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12.05.17

2017 SWAC Meeting #5

Meeting Topics (review)

1. Stormwater Budget & Extent of Service
2. Level of Service
3. Structural BMP's – Tentatively 1/2/2018
4. Stormwater/Watershed Planning
5. Funding Sources and Revenue Options
6. Water Quality Compliance
7. Floodplain Management
8. Regulatory Reforms/Ordinances

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Staff Presentation on Stormwater Program and Budget

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Discussion of Evaluation Criteria
(continued)

Evaluating Extent of Service

- To facilitate evaluation and consideration of extent of service, a number system is suggested
  - 1 critical thru 5 not critical
  - For each program component, the stakeholder group may determine the current ranking & consider if a higher or lower rank is desired

Assignment of Need

- Rank 1 thru 5 / A thru F ?
  - 5/A= Would be nice if cost was no concern – "pie in the sky"
  - 4/B= Exceeds expectations but should be considered if cost not unreasonable – Desirable
  - 3/C= Normal expectation and need to fund if possible - Important
  - 2/D= Bare minimum service that needs to be funded – Very Important
  - 1/F= Current service inadequate and need to fund now regardless of cost – Critical

Assignment of Need

- Preferences for ranking system?

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Extent of Service
(continued from last meeting)

Extent of Service

- Today - consider the current extent of service, the desired extent of service, and then provide a recommendation on what extent is desired

Maintaining Drainage Outside the City (corporate) Limits

- Currently the City does not normally maintain the drainage system outside of the City limits.
- City accepts drainage system when annexed into City
- Where might City maintenance be appropriate?
  - NCDOT roadways where City interests are impacted
  - Where drainage crosses ETJ back into City limits (illustration)

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Find yourself in good company

Maintaining Drainage Outside the City (corporate) Limits

- Most cities restrict their maintenance to the City limits
- Extending maintenance to all ETJ would dramatically increase budget needs
- There may be individual cases where work in the ETJ is warranted – blockage that affects public roads or facilities

Maintaining Drainage Outside the City (corporate) Limits

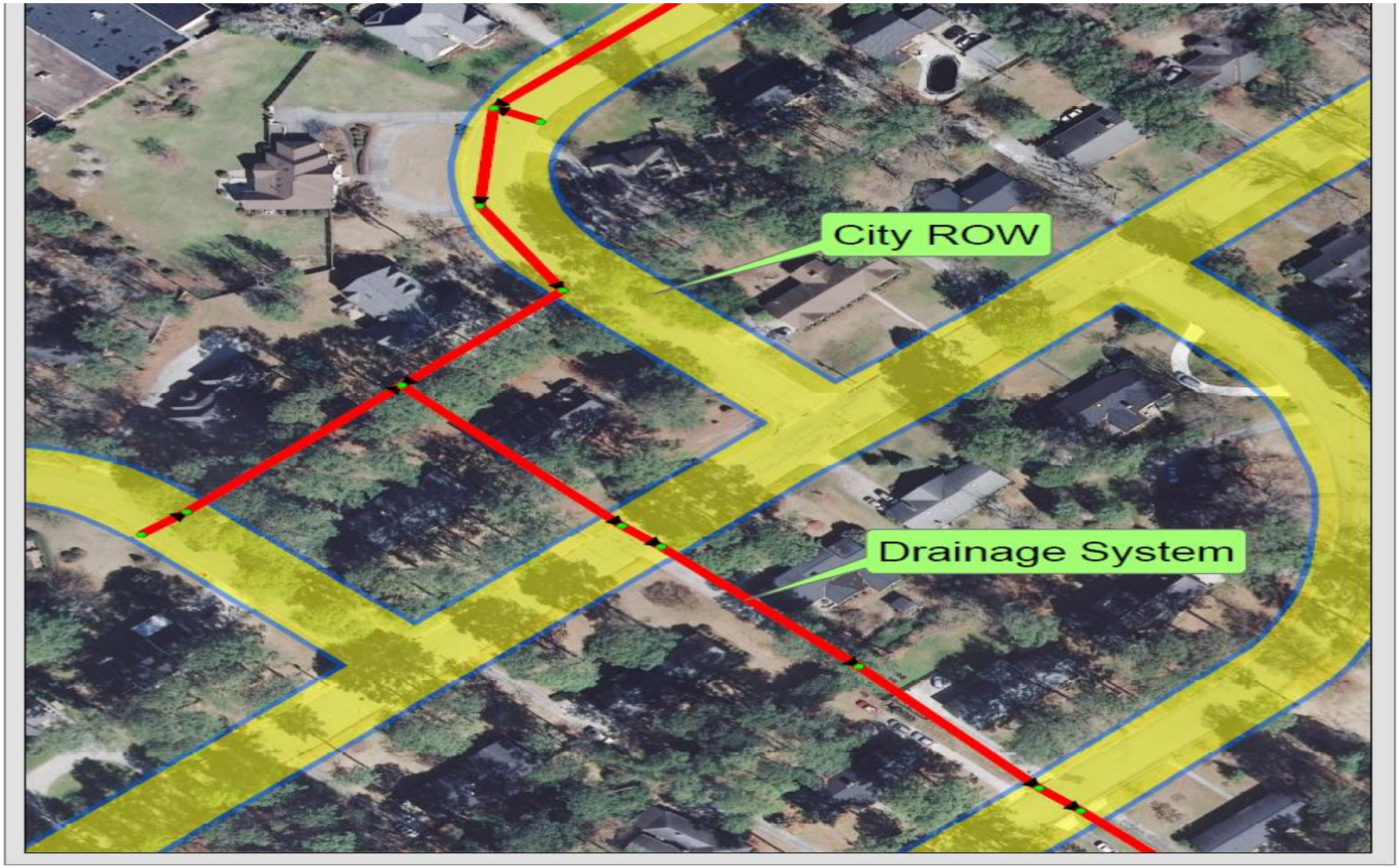
- Options:
  - Maintain only within the City Limits
  - Allow maintenance public outside City limits on a case by case basis
  - Maintain all public drainage within the ETJ
  - Maintain both public and private drainage within the ETJ (with limitations to be discussed in following topics)

Maintaining Drainage on Private Property

- 20-30 years ago, most NC communities only maintained inside the ROW
- (Cary, Asheville, Wilmington) still only ROW
- Many now provide some service on private property due to:
  - Aging infrastructure and inability to pay for repairs
  - Pressure/expectations due to SW Utility Fees

Extent of Service – Private Property Topics

- Should the City maintain beyond the ROW
- Then, the need to convey "Public Water"
- Followed by:
  - Maintaining jurisdictional streams
  - Eroding ditches and streams (non-jurisdictional)
  - Installation of pipes
  - Assistance for failing systems
  - Obtaining easements & accepting maintenance


City ROW
Drainage System

Maintaining Drainage on Private Property

- Options:
  - Continue with the current policy with clarifications
  - Consider modifications to the current limitations/extent
  - Take over maintenance of entire system

Must Convey "public water"?

- Options:
  - Continue with the current policy
  - Provide assistance regardless of public water conveyance
  - Allow assistance where public water is not present on a case by case basis

Maintenance of Private Streams

- The City historically maintains a limited number of Jurisdictional streams
  - Greens Mill Run,
  - Fornes Branch, from Greens Mill Run to NC 43
  - Reedy Branch, from Greens Mill Run to Greenville Boulevard; and
  - Other portions of Jurisdictional Streams in which the City has participated in a drainage project.

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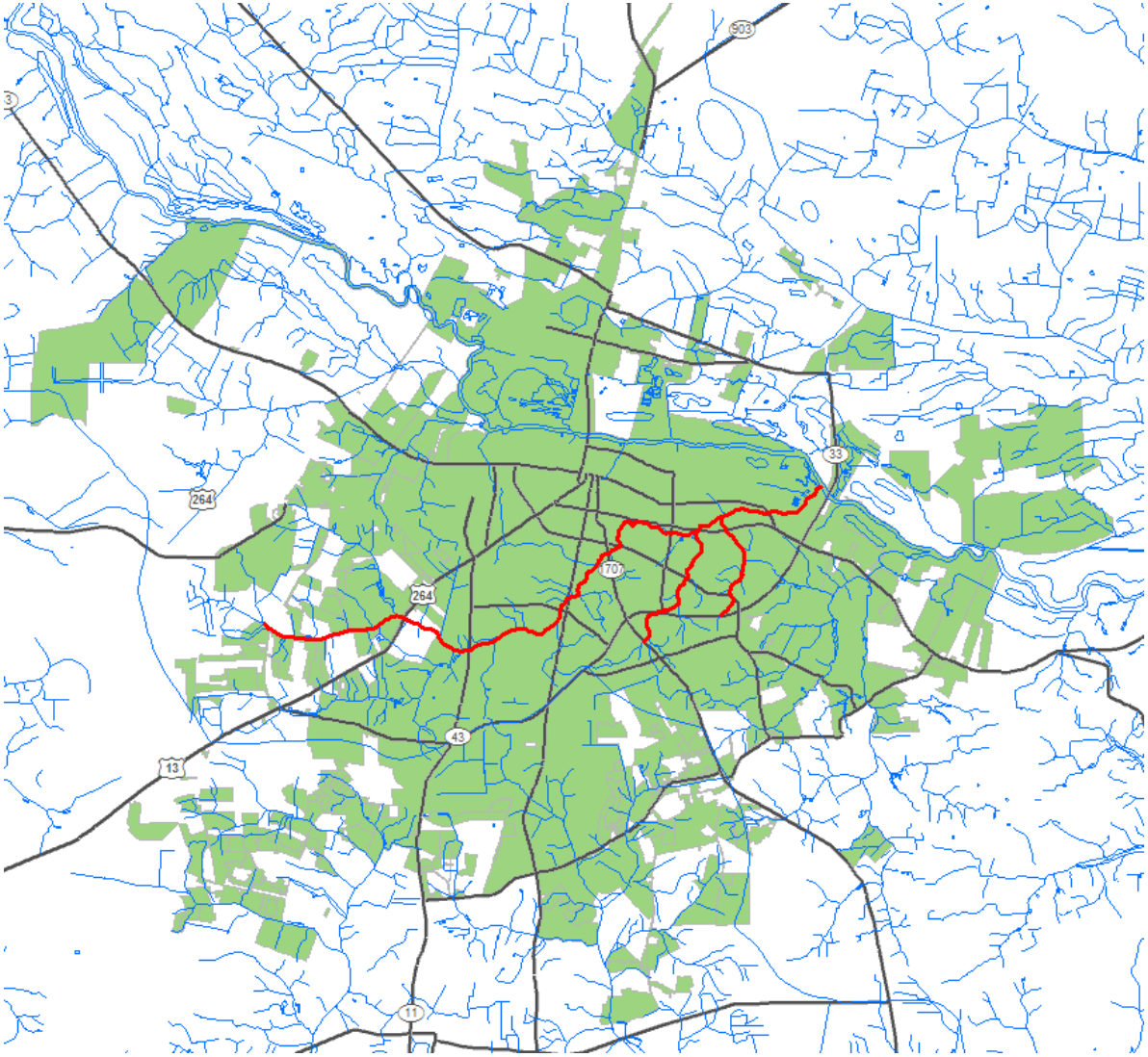

Maintenance of Private Streams

- Should the City maintain, drop, or expand this program?
- Maintenance only to ensure conveyance of flow (removal of blockages)
- City currently bears all costs
- Has established level of expectation for adjacent owners
- Dropping the program might impact future ability to maintain (impacts to jurisdictional stream buffers)

Maintenance of Private Streams

- Options:
  - Maintain the current policy
  - Cease maintenance of all streams on private property
  - Expand maintenance to all jurisdictional streams

Stabilize Eroding Ditches and Streams

- City ordinance provides for stabilizing both jurisdictional and non jurisdictional ditches & streams on private property
- City covers 100% of cost
- Only as funding allows
- Charlotte has informally "dropped" stabilization due to extensive higher priorities (will never get to)

Stabilize Eroding Ditches and Streams

- Options:
  - Continue current policy
  - Drop policy
  - Modify Policy

Installation of Pipes on Private Property

- City currently participates in installation of pipes for existing ditches (non jurisdictional) under certain conditions
  - <48” pipes / 300’ minimum length
  - Not a jurisdictional stream / in City Limits
  - All owners participate / donated easements – and indemnify city
  - Owners pay materials
  - Low Priority

Installation of Pipes on Private Property

- Options:
  - Maintain current policy
  - Drop policy
  - Expand or modify the policy – owner participation / funding options

Informal Assistance for Failing Systems on Private Property

- City intervenes in correcting problems under certain conditions
  - Problem not caused by owner / owner cannot afford to correct
- Examples
  - Sink holes, clogged pipes, failing headwalls, flooding
- Level of City funding varies from project to project
- Formalizing would likely expand budget needs

Informal Assistance for Failing Systems

- Other Community's programs
  - "Fix" private erosion and flooding problems
  - Many years backlog of projects – may never get to some
  - Limited by annual funding allocation (level of service)

Informal Assistance for Failing Systems

- Options:
  - Discontinue informal policy
  - Maintain current policy
  - Formalize the policy

Obtaining Public Easements & Accepting Maintenance

- Should the City require Public Drainage Easements and then accept maintenance for all private drainage?
- Only a few cities doing this (some take over after projects)
- Would expand budget needs
- Greenville currently requires easements for new development but they are not "public" and City does not maintain them or govern their use or protect them
- Staff prefers drainage system placed in ROW when feasible

Obtaining Public Easements & Accepting Maintenance

- Options:
  - Maintain current policy
  - Drop policy
  - Expand or modify the policy – owner participation / funding options

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Possible Expansions to Extent

Fund Leaf Collection through Stormwater Utility

- Based on assumption that leaf litter can clog drains and contribute to nutrient loading
- Primarily a budget balancing tool
- Only a few communities fund through stormwater utility

Fund Leaf Collection

- Options:
  - Consider funding leaf collection
  - Fund leaf collection

Private BMP/SCM maintenance

- A few communities have accepted maintenance due to:
  - Frustration in getting owners to maintain (mostly HOA's)
  - Felt obligated/pressured due to collection of utility fee
- Some cities only assist in repair in event of failure
- Most do not perform regular maintenance (mowing)
- Some only maintain for residential and above ground BMP's
- Conditions; have access; won't interrupt business; only serve more than one lot….

Private BMP/SCM maintenance

- Options:
  - Do not maintain private BMP's
  - Maintain only above ground residential BMP's (with conditions)
  - Maintain all above ground BMP's

Private Lake / Dam Maintenance

- Most communities shy away from Lakes/Dams due to liability concerns
- A few have established policies to assist dam owners on a case by case basis under the following conditions:
  - The lake provides a public benefit (flood control / water quality)
  - The City will fund repairs/improvements if the owners agree to maintain the lake in perpetuity
- Cities pressured where road over dam or owners cannot afford to repair after storms (Fayetteville experience)

Private Lake / Dam Maintenance

- Options:
  - Do not maintain private lakes / dams
  - Maintain on case by case basis where appropriate
  - Maintain all lakes / dams

Questions and/or Comments

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Level of Service

Level of Service

- Type and magnitude of benefits derived from the City's Stormwater Program
- Can be used to evaluate the performance of stormwater programs
  - Is the program adequate or should the level of service be increased?
- For discussion, stormwater programs can be generalized or broken down into individual components

General Categories

- Program Management - Regulatory responsibilities and Administration
- Operation and Maintenance - Day to day maintenance of the drainage system
- Capital Improvement - Large investments in drainage improvements
- May be discussed in general or broken down into individual components

Individual Components

- Closed System
- Open System
- Capital Improvements (CIP)
- Structural Controls (BMP / SCM)
- Watershed Planning
- Water Quality
- Floodplain Management
- Regulatory / Compliance
- Administration

Evaluating Level of Service

- To facilitate evaluation and consideration of alternative levels of service, a letter grading system is suggested
  - "A" thru "E"
  - For each program component, the stakeholder group may determine the current grade & consider if a higher or lower grade is desired

Level of Service Categories	Program Element		
	Program Management & Regulatory Compliance	**Operation & Maintenance**	**Capital Improvement (CIP)**
A	comprehensive program planning, aggressive regulatory compliance, state of the art practices, full program implementation	fully preventative and proactive maintenance , state of the art practices	all known CIP needs completed in 10 years
B	basin master planning, above average regulatory compliance, systematic program implementation	fully routine & partially inspection based maintenance	all known CIP needs completed in 20 years
C	limited planning, baseline regulatory compliance, priority program implementation	limited routine maintenance, limited inspection based maintenance, partially reactive maintenance	all known CIP needs completed in 30 years
D	minimal planning, below average regulatory compliance, partial program implementation	no routine or inspection based maintenance, reactive maintenance only	all known CIP needs completed in 40 years
E	no planning, non-compliant with regulatory programs, mimimal program implementation	limited reactive maintenance	all known CIP needs completed in 50+ years

Program Management

- Typical activities can include
  - Administration
  - New development plan review, inspection, enforcement
  - Strategic Planning
  - Water Quality Compliance
  - Citizen response

Program Management	current level of service	desired level of service
administration/management		
budgeting		
indirect costs (see additional spreadsheet)		
billing/finance		
GIS		
planning (strategic and master planning)		
design		
floodplain regulation		
water quality/NPDES compliance		
public education and outreach		
Pubic involvement and participation		
illicit discharge detection and elimination (IDDE)		
development plan review		
construction and post-construction inspection/enforcement		
pollution prevention and good housekeeping		
stormwater complaint response		
stormwater information request response		
construction project management		
stormwater system inventory		
hazmat response		
private drainage assistance (pipes and streams)		

Operation and Maintenance

- Typical activities can include
  - Remove nuisance vegetation that can impede flow
  - Remove debris that can impede flow
  - Remove accumulated sediment
  - Flush pipes
  - Minor repairs to catch basins and pipes

Operation & Maintenance

- Proactive vs. reactive maintenance
- Up front cost for proactive maintenance for staff and equipment
- Proactive maintenance provides long term cost savings
  - Reduction in damages during storm events
  - Rehabilitation and maintenance costs less than replacement

Closed vs Open System

1. Closed System – man made
   - Inlets, manholes, junction boxes
   - Pipes – concrete, metal, plastic
2. Open System – natural & man-made
   - Drainage ditch – road ditch & conveyances
   - Culverts – under roadways – open ends
   - Outlets – Headwalls, Flared End Sections
   - Stream – jurisdictional and non
   - River system

Annual Operations and Maintenance	current level of service	desired level of service
inlet/manhole (closed system) inspection, cleaning and minor repairs		
pipe (closed system) inspection, cleaning, and minor repairs		
roadway culvert (open system) inspection, cleaning and minor repairs		
bridge (open system) inspection and minor repairs		
ditch (open system) inspection and cleaning		
public dam inspection and minor repairs		
public BMP inspection and minor repairs		
stream inspection and clearing		
street sweeping/litter control		
(leaf collection - not currently funded)		

Capital Improvement Program (CIP)	current level of service	desired level of service
engineering and new construction to improve, repair, or replace failing or undersized SW facilities to ensure the system is adequate to handle anticipated flows (that exceed minor repairs)		
engineering and new construction of water quality retrofits		
restoration and stabilization of eroding streams		

Questions and/or Comments