 104  | 860                             | 274  | 12                     |
| <b>Parkers Lake<sup>4</sup></b>              | 230                               | 257  | 860                             | 716  | 103                    |
| <b>Sweeney Lake<sup>4</sup></b>              | 230                               | 276  | 860                             | 371  | 48                     |
| Twin Lake                                    | 230                               | 117  | 860                             | 139  | 26                     |
| Westwood Lake                                | 230                               | 81   | 860                             | 99   | 12                     |
| Wirth Lake                                   | 230                               | 200  | 860                             | 512  | 306                    |
| <b>Bassett Creek Main Stem<sup>3,4</sup></b> | 230                               | 165  | 860                             | 664  | 259                    |
| North Branch Bassett Creek                   | 230                               | 88   | 860                             | 219  | 12                     |
| Plymouth Creek                               | 230                               | 180  | 860                             | 382  | 25                     |
| Sweeney Branch Bassett Creek                 | 230                               | 218  | 860                             | 348  | 18                     |

Red = does not meet standard/goal

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(1) Based on all measurements 2013-2022

(2) Based on maximum concentration observed between 2013-2022

(3) As measured at watershed outlet monitoring program (WOMP) location

(4) A stream is considered impaired if two or more measurements exceed the chronic criterion within a 3-year period or if one measurement exceeds the acute criterion

| Streambank and Gully Erosion – Medium Priority  |  |  |  |   |
|---|--|--|--|---|
| <b>Issue Statement:</b> Excessive erosion along streambanks and gullies negatively impacts stream geomorphology, water quality, aquatic habitat, and floodplain function..        |  |  |  |   |
| Desired Future Condition  | Goal (10-year)   | Strategy, Action, or Task (some potential examples; <b>highlight</b> = new activity)   | Notes/Timeframe/ Discussion Items  | Plan TAC comments   |
| Streambanks and gullies throughout the watershed are naturally stable with no excessive erosion that negatively impact the beneficial functions of waterbodies or infrastructure. | Achieve stable streambanks along all priority streams (Bassett Creek Main Stem, North Branch Bassett Creek, Plymouth Creek, and Sweeney Branch Bassett Creek) such that streambanks are not contributing to pollution downstream nor threatening infrastructure or public health.<br><br>Stabilize gullies that most significantly contribute to reduced water quality downstream. | <ul style="list-style-type: none"> <li>- Monitor and evaluate stream habitat and macroinvertebrate communities. (\$8,000/creek)</li> <li>- Biennially assess the condition of streambanks along BCWMC priority streams and prioritize areas for action – <b>new activity</b> (\$25,000 possible estimate)</li> <li>- Monitor and evaluate impact of eroding streambanks and gullies on water quality in downstream impaired waters including lakes and streams <b>partially new activity</b> (\$ unknown)</li> <li>- Identify and implement streambank restoration projects to stabilize banks, limit erosion, and improve ecological health - CIP</li> <li>- Continue setting aside funds in Channel Maintenance Fund – (\$25,000)</li> <li>- Require vegetated buffers adjacent to priority streams for projects triggering BCWMC review (ensure enforcement of existing stream buffer standards) \$0</li> </ul> | <p>No change to current buffer standards proposed.</p> <p>Could consider mechanism to enforce buffer requirements or audit city's enforcement</p> <p>Discussion about possible need for more specificity in goal. Agreed not needed.</p> | <p>MCES – Is there an inventory to know if goal is feasible? (Staff discussed how BCWMC has completed restorations on most streambanks and how some cities do annually evaluate streambanks. All agreed it's a feasible 10-year goal)</p> <p>Discussion: this goal &amp; lakeshore restoration goal are tied closely to goals in impaired waters issue. Consider restoration as a strategy to address impaired waters rather than a separate issue with its own goal. MPRB noted that if combined, does that impact priority?</p> |

| Lakeshore Erosion – Medium Priority  |  |  |  |  |
|--|--|--|--|--|
| Issue Statement: Erosion along lake shorelines degrades water quality and negatively impacts lake ecology. |  |  |  |  |
| Desired Future Condition   | Goal (10-year)   | Strategy, Action, or Task (some potential examples; highlight = new activity)  | Notes/Timeframe/ Discussion Items  | Plan TAC Input   |
| <p>Shorelines along priority lakes have buffers with native vegetation and no excessive erosion.</p>       | <p>Establish a baseline of lakeshore conditions along all priority lakes.</p> <p>Increase percentage of properties with native buffers on nutrient impaired lakes.</p> | <ul style="list-style-type: none"> <li>- Inventory lakeshore conditions in priority lakes – new activity (\$10,000/lake)</li> <li>- Provide education to lake homeowners including shoreland restoration workshops – new activity (\$5,000)</li> <li>- Encourage/fund buffers on public or private lakeshore property – new activity (\$10,000)</li> <li>- Sponsor vegetated buffer project for purpose of public education for shoreland property owners and general public (need more info)</li> <li>- Support existing city/partner programs to stabilize shorelines</li> </ul> | <p>Shoreland habitat monitoring program was not approved for implementation (upon TAC recommendation) in Jan 2017. (TAC indicated cities already perform these types of surveys but there’s no evidence or reporting of that activity)</p> | <p>TRPD – It’s valuable to keep specific lakeshore goal separate and not get “lost” within other goals and issues.</p> <p>DNR – It’s good to see investment in buffer establishment. DNR is working to update its information on buffers, hoping to increase participation in buffer establishment. (DNR followed up by email with additional information.)</p> <p>Plym – Could consider a goal of percentage <u>and</u> linear feet</p> |

| Wetland Health and Restoration – Medium Priority  |   |   |   |  |
|---|---|---|---|--|
| Issue Statement: The function, value and quantity of wetlands within the Bassett Creek watershed have been negatively impacted by development and the changing climate. |   |   |   |  |
| Desired Future Condition  | Goal (10-year)  | Strategy, Action, or Task (some potential examples; highlight = new activity)   | Notes/Timeframe/ Discussion Items   | Plan TAC Comments  |
| Wetland function and values are sustained and enhanced, and no additional wetland acres are lost to development.  | Establish baseline wetland conditions through watershed wide wetland inventory and assessment; identify priority wetlands | <ul style="list-style-type: none"> <li>- Inventory wetlands and their conditions throughout watershed</li> <li>- Require vegetated buffers adjacent to wetlands for projects triggering BCWMC review \$0</li> <li>- Ensure enforcement of existing wetland buffer standard – new activity (\$ unknown)</li> <li>- Assist partners with education to residents on wetland health and native buffers – (\$46,000 current education programs)</li> </ul> | <p>BCWMC must identify priority wetlands within this plan [decide process for that]</p> <p>Reference wetland maps</p> <p>BCWMC is the WCA LGU in Robbinsdale, Med Lake, SLP</p> <p>NMCWD wetland assessment and prioritization could be used as model</p> | <p>Plym – Wetland Conservation Act allows for wetland loss so perhaps Desired Future Condition shouldn't say "no loss."</p> <p>HennCo – "No loss" in the Desired Future Condition is appropriate as a "reach goal".</p> <p>Discussion about how it's not feasible to require wetland mitigation in the BCWMC boundaries.</p> |
|   | Restore or enhance priority wetlands as opportunities arise or adjacent CIP projects are planned                          | <ul style="list-style-type: none"> <li>- Work with cities to create list of priority wetlands in need of restoration</li> <li>- Encourage cities to restore or enhance wetlands during city projects or through development processes - \$0</li> <li>- Identify opportunities for wetland restoration and enhancement through BCWMC CIP projects</li> </ul>   |   |  |

| Aquatic Invasive Species – Medium Priority  |  |  |  |
|---|--|--|--|
| Issue Statement: Aquatic invasive species (AIS) present in the Bassett Creek watershed negatively impact water quality, lake and stream ecology, and <u>are exacerbated by climate resiliency trends.</u> |  |  |  |
| Desired Future Condition  | Goal (10-year)   | Strategy, Action, or Task (some potential examples; <b>highlight</b> = new activity)   | Notes/Timeframe/Discussion Items   |
| No new AIS infestations in lakes or creeks. Existing AIS <del>are eradicated or well under control</del> <u>managed such that they are not negatively impacting beneficial functions.</u>                 | Prevent new AIS infestations in lakes or creeks throughout the watershed.                                    | <ul style="list-style-type: none"> <li>- Implement BCWMC's aquatic plant management/aquatic invasive species (APM/AIS) policies (\$40,000)</li> <li>- Assist TRPD, Hennepin County, and others with AIS inspection programs (\$5,000)</li> <li>- Work with partners and agencies to identify and track emerging AIS threats – <b>new activity</b> (\$ unknown)</li> <li>- Work with Hennepin County, member cities, and other partners to provide signage, education, and early detection training to residents, boaters, anglers, and lakeshore landowners (\$46,000 current education programs)</li> </ul> | <p>Turn <a href="#">APM/AIS recommendations</a> approved in 2017 into policies, where appropriate</p> <p>Consider updating rapid response plan to reflect actual practice (Sweeney EWM as example)</p> <p>Reference map showing current AIS in priority waters</p> |
|   | Mitigate the impact of existing AIS infestations through application of BCWMC policies <u>and practices.</u> | <ul style="list-style-type: none"> <li>- Implement BCWMC's aquatic plant management/aquatic invasive species (APM/AIS) policies (\$40,000)</li> <li>- Work with TRPD and MnDNR to manage and assess curly-leaf pondweed, starry stonewort, and zebra mussels in Medicine Lake (included in \$40,000 above)</li> <li>- Follow AIS Rapid Response Plan when needed - \$ unknown</li> </ul>   |  |

| Groundwater – Surface Water Interactions – Medium Priority   |   |   |                                   |
|--|---|---|-----------------------------------|
| Issue Statement: The <u>uncertainty of groundwater and surface water interactions</u> <del>flow of water between groundwater and lakes, streams, and wetlands</del> complicates <u>our ability to protect, restore, and responsibly manage natural resources</u> <del>the protection, restoration, and responsible management of natural resources</del> . |   |   |                                   |
| Desired Future Condition   | Goal (10-year)  | Strategy, Action, or Task (some potential examples; <b>highlight</b> = new activity)  | Notes/Timeframe/ Discussion Items |
| <p><u>Areas</u> <del>Areas</del> with <u>significant</u> groundwater – surface interaction are identified and <u>potential</u> negative impacts due to interaction are minimized.</p> <p>Hennepin County develops and implements county groundwater plan.</p>  | <p><del>Evaluate</del><u>Evaluation of the</u> groundwater-surface water interaction characteristics of BCWMC priority waterbodies.</p> | <ul style="list-style-type: none"> <li>- Work with Met Council or other agencies to map groundwatersheds and evaluate groundwater-surface water interactions – <b>new activity (\$50,000 possible estimate)</b></li> <li>- Lobby Hennepin County to develop county-wide groundwater management plan (similar to Dakota and Washington Counties) – <b>new activity \$0</b></li> </ul>  |                                   |
|  | <p>Consider and mitigate negative impacts of groundwater-surface water interactions during development and project implementation.</p>  | <ul style="list-style-type: none"> <li>- <b>Assist with development of regional or statewide policies regarding infiltration of stormwater – <b>new activity (\$5,000 possible estimate)</b></b></li> <li>- Through BCWMC Requirements Document: maintain requirements detailing circumstances where stormwater infiltration is limited or prohibited for the protection of groundwater resources (consistent with the MPCA Construction Stormwater General Permit) – fee for service</li> <li>- Consider updating BWCMC requirements so infiltration is also consistent with MDH guidance</li> </ul> |                                   |

| Degradation of Riparian Areas – Low Priority  |
|---|
| Issue Statement: Degraded riparian areas allow excess pollutant loading to lakes and streams, contribute to impairments (water quality and biological), and result in poor ecological function and habitat. |

**VERSION 3/7/24**

**Includes revisions from 3/7/24 PSC meeting with changes (tracked)**

| Desired Future Condition   | Goal (10-year)  | Strategy, Action, or Task (some potential examples; <b>highlight = new activity</b> )   | Notes/Timeframe/ Discussion Items                        |
|--|---|---|--|
| Riparian areas throughout the watershed are ecologically healthy with well established, diverse native vegetation. | Establish and maintain vegetated stream buffers where required. | <ul style="list-style-type: none"> <li>- Require vegetated buffers adjacent to priority streams for projects triggering BCWMC review (ensure enforcement of existing stream buffer standard – <b>new activity \$ unknown</b>)</li> <li>- Provide education to creek homeowners including riparian protection/ restoration workshops – <b>new activity (\$5,000)</b></li> </ul>  | Consider lower thresholds for review of buffer standards |
|  | Restore degraded riparian areas along BCWMC CIP projects.       | <ul style="list-style-type: none"> <li>- <b>Assess the condition of riparian areas on BCWMC priority streams and lakes and prioritize areas for action – new activity (\$ included in activities under other issues) [determine where this activity would apply – along all waters or only where CIP projects are proposed?]</b></li> <li>- Incorporate elements to improve riparian areas on all stream-focused and lake-adjacent BCWMC capital improvement projects. - CIP</li> </ul> |  |



| <span style="color: #4F81BD;">Degradation of Upland Areas – Low Priority</span>   |   |   |   |
|---|---|---|---|
| <b>Issue Statement:</b> Natural areas in uplands may be threatened by development pressure, lack of proper management, and negative impacts from climate change.  |   |   |   |
| Desired Future Condition  | Goal (10-year)  | Strategy, Action, or Task (some potential examples; <span style="background-color: yellow;">highlight</span> = new activity)  | Notes/Timeframe/ Discussion Items   |
| <p>Natural areas throughout the watershed are well managed, ecologically healthy, and accessible to the public, where possible. High quality uplands are not lost or negatively impacted by development projects.</p> | <p>Consider protection or enhancement of upland natural areas during BCWMC planning and projects.</p> | <ul style="list-style-type: none"> <li>- Evaluate aesthetics, habitat, and accessibility during CIP project selection and prioritization - CIP</li> <li>- Encourage and support public and private landowners to maintain, preserve or restore open space and native habitats (\$46,000 current education programs)</li> <li>- Member cities shall consider opportunities to maintain, enhance, or provide new open spaces and/or habitat. \$0</li> <li>- Cooperate with the MDNR and other entities, as requested, to protect rare and endangered species under the State’s Endangered Species Statute. The BCWMC will review the Natural Heritage Information System during the design phase of Commission projects - CIP</li> <li>- Incorporate trails, parks, and natural areas into BCWMC watershed map. (to be included with current map update)</li> </ul> | <p>BCWMC could co-sponsor or support land protection or enhancement projects by its partners.</p> <p>NOTE: Surveys indicate passive recreation in natural areas and along streams and lakes is an important way residents interact with nature and is highly prioritized by survey respondents.</p> |

| Groundwater Quality – Low Priority  |   |  |  |
|---|---|--|--|
| Issue Statement: Groundwater quality impacts public health as a source of drinking water and may be threatened by infiltration of stormwater and associated pollutants. |   |  |  |
| Desired Future Condition  | Goal (10-year)  | Strategy, Action, or Task (some potential examples; highlight = new activity)  | Notes/Timeframe/ Discussion Items  |
| Groundwater is safe to drink, meets all drinking water standards, and is not adversely impacted by elevated chloride levels.  | Prevent negative impacts to groundwater quality from proposed projects reviewed by the BCWMC. | <ul style="list-style-type: none"> <li>- Through BCWMC Requirements Document: maintain requirements detailing circumstances where stormwater infiltration is limited or prohibited for the protection of groundwater resources (consisted with the MPCA Construction Stormwater General Permit) – fee for service</li> <li>- Review all MDNR groundwater appropriation permit applications in the BCWMC excluding applications for temporary appropriations permits - \$3,000</li> </ul> | <p>Chloride reducing actions will also help GW quality but not sure how to incorporate here b/c it's not appropriate to have chloride GW goal.</p> <p>BCWMC already reviews DNR appropriations permits and sometimes has comments on potential impacts to tunnel or other resources.</p> |
|   | Prevent negative impacts to groundwater quality from BCWMC projects.                          | <ul style="list-style-type: none"> <li>- CIP projects are evaluated for potential impacts to groundwater before implementation. - CIP</li> </ul>   |  |