Integrated Planning: A Solution for Your Utility?
Thursday, April 5, 2018
1:00 - 3:00 PM ET
How to Participate Today

- **Audio Modes**
  - Listen using Mic & Speakers
  - Or, select “Use Telephone” and dial the conference (please remember long distance phone charges apply).
- Submit your questions using the Questions pane.
- A recording will be available for replay shortly after this webcast.

Check out another recent Integrated Planning webcast

- **User Guide to Integrated Stormwater and Wastewater Planning**
  - Feb. 20, 2018 - 1-3pm
  - WEF Members: https://wefcom.wef.org/viewdocument/user-guide-for-integrated-stormwater
  - Non-WEF Members: http://knowledgecenter.wef.org/products/1214
Today’s Moderator

Jamie Hughes
Water Resource Analyst

Today’s Speakers

• Deborah Nagle & Chris Kloss
  • U.S. EPA Perspective

• Chris Hornback & Jim Pletl
  • NACWA Perspective

• Adrienne Nemura
  • Integrated Planning Toolbox

• Ting Lu
  • Integrated Planning 2.0 Innovation
Our Next Speakers

**Deborah Nagle**  
Office of Science and Technology

**Chris Kloss**  
Water Permits Division

Office of Water, U.S. EPA

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**Integrated Planning**  
U.S. EPA Perspective
Overview

Integrated Planning
- History/background
- Recent technical assistance

Long-term Stormwater Planning
- Overview
- Current technical assistance effort

What is the Integrated Planning Approach?

A voluntary opportunity for municipalities to propose to meet CWA requirements

- Sequencing wastewater and stormwater projects in a way that allows the highest priority environmental projects to come first, and
- Potentially using innovative solutions, such as green infrastructure

It is not a means to change

- regulatory standards
  - or
- requirements
Scope of an Integrated Plan

May include National Pollutant Discharge Elimination System (NPDES) permit requirements for:

- Wastewater treatment plants (WWTP/POTWs)
- Municipal separate storm sewer systems (MS4s)

Integrated Plan ELEMENTS

- Element 1 – Water Quality, Human Health, Regulatory Issues
- Element 2 – Existing Systems and Performance
- Element 3 – Stakeholder Involvement
- Element 4 – Evaluating and Selecting Alternatives
- Element 5 – Measuring success
- Element 6 – Improvements to Plan
**Benefits of Integrated Planning**

- Accommodates flexible sequencing and scheduling
  - Realize greater environmental benefits sooner
- Builds public and stakeholder support through outreach and community input on priorities
- Considers separate regulatory requirements together to:
  - Meet requirements more efficiently
  - Maximize municipal resource use
- Encourages more sustainable/multi-benefit solutions
  - Green stormwater infrastructure
  - Addressing non-point sources

**Integrated Planning Technical Assistance**

**Goals:**
- Prepare elements of integrated plans and develop products other communities can use
- Municipalities expect to use plans and analyses to inform discussions of NPDES permit requirements

**Themes:**
- Prioritizing wastewater and stormwater projects using stakeholder input
- Characterizing the value of water to inform decision-making
- Outreach and stakeholder involvement
- Sharing stormwater resources

- Durham, NH
- Burlington, VT
- Onondaga County, NY
- Santa Maria, CA
- Springfield, MO

**$335K**
**Burlington, VT**

**Background**
- Stormwater TMDL/Flow Restoration Plans - Required to identify BMPs to restore flow in 3 impaired watersheds within 20 years
- Phosphorus TMDL for Lake Champlain likely to require additional P reductions from 3 WWTPs and stormwater sector
- 2 WWTP permits currently expired/administratively continued
- Hope to complete a Plan in 2-3 years and work with VT on integrated permit

**Technical Assistance project**
- Support for developing community-derived evaluation criteria based on social, economic and environmental factors to identify and prioritize potential wastewater, combined sewer system, and stormwater projects
- Develop criteria with stakeholders (via webinar & survey) for comparing and ranking SW/WW projects
- Develop evaluations of projects based on this criteria

**Durham, N.H.**

**Background**
- Town completed integrated plan in 2013 to weigh options for WWTP upgrades vs. controlling stormwater/NPS
- 20% of nitrogen to Oyster River comes from Durham WWTP - 80% from stormwater and NPS
- Permitting background: Several NH POTW permits now contain either WQBELs for N or special conditions for tracking and accounting for nitrogen

**Technical Assistance project**
- Evaluate ways Durham and UNH can share costs on redundant SW activities
- Assist regional workgroup (NHDES, EPA Region 1) charged with developing a BMP “tracking and accounting” toolkit for different types of N reduction activities in Southern NH
- Perform baseline nitrogen load analysis for Oyster River Watershed
Onondaga County, N.Y.

Background
- Operates 6 WWTPs with successful “Save the Rain” CSO abatement program through green infrastructure
- 25 MS4s in the county to coordinate
- Phosphorus TMDL for Onondaga Lake with additional reductions from stormwater and WWTPs in the watershed

Technical Assistance project
- Support for engaging multiple MS4s and other stakeholders in integrated planning and the evaluation of proposed wastewater and stormwater projects
- Develop approach to engage stakeholders on integrated planning
- Create framework for identifying, evaluating, prioritizing and selecting new projects

Santa Maria, CA

Background
- Prepared IP white paper- discusses MS4 Phase II permit, post-construction requirements, TMDLs for bacteria, nutrients, toxicity & pesticides, and salts for Santa Maria River Watershed, POTW, groundwater
- Want to work with state (RWQCB) and stakeholders to develop plan to be implemented through permits

Technical Assistance project
- Support for a decision-support tool for integrated water resource management that addresses multiple and interrelated wastewater, stormwater, and other WQ issues
- City has prepared a matrix of multi-benefit projects for consideration
- City has a different contractor (LWA) completing rest of IP
- Aim to submit plan at end of calendar year
Springfield, MO

Background

• Phase 1 MS4, 2 POTWs, TMDLs for James River and Little Sac River
• Completed a plan-for-the-plan focused on all environmental regulation (land, air, & water)

Technical Assistance project

• Support for developing a benefits analysis of water resources for integrated planning
• Data collection on water resource users and valuation of resources that will inform the larger IP effort
• City has a different contractor working on other elements for the IP

A Community-Based Approach to Long-Term Stormwater Planning

• EPA met with states, communities, businesses, industry groups, academia, and NGOs about the best ways to improve stormwater programs
• Communities cannot afford to wait to address the flooding and public health hazards of stormwater
• Many cities have found that an effective, comprehensive approach to managing stormwater includes green infrastructure practices that complement gray infrastructure to manage rain where it falls
Communities Want To...

- Protect public health by providing clean, safe water and resilient infrastructure
- Make smart investments in water systems that promote economic development and attractive communities
- Identify efficiencies and sequence investments to successfully meet Clean Water Act obligations

Community-based Solutions for Stormwater Management: A Guide for Voluntary Long-Term Planning (Draft)

Developed based on sustained engagement with key partners including states, communities, business/industry groups, academia and nongovernmental organizations.

It includes 3 steps:

1. Assess Where You are Now
   - Set Goals
   - Drivers
   - Stormwater Systems

2. Analyze Opportunities
   - Community Involvement
   - Alternatives

3. Move Toward Implementation
   - Proposals
   - Measuring Success

The draft guide is available online to encourage continued dialogue and feedback.

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<td>Element 1 – Description of water quality, human health, and regulatory issues</td>
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<td>Element 5 – Identify, evaluate and select stormwater management alternatives based on identified goals and objectives</td>
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<td>Element 6 – Document a process for proposing investments and implementation schedules</td>
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Targeted Community Help

- EPA is working with 4 communities to develop long-term stormwater plans using the draft guide.
- They will pilot implementation of this approach while providing valuable feedback to improve the guide.
- Results for this assistance will serve as a resource for communities nationwide.
Goals of Long Term Plans

The four communities are interested in pursuing similar goals for their long term stormwater plans:

- Develop Asset Management Program
- Manage Flooding
- Sustainably Finance a Stormwater Program
- Create and Implement Stormwater Development Standards and Educate developers
- Integrate Stormwater into Downtown Redevelopment areas and other Economic Development Plans
- Pursue Stormwater Opportunities in Transportation Projects
- Improve Water Quality and Manage Water Holistically
- Increase Collaboration Throughout the Local Watershed
- Increase the Resiliency to Urban Heat and Water Demand

For More Information


https://www.epa.gov/npdes/stormwater-planning

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Our Next Speakers

Jim Pletl
Chair, NACWA Water Quality Committee

Chris Hornback
Deputy CEO, NACWA

Integrated Planning: The NACWA Perspective
What we have in hand...

• The Framework: a guide for developing an affordable plan to address regulatory requirements in a timeframe and sequence that better considers cost, benefit and societal values.

How we got here...

• Multiple, simultaneous issues/demands
  ▪ Aging infrastructure and historic under-investment
  ▪ Rising service costs and bills to ratepayers
  ▪ Increasingly more stringent water quality goals
  ▪ Growing population

• Economic downturn makes a tough situation even worse

EPA listened and with input from municipalities developed the 2012 Framework
Progress so far...

- Utilities are using IP
  - Enforcement v. permitting context
- Changing mindset at EPA, Congress
- The new ‘norm’ in engaging with the clean water community?

Working to promote and ensure IP is here to stay...

- Seeking legislation to codify IP
- Pushing for technical assistance and funding for pilots to help jumpstart work in this area
- Pursuing longer NPDES permit terms to better match the long-term view in IP
- Engaging administration on its compliance assistance first posture and how IP can play an important role in reducing the need for enforcement
Why aren’t more utilities using IP?

- Fear of commitment
- Belief in the myth that it’s just for CSO communities
- No one wants to be the first to try it
- Trying to do everything under an IP seems too daunting
- ‘We don’t have the resources to undertake something new’
- Our state regulators won’t talk to us about it

Fear of commitment?

- Commitment...
  - forces alignment with community served
  - brings regulatory agency buy-in
  - puts you in control of priorities and decisions
  - encourages other stakeholders - NPS
  - brings adaptive management and flexibility
  - Allows focus on outcomes
It’s just for CSO communities?

Examples other than CSOs:
Fairfax County, VA     City of Oxnard, CA
Burlington, VT        Springfield, MO
Durham, NH            Billings, MT

Don’t want to be the first one to try it?

- NACWA examples and contacts available
- EPA ready to release tech assistance tools
- WRF User’s Guide
- WEF has an IP subcommittee operating within its Watershed Management Committee
- Demand for regional workshops
An IP for everything is too daunting?

- You define the scope
- CWA expects compliance with all requirements at the same time - that’s daunting!
- Focus on desired environmental and human health outcomes and related actions

Don’t have the resources to do something new like an IP?

- You cannot afford to ignore IP!
- IP...
  - maximizes benefit/$ investment
  - encourages more effective and efficient operations (innovation)
  - breaks down organizational silos, streamlines work
Don’t have the resources to do something new like an IP?

• You cannot afford to ignore IP!
• IP...
  ▪ Builds support among resource managers
  ▪ resolves competing demands for resources
  ▪ provides for synergy in projects selected
  ▪ develops support for collecting more data
  ▪ helps you manage risk and uncertainty

State regulators won’t talk to you about it?

• This is a community option, not a regulator option
• Community support for IP will get the regulator’s attention
• Issues with affordability, addressed through IP, will engage the regulators
• EPA should be available to help
IP should be considered by all communities...

- Costs of providing services will continue to rise
- Environmental and human health goals will likely continue to be more challenging to meet
- Community expectations grow over time
- If these stressors do not apply today they certainly will in the near future

Our Next Speaker

Adrienne Nemura
Senior Principal Engineer

Geosyntec consultants
Integrated planning relies on diverse tools to facilitate sustainable & comprehensive approaches

- Social
- Technical
- Scientific
- Stakeholder
- Economic
QUALITY ASSURANCE PROJECT PLAN

COMMUNITY INSIGHT SURVEY

69 COMMUNITIES

SYSTEMATIC REVIEW

CASE STUDY

USER GUIDE

7

Map of 69 communities across the United States, with case studies indicated by different symbols:
- Case-Studies
- Never considered or incomplete
- Considered, decided not to
- Currently Considering
- Currently Undertaking
- Completed
- EPA Technical Assistance
Survey: Insights from Those Who Have Considered or Undertaken Integrated Planning

- Where have you experienced problems or frustrations?
- What could have made a difference for you?
- What tools do you wish you had? What improvements or tools are most needed?
- Bureaucracy - EPA (esp. regions) and DOJ, community; less of an issue with state regulators
- Cooperation, partnership, flexibility from regulators
- Cited: templates, examples, case studies, technical tools
- A liaison dedicated to coordinating regulatory and permit issues with enforcement people
General Advice for Pursuing Integrated Planning

- Review the case studies to ground process & goals
- Develop your road map
- Provide a high level of supporting data (pre- and post-plan)
- Be creative! Opportunity for site-specific program that is reasonable, affordable, and sustainable.
Advice on Regulatory Engagement

• Where you are in the process may impact the benefits of integrated planning
• Engage the agencies early and often
• Develop a relationship
• Consider the financial risks & make sure your government officials understand the commitments in the plan
• Include something to offer the regulators ("win-win")
• Be prepared to go higher up

Advice

• Understand your goals so you can identify the benefits and implications
• Develop non-traditional partners & spend up-front time
• Communicate clearly and often internally & externally
• Be flexible and adaptable to changing circumstances
• Plan, plan, plan (communication & outreach, marketing, technical)
• Understand funding sources and limits
Case Studies

Peoria, IL - did not pursue over concerns about adding obligations to CSO plan & need for state experience

Fairfax County, VA - using process internally due to busy board

Capital Region Water, PA - establishing priorities across WW, SW, DW; CSO Consent Decree, TMDLs, MS4 permit

HRSD, VA - pursuing zero discharge goal with recycled water; addressing land subsidence, generating credits for SW pollutants
Oxnard, CA - addressing seawater intrusion, groundwater recharge, and water supply

Lima, OH - tackling affordability issues and future regulatory requirements

Springfield Water & Sewer Commission, MA - asset management
Integrated Planning - Getting to “Yes”

For more information...

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Our Next Speaker

Ting Lu
Principal Engineer

CleanWater Services

Integrated Planning Experience From CWS

Dr. Ting Lu, Ph.D., P.E.
Principal Engineer
Clean Water Services
Hillsboro, Oregon
WEF Integrated Planning Subcommittee Chair
Clean Water Services

• Regional wastewater and stormwater district in cooperation with:
  ▪ 12 member cities
  ▪ Washington County

• Service population >560,000

• Operates four wastewater treatment facilities

• Implements municipal stormwater program

• River flow management and regional water supply planning

Outcome: Watershed Health

Today, We Face Complex Environmental Problems

Drought and Flooding

Hydro Modification

Nutrient Issues

Aging Infrastructure

Stormwater Phase II Permit

CSO and SSO

Regulations
Using Public Resources With Wisdom Through Integrated Planning

Regulators

NGOs

Communities

Partners

Board members

Employees

Driver for Integrated Planning?

- Not a CSO community
- Not a consent decree driver

Watershed Outcome-Based Integrated Planning

- Use public resources with wisdom
- Protect holistic resources
- Provide additional community benefits besides regulatory compliance
- Create a supportive regulatory structure
Outcome-Based Integrated Planning

- Innovative regulatory framework
- Leverage partnerships
- Integrated project implementation
- Collaborative culture

Regulatory Framework With Innovation? (!!!)

- First watershed-based permit
- Water quality trading
  - Innovative temperature trading
  - Restoration and flow augmentation
- Mass bubbled loading
  - TSS, Ammonia, Phosphorus
Benefits of the Watershed-Based Permit

• System-based approach rather than managing impact from individual WWTFs
  ▪ Optimize existing infrastructure
  ▪ Reduce chemical cost
  ▪ Reduce energy cost
• Allows support for a complex TMDL
• Provides pathway for restoration improvements
• Creates a shift to watershed-scale management

Lessons Learned

• Need for an appropriate, good quality data set
• Requires a detailed water quality model for the watershed
• Need supportive interactions with state and federal regulators
• Complicated management and implementation
• Involves numerous stakeholders and partners
Outcome-Based Integrated Planning

• Innovative regulatory framework
• **Leverage partnerships**
• Integrated project implementation
• Collaborative culture

Stakeholder Involvement: Leverage Partnerships

• Integrated planning provides a framework to leverage partnerships and resources
• Provides greater watershed outcome
Lessons Learned: Collective Impact Approach Is Effective

- Common agenda
- Shared measurement
- Mutually reinforcing activities
- Communication
- Backbone support

Outcome-Based Integrated Planning

- Innovative regulatory framework
- Leverage partnership
- Integrated project implementation
- Collaborative culture
Integrated Project Implementation

Proposed Rock Creek Expansion

- Nutrient removal and recovery
- Temperature reduction

Fernhill NTS Tertiary Treatment

- Nutrient removal
- Temperature reduction

* 2010 Dollars

Integrated Treatment: Maximizing Use of Existing Infrastructure

- Year-round WWTF operation
  - Secondary treatment for phosphorus and CECs

- Treatment wetlands
  - Temperature reduction
  - Ammonia removal
Environmental Benefits

Social Benefits
Lessons Learned

• Integrated projects require integrating scientists, regulators, ecologists, engineers, architects and citizens
• Lots of challenges between opportunity and implementation

Outcome-Based Integrated Planning

• Innovative regulatory framework
• Leverage partnerships
• Integrated project implementation
• Collaborative culture
Integrated Planning Approach Requires a Change in Organizational Structure

- Hierarchical along departmental lines
- Individual project orientation
- Consultation model between departments

Working in Department Silos

- Multi-disciplinary teams
- Thematic and project-based
- Interconnected and networked
- Co-creation model

Working in Interconnected Hubs as an Ecosystem

Infusion of a new way

CWS’s Integrated Planning Structure
Permit Compliance Approach

Watershed Approach

Be Part of Integrated Planning

Join Watershed Management Committee and Integrated Planning Subcommittee to learn, share, and advance the IP effort!
Questions

lut@cleanwaterservices.org

Questions?