MDEQ Update – Focus on Sustainability

Detroit River Lighthouse, photo courtesy of the Friends of the Detroit River
DEQ Overview

- 1,100 Employees
- 3 Offices
- 6 Divisions
- 11 District Offices
DEQ Organizational Structure

- Air Quality Division
- Drinking Water and Municipal Assistance Division
- Oil, Gas, and Minerals Division
- Remediation and Redevelopment Division
- Waste Management and Radiological Protection Division
- Water Resources Division
DEQ Priorities

- Protect public health & environment
- Assist Michigan communities with addressing infrastructure needs
- Build external partnerships to address Michigan’s environmental issues
2018 State of Michigan Budget

- Health & Human Services: 45%
- Education: 29%
- Jobs: 11%
- Government Services: 7%
- Public Safety: 6%
- Quality of Life: 2%
- Health & Human Services: 45%

Total: $56.3 Billion
2018 DEQ Budget by Fund Source

- Restricted Funds: $201.3 Million (40%)
- State GF/GP: $51.3 Million (10%)
- Bond Funds: $88.2 Million (17%)
- Federal Funds: $170 Million (33%)

Total: $510.8 Million
2018 DEQ Budget by Category

- **Local Grants & Loans**: $218.3 Million, 43%
- **Remediation & Redevelopment**: $100.9 Million, 20%
- **Water Resources**: $96.5 Million, 19%
- **Administration**: $34.8 Million, 7%
- **Air Quality**: $27.1 Million, 5%
- **Waste Management**: $16.5 Million, 3%
- **Oil, Gas, Mineral**: $10.7 Million, 2%
- **Environmental Assistance**: $6.4 Million, 1%

**Total**: $510.8 Million
Water Resources

- Protect and Monitor
  - 4 Great Lakes
  - 3,288 miles of Great Lakes shoreline
  - 11,000 inland lakes
  - 36,000 river miles
  - 5.5 million acres of wetlands
  - 70,000 acres of critical dunes

For swimming, fishing, drinking water and aquatic ecosystems.
DEQ Update – Water Quality Program

- NPDES permits – working to reduce the backlog
- Continuing CSO/SSO correction programs
- Issuing individual MS4 storm water permits
- Working on implementing Annex 4 Domestic Action Plan to reduce phosphorus discharges by 40% to Lake Erie
NPDES Program

- Meet state and federal water pollution control requirements

- NPDES permits started using technology and water quality based requirements in 1972

- Working to reduce our current NPDES backlog; our goal is to make sure that at least 90% of all permits are current
Michigan’s CSO Control Program

- Refocused in 1988; based on revised WQS in 1986 to protect all waters for total body contact
- CSO Control Manual (1994) documented a phased program; revised WQS led to all discharges with sewage needing disinfection
- Municipalities must either:
  - eliminate the CSO through sewer separation, or
  - provide adequate treatment to meet all water quality standards (WQS) at times of discharge
Adequate Treatment

- **Presumptive definition**
  - complete capture of the 1 yr–1 hr event
  - 30 min of detention of the 10 yr–1 hr event, for screening, settling, skimming, and disinfection

- **Demonstration approach**
  - allows evaluation that treated discharges, across a range of events, meet WQS at times of discharge

- **Typical treatment is a Retention Treatment Basin (RTB)**
Demonstration Criteria

- Refined in 1998 for Rouge River; “Criteria for Success in CSO Treatment”
  - Eliminate raw sewage
  - Protect public health
  - Meet the DO standard
  - Control TRC
  - Ensure health of biological communities

- Now used statewide
Summary of CSO Correction Progress

- In 1988 we had 46 communities that had untreated CSO
- 80% of the 613 CSO outfalls have been eliminated.
- Communities still implementing their long term plans include Detroit, Lansing, Dearborn, Dearborn Heights, Inkster, Sault Ste. Marie, Manistique and Manistee.
- In SE MI, suburban CSOs (23) will be corrected by 2020-2025, and Detroit high priority CSOs (17) will be corrected by 2037
Detroit CSO Correction Progress – completion of core program in 2019
Michigan’s SSO Correction Program

- Orders (ACOs) follow the 2002 SSO Policy
- 2003 SSO Clarification Statement
  - 3.9 inches of rain in 24 hours
  - normal soil moisture
  - rainfall amount NRCS Type II distribution, or Bratter-Sherrill (or equivalent)
- WWTP treat to 25 yr/24 hr event to meet secondary treatment limits
Stormwater Update

Balance compliance monitoring (audits/inspections) with application reviews

Review of MS4 program components for regional and statewide consistency (e.g., street sweeping and catch basin cleaning schedules)
Stormwater Update

Reviewing proposed MS4 county post-construction standards for consistency and idea sharing

MS4 permits issued with a goal of coordinating implementation of post-construction standards on a regional schedule
Stormwater Update

Review findings above the minimum MS4 requirements…

- Post-Construction standards apply in non-urbanized areas and to direct discharges to WOS
- Standards apply to sites <1 acre
- NOAA Atlas 14 rainfall data - channel protection
- Pre-settlement (woods/meadow) as the last land use
- Require retrofits for redevelopment
Stormwater Update

Solutions to Challenges

Allow for extended detention to meet channel protection criteria in C/D soils

Require a suite of BMPs to be evaluated, including GI and LID

- LGROW Green Calculator
- OCWRC Technical Infeasibility criteria
Stormwater Update

Coordinated review of SAW MS4 Stormwater Management Plans with Revolving Loan Section

Recently completed a review of the Round 1 SAW Stormwater Asset Management Plans

Continued support for storm water utility legislation
PFAS

**Per- and Polyfluoroalkyl Substances**

- US EPA designation - national emerging contaminant
- PFAS - suite of chemicals with thousands of applications
- Used in industrial, food, and textile industries
- Characteristics
  - Incredibly stable
  - Break down very slowly
  - Highly soluble
  - Easily transferred through soil to groundwater
Statewide Concerns

- PFAS contamination identified in several locations in Michigan
- Currently – 14 locations, 28 sites
- Sources include:
  - Current and former military installations
  - Tanneries
  - Plating operations
  - Legal and illegal disposal sites
State Response

- Governor Snyder’s Executive Directive 2017-4
  - Michigan PFAS Action Response Team
  - Comprehensive, cohesive and timely response
  - Team lead – Carol Issacs
  - Team advisor – Dr. David Savitz, Brown University
  - Team composition:
    - DEQ
    - DMVA
    - DHHS
    - MDARD
    - Other agencies as needed
Challenges

- Funding
- Test analysis timeframe
- Lack of public health and environmental standards
- Unsettled science
Next Steps

- Secure additional financial support
- Stand up state laboratory capabilities
- Work with USEPA, pass state cleanup criteria standards
- PFAS technical team
- MPART

- Website: [www.michigan.gov/pfasresponse](http://www.michigan.gov/pfasresponse)
Issues Involving System Sustainability

- Stormwater Utility legislation
- Asset Management Program
- Resiliency (Climate)
- Green Infrastructure
- Water Resource Recovery Facility (WRRF) – utility of the future
21st Century Infrastructure Report

- Completed December 2016

- For several sectors (water, transportation, communication, transportation); calls for coordinated asset management; pilot in SE MI and Grand Rapids area

- 5 items from previous slide; Stormwater Utility, system resiliency, green infrastructure, most effective and cost-effective use of infrastructure
Wastewater Asset Management Plans

- A program for maintaining a desired level of service for what you want the assets to provide at the lowest life-cycle cost. Lowest life-cycle cost refers to the best appropriate cost for rehabilitating, repairing, or replacing an asset.

- In a wastewater system, an "asset" is a component of a facility with an independent physical and functional identity and age (e.g., pump, motor, clarifier, etc.).
Wastewater Asset Management Plans

Five Core Questions of Asset Management

1. What is the current state of my assets?
2. What is my required "sustainable" level of service?
3. Which assets are critical to sustained performance?
4. What are my minimum life-cycle costs?
5. What is my best long-term funding strategy?
Wastewater Asset Management Plans

- Currently in 5\textsuperscript{th} year adding to major WWTP NPDES permits

- Will start to add to minor permits with SAW asset management grants

- Will likely add requirements to the new collection system general permit
CMOM

Capacity Management Operation & Maintenance

- Capacity Evaluation (testing, inspection, flow monitoring)
- Management (org structure, training, customer service, legal authority)
- Operation (budget, emergency response, mapping, construction)
- Maintenance (budget, maintenance, cleaning schedules, parts and equipment inventory)
- Rehabilitation (SSO elimination, I/I reduction)
Potential Collection System General Permit

- Internal/External stakeholder group started this June

- Working to address issues
  - related to SSO prohibition
  - system inspections (AM)
  - outlet and internal capacity restrictions
  - fiscal sustainability
  - incentives to participate
Resiliency (Climate)

- Looked at all WRD wet weather programs (CSO, SSO, Storm water, Non-point source, CAFO, resource permitting)
- Had used Bulletin 71, TP 40, and NOAA
- Now will be using NOAA Atlas 14, that includes recent storm data
- Will be messaged to regulated community over the next year
Green Infrastructure (GI) in Detroit WWTP Permit

- Fits within the opportunities provided in the Detroit Future City report

- Areas of Green Infrastructure
  - Upper Rouge Area
  - Near Eastside Area

- Develop a required level of stormwater control for new and redevelopment by 4/1/17
GI - Upper Rouge Area (implementation)

- Requires spending $50 million over 20 years
- Spending consistent with GI Plan, once approved
- Targeted reduction of stormwater of 2.8 MG by 2017
GI - Near Eastside (planning)

- Removes gray CSO projects from previous permit
- Allows for planning of GI potential in an area that has a relatively high amount of vacant land
- Requires a revised CSO correction plan
WRRF

- Working closely with MWEA on their grant (through 2018)
- Working to facilitate Nitrogen and Phosphorus harvesting, biosolids reuse, and energy reduction
- WRD will discuss how to help educate permittee’s on the WRRF process in
  1. permits
  2. DEQ website, conferences
- WRD will participate in Leaders Innovation Forum Technology (LIFT)
Part 41 changes might include:

- Developing checklists for design/build
- Review WRD Innovative Technology
  Review memo to consider LIFT
- Developing a Part 41 permit condition for
  “Ancillary” projects, to the primary function
  of treatment
- Developing checklist for BNR and
  anaerobic digestion
Summary

- At DEQ-WRD we are working in many programs

- WRD will help facilitate sustainability of systems.
Questions
Discussion

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