

Implementation of a Water Quality Crediting Program

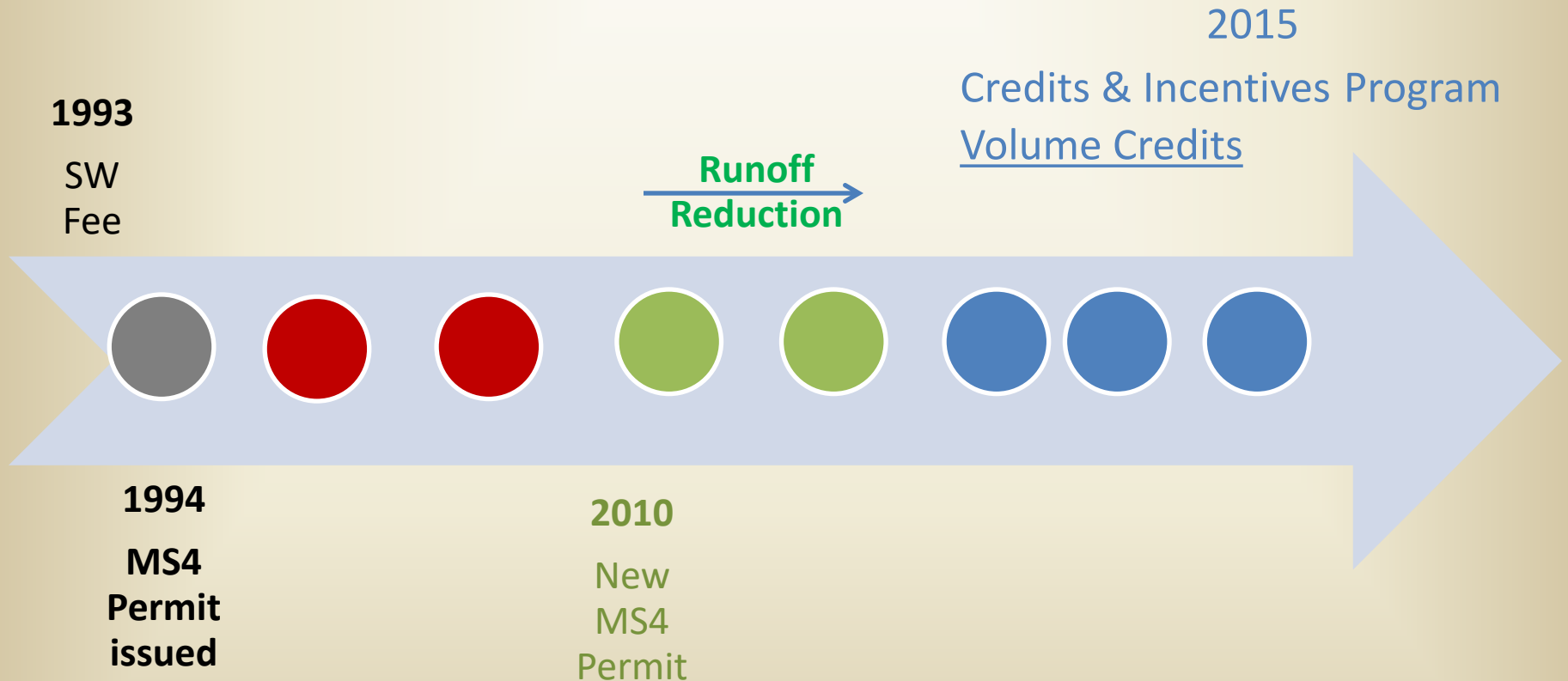
2019 Southeast Stormwater Association Conference

Chattanooga, TN

October 11, 2019



Chattanooga MS4 History



Objectives

- Clearly explain how the components of the City's Credit & Incentive Manual are correlated and how they are applied. Components include:
 - SOV Reduction Incentives
 - Offsite Mitigation
 - Mitigation Fees
 - Water Quality Fee Discounts
 - Credit Coupons

SOV?

- City Code Section 31-313.4.D
 - For projects greater than one (1) acre of disturbance or part of a larger plan of common development that will exceed one (1) acre of disturbance, all new developments and all redevelopment projects, in combination or alone, are required to incorporate runoff reduction measures designed, constructed and maintained, to manage (infiltrate, evapotranspire, harvest and/or use), at a minimum, the first one (1.0) inch of every rainfall event preceded by seventy-two (72) hours of no measurable precipitation, with no discharge from the project site to surface waters. This first inch of rainfall must be one hundred percent (100%) managed with no discharge to surface waters. The required volume to be managed is referred to as the "SOV" as calculated by the method set forth in the RMG.

SOV Reduction Incentives (redevelopment sites only)

- 10% additive reductions of baseline SOV for the following:
 - Redevelopment
 - Brownfield Development
 - High Density (>7 units per acre)
 - Vertical Density (FAR=2 or >18 UPA)
 - Mixed-use/Transit Oriented Development (w/n ½ mile of transit)

Hardship

- Hardships (City Code: Sec. 31-356.3)
 - Must be technically infeasible
 - Economic hardship, lack of space, or conditions imposed solely by the site design are not a presumed basis for infeasibility
 - Acceptable reasons may include:
 - <2' to limiting layer (bedrock, groundwater, etc.)
 - Contaminated soils
 - Karst features
 - Flood Control & Water Quality still required

So... what now?!

How to Achieve Unmet Stay-On-Volume (SOV)?

– Options

- Use SOV Credit Coupon
- Off-Site Mitigation
- Pay Mitigation Fee (In-Lieu-Fee)
- Filter 2.1 inch through a Modified Green Infrastructure (GI) Device to remove 80% TSS
- Filter 3.1 inch through an Extended Detention or Proprietary Device to remove 80% TSS

Mitigation

- Mitigation Fee & Offsite Mitigation
 - NPDES Permit Language: “If runoff reduction and/or pollutant removal cannot be fully accomplished on-site..., then the permittee may propose off-site mitigation and/or payment into a fund for public stormwater projects.”
 - These are not punishments, but optional permit incentives intended to provide flexibility.
 - Synonyms for “mitigation”
 - Alleviation
 - Easing
 - Lessening
 - Relief

Mitigation Fee

- Fee is in lieu of not meeting the onsite SOV requirement
 - Achieved SOV can be a combination of Installed SOV & Credit Coupons
- May be assessed on new development and redevelopment
 - Retrofits are not applicable
- Requires City approval
- Fees are paid into a “public stormwater project fund”

Mitigation Fee

- Permit Language
 - “Payment into a public stormwater fund must be at a minimum 1.5 times the estimated cost of on-site runoff reduction controls.”
- What is the estimated cost?
 - City study included:
 - *Guidance for Developing an Off-site Stormwater Compliance Program in West Virginia*
 - *Approach and Economic Analysis of LID/GI for Sample Development Sites*
 - *Green Stormwater Infrastructure Design: Lesson Learned in Philadelphia*
 - Cost analysis of local projects

Mitigation Fee

- City's estimated cost = \$30/CF
 - Includes Land acquisition, Design, Installation, Operation & Maintenance, & Administration
 - $1.5 \times \$30 = \$45 \text{ per cubic foot}$

This does NOT mean...

1 acre x 1.0" rain = 3600 CF

Therefore, development will cost me...

$3600 \text{ CF} \times \$45/\text{CF} = \$162,000 \text{ per acre}$

} Wrong!

Mitigation Fee

- 50% of fees due prior to the issuance of a Land Disturbing Permit
- Remaining balance due with receipt of certified and approved As-Built, prior to issuance of a CO

Offsite Mitigation

- Permit requires 1.5 times the unmet SOV
 - Achieved SOV can be a combination of Installed SOV & Credit Coupons
- Must be in the same watershed as the primary development
- Applicant responsible for land acquisition, design, construction, and long-term O&M
 - The City may identify priority areas
- Requires a surety bond in the amount of the total equivalent mitigation fee – due at issuance of LDP
- Offsite mitigation must be performed on redevelopment or retrofit sites
 - New development sites are not allowed to be used to fulfill the offsite requirement

Offsite Mitigation

- Mitigation Example:
 - Onsite SOV Required = 1.0"
 - Achieved onsite SOV = 0.6"
 - Unmet SOV = 0.4"
 - Mitigation Fee for 0.4" (Vol. of 0.4" x \$45 = \$\$)
- OR
- Offsite Mitigation for 0.4" ($1.5 \times 0.4" = 0.6"$)
- OR
- Combination
 - Mitigation Fee for 0.2" (Vol. of 0.2" x \$45/CF = \$\$)
 - Offsite Mitigation for 0.2" ($1.5 \times 0.2" = \text{Vol. of } 0.3"$)

WQ Fee Discounts

- What is the Water Quality Fee?
 - Annual fee charged on the property tax bill for the amount of impervious surface
 - \$138.76 per Equivalent Residential Unit (ERU) as of June 2019
 - 1 ERU = 3200 sq ft of impervious area
 - For visualization purposes...
 - Average fast food restaurant pays \approx \$1,200/yr
 - Average big box store pays \approx \$30,000/yr
 - Average mall pays \approx \$65,000/yr

WQ Fee Discounts

- No minimum ERU required
- Minimum WQFD = 10%
- Maximum based on development category
 - 40% for new development
 - 60% for redevelopment
 - 70% for retrofit
- Discount given only for the imp area treated
- No discounts for peak rate control
 - SOV exceedance only
- Not available for single family residential

WQ Fee Discounts

- WQFD Calculation
 - Retrofit (baseline SOV = 0.0")
 - % discount corresponds to inches > baseline
 - Example
 - Baseline = 0.0"
 - Installed = vol. equivalent to 0.44" rain event
 - $0.44" - 0.0" = 0.44"$ (44% WQFD)
 - 35% of the site's impervious area is treated
 - $35\% \times 44\% = 15\%$ discount to the WQ Fee bill

WQ Fee Discounts

- WQFD Calculation
 - New Development/Redevelopment (baseline SOV = 0.5" to 1.0")
 - % discount corresponds to % vol. > baseline
 - Example
 - Baseline = 0.80" (9,470 CF required)
 - » Redevelopment site w/ two 10% deductions
 - Installed = 14,786 CF
 - $14,786 \text{ CF} - 9,470 \text{ CF} = 5,316 \text{ CF}$
 - $5,316 \text{ CF} / 9,470 \text{ CF} = 0.5613$ (56% WQFD)
 - 85% of site's impervious area is treated
 - $85\% \times 56\% = 48\%$ discount to the WQ Fee bill

WQ Fee Discounts

- All site SCMs must be in compliance with City standards to receive WQFDs
- Requires IM Agreement & Plan
 - Recorded with Register of Deeds
- Annual IM Forms required
- Penalty for failure to submit annual forms or maintain BMPs:
 - 1st offense – discount suspended for 1 yr
 - 2nd offense – discount forfeited
 - Applicant may choose to reapply
 - No back credit will be given

Credit Coupons



Credit Coupons

- Earned in CF of SOV > Baseline
- Issued as hard copy coupon
- Tracked in City database
- No expiration date
- 2.1" ceiling (WQ_v identified in RMG)
- Earned at 1:1 ratio for installed volume



CREDIT COUPON

City of Chattanooga

1250 Market St, Chattanooga, TN 37421

ISSUED TO [Contact Name]
[Company Name]
[Street Address]
[City, ST ZIP Code]
[phone]

CATEGORY New Development ____ (1.5:1 ratio)
Redevelopment ____
Retrofit ____
Off-Site Mitigation ____

SITE INFORMATION Site Name (if applicable): _____
Address: _____
Watershed: _____
Baseline SOV: _____ CF
Installed SOV: _____ CF
Date of approved As-Built: [\[Click to Select Date\]](#)

AMOUNT OF SOV CREDIT COUPON: _____ CF

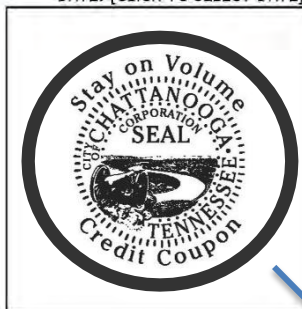
Coupon particulars:

- Coupons are earned on new development sites at a ratio of 1.5:1 (installed:earned).
 - Coupons earned on new development are limited to use within the watershed where they were earned.
 - Use of coupons is not applicable within the CSS or on retrofit sites.
 - Coupons earned on redevelopments, retrofits, and off-site mitigation sites* are eligible to be used within any City watershed.
- *Off-site mitigation sites must be redevelopments or retrofits.

Approved Applicant Signature: _____ Date: _____

City Representative Signature: _____ Date: _____

Chattanooga thanks you for supporting water quality!



Unique ID
Watershed
Development Type
Permit #
Volume (CF)

Pressed Seal

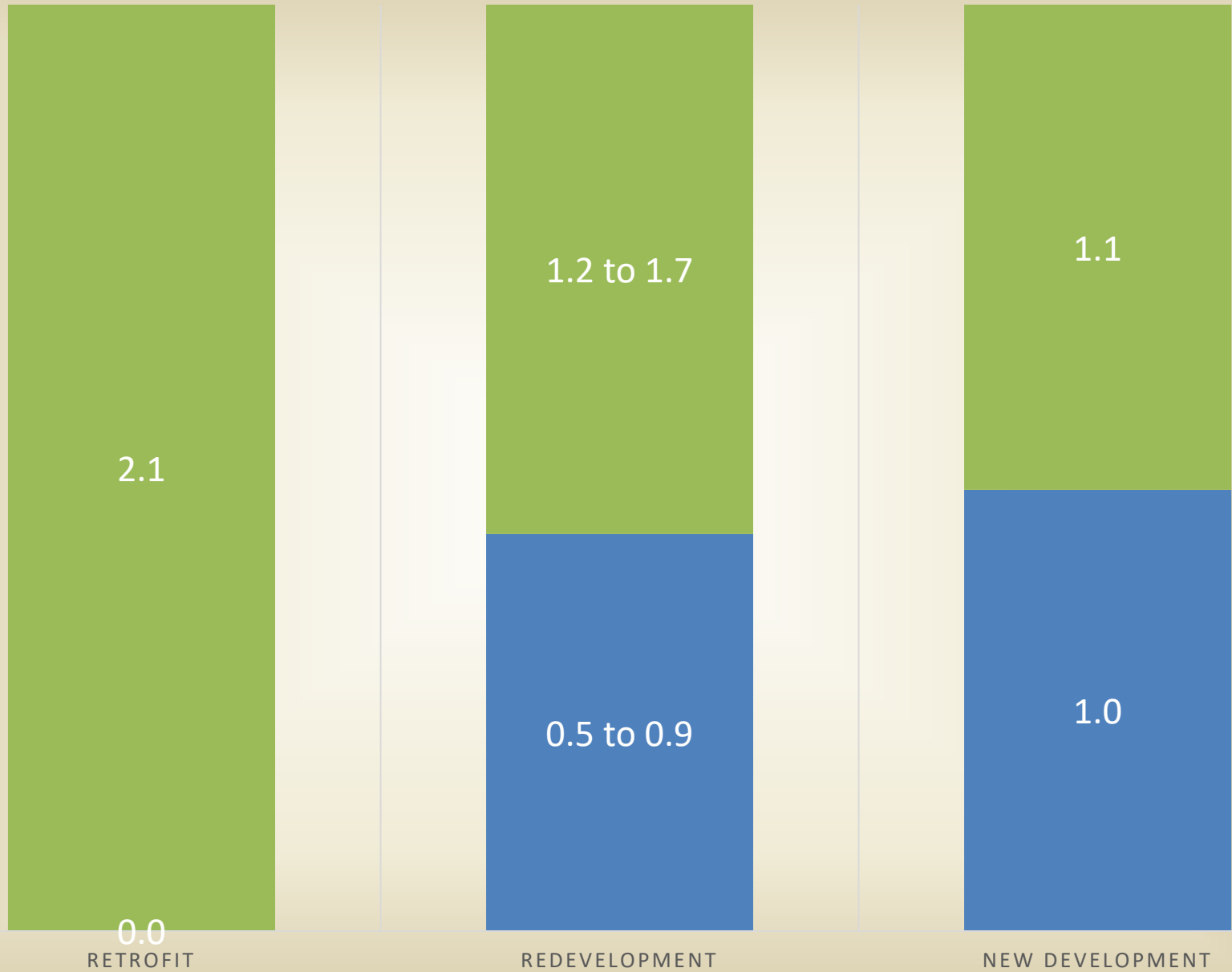
Original Signatures

Credit Coupons

- Open Watershed Usage
 - Not including CSS
- Demonstration of hardship needed for coupon use over 50%
- City doesn't track trades
 - Only issues and receives coupons
- City doesn't purchase/sell its coupons
- Use of credits doesn't negate flood control or water quality requirements

■ Baseline SOV ■ Credits Available

STORM EVENT (INCHES)



DEVELOPMENT TYPE

Credit Coupon Drivers

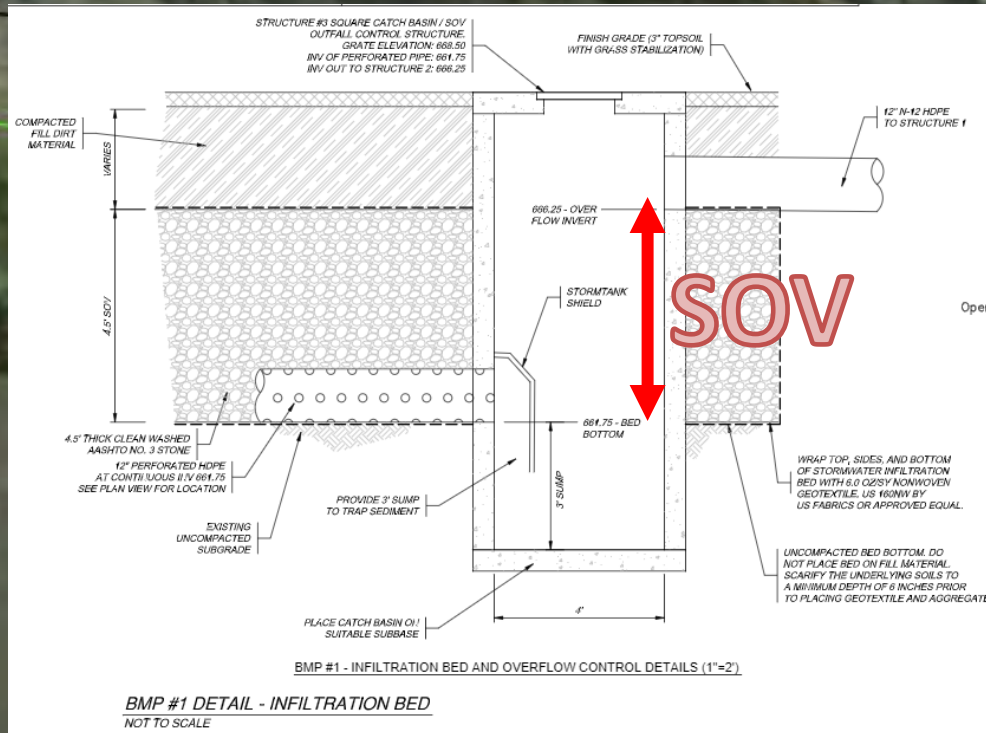
- Financial and Environmental Incentives for overdesigning
- Competitive to In-Lieu-Fee and Off-site Mitigation
- No Expiration Date on Coupon
- Can be split when traded
- Flexible Usage: used/sold/traded
 - Value/Price is determined by buyer & seller
 - Cash value or for professional services provided by PE, LA, Contractor, etc.)

Credit Coupon Challenges

- Attempting to design for minimum requirements
- Lack of knowledge (how to trade, benefits, etc.)
- Takes time to establish a Market
- Availability of other Options to achieve Unmet SOV



Earned SOV Coupon Site



- Site < 1 acre
 - 0 CF (SOV Not required)
- 2,800 CF Captured for 2.1 inch
 - Earned 66.7% of under previous code (1,867 CF)



Implementation of a Water Quality Crediting Program



For more information please visit:
www.chattanooga.gov/waterqualityfee

Joshua Rogers

jsrogers@chattanooga.gov

423-643-5813