

# Ten Emerging Stormwater Management Best Practices



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# Stormwater, its time to grow up.

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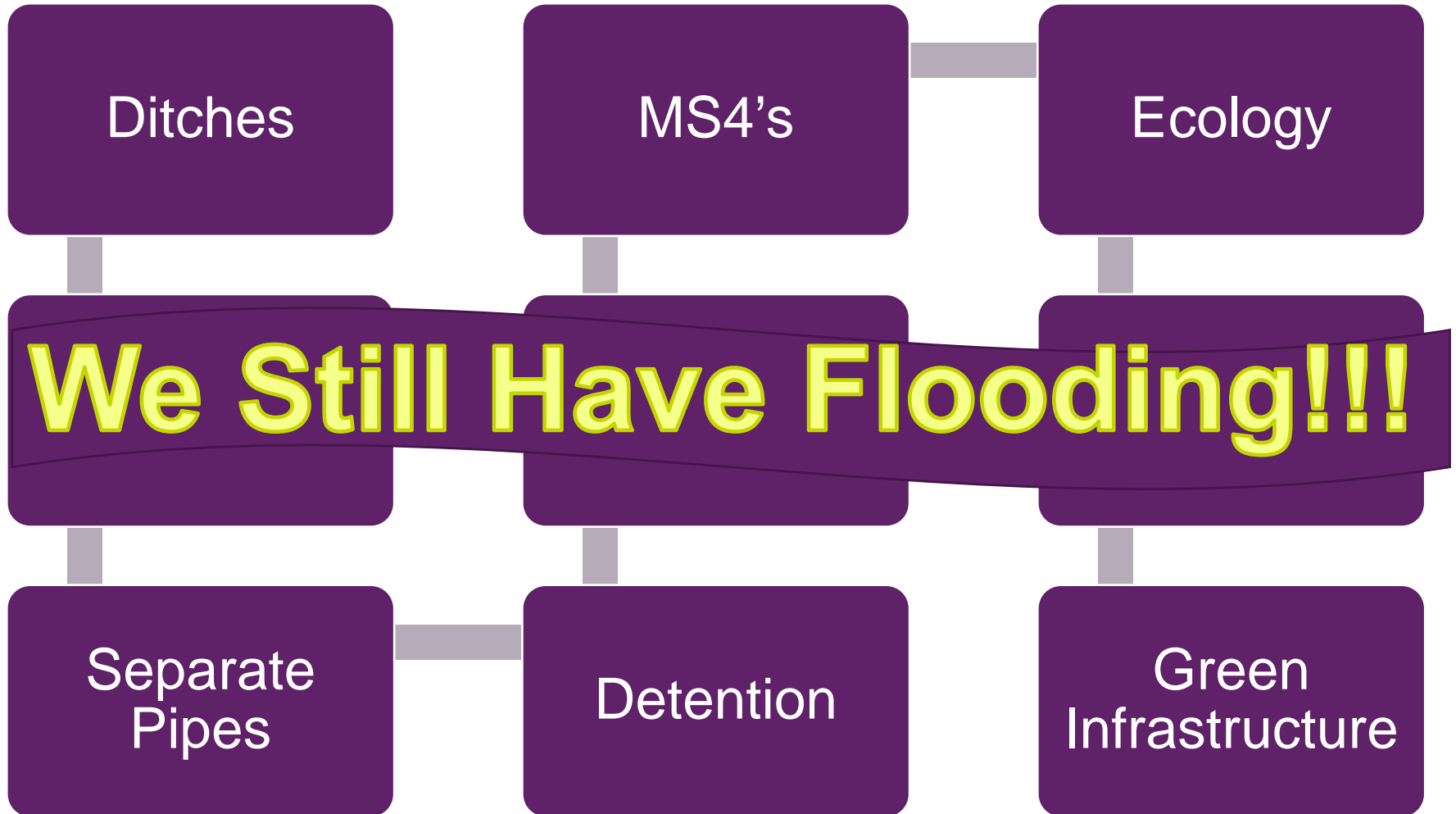
## Disclaimers

- Your favorite new stormwater thing may not be on this list.
  - We understand you inherited a pile of \*\*\*\* from the previous administration and are just trying to cope.
  - Just because it's a common practice doesn't make it a best practice.
  - This is all ideal, may not be practical for your community.
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# Past Stormwater Paradigms

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# Top Ten Emerging Best Practices

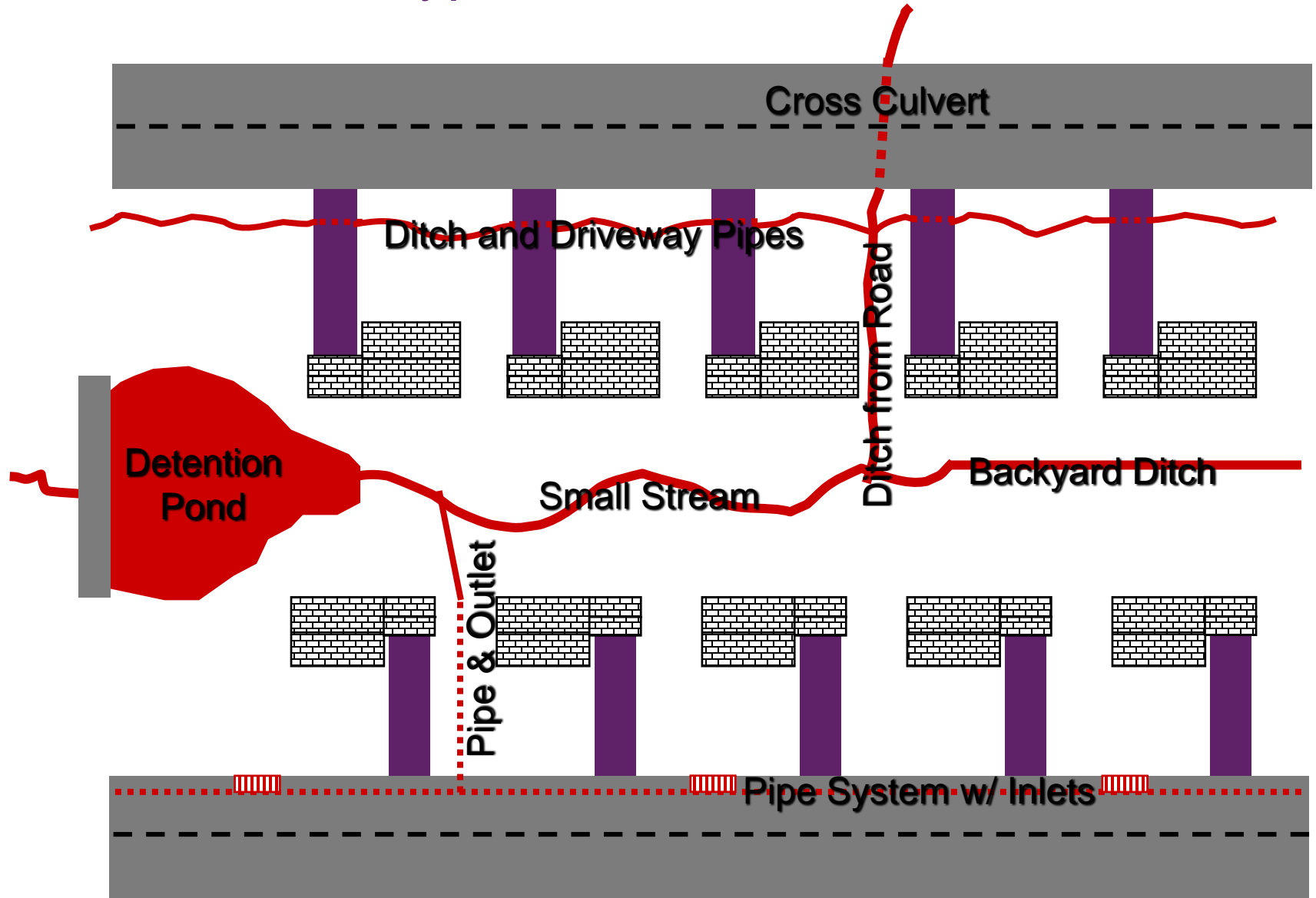
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## 1. System Thinking

**System thinking is not parcel thinking**



# Extent, Level, & Type of Service Policies



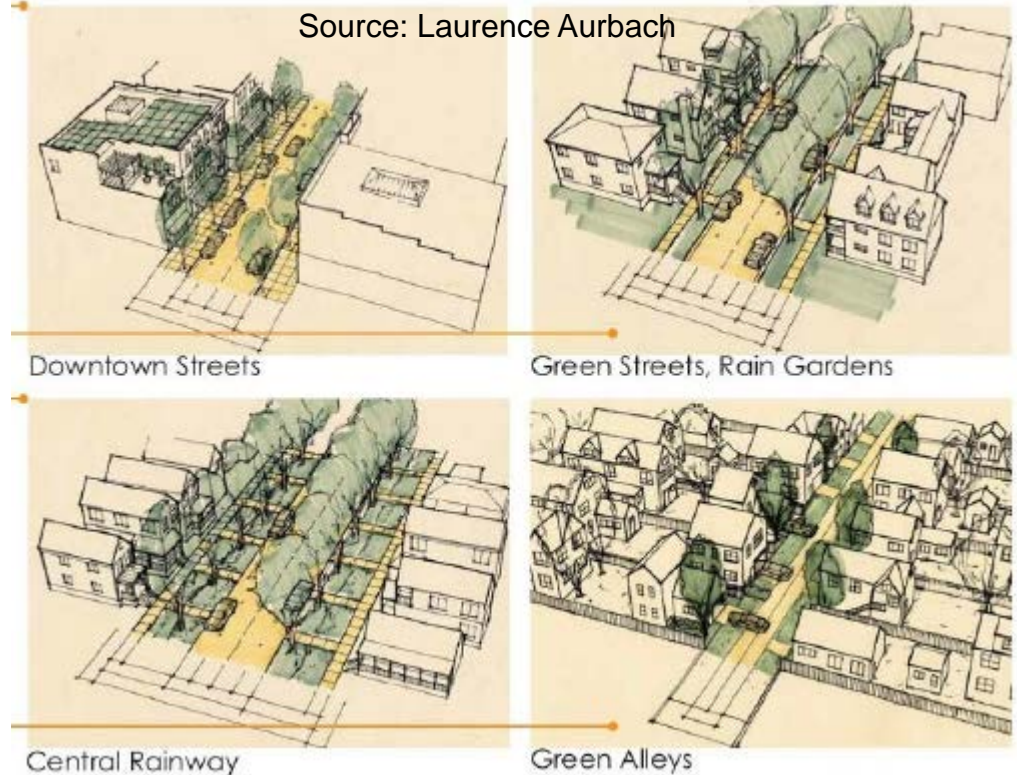


# ROW as a Shared Resource

- The ROW is not a boundary it is a legal line.
- New development concepts blur the ROW line.
- \$\$ - I create legal and financial policies to make it easy to share the ROW for mutual benefit.

***Roadways account for >1/3 of the runoff and pollution – the runoff from them should be managed like that from parking lots... or better.***

Source: Laurence Aurbach





# Top Ten Emerging Best Practices

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## 1. System Thinking

*System thinking also means that my floodplains do not shift over time to flood unsuspecting residents.*

*It means that I have established floodplains everywhere – not just along FEMA streams (Think Baton Rouge).*





# Top Ten Emerging Best Practices

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1. System Thinking

2. Business Thinking

*Your political leaders are often business people. Run stormwater like a business starting with a business plan and a “real” user fee.*





# Top Ten Emerging Best Practices

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1. System Thinking

2. Business Thinking

3. Water Resource Organizations

*Stormwater looks and smells more like wastewater than like police, schools and animal control. Wastewater is run as:*

- *a municipal business*
- *serving customers*
- *having a fully funded, comprehensive program*
- *operating a well-defined and owned system*
- *handling a quantifiable resource*
- *meeting strict regulatory standards as a matter of course*

<http://bit.ly/28K1FIG>



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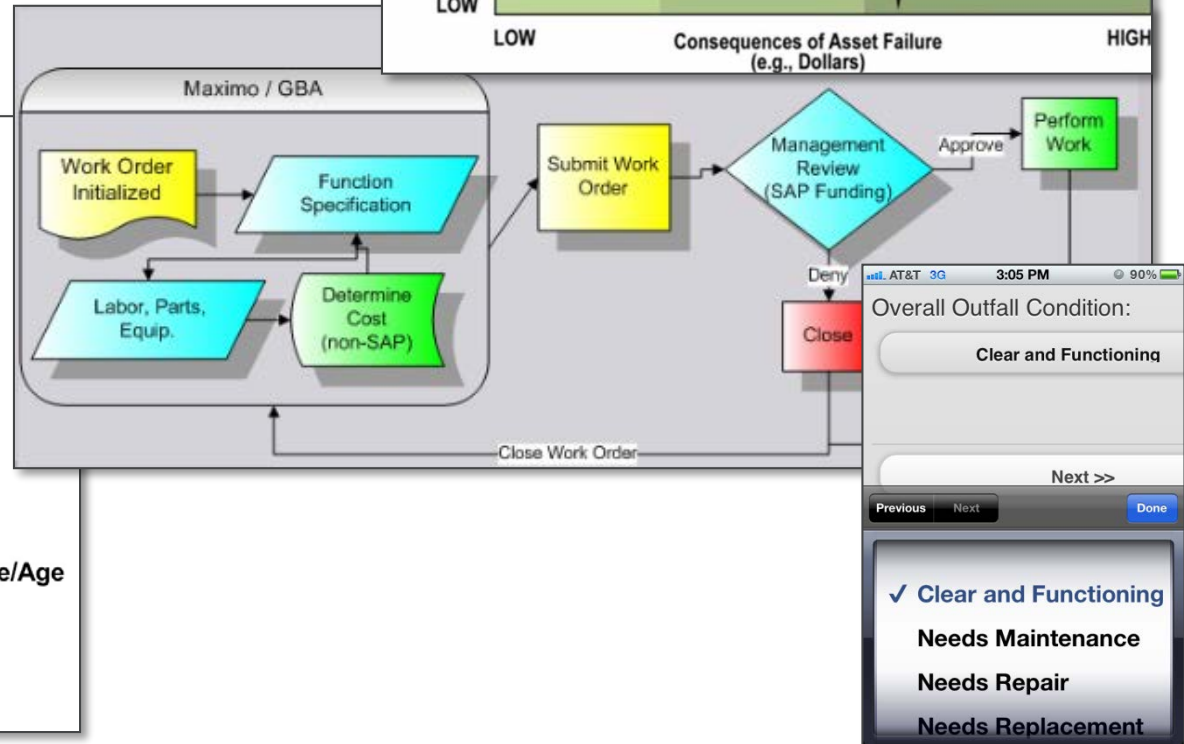
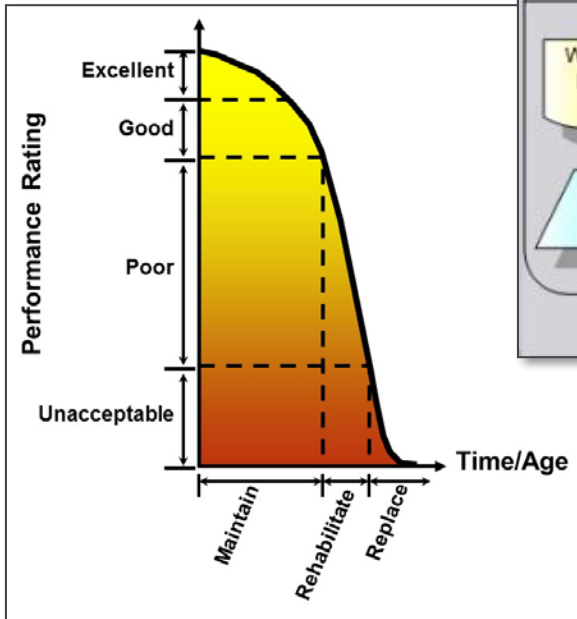
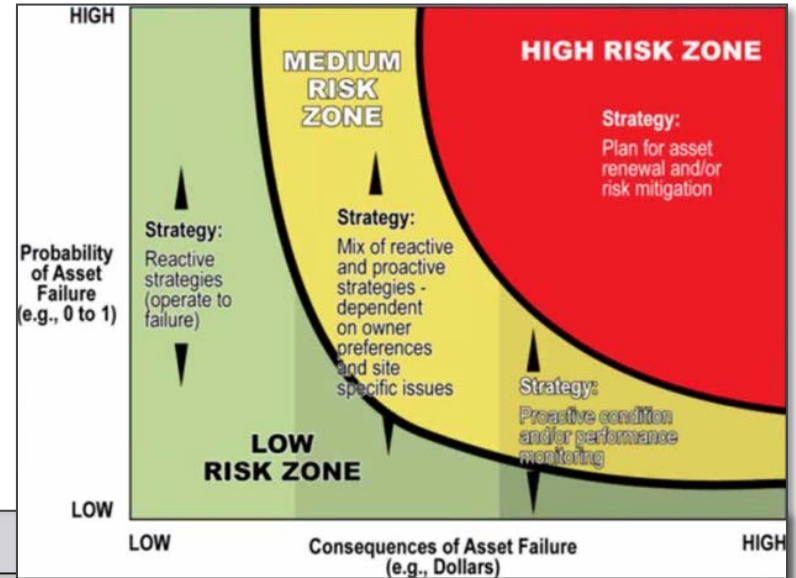
4. Asset Management

Aging infrastructure is the “sleeping giant” for most stormwater programs today.

Asset management will stretch scarce dollars.

# Leaders combine four things:

1. Maintenance Management
2. Risk-Based Asset Assessment
3. Work Order Management
4. Smart Phone/Drone Collection





# Top Ten Emerging Best Practices

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1. System Thinking

2. Business Thinking

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4. Asset Management

5. TBL Thinking

*Conveyance, flood control and pollution reduction are just three out of 20-40 benefits of attractive, sustainable designs.*

*Urban soils are a “building code” issue.*

*Rainwater is a resource we cannot continue to use up. We must be volume-based.*

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# Elmer Avenue Neighborhood Retrofit

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## Google “The Miracle on Elmer Avenue”



Before



After

# Top Ten Emerging Best Practices

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1. System Thinking

2. Business Thinking

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6. Resiliency Planning

*Climate change is a given, resiliency is a must. Predictions increase frequent storms 10-15%.*

# The Resiliency Dividend

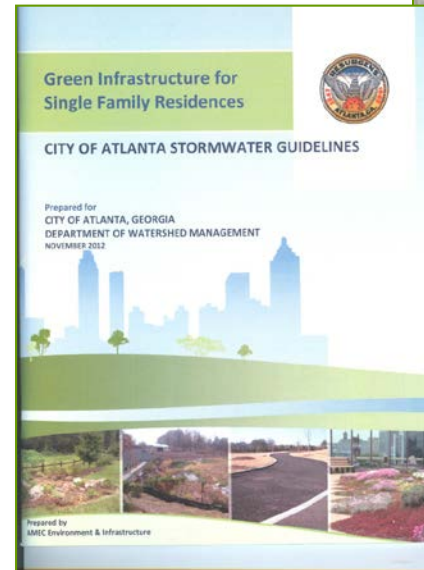
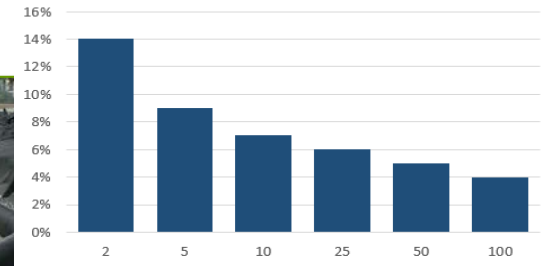
GI can handle that increase effectively – and will create ancillary benefits.

I will create design standards and approaches.

\$\$ - I will modify my rate structure to reflect resiliency and credits.

\$\$ - I will incentivize private resiliency retrofits in areas needing it.

Estimated % Increase in Rainfall Intensity 2015 to 2050





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6. Resiliency Planning

7. Innovative Partnerships

*Maybe others can do parts of your job better than you can. Let them.*

*Public-Private options*

*Non-profits*

*Joining with neighbors*





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7. Innovative Partnerships

8. Modified Rate Structures

*Use funding as a tool to leverage your dollars to encourage best development and maintenance behaviors and private initiatives.*

*Basic methodology, incentives, credits*



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6. Resiliency Planning

7. Innovative Partnerships

8. Modified Rate Structures

9. Strategic Public Engagement

*If you are a business then you have customers. Treat them like that:*

- comprehensive plan*
- social media*
- meaningful involvement*



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9. Strategic Public Engagement

10. Go High Tech as a Policy

*Technology can be a game changer...get in the game.*



# High Tech Ideas

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- Smart phone applications for all data collection, citizen reporting, inspections, etc.
- Use drones to inspect linear features.
- Real-time GI controls get six times better volume efficiency
- Floating outlet structures give exact outflow hydrographs
- Continuous simulation models have both simplifying and complex options
- Real-time weather prediction can save lives and property
- Dashboard-connected monitoring systems save lost opportunities





# Growing Up Takes Time

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- Don't rush off and do something regretful
- Start with a business plan and a data inventory
- Match program changes to funding increases
- Learn from others – shamelessly copy
- Deliver early visible results; don't overpromise and under deliver
- Be patient





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## Questions?

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