

IMPLEMENTATION STRATEGIES OF THE MILWAUKEE RPI¹

The Milwaukee Regional Partnership Initiative (Milwaukee RPI) is a new umbrella organization forming to improve our region's water resources through trust-building and collaboration. It is a non-governmental, non-taxing, voluntary partnership. The Milwaukee RPI's mission statement is as follows:

The Milwaukee Regional Partnership Initiative (Milwaukee RPI) is a collaborative effort to achieve healthy and sustainable water resources throughout the Greater Milwaukee Watersheds² and nearshore Lake Michigan.

Three draft Milwaukee RPI goals were developed in the summer/fall of 2007 by a Water Policy group assembled and facilitated by Dr. Nancy Frank and funded by the Brico Fund. Those draft goals include:

1. Make measurable progress toward improving the water resources in the region.
2. Identify/support land use practices and designs that enhance/improve water resources and promote and restore ecological benefits.
3. Forge and strengthen relationships to leverage funding and recommend policies to assist in the implementation of projects to produce lasting water resource benefits and cost savings throughout the Greater Milwaukee Watersheds and nearshore Lake Michigan.

To catalyze a framework for the Milwaukee RPI, the Water Policy group subsequently designated a Milwaukee RPI Organizing Committee, whose members confirmed the draft goals above without exception.

Implementing these goals is where the work necessary of the Milwaukee RPI will be accomplished. In order to implement these goals, the objectives and recommendations of the Southeastern Wisconsin Regional Planning Commission (SEWRPC)³ in its 2007 update to the *Regional Water Quality Management Plan* (RWQMP) provide a relevant and transparent foundation for moving forward. If pursued, recommendations in the update to the RWQMP will move toward attaining Milwaukee RPI goals, and a direct link between Milwaukee RPI goals and RWQMPU objectives and recommendations is provided in Appendix A of this document.

Below, is a detailed listing of RWQMPU objective categories paired to an extensive list of recommendations or implementation strategies.

¹ Implementation Strategies from Chapter XII, SEWRPC - *Regional Water Quality Management Plan Update*, 2007.

² The Greater Milwaukee Watersheds are defined as the watersheds of the Kinnickinnic River, Menomonee River, Milwaukee River, Root River, and Oak Creek; the Milwaukee Harbor estuary, and the Lake Michigan direct drainage area.

³ SEWRPC implements Section 208 of the federal Clean Water Act toward the goal of achieving water use objectives for surface waters within the region through a sound and workable plan for the abatement of water pollution.

LAND USE DEVELOPMENT OBJECTIVES

1. **Achievement of a Balanced Land Use Allocation**
2. **Protection and Wise Use of Natural Resources**
3. **Land Use Compatible with Economical Provision of Public Services**
4. **Preservation of Land for Agriculture, Habitat, and Orderly Development**

Related Implementation Strategies:

- a. Develop land consistent with approved comprehensive land use plans.⁴
- b. Remaining natural stream channels, including small tributaries and shoreland wetlands that provide habitat for the continued survival, growth, and reproduction of a sustainable fishery throughout the study area should be protected.
- c. Wetlands, woodlands, and grasslands adjacent to the stream channel should be restored, and a minimum buffer of 75 feet wide to reduce pollutant loads entering streams and protecting water quality should be established.

Note: additional land use development implementation strategies are woven throughout the implementation strategies provided below.

⁴ Plan geography within the Greater Milwaukee Watersheds applies, including a portion of SEWRPC's *2035 Regional Land Use Plan*, Planning Report No. 48, and municipal comprehensive plans consistent with Wisconsin Comprehensive Planning Law (s. 66.1001).

WATER QUALITY MANAGEMENT OBJECTIVES

- 1. Development of Facilities, Programs and Policies to Serve the Regional Development Pattern**
- 2. Development of Policies and Practices to Meet Water Use Objectives**
- 3. Enhancement of the Quality of Natural and Man-Made Environments**
- 4. Reduction of Sedimentation, Other Water Pollution, and Eutrophication**

Related Implementation Strategies:

- a. The need for upgrading and the level of treatment at private wastewater treatment facilities should be formulated on a case-by-case basis as part of the WPDES permitting process.
- b. Wastewater treatment facilities and industrial discharges should be regulated and their effluent concentrations be controlled to acceptable levels on a case-by-case basis through the operation of the WPDES.
- c. Water utilities in the study area should give further consideration to changing to an alternative technology that does not result in increased phosphorus loading (provided such a technology is both effective in controlling corrosion in pipes and cost-effective for utilities to implement).
- d. Rural nonpoint source measures should be adopted including:
 - d.a. Practices to reduce soil loss from cropland should be expanded to attain erosion rates less than or equal to T by 2020 through a combination of practices including (but not limited to) expanded conservation tillage, grassed waterways, and riparian buffers (i.e., through the development of farm management plans).
 - d.b. All livestock operations in the study area with 35 combined animal units or greater should provide six months of manure storage, and any additional supplemental nutrients should be applied to cropland in accordance with a nutrient management plan consistent with regulation, and nutrient management requirements for concentrated animal feeding operations (CAFOs) in the study area should be based on the WPDES permit conditions for those operations.
 - d.c. Consideration should be given to increasing levels of cost-share funding to enable a higher level of implementation of the best management practices needed to meet NR 151 performance standards.
 - d.d. Minimum 75-foot wide buffers should optimally be provided along each side of streams flowing through current crop and pasture land, buffers should be targeted to locations where they would be most effective, buffers should be expanded wider than 75 feet along high-quality stream systems, and stream crossings should be limited and configured to minimize fragmentation of streambank habitat.
 - d.e. A total of 10 percent of existing farmland and pasture should be converted to either wetland or prairie conditions, focusing that effort on marginally productive land.

d.f The MMSD Greenseams program should be continued and integrated with the regional water quality management plan update recommendations regarding environmental corridors and conversion of cropland and pasture to wetland and prairie.

d.g Livestock access to streams should be restricted through fencing or other means.

d.h Measures should be taken to ensure proper handling and treatment of milking center wastewater.

d.i County-enforced inspection and maintenance programs should be implemented for all new or replacement Private Onsite Wastewater Treatment Systems (POWTS) constructed after the date on which the counties adopted private sewage system programs (plus voluntary programs for POWTS constructed prior to the date). Further, WDNR and counties in the study area should work together to strengthen oversight and enforcement of regulations for disposal of septage and to increase funding to adequately staff and implement programs. Counties should continue to regulate POWTS as called for under the *Wisconsin Statutes*. Within each county consideration should be given to establishing town utility districts to complement and supplement the activities of the county sanitarian relative to POWTS.

e. Urban nonpoint source pollution:

e.a. Controls should be implemented that are consistent with the standards of NR 151.

e.b Innovative means of identifying and controlling possible pathogen sources should be pursued.

e.c Programs should be implemented that achieve a practical level of disconnection of the residential roof drains that are currently connected to sanitary and combined sewers. Roof drains that are not directly connected to sanitary or combined sewers but which discharge to impervious areas should be redirected to pervious areas where feasible. Also, consideration should be given to directing those roof drains which are to be disconnected to rain barrels and/or rain gardens, with the runoff from those roofs ultimately being infiltrated.

e.d Existing litter and debris control programs along Lake Michigan beaches, inland lake beaches, and along the urban streams of the study area should be continued and opportunities to expand such efforts be explored.

e.e All municipalities in the study area should have pet litter control ordinance requirements and those requirements should be enforced.

e.f Boating facility operators should continue to maintain pump-out stations for disposal of sanitary waste through the public sanitary sewerage system and should upgrade or expand those stations as necessary.

f. For stream habitat improvements, streambank stability should be enhanced, instream sediment deposition should be limited, techniques to moderate the effects of channelization should be implemented, and instream and riparian habitat should be restored.

- g. To preserve and enhance the interconnection between the watershed's ecosystems, actions should focus on the restoration and management of declining habitats found not only within streams, but also within the watershed as a whole.
- h. Programs should be implemented to discourage unacceptably high numbers of waterfowl from congregating near beaches and other water features. These measures could include expanded use of informational signs regarding the negative aspects of feeding waterfowl, ordinances prohibiting the feeding of waterfowl, covering trash receptacles at beaches and water features, providing vegetative buffers along shorelines that discourage geese from congregating, and other innovative measures such as trained dogs.
- i. A study should be conducted to reevaluate dissolved oxygen levels in the estuary in light of possible future sediment removal projects that could improve dissolved oxygen conditions.
- j. An engineering study should be conducted to evaluate the condition of the Kinnickinnic River flushing tunnel and the pump station and, depending on the findings of that study, consideration should be given to renovating the flushing tunnel intake and outlet, the tunnel and the pump station (if necessary and economically justifiable).
- k. The Lake Michigan Lakewide Management Plan should continue to be implemented and refined. Liaison and linkages should be maintained via WDNR's Office of the Great Lakes with local, state, and federal programs. Further, shipping and harbor management programs and activities, including dredging and sediment remediation programs, ballast water management programs, and toxic contaminant strategies should be coordinated with environmental management programs and activities.
- l. MMSD should continue its household hazardous waste collection program at the three permanent sites in Franklin, Milwaukee and Menomonee Falls, and should continue providing waste collection at temporary sites between April and October. Further, communities in the study area that are not served by such programs should consider developing and implementing them.
- m. Assessments and evaluations should be made of the significance to human health and aquatic and terrestrial wildlife of the presence of pharmaceuticals and personal care products in surface waters. Further, periodic collections of expired and unused medications should be conducted.
- n. Programs to reduce the spread of exotic invasive species should be continued and supported, the occurrence and spread of exotic and invasive species should be monitored and documented, and programs to educate the public about exotic invasive species should be continued and supported.
- o. WDNR should develop a policy regarding water temperatures and thermal discharges into waterbodies.
- p. Recommendations of SEWRPC's regional water supply plan should be pursued, including:
 - p.a. Groundwater sustainability guidance results should be considered by municipalities in the study area when evaluating the sustainability of proposed developments and in conducting local land use planning.

p.b Groundwater recharge areas and groundwater contamination potential of the shallow aquifers should be mapped in Dodge, Fond du Lac, and Sheboygan Counties.

p.c The design of stormwater management facilities that directly or indirectly involve infiltration of stormwater should consider the potential impacts of groundwater quality. Applicable WDNR post-construction stormwater management technical standards for site evaluation for stormwater infiltration, infiltration basins, bioretention facilities, and wet detention basins should be applied in the design of such management facilities.

OUTDOOR RECREATION AND OPEN SPACE PRESERVATION OBJECTIVES

- 1. Provision of Outdoor Recreation Sites**
- 2. Preservation of Open Space**

Related Implementation Strategies:

- a. Primary environmental corridors should be preserved in essentially natural, open uses, forming an integrated system of open space lands in the study area.
- b. All identified natural areas and critical species habitat sites should be preserved and – where not in existing public or public-ownership interest – acquired.

WATER CONTROL FACILITY DEVELOPMENT OBJECTIVE

1. Development of a System to Reduce Flood Damage

Related Implementation Strategies:

- a. Regarding hydrologic and hydraulic management:
 - a.a Projects to remove concrete linings from stream channels under MMSD jurisdiction and to rehabilitate those channels where such removal can be accomplished without creating flood or erosion hazards should be pursued.
 - a.b Dam owners should perform ongoing maintenance and repair, should prepare abandonment and associated riverine area restoration plans, and should include provisions to protect upstream reaches from erosion and downstream reaches from sedimentation in dam removal plans.
 - a.c To the extent practicable, culverts, bridges, drop structures and channelized stream segments (especially concrete-lined segments) should be limited. Where required, they should allow the passage of aquatic organisms, thus ensuring the connectedness of the ecosystem both upstream and downstream.
 - a.d When opportunities arise, ecosystem-friendly design standards should be considered for implementation. Further, opportunities should be considered for the removal of existing hydraulic structures, or for their replacement with ecosystem-friendly structures.
- b. Regarding dredging:
 - b.a Dredging for navigational purposes should extend within the limits as shown on SEWRPC maps.
 - b.b The Kinnickinnic River Environmental Restoration project should be implemented, and implementation of the Milwaukee Estuary Remedial Action Plan should continue to be supported.
 - b.c Limited dredging should be considered only if site-specific evaluation or findings support its need to improve habitat for aquatic life.
 - b.d The Jones Island Confined Disposal Facility (CDF) should be expanded by raising the dikes and mounding the spoil pile, as recommended by the U.S. Army Corps of Engineers Detroit District in November 2007.

PLAN STRUCTURE AND MONITORING OBJECTIVES

1. **Development of Economical and Efficient Programs**
2. **Development of Strong Institutions for Plan Implementation**
3. **Support of Economic Development and Job Creation**
4. **Responsiveness of Adaptive and Flexible Plans**
5. **Improvement of Assessment and Management**
6. **Support of a Collaborative Approach to Water Quality Management**

Related Implementation Strategies:

- a. Communities in the study area, but outside the MMSD planning area, should continue to assess their wastewater conveyance and treatment systems to provide the capacity necessary to allow for future development as it occurs while adhering to the conditions of their operating permits.
- b. Various communities should initiate facilities planning and potentially add capacity if population projections are attained (there are various nuances to this implementation strategy).
- c. A new intercommunity trunk sewer in the City of West Bend (between the City of West Bend and Town of Barton) should be constructed between 2011 and 2015.
- d. The municipalities outside the MMSD service area should implement locally-designed programs similar to the Capacity, Management, Operations and Maintenance (CMOM) program promoted by US EPA to evaluate and maintain sewage collection systems.
- e. The MMSD Facilities Plan elements should be implemented, including:
 - e.a Facilities recommended under the wet-weather control plan that is designed to meet MMSD's discharge permit requirements,
 - e.b MMSD programs and policies to maximize capture and treatment of sewage during wet weather,
 - e.c Improvement of existing MMSD facilities to ensure the continued provision of adequate sewage treatment,
 - e.d A biosolids plan,
 - e.e Watercourse projects directed toward improving instream water quality and reducing municipal infiltration and inflow (I/I) through reducing overland flooding in developed areas,
 - e.f Best Management Practice (BMP) demonstration projects intended to assess the effectiveness of specific BMPs in reducing nonpoint source pollution and improving water quality consistent with the urban nonpoint source pollution control recommendations of the regional water quality management plan,
 - e.g New MMSD programs and policies that are to be continued,

- e.h Existing MMSD operations that are to be continued,
 - e.i MMSD committed projects, and
 - e.j Community-based components.
- f. The MMSD should consider all capacity upgrades as per the 2020 Facilities Plan, but should also include the possibility of blending at the South Shore plant (includes evaluating actual population levels), the need for physical-chemical treatment with chemical flocculation, continuing efforts to implement a Variable Volume Reserve for Sanitary Sewer Inflow (VRSSI) through refinement and improvement of the prediction algorithm, considering additional study of blending at the South Shore plant, possibly implementing physical-chemical treatment and/or blending, and revising the US EPA draft policy regarding blending).
- g. South Milwaukee should:
- g.a Continue its program of wastewater treatment plant upgrades to meet the court-ordered stipulation by increasing the raw sewage pump capacity to meet a design peak flow of 30 MGD with the largest unit out of service, installing two new secondary clarifiers, and replacing the ultraviolet disinfection system, and
 - g.b Discuss with WDNR the likelihood of an ammonia limit being required under the next (2011) permit.
- h. For urban nonpoint pollution source controls:
- h.a A coordinated program should be implemented to reduce pathogens in surface waters through better identification of the sources of fecal coliform bacteria and elimination of those sources that would potentially be most harmful to human health.
 - h.b Enhanced programs should be implemented to detect and eliminate illicit discharges to the urban stormwater management system.
 - h.c Human health and ecological risk assessments should be conducted to address pathogens in stormwater runoff, possibly followed by application of innovative methods to identify and control possible pathogen sources in stormwater runoff from all urban areas in the study area.
 - h.d MMSD and others should continue to support targeted research on bacteria and pathogens, and implement stormwater BMP techniques and programs. In addition, research to develop and apply more direct methods of identifying sources of pathogens important to human health should also be supported.
 - h.e Contaminated sediment sites should be managed, with specific consideration being given to the Milwaukee Estuary Area of Concern. Toxic substances, such as the program being conducted by the MMSD's Corridor Study, should be continued and supported.
- i. Regarding fish and aquatic life:

- i.a Stream channels to provide increased quality and quantity of available fisheries habitat should be restored, enhanced and/or rehabilitated using management measures that include minimizing stream crossings and other obstructions to limit fragmentation of stream reaches, stabilize stream banks to reduce erosion, limit instream sedimentation and selectively remove excessive silt accumulations, reestablish instream vegetation and bank cover to provide fish with shelter, realign channelized reaches of streams and remove concrete lining to provide heterogeneity in depth, velocity or flow regime, and bottom substrate composition, and remove or retrofit stream obstructions that limit the maintenance of healthy fish and macroinvertebrate populations.
- i.b Fish and macroinvertebrate populations should be monitored to evaluate the effectiveness of the water quality management program.
- i.c Locations for carrying out the recommended stream restoration measures should be developed with guidance and direct involvement of the WDNR, based on site-specific field evaluations.
- j. Current public health monitoring programs at public beaches along Lake Michigan and inland waterbodies should be maintained and, where possible, expanded to include public beaches that are not currently monitored. Monitoring agencies should continue to disseminate information regarding water quality at public beaches, including water quality advisories, with additional detail as provided in the RWQMMPU.
- k. Future updates to the RWQMP should consider precipitation patterns and frequency and streamflow data, and should compare those data to the historical record to consider the potential effects of global climate change.
- l. Regarding water quality monitoring:
 - l.a Surface water quality monitoring programs currently being conducted by WDNR, USGS and MMSD should be supported and continued. Further, the USGS stream gauging program should be maintained as a minimum and expanded where possible, and monitoring programs should be reviewed and evaluated to refine monitoring strategies. Finally, existing streamflow gauges, including sampling, should be continued and supported.
 - l.b Long-term water quality monitoring programs should be extended to areas outside the MMSD service area.
 - l.c Refinements should be made in the choice of water quality parameters selected for sampling.
 - l.d Long-term fisheries monitoring stations should be established and maintained, and local fisheries surveys should be conducted periodically at these stations to assess species composition and toxicant loads. Further, long-term macroinvertebrate monitoring stations should be established and maintained, with sampling conducted periodically to assess species composition of invertebrates. A more rational biological sampling strategy should be adopted, with (minimally) fish community and (where possible) macroinvertebrate assessments conducted at least every two years at the long-term water quality monitoring sites.

- l.e Long-term habitat monitoring sites should be established and maintained, and surveys should be conducted periodically to assess habitat quality and streambed and streambank stability. Further, aquatic plant habitat assessments within lakes should be supported and better integrated with fishery survey assessments.
 - l.f Long-term trend lake monitoring programs should be established/continued.
 - l.g The water quality models developed under the RWQMP and the Facilities Plan should be maintained and updated at least every 10 years.
- m. Updates to the RWQMP and the data and forecasts on which these plan elements are based, as well as the recommendations for plan implementation, should be conducted periodically.

EDUCATIONAL AND INFORMATIONAL PROGRAMMING OBJECTIVE

1. Support of an Informed and Educated Public

Related Implementation Strategies:

- a. Municipalities and counties in the study area should continue to evaluate their practices regarding the application of chlorides for ice and snow control and strive to obtain optimal application rates to ensure public safety without applying more chlorides than necessary for that purpose. Further, municipalities should consider alternatives to current ice and snow control programs, such as applying a sand/salt mix to local roads with enhanced street sweeping in the spring to remove accumulated sand or using alternative materials for ice and snow control.
- b. Education programs should be implemented to provide information about alternative water softening media and the use of more efficient softeners which are regenerated based upon the amount of water used and the quality of the water.
- c. The use of low- or no-phosphorus fertilizers should be encouraged in areas tributary to inland lakes and ponds, and consideration should be given to adopting low- or no-phosphorus fertilizer ordinances in those areas. Information and education programs required under municipal WPDES stormwater discharge permits should promote voluntary practices that optimize urban fertilizer application consistent with WDNR requirements.
- d. Agencies and organizations conducting monitoring should adopt common quality assurance and quality control procedures. Sampling and analysis protocols should be standardized across monitoring programs, including both agency programs and citizen-based programs. Further, current data management systems should be maintained and upgraded, and the MMSD Corridor Study should be supported.
- e. Citizen-based monitoring efforts should be continued and supported, and (as these programs develop new sampling sites) they should target streams and lakes not currently being monitored.
- f. Utility- or community-specific water conservation programs should be developed and implemented based upon a number of factors, including the composition of the community water users, the operational characteristics of the utility, the level of efficiency already being achieved, the water supply infrastructure in place that's needed to meet future demands, and the sustainability of the water supply.

NOT CLASSIFIED

Implementation Strategy:

- a. WDNR should consider pursuing changes to the existing regulatory water use objectives as per recommendations in the RWQMP.

Appendix:

Bridge Table

Linking Milwaukee RPI Goals with RWQMPU Objectives and Recommendations

<will insert bridge table here>