



One Water
Collectively Managing Wastewater,
Stormwater, and Drinking Water

Presented by

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Outline for Today

- **Introductions**
- **One Water Approach**
- **Arenas for action**
- **Case Studies**
- **Questions**

One Water Approach



- **Created in 2008 by the US Water Alliance**
- **All water has value**
 - Developing a mindset that all water is important
 - Manage all sources carefully and collectively
 - Identifying and advancing achievable solutions to most pressing water challenges

What is the One Water Approach?

- **Managing water in an integrated, inclusive, and sustainable manner**
 - Salvaging nutrient & energy from wastewater
 - Green infrastructure systems
 - Collaboration on water quality issues
- **Effort to achieve multiple benefits**
 - Social
 - Industrial
 - Environmental

What is the One Water Approach?

■ Watershed-Level Planning

- Minimize disturbance to geology and hydrology
- Conservation of ecosystems
- Reconciliation with communities
- Creation of social programs for low-income people

■ Long term planning

- Ensuring continuing supply for generations
- Assessing impacts of climate change

What is the One Water Approach?

■ Optimizing resource allocation

- Investing in storm water management infrastructure in areas more prone to flooding
- Using natural geology and hydrology to improve water quality

■ Creating partnerships

- Recognizing every stakeholder group
- Collaboration to solve problems

■ Inclusion and engagement

- All people have the right to quality drinking water
- Recognizing that low income people and minority groups are often disproportionately impacted

Arenas for action



#1: Reliable and Resilient Water Utilities

■ Diversifying water supplies

- Rapidly respond to changes in availability and demand
- Increase water storage capacity
- Extending water systems to new sources
- Matching water quality to actual end use

■ Transforming wastewater into a resource

- Nutrient and Energy recovery
- Water reclamation
- Anaerobic digestion

#1: Reliable and Resilient Water Utilities

■ Forging new business models

- Increase cooperation and service sharing
- Developing new funding and financing tools
- Public-Private partnerships

■ Green Infrastructure

- Reduce volume of stormwater going into combined sewers
- Provide aesthetic value to neglected communities
- Eases surface water management

#2: Thriving Cities

■ Integrated planning across water cycle

- Overcome fragmented nature of water governance and transform into an integrated water resource planning
- Balance water needs throughout each community

■ Utilizing onsite water systems

- Develop, conserve, and reuse water
- Create policies to support and incentivize use of local and decentralized water systems
- Increase local water efficiency

#2: Thriving Cities

■ Adopting a “dig once” approach

- Building common trenches for multiple utility lines including gas, electric, water, telecommunications, etc.
- Coordinate schedules with road or utility related repairs
- Simplify permitting and construction

■ Deploying technologies to improve decision-making

- Advanced sensors to detect vulnerable or leaking pipes
- Measuring and improving performance
- Collecting data on flow, pressure, distribution, etc.

■ Managing water to foster climate resilience

- Optimize land use planning
- Flood protection
- Utility strengthening

#3: Competitive Business & Industry

- **Integrating water stewardship into company strategy**
 - Establishing stewardship strategies including goals for conservation and sustainability
 - Reduction of “water footprint” as part of a company’s social responsibility goals
- **Deploying water efficiency, stormwater management, & water reuse at industrial facilities**
 - Improving water efficiency in manufacturing process
 - Water reuse systems for industrial and irrigation purposes
 - Strategically identifying risks and challenges in watershed
- **Developing upstream & downstream partnerships**
 - Recognizing offsite challenges to drive collective action
 - Collaborate across sectors and supply chain

#4: Sustainable Agricultural Systems

■ Using on-farm strategies to reduce water consumption and manage nutrients

- Keep nutrients in fields
- Reduce nutrient loads on stormwater runoff
- Utilization of field practices: Cover crops, filter strips, no till or strip till farming
- Use of bioreactors to prevent nitrate and sediment runoff

■ Partnerships between upstream & downstream communities

- Collaboration between urban and rural entities
- Promote water protection
- Uniting stakeholders around a common vision and approach

#4: Sustainable Agricultural Systems

- **Using watershed-scale planning and monitoring**
 - Monitoring and mapping
 - Predictive watershed modeling
 - Standardized data collection

#5: Social & Economic Inclusion

■ Building a water safety net

- Providing everyone with a basic level of access to safe, reliable, and affordable water & sewer service
- Determine financially sustainable approaches
- Resolve water safety issues to ensure long-term and reliable access

■ Leveraging water investments to generate community benefits

- Economic growth by investing in water infrastructure
- Creating well paid jobs with career growth opportunities

#5: Social & Economic Inclusion

- **Fostering community resilience in the face of changing climate**
 - Assessing environmental and economic challenges
 - Identify communities likely to be hit first and worst
 - Planning and investing to protect communities at risk
- **Enhancing community capacity to engage in water planning and governance**
 - Engage community organizations and local leaders
 - Generating community awareness of local water issues
 - Increase public participation in infrastructure planning

#6: Healthy Waterways

- **Maximizing natural infrastructure for healthy ecosystems**
 - Use forests, wetlands, & riparian habitat to control flow and prevent nutrient and sediment discharge
 - Minimize disturbance of natural flow
- **Managing groundwater for the future**
 - Prevent groundwater levels from falling further
 - Using rainwater to replenish aquifers
 - Enable large scale water reuse

#6: Healthy Waterways

- **Protecting forests to protect water**
 - Prevent further declines in forest cover
 - Protect forests adjacent to waterways to prevent nutrient runoff
- **Utilizing citizen science for ecosystem monitoring and watershed restoration**
 - Create awareness of water related issues
 - Treat community complaints as early warning systems
 - Create more actionable solutions by having support of the community

Case Studies

- Philadelphia Green City, Clean Waters
- One Water Los Angeles

Philadelphia Green City, Clean Waters

- Citywide plan to mitigate pollution caused by increased urbanization
- Construction of green infrastructure
- Billing incentives
- Stormwater management on private developments



Philadelphia's Challenges

- Water quality
- Aging infrastructure
- Degraded waterways
- Flooding
- Combined sewer overflows



Green City, Clean Waters - Benefits

■ Waterway Restoration

- Identifying areas prone to water quality and flooding issues
- Streambank engineering
- Floodplain and wetland remediation
- Riparian vegetation buffer

■ On site stormwater management

- Intrinsically decentralized
- Decrease urban runoff
- Increase groundwater recharge

Green City, Clean Waters - Benefits

- Green Stormwater Infrastructure
 - Enhance watershed health
 - Improve quality of parks and recreational areas
 - Reduce localized flooding
 - Reduce runoff volume
- Extending life of existing sewer infrastructure
 - Inlet cleaning and litter pollution prevention
 - Inspection and maintenance
 - Real time data collection



One Water - Los Angeles

- Integrated approach for water supply wastewater treatment & stormwater management
- Managing water in areas affected by drought
- Develop framework for managing the city's water resources



One Water LA - Challenges

- Dependence on imported water
- Droughts
- Flooding
- Inadequate funding
- Aging infrastructure
- Climate change

One Water LA - Goals

- Assess objectives for water policy
 - Improve health of local watershed
 - Balance between social, economic and environmental goals
 - Increase climate resilience and supply reliability
- Water integration
 - Reducing demand
 - Reusing water by recycling for non-potable uses
 - Capturing stormwater both locally and centrally

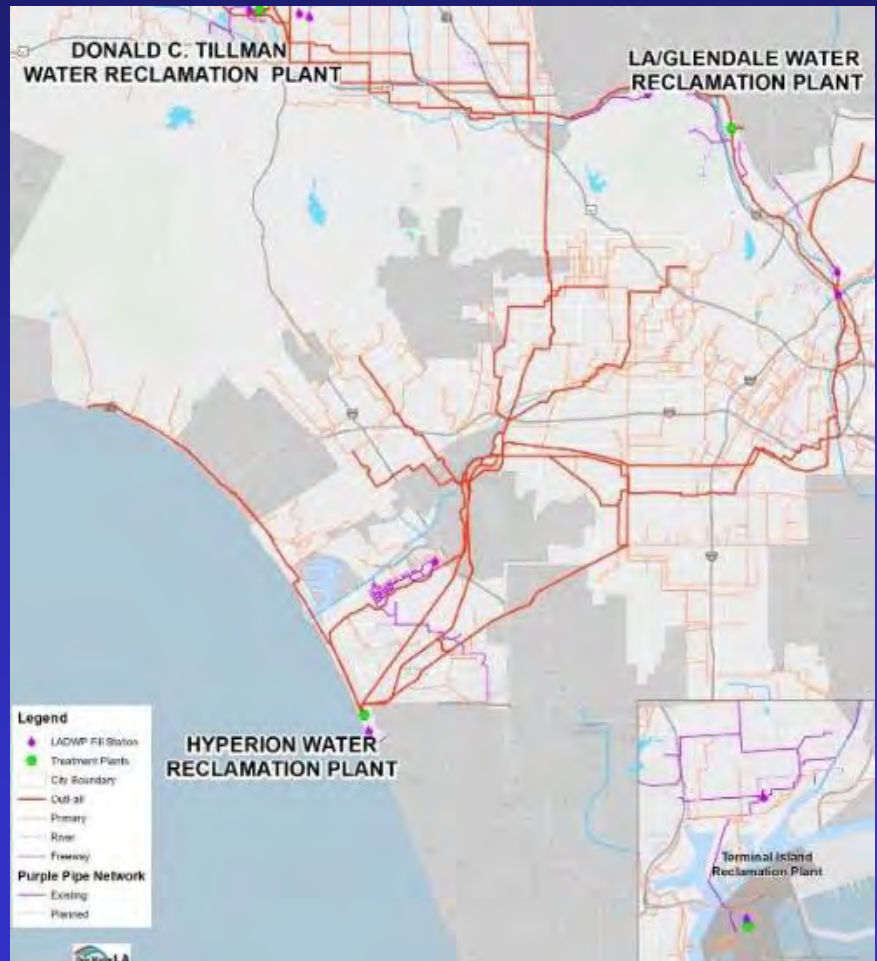
One Water LA - Goals

■ Collaboration

- Creating partnerships
- Identification of funding strategies
- Alternative analysis

■ Innovation

- Increase water recycling by construction of new reclamation plants
- Increase sewer flows with runoff
- Reconfigure sewer alignment



One Water LA - Benefits



Questions

- **For more information, please contact:**

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Websites

- <http://uswateralliance.org/sites/uswateralliance.org/files/publications/Roadmap%20FINAL.pdf>
 - One Water Roadmap
- <https://www.lacitysan.org/san/sandocview?docname=cnt016744>
 - Stakeholder informational meeting One Water LA Overview
- http://www.phillywatersheds.org/what_were_doing/documents_and_data/cso_long_term_control_plan
 - Green City Clean Waters