Sustainable Infrastructure … Linking it all together

WRAC

October 8, 2008
Executive Order

Sustainable Water Infrastructure Task Force

Identify the following by October 1:

- The “gap” between financial need and available resources
- Cost savings due to non-structural alternatives
- Actual costs for providing services
- Recommendations for promoting components of Sustainable Infrastructure

Revise existing policies and procedures, guidelines and regulations to insure consistency with the principles of Sustainable Infrastructure
So what IS sustainable infrastructure?

Defined as Five Key Elements

- **Effective System Management**
  - Workforce Development and Management Training
  - Practices to Promote Customer Satisfaction
  - Protection of Health and the Environment

- **Asset Management**
  - Long term budget that accounts for repair, replacement of assets by assessing risk for failure

- **Efficient Operation**
  - Optimized operation
  - Water and Energy Conservation

- **Regionalization**
  - “Right sizing”
  - Consolidation

- **Nonstructural Solutions**
  - Integrated water resource planning
  - “Green Infrastructure”
  - Trading
Task Force Structure/Schedule

- Composition (30 members)
  - Legislators
  - Water and Wastewater Industry
  - State Agencies
  - Watershed Associations
  - Environmental Groups
  - Conservation Districts

- Five Workgroups
  - Needs Assessment
  - Financial Resources
  - Innovative Measures
  - Financial Sustainability
  - Legislative and Regulatory Issues

- Public Hearings/Meetings (Eight)
  - Between May 8 and May 31
Total Wastewater Needs Over 20 Years Assuming a 2% Increase in Operating & Maintenance Costs Annually

Total Need is $75 Billion
WasteWater Facilities - Gap vs Rates (2% Increase in O&M Annually)

Total Gap for Facilities Serving Populations:
- a) < 0.1 MGD
- b) 0.1 - 1.0 MGD
- c) 1.0 - 5.0 MGD
- d) > 5 MGD

Gap = $28.3 Billion

Gap = $1.7 Billion
Drinking Water Needs Over 20 Years Assuming a 2% Increase in Operating & Maintenance Costs Annually

Total Needs

- a) <3,301
- b) 3,301-10,000
- c) 10,000-50,000
- d) >50,000

Total Need is $39 Billion
Drinking Water Facilities - Gap vs Rates (2% Increase in O&M Annually)

Total Gap for Facilities Serving Populations:

- a) <3,301
- b) 3,301-10,000
- c) 10,000-50,000
- d) > 50,000

Gap = $15.5 Billion

Gap = $5.1 Billion
So what does this tell us?

- **Total 20-year gap** of $43.8 Billion
  
  \[ \text{Gap} = (\text{Capital} + \text{O} \& \text{M} + \text{Debt Service}) - \text{Revenues} \]

- **Capital needs** are $36.5 Billion:
  - $25 Billion for wastewater
  - $11.5 Billion for drinking water

- **Gap** reduced to **$6.8 Billion** at 1.5% MHI

- **Total existing 20-year subsidy** $2.1 Billion
Effective System Management

- Changes to procurement and bidding requirements, design build standards, minimum wage requirements
- Require/Promote business planning, statement of financial condition to be submitted to either PENNVEST or PUC for review.
- Limit use of user rates to only water/wastewater system improvement, maintenance…no police cars, fire trucks, parks, etc............
Asset Management (AM)

- Establishment of a standard AM system
- Phased approach with assistance programs designed to help systems implement an asset management system.
- Provides a means to make better acquisition, operation and maintenance, and renewal or replacement ….

Decisions
Efficient Operations

- Water Conservation and energy efficiency
- Use of innovative technologies for treatment...ie use the RIGHT technology ....
  - Anaerobic Treatment
  - Wastewater re-use
- I & I
  - Require inspection of laterals at time of house sale
  - Establish standards for leakage, water loss
Regionalization

- Financial incentives to promote
- Can be achieved without physical connection
- Creative approaches for:
  - Sharing of resources
  - Integrated planning
  - Private/public partnerships
- No new, non-viable systems
- Examples:
  - Three Rivers Wet Weather
  - SW Regional Planning Effort
Maximizing Non-structural Alternatives

Watershed-based approaches with integrated resource management

Incentives for installing riparian forests, rain gardens, green roofs, and creative practices for flood control... green infrastructure

From Stroud Research Testimony... Forest Buffers remove on average 26% nitrogen and 43% suspended sediment

Trading Programs

From East Liberty Testimony... Estimate elimination of 85% of their CSO flow through installation of practices such as these.
It’s about education

- Educating the **public** on the value and true cost of the service
- Educating **decision makers** on effective system management
  - Board/Management training
- Educating **students** on potential careers
- Educating **operators** on the importance of their job
Any Questions?

Website:  www.depweb.state.pa.us

Hot topics “Sustainable Water Task Force”
Keyword: “operators”

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