

# Stormwater Master Planning: *Putting the Pieces Together*

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# Briefing Points

- **Historic causes of disconnection**
- **Common puzzle pieces**
- **Common focus of master planning**
- **Master planning for connectivity**
- **“Emerging” themes to consider**
- **Key considerations**
- **Questions/Discussion**



# Historic Causes of Disconnection



# Historic Causes of Disconnection

- Evolution of drainage systems
  - No over-arching masterplan
- Reactive
  - Flood event
  - Development
- Representative of larger “program”



# Historic Causes of Disconnection

- **Easy to overlook /neglect**
  - **Inconspicuous system**
  - **Sporadic symptoms**



# Historic Causes of Disconnection

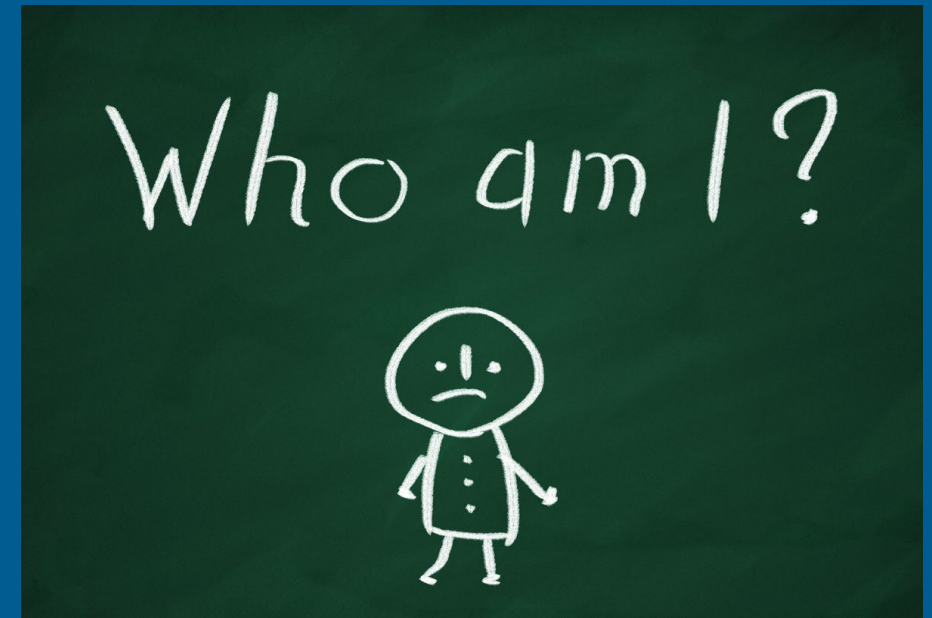
- Late arriving regulatory drivers



*City  
Drainage Criteria Manual*

# Historic Causes of Disconnection

- **Lack of “program identity”**
- **Commonly a step-child of streets**
- **Both a symptom and cause**



# Common Pieces of the Puzzle



*System  
Maintenance  
& Repair*

*Flood/Erosio  
n Mitigation  
(CIP)*

*Sinkholes*

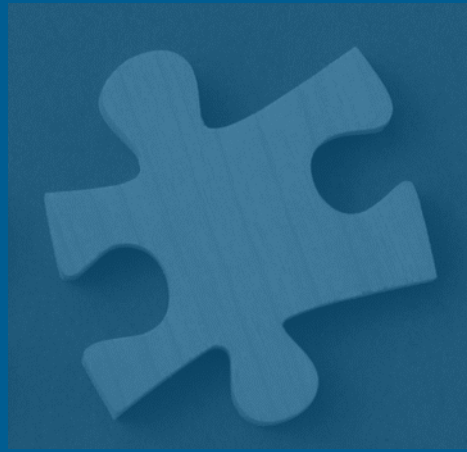
*Flood/Erosion  
Risk Mapping*

*Water  
Quality*

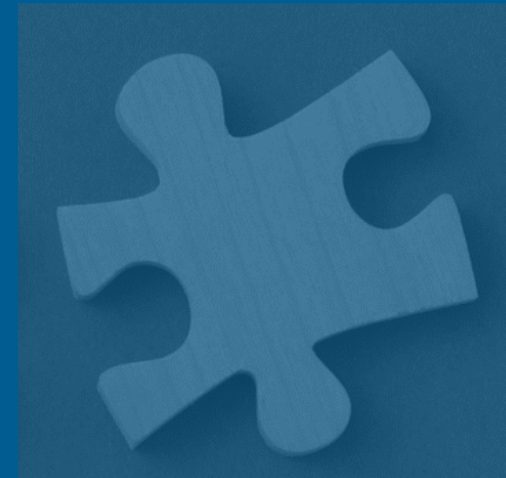
*Floodplain  
Administration*

*Development Review*

*Flood  
Warning*



# Common Focus of Stormwater Master Planning



# Common focus of stormwater master planning

- Major
  - Define & mitigate hazards
    - System inventory
    - H&H modeling/erosion assessment
      - Define risks
      - Map floodplains
      - Mitigation alternatives
- Minor (if included)
  - Maintenance best practices
  - Drainage criteria
  - Funding
  - Others

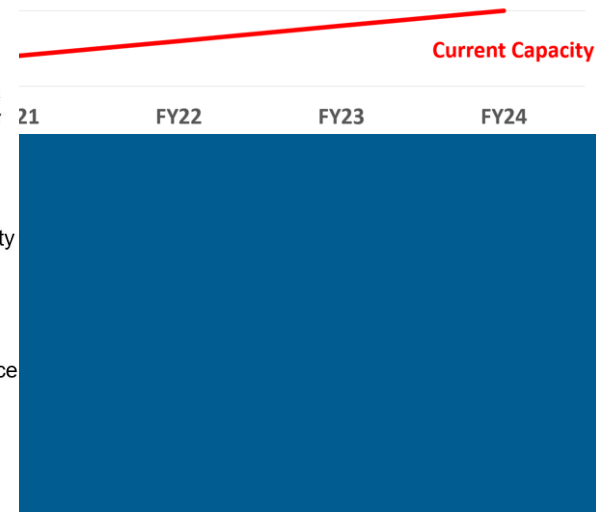
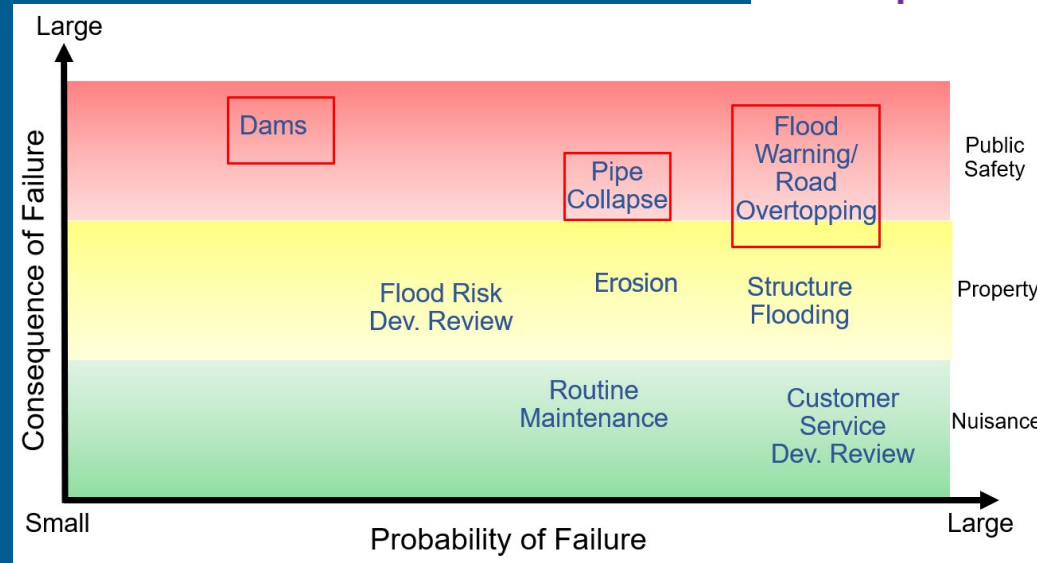
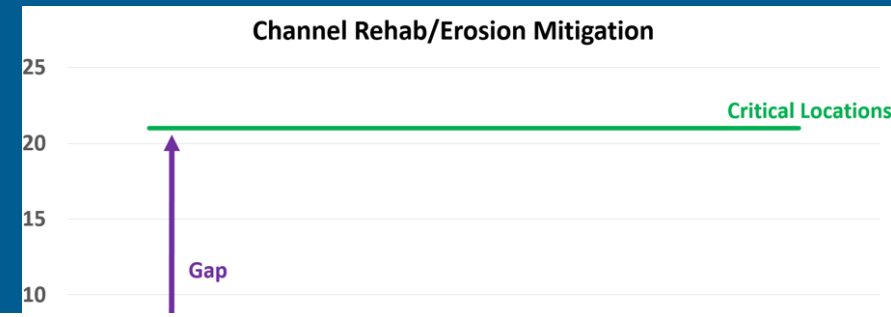
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# Master Planning for Connectivity

# Master Planning for Connectivity

- Define the mission
- Identify the pieces
- Assess the needs
- Prioritize the needs
- Evaluate resource allocation
- Adjust plans accordingly



Program Elements	Support from Drainage Fee*		Support from other funding source(s)**		Funding Level Adequacy***		Comments
	Current	Future Desired	Current	Future Desired	Current	Future Desired	
O&M	Full	Full	None	None	Highly inadequate	Adequate	Would like to stop supporting maintenance work in Parks
Capital Improvements	None	Partial	Partial/Bonds	Partial/Bonds	Inadequate	Adequate	Would like to have an annual PayGo program funded via the drainage fee. Would like to stop contributing drainage funds to Streets projects
Hazard warning							
Water quality	Full	Partial	None	Partial/General Fund	Adequate	Adequate	Would like to scale back street sweeping and reallocate funding.
Development review							

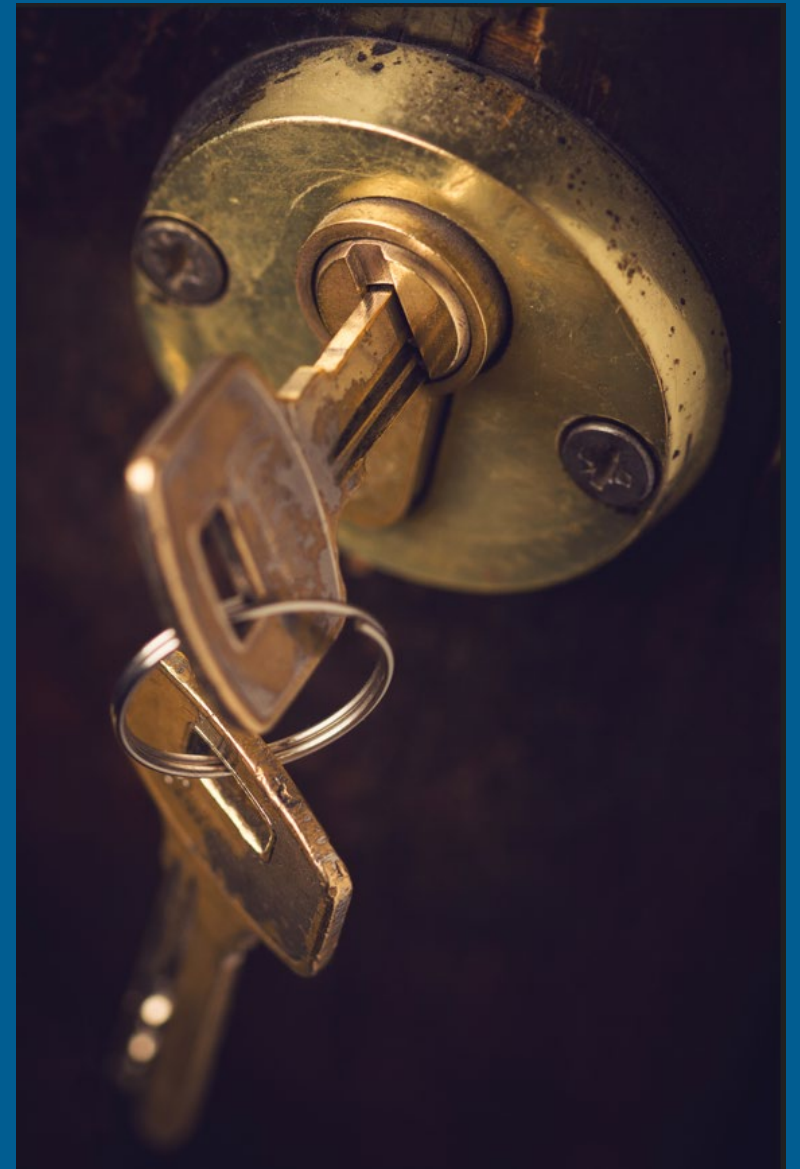
# “Emerging” Trends

- Water Quality
- Asset Management
- Partnerships
  - Public/public
  - Public/private
- Pipe rehab
- State Flood Plan



# Key Considerations

- Stakeholder identification
- Integration readiness
- Staying strategic
- Anticipate moments of opportunity
- Funding alternatives



# Key Considerations

- **Funding alternatives**

- **One time**

- **Grants/Loans**

- Fed'l (FEMA, EPA, HUD, USACE, NRCS)
- State (OWRB, ODEMHS)

- **Partnerships**

- **Ongoing**

- **Stormwater Utility**

- Ops
- CIP (PayGO and Debt)
- Impact fees and Drainage Districts





**Thank you!**



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**130**  
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AND **NICHOLS**