Department of Public Health

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August 20, 2013

Honorable Mayor and Members of the Common Council
City of Racine
Racine City Hall
730 Washington Avenue
Racine, WI 53403

Dear Mayor and Council Members:

I hereby request permission to apply and accept funds for *Monitoring of Point and Non-Point Source Pollutants in the Oak Creek Watershed* in the amount of $100,071.00 from the Fund for Lake Michigan. Runoff from urban landscapes, via direct overland flow and stormwater infrastructure, frequently contains high bacteria concentrations. High levels in Oak Creek discharge adversely impact Lake Michigan water quality at Grant Park, contributing to its impaired water (303d) designation.

The project will seek to identify pollution sources as well as habitat degradation that promote the delivery of contaminants into Lake Michigan. This will be done through physical, chemical, and microbial assessments to support future watershed restoration efforts.

There is no City match required. (Grant Control #2013-024)

Respectfully submitted,

D Bowersox

Dottie-Kay Bowersox
Public Health Administrator

THE FUND FOR Lake Michigan

Fall 2012 Grant Program
Grant Application

1. Name of Organization	2. Project Title:
City of Racine Health Department	*Monitoring of point and non-point source pollutants in the Oak Creek Watershed*

3. Brief Summary of the Project: *Please include: 1) the problem the project intends to address, 2) the activities your organization will conduct for this project, and 3) the outcomes you hope to achieve and the expected impact on Lake Michigan water quality. The summary should fit in this box.*

It has been unequivocally demonstrated that water of good quality is crucial to sustainable socio-economic development. Aquatic ecosystems are threatened by a variety of pollutants resulting from destructive land-use, lack of appropriate water management practices, and human activity. The Oak Creek Watershed (~67 km^2) drains portions of the Cities of Franklin, Oak Creek, South Milwaukee, and Milwaukee. It is highly urbanized (38%), channelized, with little wetland areas remaining (3%). Due to the high amount of urbanization, and the likelihood of flashy flow conditions, discharge from the main stem of Oak Creek has the potential to adversely impact Lake Michigan surface water adjacent to its mouth, e.g. the South Milwaukee Yacht Club Marina and Grant Park Beach. Reduction of water pollution in tributary systems, such as the Oak Creek Watershed, are desirable but suitable restoration activities should be guided by sound science in order to target mitigation activities towards projects which will attain the maximum restorative benefit.

While coastal water quality has undergone close scrutiny in recent years, significant knowledge gaps exist concerning surface water quality and riparian corridor integrity of upstream sections of the Oak Creek watershed. This grant proposes to investigate and monitor Oak Creek and the Seven Bridges tributary (a direct drainage area within the Kinnickinnic River watershed) by conducting physical, chemical, microbial and terrestrial assessments. Specifically, 15 geospatially diverse locations encompassing multiple land uses will be monitored within the Oak Creek (n=14) and Kinnickinnic watershed (n=1) for a suite of water quality indicators (pH, conductivity, turbidity, *E. coli,* temperature, total suspended solids and dissolved oxygen) twice weekly for a one year period. Samples will also be collected monthly at all locations and will be analyzed for total phosphorus concentration. Habitat and stream bank assessments will be conducted at each of these locations in order to determine how surrounding land use, impervious surfaces, erosion and stream buffer influences local water quality. Through consulting with stakeholder communities within the watershed (Cities of Franklin, Oak Creek, South Milwaukee and Milwaukee) stormwater outfalls and other municipal infrastructure with the greatest potential to influence water quality will be identified and monitored. Samples from stormwater or other municipal infrastructure will be analyzed for the previously mentioned suite of indicators, with the exception of dissolved oxygen, and the addition of residual chlorine, detergents, copper and phenols. Beyond water quality and habitat assessments, this project will facilitate two stakeholder meetings to determine key issues of concern within the watershed, disseminate monitoring results and form a coalition of interested individuals which will prove invaluable to future projects within the watershed.

Oak Creek is one of the few remaining Great Lakes tributaries within Southeastern Wisconsin lacking in sufficient monitoring data to elucidate water quality within a broader context and without a watershed restoration plan. Through the body of work outlined within this proposal, an initial baseline will be established that will serve as a foundation for future watershed restoration planning. This will identify and focus near term and future efforts on impaired and problematic areas. Further, this will provide an important initial index upon which the success of restoration projects may be judged. Through a complete assessment of this watershed, scientifically defensible priorities will be established to reduce pollutants and improve ecological health. This will prevent the use of limited funds on projects which fail to address watershed needs. The monitoring results will also be used to recommend site appropriate best management practices for the improvement of water quality. By engaging the public and assembling stakeholders, a coalition will be established that will serve as a cornerstone for future projects and restoration work. This project should take place while coastal monitoring is occurring and is the rational next step in promoting and enhancing the nearshore health of Lake Michigan, the riparian corridors within the Oak Creek watershed and contiguous areas of the Kinnickinnic River watershed.