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| Elk River Chain of Lakes Watershed Management Plan Implementation Steps |
| WQ | Water Quality Monitoring |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |  |  |
| High | WQ.1 | Continue surface water quality monitoring conducted by various agencies, governments, and academic institutions according to their respective programs. | NA | $200,000 | Monitor | MDEQ, MDNR |  |
| Notes: Various groups monitor different bodies of water within the Watershed according to their individual protocols. Data should be share regularly with the Advisory Committee. |
| WQ.2 | Continue implementing Comprehensive Water Quality Monitoring (CWQM) program every 3 years on all lakes and streams currently included in the program. | $6,000 | $18,000 | NA | Monitor 2019 | Monitor 2022, 2025 | TOMWC |  |
| Notes: TOMWC conducts monitoring, along with entities listed in WQ.1. Likewise, data should be shared regularly through the Advisory Committee and other public outreach. |
| WQ.3 | Expand CWQM monitoring parameters (PAHs, pharmaceuticals, etc.) to address newly emerging water quality threats. | NA | $25,000 | Identify, Plan, Funding | Monitor new parameter | Continue  | TOMWC |  |
| Notes: Identify priority parameters, develop monitoring plan, and secure funding; begin monitoring new parameter in 2019; retain parameter (new in 2019) through 2025 monitoring. |
| WQ.4 | Continue implementing TOMWC's Volunteer Stream Monitoring (VSM) program and expand to include the TBD. | $1,000/year | $9,000 | Recruit and Monitor | Monitor | Continue | TOMWC |  |
| Notes: Recruit and maintain new VSM team for three new creeks by year 2; monitor new streams and all currently monitored streams annually for 10 years. |
| WQ.5 | Continue implementing Tip of the Mitt Watershed Council's Volunteer Lake Monitoring (VLM) program and expand to include TBD. | NA | $5,000 | NA | Recruit and Monitor | Continue | TOMWC |  |
| Notes: Recruit new lake monitors for lakes by 2019; retain monitors through 2025. |
| WQ.7 | Continue the Fish Contaminant Monitoring program in both lakes previously monitored and not monitored to date, following protocol established by the MDEQ/MDNR. Continue to report results via the program’s online database. | NA | $5,000 | Monitor | MDEQ, MDNR |  |
| Notes: Monitor surface waters within the Watershed. |
| WQ.8 | Determine the effectiveness of water quality protection efforts achieved through watershed management plan implementation by using the criteria set forth in the Evaluation Strategy. | NA | $3,000 | NA | NA | Compare |  |  |
| Notes: Compare 10 years of monitoring data with Evaluation Strategy criteria.  |
| WQ.9 | Continue and expand as necessary the study of golden-brown benthic algae in lakes. Provide shoreline property information on the algae and its management. | NA | $25,000 | Study and Outreach |  |  |
| Notes: Identify project partners and study locations, secure funding, determine and implement outreach efforts as needed.  |
| Medium | WQ.10 | Conduct water quality and discharge monitoring of all major tributaries and at least three minor tributaries to assess the impacts to TBD. Additional data are needed under various conditions (wet and dry). | NA | $10,000 | NA | Monitor and Report | NA |  |  |
| Notes: Secure funding, identify methods, conduct monitoring, complete monitoring report; distribute report.  |
| WQ.11 | Conduct septic evaluations on lakefront properties by monitoring groundwater along the shoreline and using dye tracers are used to determine if septic leachate is contaminating the lake or stream. | $300 | $12,000 | Develop campaign | Evaluations | Continue |  |  |
| Notes: Promote septic evaluation services to lake associations in conjunction with septic outreach/campaign, develop cost/share program for lakefront property owners. |
| Low | WQ.12 | Develop a nutrient budget to determine the amount of nutrients and sediments that are sequestered in TBD. Data should be collected over a period of several years, sampling throughout all seasons and hydrologic conditions (i.e., low, normal and high discharge). | NA | $15,000 | NA | NA | Partners, Funding, Study |  |  |
| Notes: Identify project partners, secure funding, and develop study design.  |

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| WL | Wetlands |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | WL.1 | Continue to review DEQ Part 303 Wetland Permit Applications to evaluate proposed wetland impacts. Submit comments to DEQ regarding anticipated wetland impacts when appropriate and work with applicants to minimize impacts. | NA | $25,000 | Ongoing |  |  |
| Notes: Respond to all permit applications when potential wetland impacts are high. |
| **Medium** | WL.2 | Restore high-value wetlands. | NA | $150,000 | NA | Identify and Funding  | Restore |  |  |
| Notes: Identify wetland restoration site, secure funding, develop plans; Complete one wetland restoration (>5 acres).  |
| WL.3 | Ground-truth wetlands identified through Landscape Level Wetlands Functional Analysis to confirm high-value wetland status. | NA | $20,000 | NA | NA | Ground-truth |  |  |
| Notes: Identify priority areas for ground-truthing and project partners. |

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| SP | Shoreline and Streambank Protection |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | SP.1 | Repeat shoreline surveys on TBD Lakes (completed on or before 2012). | NA | $40,000 | NA | Survey and Distribute | NA |  |  |
| Notes: Secure funding to conduct surveys. |
| SP.2 | Repeat streambank inventory on the TBD River and its tributaries. | $6,000 | $6,000 | NA | NA | Funding and Inventory |  |  |
| Notes: Secure funding to conduct survey; Completion of inventory and results summary. |
| SP.3 | Prioritize streambank erosion sites on a subwatershed basis. | NA | $10,000 | NA | Matrix | Update |  |  |
| Notes: Convene working group to develop a prioritization matrix to guide streambank projects; update every five years.  |
| SP.4 | **Restore priority streambank erosion sites on the TBD River.** | **Varies** | **$100,000** | **Identify** | **Restore** | **Restore** |  |  |
| Notes: Identify sites and secure funding to implement projects; 500' streambank stabilized/restored. |
| SP.5 | **Implement best management practices (BMPs) on moderate and severe shoreline erosion sites on large inland lakes in conjunction with property owner outreach.** | **NA** | **$100,000** | **NA** | **Funding and begin Installation** | **Continue Installation** |  |  |
| Notes: Secure funding to implement outreach program; Implement 5 erosion control projects.  |
| SP.7 | **Promote the Michigan Shoreland Stewards program.** | **NA** | **$30,000** | **Ongoing** |  |  |
| Notes: Conduct trainings, site assessments, presentations to lake associations; Increase overall program enrollment by 30% on lakes within Watershed.  |
| SP.8 | **Promote the use of Certified Natural Shoreline Professionals to riparians for bioengineering projects.** | **NA** | **$5,000** | **Ongoing** |  |  |
| Notes: Conduct trainings, site assessments, presentations to lake associations; Increase overall program enrollment by 30% on lakes within Watershed.  |
| SP.9 | **Provide riparian property owners with assistance and resources (publications, websites, workshops, and on-site assessments) as they relate to shoreline and streambank management.** | **NA** | **$30,000** | **Ongoing** |  |  |
| Notes: Conduct at least 10 site assessments/year and 3 workshops (total); 100 site assessments and 3 workshops. |
| SP.10 | Continue to review DEQ Part 301 Inland Lakes and Streams Permit Applications to evaluate proposed wetland impacts. Submit comments to DEQ regarding anticipated impacts when appropriate and work with applicants to minimize impacts.  | NA | $25,000 | Ongoing |  |   |
| **Medium** | Notes: Respond to all permit applications when potential impacts are high. |
| SP.11 | Repeat streambank inventory on the TBD River and its tributaries.  | $6,000 | $6,000 | NA | NA | Funding and Inventory |  |  |
| Notes: Secure funding to conduct survey; Completion of inventory and results summary. |
| SP.12 | Repeat streambank inventory on the TBD River and its tributaries.  | $4,000 | $4,000 | NA | NA | Funding and Inventory |  |  |
| Notes: Secure funding to conduct survey; Completion of inventory and results summary. |
| SP.13 | Restore priority streambank erosion sites on the TBD River.  | Varies | $40,000 | Identify | Restore | Restore |  |  |
| Notes: Identify sites and secure funding to implement projects; 300' streambank restoration. |
| SP.14 | Restore priority streambank erosion sites on the TBD River. | Varies | $20,000 | Identify | Restore | Restore |  |  |
| Notes: Identify sites and secure funding to implement projects; 200' streambank restoration. |
| SP.15 | Restore priority streambank erosion sites on TBD Creeks. | Varies | $50,000 | Identify | Restore | Restore |  |   |
| Notes: Identify sites and secure funding to implement projects; 200' streambank restoration. |
| SP.16 | Implement best management practices (BMPs) on moderate and severe shoreline erosion sites on smaller inland lakes in conjunction with property owner outreach. | NA | $25,000 | NA | Funding and begin Installation | Continue Installation |  |  |
| Notes: Secure funding to implement outreach program; Implement 5 erosion control projects.  |
| SP.17 | Develop and implement cost/share greenbelt program(s) on lakes with supportive lake associations, including demonstration sites. | NA | $50,000 | Adoption | Implementation |  |  |
| Notes: Adoption of program by at least one lake association; Approximately 20% increase in greenbelts rated good or excellent overall. |

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| SW | Stormwater Management |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | SW.1 | Monitor stormwater discharge to TBD to establish baseline data. | $10,000 | $10,000 | NA | Identify and Funding  | Monitor |  |  |
| Notes: Identify outfalls and monitoring parameters; secure funding; monitor; Distribution of monitoring report. |
| SW.2 | Incorporate green infrastructure into new or re-developments where the potential to impact water resources is present. | NA | $100,000 | NA | Identify and Funding  | Installation |  |  |
| Notes: Identify potential project(s), secure funding, implement and promote/publicize; One or more local examples of green infrastructure, project publicity, public awareness. |
| SW.3 | **Promote green infrastructure to watershed residents to increase stormwater awareness and implementation of best management practices.** | **NA** | **$15,000** | **Funding** | **Develop and Distribute**  | **NA** |  |  |
| Notes: Secure funding, develop/distribute green infrastructure publication and other resources to a minimum of 5,000 watershed residents; Print (5,000) and electronic publication, watershed-wide distribution. |
| SW.4 | **Install stormwater best management practices, including rain gardens, oil/grit separators, and other structures in TBD.** | **NA** | **$100,000** | **NA** | **Identify and Funding**  | **Installation** |  |   |
| Notes: Identify locations and secure funding; Install at least three BMPs. |
| **Medium** | SW.5 | Provide developers, builders, architects, and landscape architects with green infrastructure resources. | NA | $5,000 | NA | Workshop | NA |  |  |
| Notes: Secure funding, develop workshop(s), promote; Conduct at least one workshop with a minimum of 25 attendees. |

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| PZ | Planning and Zoning |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners |  |
|  | PZ.1 | Utilize the recommendations of the Antrim and Charlevoix County Gaps Analysis (2013) to encourage adoption of model standards in zoning ordinances to protect water quality. | NA | $60,000 | Ongoing |  |  |
| Notes: 3 model standards adopted by year 7. |
| PZ.2 | Establish requirement that state permits must be issued for regulated wetlands before a Zoning permit is issued at the county level.  | NA | $3,000 | NA | Support | Implement |  |  |
| Notes: Majority support established from citizens and local officials by year 5; State permit approval required by year 7 to protect local wetlands. |
| PZ.4 | Work with Antrim, Grand Traverse, Charlevoix, and Kalkaska Counties to adopt a wetland setback of at least 25', similar to shoreline setbacks.  | NA | $3,000 | NA | NA | Support and Implement |  |  |
| Notes: Majority support established from citizens and local officials by year 6; Setback established to protect wetlands by year 8. |
| PZ.6 | Work with each county to provide incentives for using LID techniques to mitigate impacts of impervious surfaces. Establish lot coverage limits in all zoning districts to limit impervious surfaces to 15% in exchange for incentives.  | NA | $8,000 | NA | NA | Support and Implement |  |  |
| Notes: Stakeholders in agreement and supporting change by year 7; Incentive-based lot coverage limits by year 9 to protect surface waters from NPS. |
| PZ.7 | **Work with TBD Township to improve the greenbelt ordinance and solve enforcement issues.** | **NA** | **$3,000** | **Support and Ordinance** | **NA** | **NA** |  |  |
| Notes: Stakeholders in agreement and supporting change by year 1; New ordinance in place with enforcement measures by year 2. |
| PZ.9 | **Work with TBD Township to pass a Time of Transfer Septic Inspection Ordinance.** | **NA** | **$7,000** | **Ordinance** | **NA** | **NA** |  |   |
| Notes: Ordinance language drafted by year 1; Ordinance passed and protecting surface water quality by year 2. |

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| LU | Land Use |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | LU.1 | Implement agricultural BMPs in designated critical areas.  | NA | $50,000 | NA | Identify | Implement |  |  |
| Notes: Identify and prioritize BMPs, engage with land owner, fundraise; Implement a minimum of 2 BMPs. |
| **Medium** | LU.2 | Promote forestry best management practices to practitioners. | NA | $5,000 | NA | Workshop | NA |  |  |
| Notes: Conduct Better Back Roads workshops for timber harvesters. |
| LU.3 | Enroll private property owners in Forest Management programs, such as State of Michigan’s Forest Stewardship Program or Natural Resource Conservation Service’s Environmental Quality Incentives Program. | NA | $2,000 | Identify | Enroll |  |  |
| Notes: Identify private forested lands with high potential to yield water quality benefits; engage with property owners; Increase enrollment in either program by 15%. |
| LU.4 | Increase designation of MDNR Forestry Riparian Management Zones to ensure greater water quality protection. | NA | $1,000 | Identify | Designate |  |  |
| Notes: Review current and identify potential RMZs; relay to MDNR; 50% increase in designated RMZs. |
| LU.5 | Address illegal dumping on MDNR forest lands. | NA | $1,000 | NA | Identify | Implement |  |  |
| Notes: Identify recurring dump sites near surface waters; Develop and implement strategies to monitor and control. |
| LU.6 | Promote MAEAP to agricultural producers.  | NA | $10,000 | Ongoing |  |  |
| Notes: Conduct site assessments to potential enrollees; Increase enrollment by 20% by year 10. |

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| RSX | Road/Stream Crossing |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | RX.1 | Conduct/repeat RSX inventories throughout the Watershed on a priority subwatershed basis, beginning with previously non-inventoried subwatersheds followed by subwatersheds with inventories older than 10 years old.  | NA | $22,000 | NA | Funding and Inventory | NA |  |  |
| Notes: Secure funding to conduct survey; Completion of inventory and results summary; Completion of inventory and upload data to www.northernmichiganstreams.org. |
| RX.3 | **Implement priority RSX projects for improved hydrology, erosion control, and fish passage in the Rapid River Watershed.** | **Varies** | **$1,000,000** | **Identify and Funding** | **Implement** |  |  |
| Notes: Identify five priority sites and secure funding; Completion of three priority RSX projects by year 10. |
| RX.4 | **Implement priority RSX projects for improved hydrology, erosion control, and fish passage in the Cedar River Watershed.** | **Varies** | **$1,000,000** | **Identify and Funding** | **Implement** |  |  |
| Notes: Identify three priority sites and secure funding; Completion of three priority RSX projects by year 10. |
| RX.5 | Implement priority RSX projects for improved hydrology, erosion control, and fish passage on coldwater streams within the TBD subwatershed that support self-sustaining brook trout populations. | **Varies** | **$1,000,000** | **Identify and Funding** | **Implement** |  |   |
| Notes: Identify three priority sites and secure funding; Completion of three priority RSX projects by year 10. |

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| LP | Land Protection and Management |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | LP.1 | Repeat priority parcel process (PPP) for the entire Watershed to identify additional priority parcels.  | NA | $5,000 | NA | NA | Complete |  |  |
| Notes: Evaluate criteria used for PPP; obtain updated data; Complete by year 10. |
| LP.2 | Permanently protect 1500 acres or more of high and very high priority parcels throughout the Watershed. | NA | $2,000,000 | Outreach | Protect |  |  |
| Notes: Conduct outreach via workshop, newsletters, direct contact or other means to engage with land owners; 1500 ac. permanently protected (700 acres land acquisition, 800 ac. conservation easements). |

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| EH | Ecosystem Health |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | EH.1 | **Protect and restore the physio-chemical habitat within the Watershed's priority areas that currently support, or have the potential to support, robust populations of native fish species (e.g. brook trout).** | **NA** | **$600,000** | **Identify** | **Implement** |  |  |
| Notes: Identify priority projects for fish habitat projects based on fish and habitat surveys; Secure funding and implement at least one project by year 10. |
| EH.2 | Compile known information about small dams within the Watershed. Remotely gather additional information to fill in gaps. Prioritize field assessments and work to meet with property owners to discuss options. | NA | $4,000 | Convene | Report | NA |  |  |
| Notes: Convene small dam projects working group to begin implementation; Report of small dam findings with priority projects and property owners identified.  |
| EH.3 | Develop and implement outreach and education strategy targeting owners of priority small dams. Focus on ecosystem impacts, dam removal options, and available assistance. | NA | $5,000 | NA | Engage |  |  |
| Notes: Develop materials packet for distribution; Engage with at least 10 priority small dam owners. |
| EH.4 | Remove priority small dams throughout the Watershed where ecosystem benefits outweigh dam utility. | Varies | $200,000 | NA | Funding | Removal |  |  |
| Notes: Secure funding for dam removal; Remove at least two priority small dams.  |
| **Medium** | EH.5 | Conduct habitat mapping on TBD Creek(s) to establish baseline data. | NA | $5,000 | NA | Funding  | Monitor |  |  |
| Notes: Secure funding to conduct surveys; Baseline data collected for six streams. |
| EH.7 | Implement fish habitat improvement projects on TBD (major streams) and their tributaries throughout the Watershed. | NA | $250,000 | Identify | Implement |  |  |
| Notes: Identify priority projects for fish habitat projects based on fish and habitat surveys; Secure funding and implement at least three fish habitat projects. |

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| RSH | Recreation, Safety and Human Health |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | RH.1 | Monitor public beaches annually for potential health hazards, report advisories and beach closings via Beachguard. | $250/per beach sample  | $440,000 | Monitor |  |  |
| Notes: Secure funding to implement program annually.  |
| RH.2 | Increase number of certified Michigan Clean Marinas within the Watershed. | $400 | $1,600 | Promote and certify |  |  |
| Notes: Promote program and conduct consultations; At least four new marinas certified by year 10. |
| RH.3 | Restrict ORV access to public lands where the potential to impact water resources is high. | NA | $30,000 | NA | Identify | Implement |  |  |
| Notes: Identify areas where restrictions are needed; Implement measures to restrict access. |
| **Medium** | RH.4 | Implement stormwater and erosion BMPs at boat launches and other access points where water quality impacts are noted. | NA | $40,000 | NA | Report and Implement |  |  |
| Notes: Identify sites and partners, compile report, prioritize project(s), and improve 3-4 launches. |
| RH.5 | Develop Elk River Chain of Lakes campaign that includes social media, advertisements, printed materials, and signage that highlights exceptional natural resources, boating safety, clean boating, invasive species, water quality, and water trails, etc. to educate recreationists about both enjoying and protecting the resource. | NA | $50,000 | NA | Convene | Launch |  |   |
| Notes: Convene working group to identify needs, develop communications plan, seek funding and additional partners; Launch campaign. |
| RH.6 | Provide information and feedback to local and state governments regarding their recreational planning efforts that may impact the Watershed. | NA | $6,000 | Ongoing |  |   |
| Notes: Respond to planning efforts as projects are proposed. |
| RH.7 | Promote clean boating practices and state boating regulations at marinas, boat launches, fishing tournaments, events and other public venues. | NA | $5,000 | NA | Partner |  |   |
| Notes: Identify partner businesses, identify needs and methods to convey message; Partner with at least two businesses to reduce recreational impacts. |
| **Low** | RH.8 | Partner with liveries and outfitters to promote low-impact recreation. | NA | $8,000 | NA | Partner |  |   |
| Notes: Identify partner businesses, identify needs and methods to convey message; Partner with at least two businesses to reduce recreational impacts. |

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| HG | Hydrology and Groundwater |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | HG.1 | Assess changes (net gain or loss) in permanently protected lands in areas with high groundwater recharge rates. | NA | $2,500 | NA | NA | Compile and Distribute |  |  |
| Notes: Complete assessment concurrent with watershed management plan update; Compile and distribute results.  |
| **Medium** | HG.2 | Compile all existing groundwater information, identify problems, determine data gaps, and develop a strategy for long-term monitoring. | NA | $5,000 | NA | NA | Strategy |  |  |
| Notes: Complete compilation and assessment of existing data. |
| HG.3 | Monitor groundwater based on strategy (HG.2). | NA | $10,000 | NA | NA | Monitor |  |  |
| Notes: Secure funding, identify project partners and implement. |
| HG.4 | Employ Landscape Hydrology Model to assess pollutant loadings and sources concurrent with watershed management plan update. | NA | $10,000 | NA | NA | Model |  |  |
| Notes: Secure funding, identify project partners, apply model; Incorporate model results into plan update. |
| HG.5 | Implement Wellhead Protection Programs (WHPP) in communities where greater protection of groundwater is critical to safeguard against drinking water contamination. | NA | $40,000 | NA | Identify and Funding  | Develop |  |  |
| Notes: Identify communities that are at greatest risk for drinking water contamination; secure funding through WHPP grant program; Develop WHPP for at least one community within Watershed. |
| **Low** | HG.6 | Work with area businesses and property owners to encourage proper maintenance, monitoring, and removal of underground fuel storage tanks and other potential hazards. | NA | $40,000 | NA | Identify | Removal |  |  |
| Notes: Identify potential sites for future removal or replacement, secure funding to support; removal or replacement of at least one tank. |

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| TE | Threatened, Endangered, and Species of Concern |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | TE.1 | Protect and restore critical TBD habitat through stream conservation practices, such as maintaining or establishing sufficient riparian buffers or natural flows, water quality protection, and invasive species management. | NA | $60,000 | Identify and Funding  | Implement |  |   |
| Notes: Identify priority projects and project partners, secure funding. |

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| AI | Aquatic Invasive Species |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | AI.1 | **Report introductions and spread of invasive species to at least one tracking database (USGS, MISIN, etc.).** | **NA** | **$20,000** | **Report** |  |  |
| Notes: Report introductions annually beginning year 1. |
| AI.2 | **Implement on-the-ground management projects to stop the introduction, spread, and distribution of invasive species within the Watershed.** | **NA** | **$100,000** | **Implement** |  |  |
| Notes: Implement at least 20 private or public property projects by year 5. |
| AI.3 | **Provide property owners with assistance and resources with invasive species management through site assessments, distribution of resources, and other outreach.** | **NA** | **$50,000** | **Implement** |  |  |
| Notes: Perform 50 site assessments and publish 10 widely-distributed AIS articles via newsletters or other media. |
| AI.4 | Install signage at public boat launches that highlight Clean Boats, Clean Waters program and message.  | $1,000/sign | $10,000 | Locations and Funding | Install |  |  |
| Notes: Identify locations, secure funding; Install 10 signs throughout the Watershed. |
| AI.5 | Conduct volunteer-based boater education program through Clean Boats, Clean Waters program.  | NA | $5,000 |   | Recruit and Train |   |  |  |
| Notes: Recruit volunteers, host training; Conduct boater outreach at popular launches. |
| AI.6 | Install permanent or access mobile boat washing stations for use at public boat launches. | Varies | $100,000 | Location, Funding, Strategy | Install or Purchase |  |  |
| Notes: Identify locations, secure funding, develop user and operator strategy; Install or purchase either one permanent or two mobile units or combination of both |
| AI.7 | Recruit and coordinate multiple lake association-based volunteer teams to operate boat washing stations (AI.6). | NA | $30,000 | Develop | Operate |  |  |
| Notes: Develop and promote program, recruit volunteers, trainings and coordination. |
| AI.8 | Monitor and manage purple loosestrife throughout the Watershed with biological control agent. | NA | $25,000 | Ongoing |  |    |
| Notes: Release *Galerucella* beetles annually  |
| **Medium** | AI.9 | Develop volunteer-based aquatic invasive species monitoring program. | NA | $15,000 | NA | Implement |  |  |
| Notes: Develop program and begin implementation by year 5; Continue program through year 10 |
| AI.11 | Eliminate use of lampricide within the TBD through sterile male release technique (SMRT) or modifying the TBD lock system, or a combination of both in order to treat existing and potential populations.  | NA | $300,000 | SMRT and Research | SMRT and Research | NA |  |  |
| Notes: Conduct SMRT for three years beginning in 2017, concurrent with USGS research; Complete initial research by 2020, determine most effective lamprey control measures for the ERCOL. |

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| SS | Septic Systems |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | SS.1 | Develop septic system outreach campaign, including incentives such as a septic giveaway, free inspections.  | NA | $75,000 | NA | Develop and Funding | Implement |  |  |
| Notes: Develop outreach materials, identify potential project partners, secure funding. |
| **Medium** | SS.2 | Replace individual septic systems in communities where systems are ineffective or insufficient for given demand with community sewer systems. | $10,000  | $300,000 | NA | Identify and Fundraise | Convert |  |  |
| Notes: Identify priority community to convert to sewer system, fundraise; Approximately 30 households converted to sewer system. |

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| EI | Emerging Issues and Future Threats |
| Priority | Categories | Unit Cost | Est. Total Cost | Milestone 2018-2019 | Milestone 2020-2022 | Milestone 2023-2027 | Potential Project Partners | Notes: |
| **High** | EI.1 | **Conduct education and outreach to local government officials, lake associations, and other community groups and members about Line 5.**  | **NA** | **$100,000** | **Ongoing** |  |  |
| Notes: Conduct presentations, workshops, publish articles, press releases, and utilize social media to provide current and accurate information. |
| EI.2 | **Develop climate-change strategies to protect most vulnerable aquatic resources.** | **NA** | **$100,000** | **Funding** | **Strategies** |  |  |
| Notes: Convene working group to identify and prioritize vulnerable areas; develop strategies given climate predictions, disseminate strategies via climate change campaign. |
| **Medium** | EI.3 | **Monitor microplastics concentrations as new technology becomes available.** | **NA** | **$250,000** | **Support and Implement** |  |  |
| Notes: Support new research and implement both pilot and permanent technologies where applicable to reduce future microplastics inputs.  |