City of Longview

1525 Broadway
Longview, WA 98632
www.ci.longview.wa.us

City Council

Mayor MaryAlice Wallis
Mayor Pro Tem Michael Wallin
Council Member Ruth Kendall
Council Member Chet Makinster
Council Member Steve Moon
Council Member Christine Schott
Council Member Hillary Strobel

Thursday, September 10, 2020 **5:30 PM** **Virtual Meeting**

NOTICE IS HEREBY GIVEN, in accordance with RCW Chapter 42.30, that the City Council of the City of Longview, Washington, will conduct a virtual Zoom workshop on Thursday, September 10th, at 5:30 p.m.

For information about Zoom accessibility, please contact the City Clerk's Office at 360-442-5041.

Please click the link below to join the meeting:
https://us02web.zoom.us/j/87137183256

Telephone options (you may need to try more than one number if you receive a busy signal):

Dial any of the following numbers:

1-253-215-8782
1-669-900-6833
1-346-248-7799
1-408-638-0968
1-646-876-9923
1-301-715-8592
1-312-626-6799

Meeting ID: 871 3718 3256

1. CALL TO ORDER

2. ROLL CALL

3. WORKSHOP

20-000375 STORMWATER UTILITY EVALUATION & RATE STUDY UPDATE AND ISSUE ANALYSIS

RECOMMENDED ACTION:
FOR INFORMATION AND DISCUSSION

4. ADJOURNMENT

NEXT REGULAR COUNCIL MEETINGS:
THURSDAY, SEPTEMBER 24, 2020- 7:00 P.M.
THURSDAY, OCTOBER 8, 2020- 7:00 P.M.

NEXT COUNCIL WORKSHOPS:
THURSDAY, SEPTEMBER 17, 2020- 6:00 P.M.- BUDGET WORKSHOP
THURSDAY, SEPTEMBER 24, 2020- 6:00 P.M.- 2021 STATE LEGISLATIVE AGENDA

City of Longview

Agenda Summary

STORMWATER UTILITY EVALUATION & RATE STUDY UPDATE AND ISSUE ANALYSIS

RECOMMENDED ACTION:
FOR INFORMATION AND DISCUSSION

COUNCIL INITIATIVE ADDRESSED:
Provide Sustainable Water Quality & Environmental Infrastructure

CITY ATTORNEY REVIEW: N/A

SUMMARY STATEMENT:
This workshop is intended to provide Council with an update on the current progress to date on the Stormwater Utility Evaluation & Rate Study being performed by FCS Group. This study was initiated in order to evaluate the current framework of the City's stormwater utility and update impervious assessments to ensure that all properties are being billed for the correct rates. As the first step, a number of issue papers were developed along with a set of alternatives and recommendations on the following topics:

- Stormwater Rate Structure Alternatives
- Definition of Impervious Surface
- ERU (Equivalent Residential Unit) Definition
- Recovery of Source Control Program Costs
- Funding Development Services

FCS Group will share these recommendations with Council members, which will provide the basis for moving forward with an updated utility framework and rate model which will be completed in the next month.

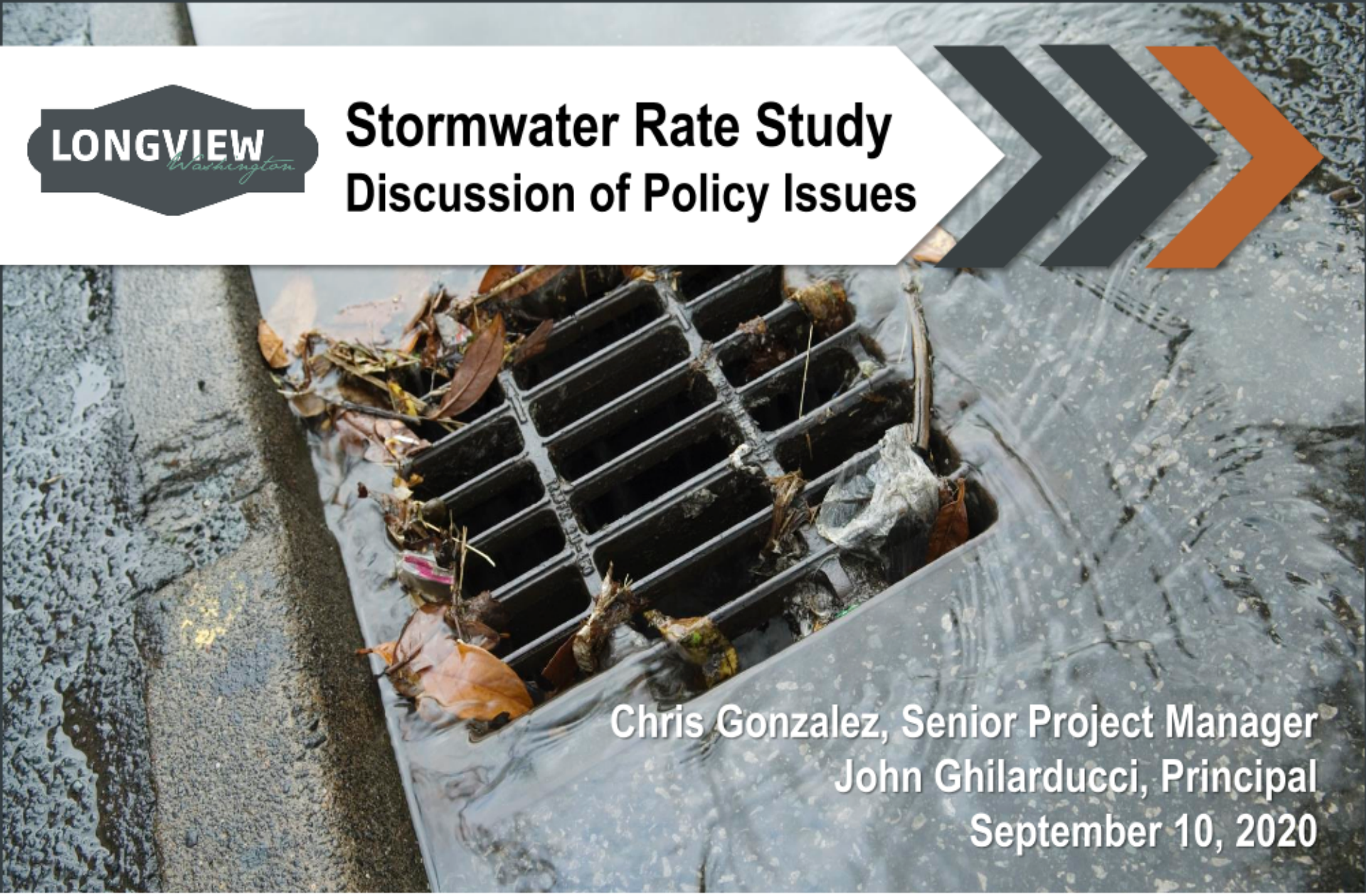
FCS Group will also report on the progress of assessing impervious cover on both residential and non-residential parcels as well as cover the remaining work and tasks to be undertaken.

Staff Contact:
Steve Haubner, Stormwater Manager

Attachments:

1. Stormwater Rate Study Policy Discussion v2
2. IP1 - Stormwater Rate Structure Alternatives - Final
3. IP2 - Definition of Impervious Surface - Final
4. IP3 - ERU Definition - Final
5. IP4 - Development Service Cost Recovery - Final
6. IP5 - Recovery of Source Control Program Costs - Final

Stormwater Rate Study
Discussion of Policy Issues



Chris Gonzalez, Senior Project Manager
John Ghilarducci, Principal
September 10, 2020

FCS GROUP
Solutions-Oriented Consulting

Overview of Policy Issues

- Stormwater Rate Structure Alternatives
- Definition of Impervious Surface
- Equivalent Residential Unit (ERU) Definition
- Recovery of Development Services Costs
- Recovery of Source Control Program Costs

Stormwater Rate Structure Alternatives

Issue/Background:

- City has funded its stormwater program through monthly charges based on impervious surface area since 1999
- Current monthly rate is $14.50 per equivalent residential dwelling unit (ERDU)
- Question: Is the existing structure still the best option for the City, given current priorities and the alternatives available?
- Question: How should the City charge residential development?
  - Single-family
  - Duplexes
  - Triplexes
  - Buildings with 4+ units

Where should the City draw the line between single-family and multi-family residential?

Stormwater Rate Structure Alternatives

Alternative	Pros	Cons
Flat Fee	• Simplest to administer	• Least equitable
Impervious Surface Area	• Used by about 80% of storm utilities • Can be tailored to improve equity	• Significant data requirements • Potential for equity issues
Density of Development	• Accounts for impacts of development density on runoff	• Requires same data as impervious area approach; less equitable
Runoff Coefficients	• Accounts for impact of parcels' physical properties on runoff	• Requires more data/assumptions • More closely resembles a tax
Land Use	• Relatively simple to administer	• Less equitable; attempts to approximate impervious area
Trip Generation	• More equitable recovery of water quality costs from customers	• More costly/complicated; not applicable to water quantity costs

Stormwater Rate Structure Survey

Jurisdiction	Structure	Duplex Rate	Triplex Rate	Rate for 4+ Units
Longview	***Impervious Area***	***SF Rate per Unit***		
Camas	Impervious Area	Measured ISA		
Castle Rock	Density of Dev.	SF Rate per Parcel	SF Rate per Unit	
Centralia	Impervious Area	SF Rate + Charge for ISA Above Typical SF Home		
Chehalis	Impervious Area	SF Rate per Unit		Measured ISA
Kalama	Impervious Area	1.25 × SF Rate	1.50 × SF Rate	Measured ISA
Kelso	Density of Dev.	SF Rate per Parcel		Measured ISA
Olympia	Impervious Area	SF Rate per Unit	Measured ISA	
Vancouver	Impervious Area	Measured ISA		
Washougal	Impervious Area	SF Rate per Unit	Measured ISA	

*SF = Single-Family; ISA = Impervious Surface Area

- **3 charge duplexes based on measured ISA; 3 charge SF rate, 4 charge SF rate/unit**
- **5 charge triplexes based on measured ISA; others charge multiple of SF rate**
- **8 charge buildings with 4+ units based on measured ISA; 2 charge SF rate per unit**

Stormwater Rate Structure Alternatives

Recommendations:

- **Charge non-residential and residential with 4+ units based on measured ISA**
- **Consider tiered single-family rate structure**
  - » Existing: $14.50 per month
  - » Alternate: $12.98 per month (0.9 ERUs) for parcels < 0.5 acres
    $29.20 per month (2.0 ERUs) for parcels 0.5 acres or larger

Definition of Impervious Surface

Issue/Background:

- **Section 15.080.040 (6) of the Longview Municipal Code defines impervious surface as "hard-surfaced area which prevents or retards the entry of water into the soil mantle and increases runoff relative to the natural conditions that existed prior to development."**
- **Definition of impervious surface is important for purpose of stormwater rates**
- **Question: How should the City define impervious surface with respect to**
  - Gravel?
  - Permeable Pavement?
  - Green Roofs?

Definition of Impervious Surface

Surface	Assessment
Compacted Gravel (Driveways/Roads)	• Effectively impervious, allowing only minimal infiltration • Contributes similar level of pollutants to runoff as comparable impervious surfaces
Pervious Composite (Permeable Pavement)	• Can reduce runoff by 100% for most rainstorms • Susceptible to clogging if not properly maintained; functions like traditional pavement when clogged
Green/Vegetated Roofs	• Allows rooftops to mimic landscaped or pasture area • Reduced slopes and deeper media reduces runoff quantity • Generates some runoff; requires connection to a stormwater conveyance or infiltration system

Definition of Impervious Surface

Recommendations:

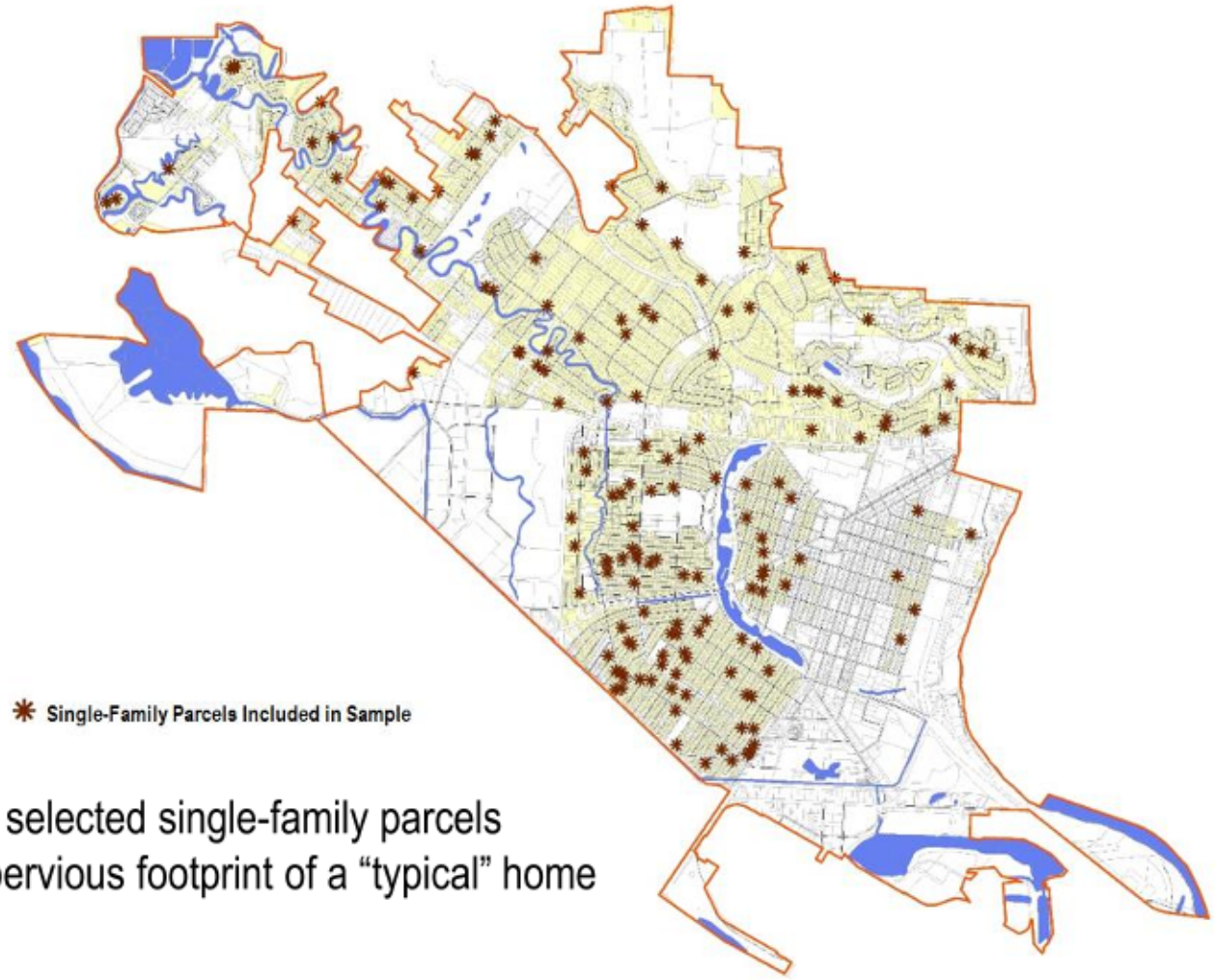
- **Continue to charge compacted gravel surfaces as effectively impervious**
- **Consider classifying permeable pavement and green roofs as onsite facilities potentially eligible for monthly rate credits**
  - » Decision to offer credits is discretionary (not required)
  - » Credits would ideally be based on a cost-of-service analysis defining the portion of costs that vary with site-specific runoff levels
  - » Ongoing eligibility should be contingent on proper maintenance of facilities
  - » Administering credits would be difficult as Public Works does not manage the City's utility billing database

Equivalent Residential Unit (ERU) Definition

Issue/Background:

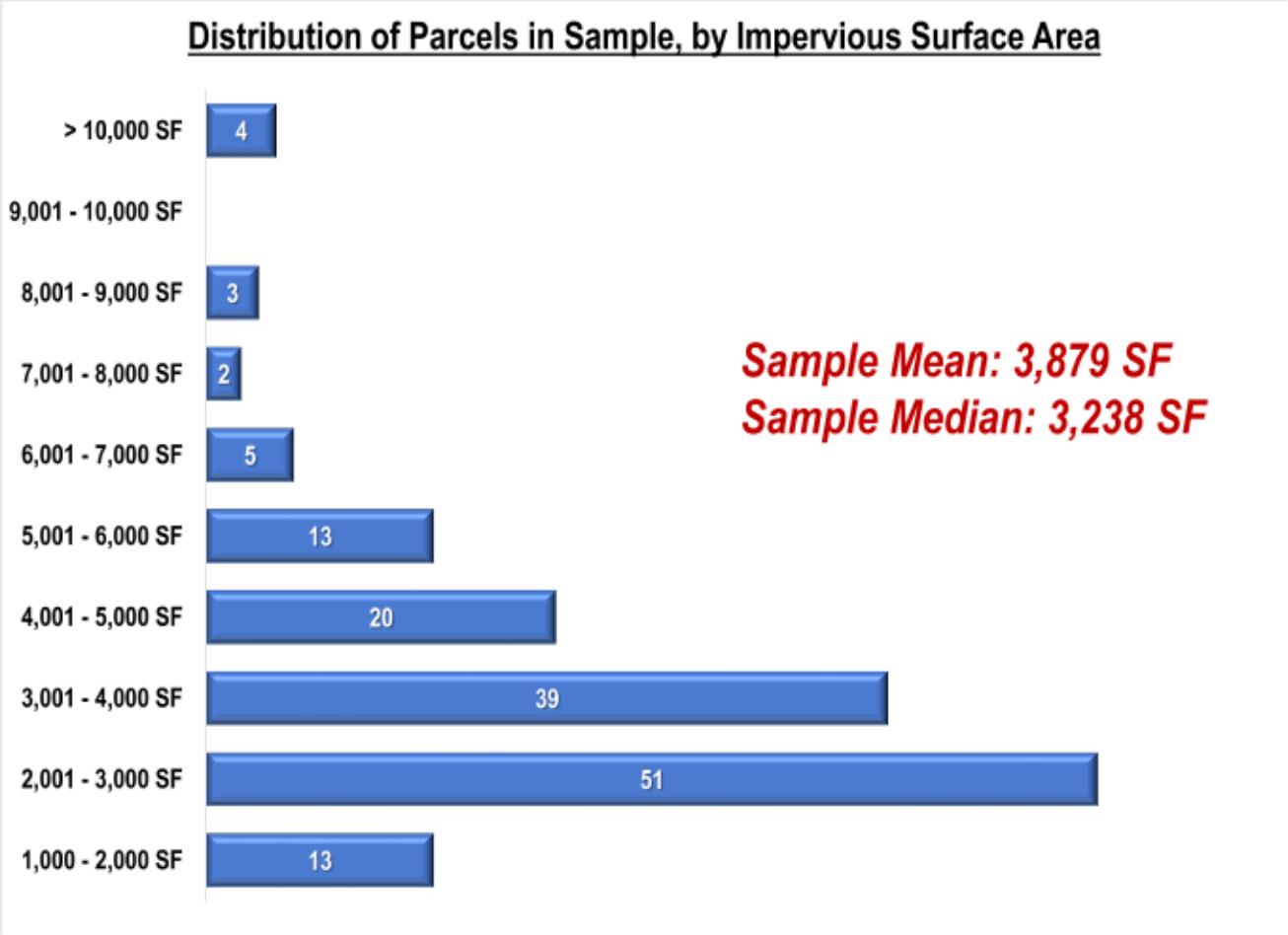
- **Since establishing its stormwater utility in 1999, the City has defined an ERU as 2,500 square feet (SF) of impervious surface area**
  - » Single-Family Parcels: 1 ERU
  - » Multi-Family Parcels: 1 ERU per dwelling unit
  - » Non-Residential Parcels: 1 ERU per 2,500 SF of measured impervious area
- **ERU definition directly impacts allocation of costs among classes**
- **Question: Is current definition adequate, or should it be revised?**

Sampling of Single-Family Parcels



Sample of 150 randomly selected single-family parcels analyzed to estimate impervious footprint of a "typical" home

Sampling of Single-Family Parcels



Equivalent Residential Unit (ERU) Definition

Recommendations:

- **Consider updating ERU definition from 2,500 to 3,250 SF of impervious area**
  - » Would require a 13% increase in rate per ERU to remain revenue-neutral
  - » Impact covered by additional revenue from updated commercial parcel measurements
- **Consider establishing tiered ERU structure for single-family homes**
  - » Lots smaller than 0.5 acres: 1.0 ERU (median impervious area of around 3,150 SF)
  - » Lots 0.5 acres or larger: 2.0 ERUs (median impervious area of around 7,000 SF)
- **Consider reduced ERU assignment for "small footprint" single-family homes**
  - » Could define threshold as 1,500 SF of impervious area
  - » Could make available by appeal (customer provides documentation)
  - » Could assign these homes 0.4 ERUs (median impervious area of about 1,000 SF)
- **Assign ERUs to multi-family parcels based on measured impervious area**

Recovery of Development Services Costs

Issue/Background:

- **City's stormwater utility development review services help ensure that**
  - » Development meets local/state regulations
  - » Impacts to public infrastructure, private property, and the environment are mitigated
- **City currently funds development review/inspection services through rates**
- **Question: What policy options are available to recover a greater share of these costs from property developers?**

Recovery of Development Services Costs

Alternative	Pros	Cons
Dev. Fees – Full Cost Recovery	• Most equitable	• Revenue varies with economic cycles while costs are fixed
Dev. Fees – Partial Cost Recovery	• Improved equity	• Revenue somewhat variable with economic cycles; costs are fixed
Stormwater Rates	• Simplest (status quo) • Stable/reliable revenue	• Least equitable
Capital Recovery Fees (CRFs)	• Improved equity	• Revenue variability/volatility • Would require CRF implementation
Hybrid Approach (CRF/Development Fees)	• Improved equity	• Greater complexity • Revenue variability from CRF/development fees

Recovery of Development Services Costs

Recommendations:

- **Consider moving to full cost recovery through development fees**
  - » User fee study could establish direct/indirect costs and appropriate fee structures
  - » Reserve structure could mitigate variability in revenue

Recovery of Source Control Program Costs

Issue/Background:

- City will have to implement stormwater pollutant source control program aimed at businesses/industries
- Program estimated to cost $100,000 per year in labor/vehicle costs
- Question: Should the City target recovery of these costs from the businesses in the source control program, or embed them in stormwater rates?

Recovery of Source Control Program Costs

Alternative	Pros	Cons
Embed costs in rates	• Simpler approach; consistent with how utility recovers other costs • Spreads cost impact across entire customer base	• Less equitable
Recover costs from businesses in program (charge per parcel)	• More equitable	• Disproportionate impact to small businesses
Recover costs from businesses in program (charge per ERU)	• More equitable	• Costs not necessarily related to impervious area
Recover costs from businesses in program (direct time/materials charge)	• Most equitable	• Most complicated to administer

Recovery of Source Control Program Costs

Recommendations:

- **Embed source control program in (rate-funded) utility operating budget**
  - » Consistent with perspective that rates reflect averaging of costs across customer base
  - » Stormwater utility rates recover a variety of costs from all customers
    - – Maintenance of drainage/stormwater management infrastructure
    - – Protecting the environment/water quality
    - – Complying with applicable state/federal regulatory requirements
    - – Funding the City's urban forestry, sidewalk repair, and street sweeping programs
  - » Source control program overlaps with costs already embedded in rates

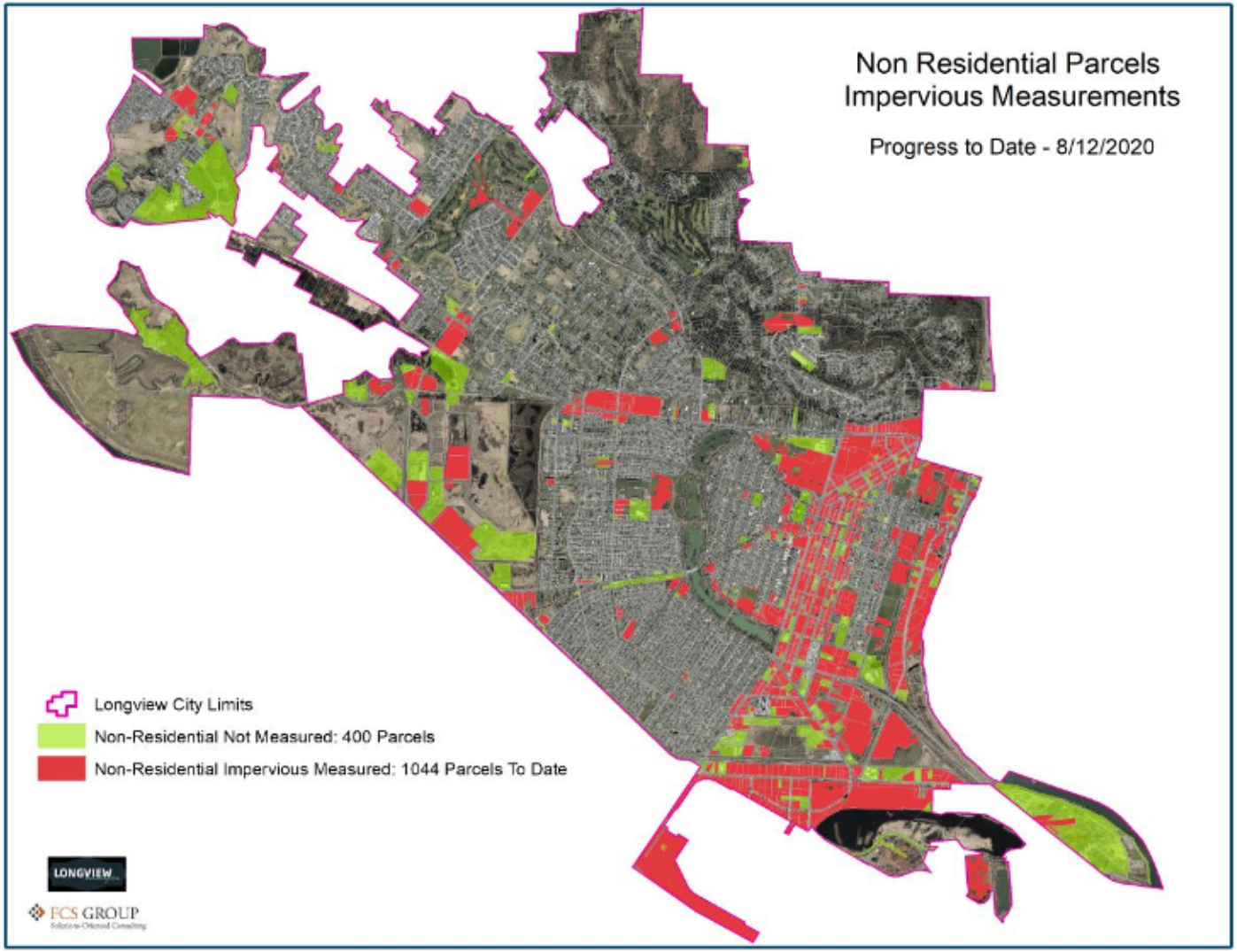
Summary of Policy Recommendations

- Charge non-residential and residential with 4+ units based on measured ISA
- Consider tiered single-family rate structure
- Continue to charge compacted gravel surfaces as effectively impervious
- Classify permeable pavement/green roofs as onsite facilities potentially eligible for monthly rate credits
- Consider updating ERU definition from 2,500 to 3,250 SF of impervious area
- Consider moving to full cost recovery through development fees
- Embed source control program in (rate-funded) utility operating budget

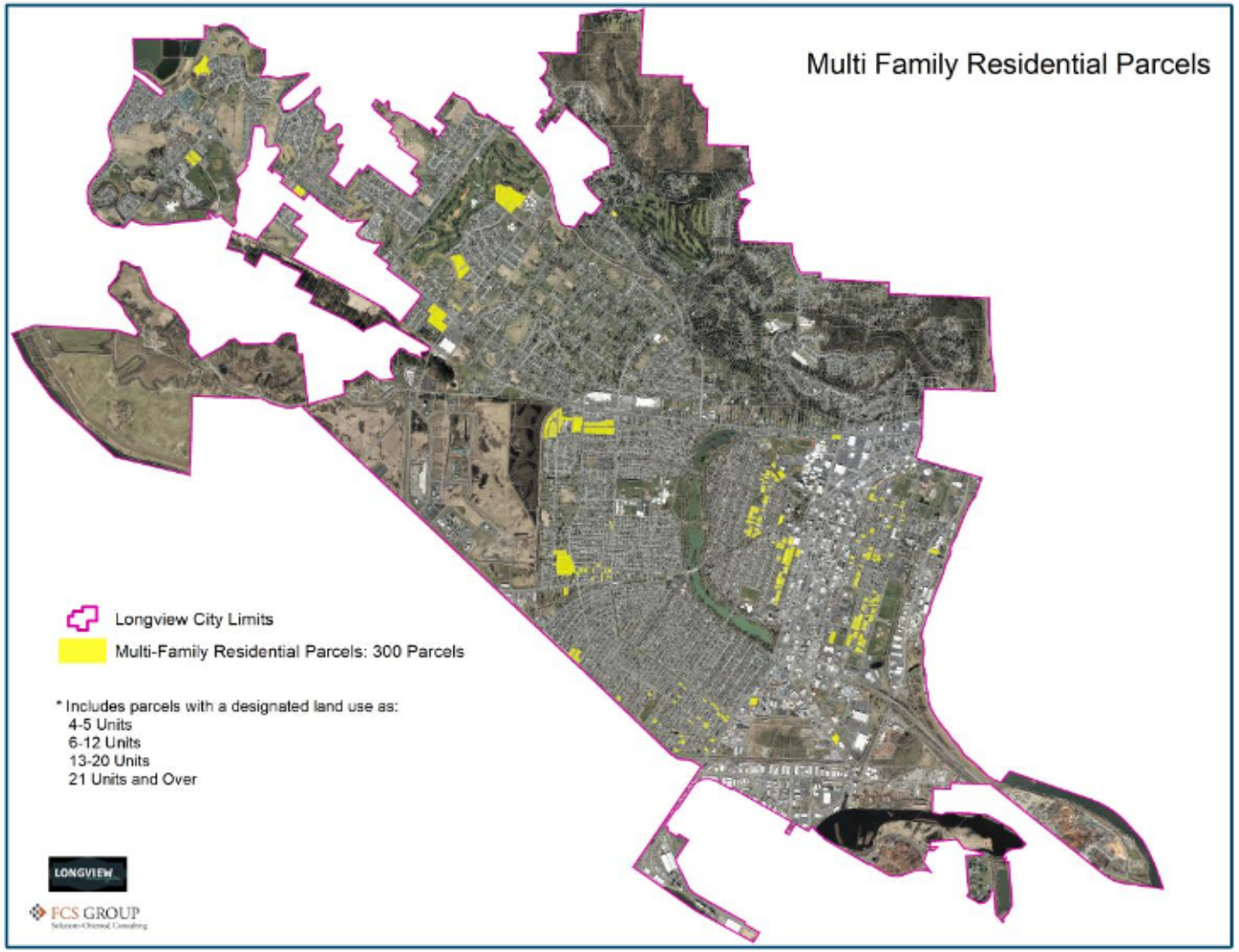
Next Steps

- **Complete parcel measurements**
  - » Approximately 400 non-residential parcels and 300 multi-family parcels
- **Incorporate updated parcel measurements into stormwater rate analysis**
  - » Updated non-residential parcel measurements expected to increase revenue
  - » Changing multi-family rate to measured ISA expected to decrease revenue
- **Develop stormwater rate structure recommendations**
- **Prepare documentation of study findings and recommendations**

Next Steps: Non-Residential Parcel Measurement



Next Steps: Multi-Family Parcel Measurement



Thank you! Questions?

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FCS GROUP
Solutions-Oriented Consulting

ISSUE PAPER #1
STORMWATER RATE STRUCTURE ALTERNATIVES

INTRODUCTION

Since 1999, the City of Longview has funded its stormwater program through a monthly stormwater utility charge that is based on impervious surface area and an equivalent residential unit (ERU) approach. Recognizing that this structure has been in place for over 20 years, the City wishes to study the alternatives and consider whether it is still the preferred methodology in the context of its current customer base and program priorities.

While there are a variety of mechanisms that local jurisdictions can use to fund their stormwater programs, the most common funding option is the stormwater service (utility) rate. The City wishes to continue funding its program through a stormwater utility, thus the alternatives for determining utility rates are presented and discussed below.

STORMWATER UTILITY RATE ALTERNATIVES

A stormwater utility is a sustainable funding mechanism dedicated to recovering the costs of stormwater management in a community including planning, regulatory compliance, maintenance, capital improvements, and infrastructure repair and replacement. Stormwater fees are generally charged to developed properties based on their attributes, regardless of whether or not they are subject to property taxes. There are a number of approaches that communities use to recover the cost of providing stormwater management service through rates, including:

- ***Flat Fee:*** This approach charges all customers in the jurisdiction a single flat utility rate regardless of the size or nature of the property in question. While extremely easy to implement, a flat rate fails to recognize how certain attributes of a property including size, impervious surface area, density of development, and land use/activity impact the amount of stormwater runoff and related pollutants discharged to the municipal stormwater system. Cowlitz County is currently the only utility that we are aware of that implements its stormwater rate as a flat fee per parcel.

- ***Impervious Surface Area:*** The most common stormwater utility rate approach is to charge customers based on impervious surface area, the hard surface area that prevents or impedes the permeation of water into the ground. Impervious surface area is widely accepted as an appropriate measure of a property's contribution of stormwater runoff, providing a rational nexus to service received from a stormwater program. Given the diversity that exists among non-single-family residential properties, it is common to charge these customers based on actual measured impervious surface area. Utilities often follow a different procedure for single-family residences, as tracking parcel-specific measurements of impervious area for these customers would add considerable administrative effort and complexity to the rate structure. The most common practice is to impose a uniform rate on single-family residences based on an estimated average impervious surface area, which is the methodology that the City of Longview follows in its existing rate structure. Though this approach may overcharge smaller residences and undercharge

larger residences relative to their stormwater contribution, it is widely considered to be an acceptable compromise between equity and practicality.

- ***Density of Development:*** An alternative measurement of stormwater runoff contribution involves applying "density factors" to actual impervious area measurements, adjusting charges depending on the percentage of the parcel covered by hard surface. This approach can acknowledge that, for example, 3,000 square feet of impervious area on a 5,000 square-foot lot more directly impacts the public system than an equivalent impervious area on a one-acre lot. As with the approach based on impervious surface area, this approach is an appropriate charge basis because it adequately quantifies the relationship between the rate paid and the level of service received.

- ***Runoff Coefficients:*** This approach is similar to the density-of-development approach in that it can be used to adjust a parcel's charge based on its runoff characteristics – however, it is more closely associated with a parcel's physical properties. When applied to lot size, runoff coefficients are generally accepted as a measure of runoff contribution (and service received). Implementing this approach requires information relating to the basic characteristics of land (e.g. slope and soil type), land use, and lot size. Depending on slope variables and soil characteristics, undeveloped parcels may also be subject to charges under this approach. In measuring runoff contributions by evaluating property-specific characteristics that may impact those contributions, this approach rationally recovers the costs of several aspects of the stormwater program.

- ***Land Use:*** Alternatively, runoff characteristics can be linked to types of land use. For example, empirical analysis may find that industrial land use has a more significant contribution to water quality problems from stormwater runoff than undeveloped land (justifying a proportionately higher industrial stormwater rate to equitably recover program costs).

- ***Trip Generation:*** While most rate structure options focus on runoff contribution, a structure based on trip generation attempts to relate automobile traffic to non-point-source pollution contributed by properties. The Institute of Transportation Engineers' Trip Generation Manual assigns a number of daily trips to specific categories of land use – this information could be used to recover the costs of water quality activities within the stormwater program. Customer land uses and lot sizes would also be required in order to calculate equitable rates. *Note: We are aware of only two utilities (Redmond, OR and Missoula, MT) that have implemented stormwater rates based on trip generation.*

ANALYSIS OF RATE ALTERNATIVES

Flat Fee

A rate may be found legally valid if the services that it funds generally benefit those who pay it – a property-specific link between fees paid and level of service received is generally not required. In fact, case law in Washington, notably *Teter v. Clark County*, has supported the stance that an indirect linkage is adequate justification for a rate. At the same time, it would be easier to challenge a flat stormwater fee as being an unlawful tax rather than a fee for service because it fails to consider how parcels differ in the level of stormwater runoff that they generate. A flat stormwater fee approach is inherently inequitable, with the smallest runoff-generating footprints paying the same stormwater utility rate as the largest industrial footprints in the jurisdiction. It is worth noting, however, that at least some stormwater utility costs (e.g.

utility billing and administrative costs) are independent of runoff volume and could equitably be recovered through a uniform charge to all developed parcels.

Impervious Surface Area

Throughout the United States, impervious surface area is a widely accepted measure of runoff contribution, providing the basis for rates in most stormwater utilities. In addition, the functional nexus among impervious surface area, runoff contribution, and the problems of increased flooding, water quality degradation, and damage to habitat is "scientifically" strong and supportable. The following selection from *Stormwater Strategies: Community Responses to Runoff Pollution* describes this nexus clearly:

> *"The problem of polluted stormwater runoff has two main components: the increased volume and rate of runoff from impervious surfaces and the concentration of pollutants in the runoff. Both components are highly related to development in urban and urbanizing areas. When impervious cover (roads, highways, parking lots, and rooftops) reaches 10 and 20 percent of the area of a watershed, ecological stress becomes clearly apparent. Everyday activities, including driving and maintaining vehicles, maintaining lawns and parks, disposing of waste, and even walking pets, often cover these impervious surfaces with a coating of various harmful materials. Construction sites, power plants, failed septic systems, illegal discharges, and improper sewer connections also contribute substantial amounts of pollutants to runoff. Sediments, toxic metal particles, pesticides and fertilizers, oil and grease, pathogens, excess nutrients, and trash are common stormwater pollutants. Many of these constituents end up on roads and parking lots during dry weather only to be washed into waterbodies when it rains or when snow melts.*
>
> *Together, these pollutants and the increased velocity and volume of runoff cause dramatic changes in hydrology and water quality that result in a variety of problems. These include increased flooding, stream channel degradation, habitat loss, changes in water temperature, contamination of water resources, and increased erosion and sedimentation. These changes affect ecosystem functions, biological diversity, public health, recreation, economic activity, and general community well-being. Urban stormwater is not alone in causing these impacts. Industrial and agricultural runoff are equal or greater contributors. But the environmental, aesthetic, and public health impacts of diffuse pollution will not be eliminated until urban stormwater pollution is controlled."*

Supporting scientific research shows that in addition to increasing the deposition of pollutants, impervious surfaces greatly increase peak flows to streams while decreasing base flows. Higher peak flows cause flooding and erosion, increasing sediment deposition and damage to aquatic habitats; lower base flows can also impact habitats.

One method to implement a rate structure based on impervious surface area is the Equivalent Residential Unit (ERU) or Equivalent Service Unit (ESU), which is the basis for the City of Longview's current stormwater utility rates. The United States Environmental Protection Agency (EPA) estimates that more than 80% of all stormwater utilities use the ERU method. The ERU value is typically based on the impervious footprint of a single-family home. A representative sample of single-family parcels is reviewed to determine the impervious area of a typical single-family home. Historically, the ERU approach has generally involved billing all single-family homes a flat rate for one ERU. Though this is still the most common structure, an increasing number of communities have been considering ways of improving equity within the single-family class because (a) stormwater rates have increased to the point of becoming a material part of the utility bill

and (b) single-family development has become considerably more diverse with accessory dwelling units and other features with varying impacts on runoff generation. As an alternative to the traditional uniform flat rate per single-family parcel, some communities have implemented (or considered implementing) a tiered rate structure that imposes different rates on groups of single-family homes of comparable size and/or impervious coverage. This approach can consist exclusively of flat rates that vary by tier, or it can include a threshold above which a single-family home would be billed based on measured impervious area. Parcels other than single-family parcels are usually billed based on measured impervious area, with their impervious area divided by the ERU value to determine the number of ERUs to be billed to the parcel.

While the impervious surface area rate basis is widely supported and accepted, it is still worthwhile to examine how it has been applied. For example, as noted above it may be beneficial to create individual distinctions or size classes for single-family residential customers where there is a wide range in the amount of impervious surface area on single-family parcels.

Density of Development

Like the City of Longview's existing ERU-based structure, the density-of-development approach would require parcel-specific measurements of impervious area for multi-family and non-residential parcels. It would be inherently less equitable, however, as it would charge a parcel based on the average impervious coverage of parcels in the same density category rather than on its actual impervious area. There would also be equity concerns around the established density categories – two parcels with a relatively comparable impervious footprint (e.g. 41% impervious vs. 40% impervious) could pay significantly different rates if one is in a lower density category than the other. The City of Kelso's stormwater rate structure uses a variation of this approach, with a couple of relatively unique features that create additional equity issues:

- Customers pay a minimum charge per parcel plus a charge based on impervious area, which results in some customers with relatively small impervious footprints paying more per impervious square foot than other parcels that are significantly more developed.

- The charge for impervious area is based on a tiered structure that applies to measured impervious area rather than gross parcel area. The density-of-development approach typically imposes charges based on estimated impervious area, which is determined based on a parcel's gross area and the average percent impervious for parcels in the same density category. By imposing a tiered rate based on density to measured impervious area, Kelso's structure charges more for impervious area on small lots than a comparable amount of impervious area on large lots.

Runoff Coefficients

The runoff-coefficient approach would be more difficult to administer than the existing structure based on impervious surface area, as it would require a relatively extensive data collection effort on the part of the City. Because it incorporates physical land characteristics over which the customer has minimal control, this approach is less defensible as the basis for a cost-based fee and more closely resembles a tax. For these reasons, the runoff-coefficient approach is less commonly used in the industry for stormwater ratemaking.

Land Use

While administratively simple compared to an impervious-area approach, an approach based on land use is typically used only when property-specific impervious area measurements are unavailable. It attempts to roughly approximate impervious area and resulting runoff contributions for a given property given its land-use type, and it would be inherently less equitable than charging based on measured impervious area.

Trip Generation

Trip generation, while a supportable means of recovering costs related to water quality, provides little if any advantage over impervious surface area for stormwater utilities whose costs are primarily attributable to managing the quantity of runoff. It is more complicated and costly to administer – for example, the City would need to develop a way to track changes in commercial occupancy and land use as the Institute of Transportation Engineers' Trip Generation Manual contains business-specific estimates of trips.

RESIDENTIAL RATE CONSIDERATIONS

Another rate structure policy question to consider is how the City of Longview classifies its residential parcels for ratemaking purposes. Under the City's existing rate structure, single-family parcels are assigned 1 ERU while multi-family parcels are assigned 1 ERU per dwelling unit. While detached single-family homes and large apartment buildings are relatively easy to distinguish from one another, deciding how to equitably charge duplexes and triplexes is often a matter of policy. The decision to classify residential parcels as single-family or multi-family should consider the impact that additional dwelling units has on the parcel's total impervious surface area. In deciding whether to charge residential parcels with more than one dwelling unit like a single-family parcel (potentially scaling up with the number of dwelling units) or based on measured impervious area, the City could consider the relative distribution of impervious area measurements for those parcels. If there is an identifiable trend (e.g. duplexes typically have between 140% and 160% of the impervious area of a typical single-family parcel), this option may make sense. To provide additional context for this issue, we have researched the stormwater rate structures of a group of nine local jurisdictions. Our findings are summarized below:

- ***City of Camas:*** Defines a single-family residence as a residential structure accommodating one dwelling unit, including mobile homes. Single-family residences pay a uniform rate per parcel; all other parcels are charged based on measured impervious area.

- ***City of Castle Rock:*** Charges single-family homes and duplexes the same rate per parcel. Residential parcels with three or more dwelling units pay the single-family rate per dwelling unit. Non-residential parcels are grouped into categories of development intensity (e.g. light, moderate, heavy) based on measured impervious area, with the monthly rate per parcel increasing with the intensity of development.

- ***City of Centralia:*** Charges a uniform rate to single-family parcels, which it defines as parcels with a dwelling unit for occupancy by a single family. Other parcels pay the single-family rate plus a charge for impervious area in excess of the estimated impervious area of a typical single-family home.

- ***City of Chehalis:*** Charges single-family parcels a uniform rate per parcel, charging duplexes and triplexes the single-family rate per dwelling unit. Residential parcels with more than three dwelling units and non-residential parcels are charged based on measured impervious area.

- ***City of Kalama:*** Duplexes and triplexes pay 1.25 and 1.50 times the monthly single-family rate, respectively. Residential properties with four or more dwelling units are charged based on measured impervious area.

- ***City of Kelso:*** Groups single-family residences, duplexes, and triplexes together, classifying buildings with four or more dwelling units as multi-family residences. Developed parcels other than single-family parcels are charged based on impervious area, with the applicable rate depending on the percentage of gross parcel area that is impervious. Kelso has considered moving to a structure that charges all developed multi-family and non-residential parcels a uniform rate per 3,000 square feet of impervious surface area, but it appears that Kelso has yet to formally adopt this structure.

- ***City of Olympia:*** Defines single-family parcels as parcels providing habitat for a single-family dwelling unit with or without an accessory dwelling unit. Single-family parcels generally pay a uniform rate, but the City offers a discounted rate for plats approved after 1990 that have a signed maintenance agreement in place. Duplexes pay the single-family rate per dwelling unit; other parcels pay a fixed administrative fee plus a charge based on measured impervious area that depends on when the parcel was developed.

- ***City of Vancouver:*** Detached single-family units pay a uniform monthly rate; customers with two or more dwelling units sharing a common wall are classified as multi-family residences and subject to a monthly charge based on measured impervious area.

- ***City of Washougal:*** Charges a uniform rate per dwelling unit to single-family parcels and duplexes; other parcels pay a rate based on measured impervious area.

The jurisdictions outlined above are distributed evenly with respect to how they charge duplexes. One third charges duplexes the same rate as single-family parcels, another third charges them the single-family rate per dwelling unit, and the remaining third charges duplexes based on measured impervious area. The policy trends appear to shift for triplexes, with only Kelso charging triplexes the same rate as a single-family parcel. Of the remaining eight jurisdictions, three (38%) impose the single-family rate per dwelling unit on triplexes; the remaining five (62%) charge triplexes based on measured impervious area. With the exception of Castle Rock (which imposes the single-family rate per dwelling unit on all residential parcels), these jurisdictions generally charge residential parcels with four or more dwelling units based on measured impervious area.

Of the jurisdictions listed above, only Castle Rock and Kelso impose a stormwater rate structure using the density-of-development approach. The remaining seven jurisdictions use an approach based on measured impervious area that is consistent with the ERU approach that the City Longview currently uses.

RECOMMENDATION

A rate structure based on impervious surface area provides an equitable fee for service that links the amount that a property pays for stormwater services to an estimate of that property's stormwater runoff contribution. The fee basis creates a standard that quantifies how the amount of impervious surface area is proportional to the impact on the municipal stormwater system as well as the community and environment in terms of flooding, water quality, and habitat degradation. By recognizing that relationship, the fee structure basis proportionately charges different customers their share of the system's cost burden and provides an equitable, defensible means of cost recovery for stormwater management. For this reason, we recommend that the City:

- Continue to charge non-residential customers based on measured impervious area. This is the approach most commonly used in the industry, and the City's non-residential customer class is small enough to allow for the measurement of all parcels within a reasonable level of effort. The City has engaged FCS GROUP to complete this task, ensuring that the City has an accurate inventory of impervious area measurements for the purpose of applying its non-residential stormwater rate structure.

- Consider charging residential customers with more than three dwelling units based on measured impervious area. The City's existing rate structure assigns multi-family parcels 1 ERU per dwelling unit, which likely overcharges them relative to the amount of runoff that they generate (given that multi-family dwelling units are typically smaller than single-family homes and in many cases are "stacked" on multiple floors). Customer billing records provided by the City indicate that there are approximately 400 multi-family parcels within City limits, suggesting that the City could obtain measurements of impervious area for the entire multi-family class within a reasonable level of effort. The advantages of this change would be (a) a stronger nexus between the charges imposed and the level of runoff generated, (b) improved equity among the City's customer classes, and (c) elimination of the need to track multi-family dwelling unit counts for the purpose of the stormwater rate structure. It is also worth noting that with the recent shift in local development trends toward mixed-use buildings (e.g. apartments on top of ground-level retail shops), moving to a uniform multi-family and commercial rate structure would eliminate the need to establish a separate mixed-use rate class. The primary disadvantage to changing the multi-family rate structure would be the upfront financial impacts, as there could be a significant reduction in the amount of revenue that the City collects from the multi-family class – the City would likely have to increase the monthly rate per ERU to compensate for the resulting loss in revenue.

- Consider a tiered rate structure for its single-family users, as our review of a sample of 150 single-family parcels found that there is considerable variation in the impervious footprints of single-family homes in the City. A tiered single-family rate alternative would improve equity but may increase administrative complexity depending on the approach and could require a significant investment to acquire the necessary parcel-specific impervious area measurements. To balance equity and practicality, the City could start by establishing a relatively simple two-tiered structure, where parcels with an impervious footprint above a defined threshold would pay a higher monthly rate than other single-family parcels. Based on the sample of single-family parcels that we evaluated, the City could justify setting the threshold at 9,140 square feet (rounded as the City deems appropriate) and initially measuring the impervious area of single-family parcels that are half an acre or larger. For the sample of single-family parcels that we evaluated, the median impervious area of lots smaller than half an acre is 3,150 square feet; the median for lots that are half an acre or larger is 7,000 square feet. Assuming that the City would continue to assign 1 ERU to single-family parcels that are smaller than half an acre, this relative proportionality suggests that the City could justify assigning 2.25 ERUs to parcels that are half an acre or larger. Under this alternative structure, the City could charge parcels smaller than half an acre $12.98 per month and parcels that are half an acre or larger $29.20 per month to remain revenue-neutral to the existing stormwater rate of $14.50 per ERU. If the City is interested in pursuing this alternative, it should consider establishing an appeal process for customers in the larger parcel category.

ISSUE PAPER #2
DEFINITION OF IMPERVIOUS SURFACE

INTRODUCTION

Consistent with standards outlined in the Stormwater Management Manual for Western Washington, which are used widely by local jurisdictions throughout western Washington State, Section 15.080.040 (6) of the Longview Municipal Code defines "impervious surface" as hard-surfaced area which prevents or retards the entry of water into the soil mantle and increases runoff relative to the natural conditions that existed prior to development. It explicitly includes gravel roads and parking lots as impervious surfaces. As part of the process of evaluating the basis for its stormwater utility, the City of Longview is interested in exploring policy options for defining impervious surface as it relates to determining stormwater utility charges.

DISCUSSION

Our research of stormwater rate policies with respect to gravel found that it is relatively common to assume that compacted gravel surfaces (e.g. driveways and roads) are effectively impervious because vehicles and heavy equipment compact the gravel to the point of allowing only minimal infiltration. Considering that the stormwater rate also includes costs associated with addressing the impacts of runoff to water quality, it could be argued that gravel surfaces do not necessarily contribute fewer pollutants to runoff than comparable impervious surfaces.

Pervious composite surfaces are an alternative to traditional asphalt and concrete surfaces, allowing stormwater to infiltrate, attenuating storm events, and providing for evapotranspiration. Permeably paved areas are typically designed to infiltrate runoff from at least a two-year storm; therefore, runoff will be reduced by 100% for most rainstorms. On an annual basis, some stormwater management programs estimate that permeably paved areas will infiltrate 70% to 80% of rainfall. However, permeable pavement can be susceptible to clogging. Their propensity to clog has been a key factor in their being classified as impermeable by some municipalities. Once clogged, permeable pavement functions just like traditional pavement. Regular maintenance is essential to the functionality of permeable pavement. The frequency of maintenance is site-specific and regular inspections are necessary to ensure continued functionality.

One study evaluated the effectiveness of permeable pavement at Seattle-area parking lots over a 6-year period. The study included four permeable pavement systems and assessed structural durability, the ability to infiltrate rainwater, and water quality. During the study period, all four permeable pavement systems showed only minor signs of wear, infiltrated virtually all rainwater, and exhibited almost no stormwater runoff. The little runoff that did occur was attributed to parked cars covering the majority of the permeable surface and to one heavy rainstorm where the permeable system was overloaded; however, 97% of rainwater was still able to infiltrate.

The City could choose to consider permeable pavement to be a partially or wholly pervious surface (after considering location and other factors) to provide developers with an incentive to install it instead of other mitigation measures required to meet development requirements. However, as its ability to mitigate runoff is

highly dependent on proper maintenance, it may be most appropriate for the City to treat permeable pavement as a temporary mitigation measure which is eligible for rate credits that may be discontinued if regular maintenance is not performed or if a system enters an unacceptable state of performance.

Green or vegetated roofs essentially allow the rooftop to mimic landscaped or pasture area. A study that evaluated vegetated roofs over a fourteen-month period found that they retained 61% of precipitation from 83 measured storm events (using one-inch of planting media, with a 2% roof slope). The study further found that reduced roof slopes and deeper media clearly reduced runoff quantity. In addition to significantly reducing the amount of stormwater runoff, vegetated roofs attenuated runoff. Regardless of design, runoff will be generated from green roofs and require a connection to a stormwater conveyance or infiltration system.

RECOMMENDATION

We recommend that the City continue to charge compacted gravel surfaces such as driveways and roads as if they are effectively impervious, as they have been generally found to impede infiltration and contribute runoff in a manner comparable to paved surfaces.

While porous composite surfaces and green roofs enable post-development sites to better mimic pre-development hydrology, this ability is limited by the extent to which such systems are adequately maintained. Permeable pavement will become impermeable once regular maintenance is discontinued, ending any benefit it provided to reduce, attenuate, or infiltrate runoff. Green roofs require maintenance to maintain plants, soil depth, etc. Consequently, we would recommend that the City classify permeable pavement or green roofs not as "pervious surfaces," but as onsite facilities that are potentially eligible for credits on the monthly utility rate which would require periodic review. It is worth noting that the City does not have to offer stormwater rate credits; in addition, City staff have indicated that administering rate credits would be difficult as Public Works does not manage the City's utility billing database.

ISSUE PAPER #3
DEFINITION OF AN EQUIVALENT RESIDENTIAL UNIT

INTRODUCTION

Since establishing its stormwater utility in 1999, the City of Longview has used impervious surface area and an equivalent residential unit (ERU) approach as the basis for setting stormwater utility rates and recovering stormwater program costs from customers. The City performed an analysis of the impervious cover in the late 1990s on a random sample of single-family residential (SFR) parcels to determine an average impervious surface area of 2,500 square feet as the ERU (which the City currently refers to as an Equivalent Residential Dwelling Unit or ERDU). Under the existing rate structure, the City assigns ERUs as follows:

- Single-Family Parcels: 1 ERU
- Multi-Family Parcels: 1 ERU per dwelling unit
- Non-Residential Parcels: 1 ERU per 2,500 square feet of measured impervious area

Given the way the City assigns ERUs to residential versus non-residential parcels, the impervious area used to define an ERU directly impacts how the stormwater utility's costs are allocated among customer classes. The ERU is intended to represent the amount of impervious area on a "typical" single-family parcel, which can change over time with development trends; the current ERU analysis was performed over 20 years ago. For these reasons, the City has requested that FCS GROUP perform an analysis of single-family parcels to determine whether the current definition is adequate or should be revised.

METHODOLOGY

To ensure that the sample of residential parcels would be representative of the entire single-family residential class, the sample size was determined using a standard statistical estimation technique based on the following parameters:

- Maximum tolerable sampling error (*B*): A maximum sampling error of 100 square feet was chosen because it would yield a manageable sample size while still providing a reasonably accurate point estimate for the mean (average).
- Desired level of confidence: This analysis assumes a 90% confidence level with the intent of balancing accuracy with the required sample size, recognizing that the calculated value may be rounded for the purpose of the surface water rate structure. Put differently, this analysis aims to be 90% confident in concluding that the sample mean is within 100 square feet of the population mean.
- Expected range of responses to the sample: Based on a typical range of values for the impervious footprint of a single-family home, this analysis assumes a range of 2,000 – 5,000 square feet of impervious area (a difference of 3,000 square feet).

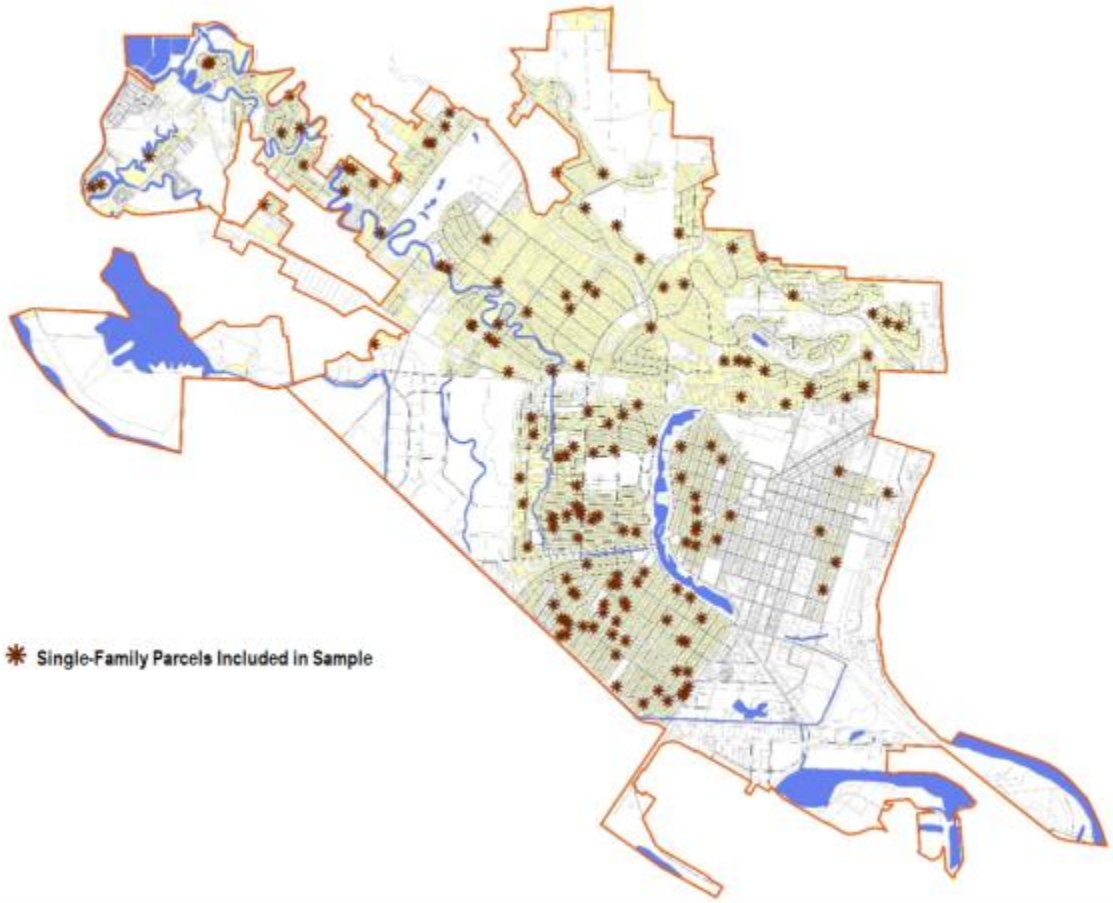
Given these assumptions, the following formula was used to determine the sample size (n).

$$n = \frac{2.71(s)^2}{B^2}; \text{ where } B = 100, \text{ and } s = \frac{(\text{expected high} - \text{expected low})}{4}$$

This formula resulted in a target sample size of approximately 150 developed single-family parcels.

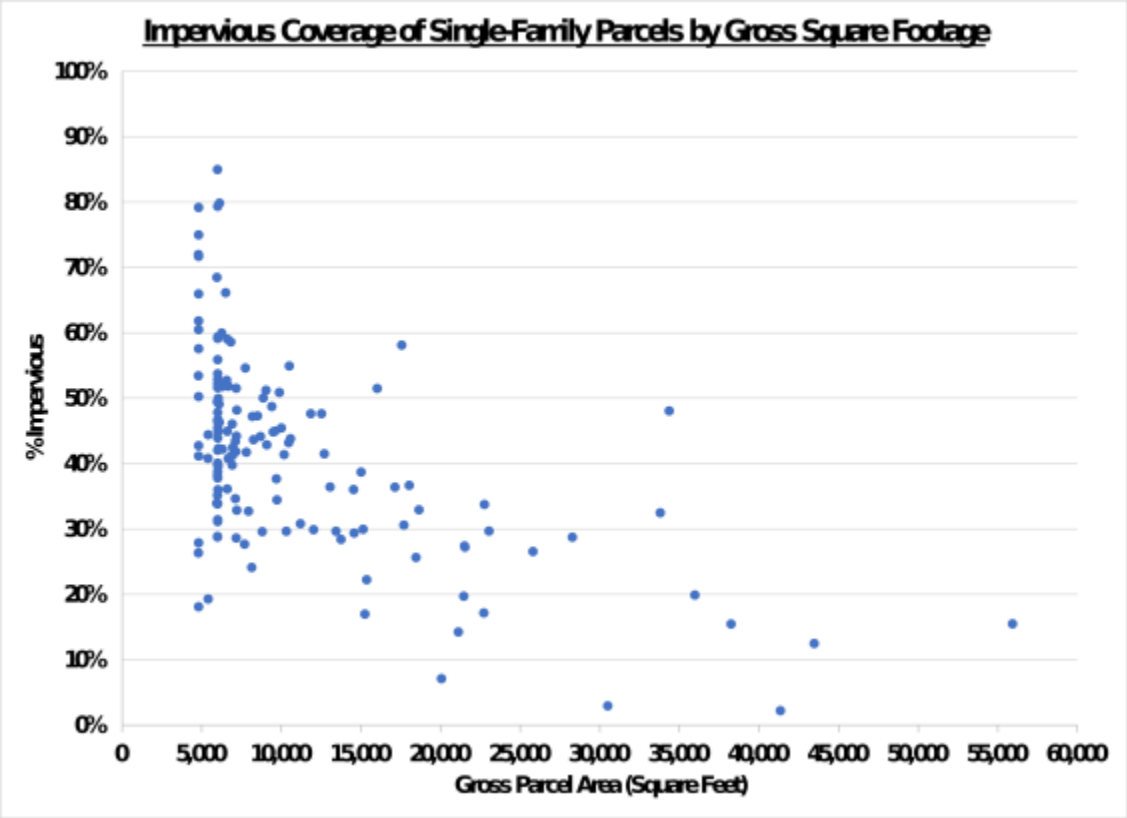
High-resolution aerial imagery taken in March 2019 served as the basis for impervious area measurements through on-screen digitizing (tracing) of surfaces. Using data obtained from the Cowlitz County Assessor's database, FCS GROUP randomly selected a sample of 150 parcels from the 10,120 single-family parcels located within City limits. **Exhibit 1** shows the locations of the SFR parcels selected for the sample:

Exhibit 1: Sampling of SFR Parcels



The measurement process involved identifying and delineating roofs, driveways, and other paved surfaces on the selected parcels using a series of digitized polygons. To verify the resulting estimates of impervious surface area, FCS GROUP overlaid Normalized Difference Vegetation Index (NDVI) imagery to display the relative biomass. Areas with low NDVI values typically have little to no vegetation, such as concrete, rock, or bare soil; areas with shrubs and grassland often have moderate values, while high values appear in forests and areas with lush vegetation. **Exhibit 2** summarizes the results of these measurements:

Exhibit 2: Summary of Impervious Area Measurements (Single-Family Sample Set)



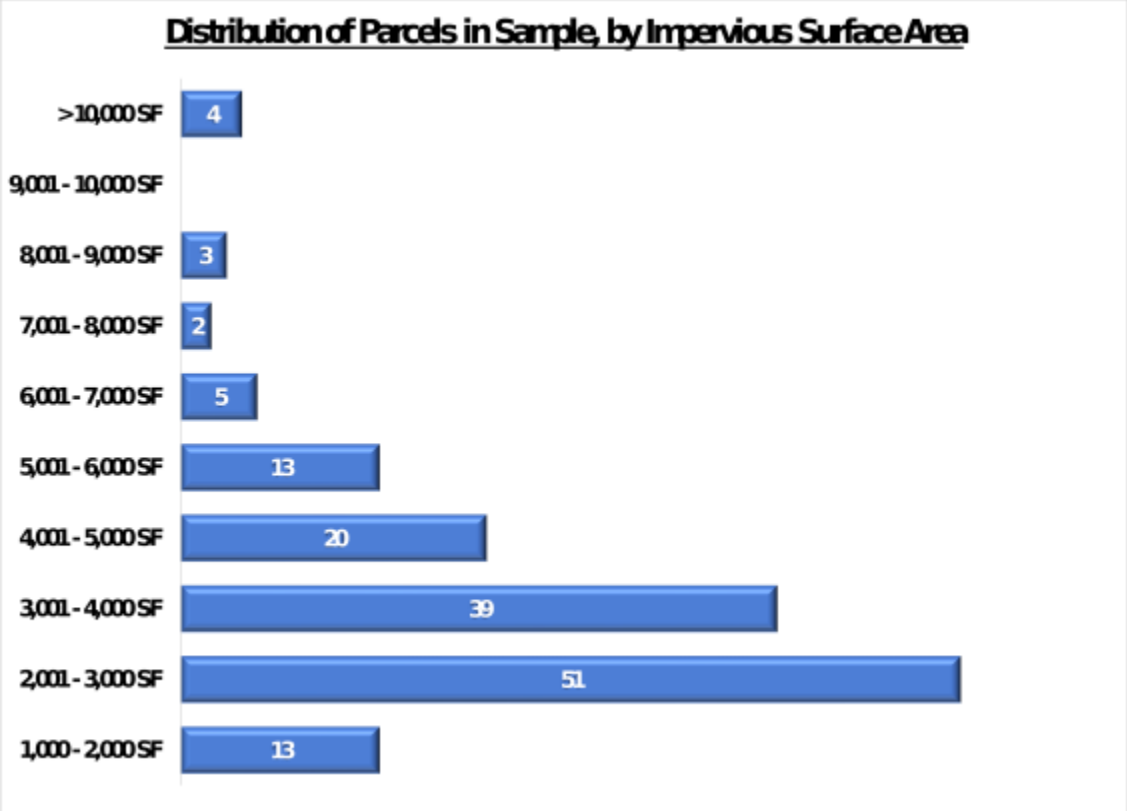


Exhibit 2 shows that 126 of the 150 parcels (84%) included in the sample have impervious areas between 1,000 and 6,000 square feet. It also shows several notable outliers, with the largest parcel having 24,877 square feet and three others having impervious areas in excess of 10,000 square feet. The mean impervious area of the sample was 3,879 square feet of impervious area, and the median was 3,238 square feet. While **Exhibit 2** also indicates a general downward trend in impervious area as a percent of gross parcel area, suggesting that it would be relatively difficult to predict impervious coverage based on gross parcel area.

RECOMMENDATION

Based on the findings of an analysis of 150 randomly selected single-family parcels, we recommend that the City consider updating its definition of an ERU to 3,250 square feet of impervious area (rounded up from the median value of 3,238 square feet). Given that the sample used in the analysis had several outliers that appear to have skewed the mean (3,879 square feet), the sample median appears to better represent the impervious footprint of a typical single-family home. For additional context, **Exhibit 3** summarizes the equivalent ERU definitions used in other local jurisdictions:

Exhibit 3: Survey of Impervious Square Feet per ERU

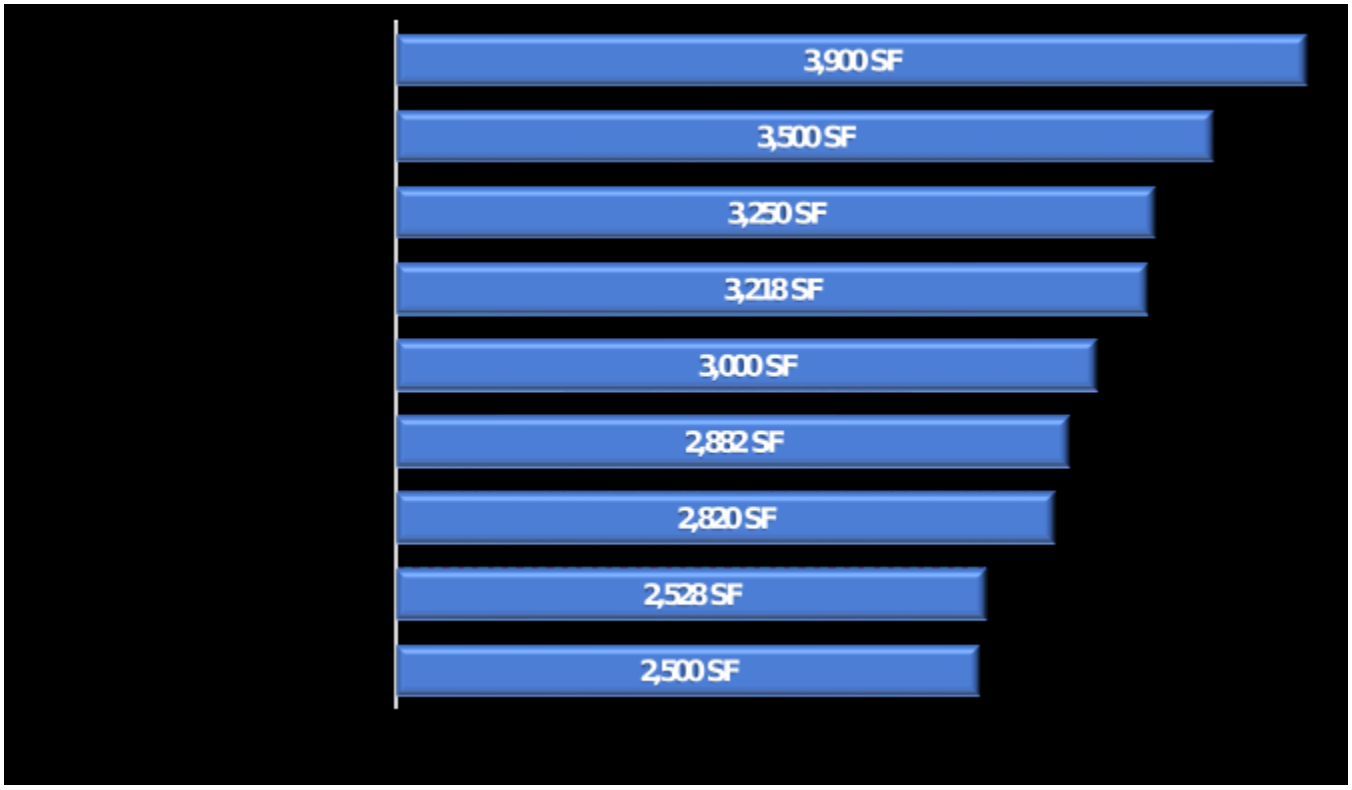


Exhibit 3 indicates that the City's current definition of 2,500 impervious square feet is at the low end of the range, but consistent with the definition used by the City of Vancouver (WA). The updated definition of 3,250 impervious square feet is slightly above the group average (3,195 impervious square feet), but lower than the values currently used by Kalama and Washougal.

By increasing the ERU from 2,500 to 3,250 square feet of impervious area, the City would update and better adhere to the original design of its stormwater rate structure. As an alternative, the City could keep its existing ERU definition of 2,500 square feet and improve equity by increasing the assignment of ERUs to single-family parcels based on the updated estimate of impervious area – at a median value of 3,250 square feet of impervious area (rounded from 3,238 square feet), the City could justify assigning 1.30 ERUs to each single-family parcel.

Given the range in impervious coverage observed in the sample, there may be an opportunity to better improve equity in cost recovery within the residential class. While the sample suggested that a "typical" single-family parcel has 3,238 square feet of impervious area, the largest parcel in the sample has a footprint that is almost eight times that size. Under the City's current rate structure, these two parcels would pay the same stormwater rate despite a seemingly large difference in the volume of runoff generated. To address this inequity, the City could consider a rate structure that treats "very large" single-family parcels like non-residential customers and assigns them ERUs based on measured impervious area. The City of Des Moines (WA) has implemented such a structure, charging single-family parcels with more than 7,500 square feet of impervious area a monthly rate per 3,450 square feet of impervious area.

Recognizing that measuring the impervious area of all single-family parcels in the City would require a significant level of effort, the City could consider proceeding in one of two ways:

- Measuring impervious area for a subset of the single-family class with parcel size above a certain threshold, such as half an acre. Out of 10,119 single-family parcels in the City, 951 (9.4%) have a gross lot area of half an acre or more. This subset is comparable in size to the commercial parcel inventory that the City has engaged FCS GROUP to measure as part of the current stormwater rate study. While this is the more equitable approach, it would require more work and be more costly to administer.

- Use the sample of single-family parcels included in this evaluation to assign ERUs to parcels based on their gross lot size. Of the 150 parcels measured, those that were smaller than half an acre had a median impervious area of about 3,150 square feet; the parcels that were half an acre or larger had a median impervious area of about 7,000 square feet. At the existing ERU definition of 2,500 impervious square feet, parcels smaller than half an acre would be assigned 1.26 ERUs; parcels that are half an acre or larger would be assigned 2.80 ERUs. If the City were to update the ERU definition to 3,250 impervious square feet, these ERU assignments would change to 0.97 and 2.15, respectively (which the City could round to 1.0 and 2.0 ERUs). Given that the City is interested in improving equity within the single-family class, we recommend that the City consider this approach as an alternative to the existing ERU structure as it would be simpler and less costly to administer than the first approach outlined above.

To promote affordability, the City may also wish to consider providing a reduced rate for "small-footprint" single-family residential customers with impervious area under a specified threshold (such as 1,500 square feet). It could make such reductions available by appeal and subject to acceptable documentation being supplied by the customer. Based on the sample evaluated in this study, seven parcels (roughly 5%) would fall into this category with a median impervious area of 1,043 square feet. The City could justify assigning these parcels 0.42 ERUs (which could be rounded to 0.4 ERUs) under the current definition of 2,500 impervious square feet or 0.32 ERUs under the updated estimate of 3,250 impervious square feet. This approach, while providing needed relief for those with smaller impervious footprints, would not require burdensome additional impervious cover measurements by the City.

Assuming that impervious surface area is a reasonable indicator of runoff generation, the City could also improve equity for multi-family customers. Given that multi-family dwelling units are typically smaller than a single-family home and are often located in buildings with multiple floors (that do not increase the impervious footprint), the City's current policy of assigning multi-family customers one ERU per dwelling unit likely overcharges them relative to the runoff that they generate. We recommend that the City assign ERUs to multi-family parcels based on measured impervious area instead of dwelling unit counts.

Impacts

Increasing the ERU definition from 2,500 to 3,250 square feet of impervious area would decrease the number of ERUs assigned to non-residential parcels, shifting the recovery of stormwater program costs to residential parcels. City billing data indicates that the City currently serves 32,982 ERUs, with approximately 51% of those ERUs being attributable to non-residential parcels. If the City were to increase the ERU definition from 2,500 to 3,250 square feet, the number of billable ERUs would drop to 29,125 and the City would have to increase the monthly rate per ERU by approximately 13% to remain revenue-neutral to the existing structure. It is worth noting that the City anticipates an increase in the total impervious area attributable to commercial customers as a result of the parcel measurements being completed as part of the current study, which would offset this rate increase. The expected increase is due to two factors: (1) updating commercial parcel measurements that are 20 years old to reflect improvements in measuring technology and redevelopment that has occurred, and (2) including commercial parcels such as parking lots on which the City has not historically assessed stormwater rates due to the lack of a water meter that the City could shut off to enforce payment of utility charges.

While increasing the ERU definition would improve equity between the single-family class and the City's other customers, it would not address inequities that result from charging homes with small impervious footprints the same amount as homes with large impervious footprints. A tiered single-family stormwater rate would address these inequities to an extent, but it would introduce other inequities by charging some smaller parcels with greater impervious coverage less than larger parcels with less impervious area (e.g. a 16,000-square-foot parcel with 10,000 impervious square feet would pay less than a 23,000 square-foot parcel with 8,000 impervious square feet). A tiered rate alternative based on gross lot size also comes with the possibility of overcharging large parcels with relatively low levels of impervious coverage, but the City can address that issue by establishing an appeal process for customers with large parcels.

Changing the multi-family stormwater rate structure to bill based on measured impervious area instead of dwelling units would also have significant revenue impacts, as many of the multi-family parcels in the City would pay less based on their measured impervious area than they would under the existing rate structure. We recommend that the City measure the impervious area of its multi-family parcels in order to gain a better understanding of the potential revenue impacts from making this change.

ISSUE PAPER #4
RECOVERY OF UTILITY DEVELOPMENT SERVICES COSTS

INTRODUCTION

The City of Longview's stormwater utility development review services help to ensure that new development and redevelopment projects in the City meet local and state stormwater regulations and ensure that they are designed and constructed to minimize impacts to public infrastructure, private property and the environment. The City has historically funded its development review and construction inspection activities through its stormwater utility rates and is interested in considering policy options to recover a greater share of these costs from the property developers.

Development services fees provide relief to existing customers and ratepayers who are currently subsidizing the cost burden associated with development projects for the staff time required for plan review and construction inspections of these projects. Development fees can, however, impose a cost burden on development and are a volatile and unreliable revenue stream that can challenge resources and service planning. Below is a discussion of various options for cost recovery from direct fees, assumptions for setting fees, and methods for managing revenue and workload volatility.

ALTERNATIVES FOR COST RECOVERY

The City's general options for recovering stormwater utility development services costs include:

- A cost-based fee structure and system intended to fully recover development services costs. Such a structure should be based on reasonable assumptions for staff utilization, load variation, and system flexibility. The structure can also be proportionate to scale of effort, either through direct cost tracking or a fee structure related to anticipated level of effort. The financial system should anticipate and address the revenue volatility and deviation (high and low) from cost-recovery objectives.

- A cost-based fee structure and system intended to partially recover development services costs. The structure should be based on a well-defined standard for cost recovery, reasonable assumptions for staff utilization, load variation and system flexibility. The financial system should anticipate and address the revenue level, volatility, and deviation (high and low) from cost recovery objectives.

- Incorporate development services costs into the general stormwater utility budget to be funded through rates. The utility budget process would establish costs and capacity (e.g. staffing, service levels) of utility development services. *This is the current approach used by the City.*

- Incorporate development services costs as a portion of related capital assets (such as developer extensions) to be funded through capital resources and built into a capital recovery fee. The utility financial structure should anticipate and address the revenue level, volatility, and cyclical deviation (high and low) from cost recovery objectives.

- Various hybrids of the above alternatives.

DISCUSSION

As alternatives are being considered and evaluated, the following criteria are relevant to the discussion:

- ***Revenue Sufficiency:*** Are revenues adequate to meet costs? Is revenue generation consistent with cost incurrence?

- ***Revenue Reliability:*** Are revenues dependable and stable? Are charges reasonably based on an expectation of productivity, workload, and cost-recovery targets?

- ***Equity:*** Is the cost-recovery method equitable across classes of system users? Does a change from past practices potentially introduce generational inequity between past and future customers?

- ***Authority:*** Are cost-recovery methods consistent with statutory authority and intent?

These criteria will be applied to evaluate the alternatives listed above – since there is a natural competition if not tension among them, the evaluation will include subjective elements that must ultimately defer to policy considerations and direction.

As context for the review, it is worth noting that no system can exactly match revenues and expenditures through cycles of activity and variability of levels of effort on similar projects. This paper considers targets for cost recovery, and then envisions potential tools for managing volatility and risk while maintaining resources and capacity through both seasonal and economic cycles of activity and demand for services.

1. Full Cost Recovery: This approach would target full recovery of costs from the recipients of development services. Under this approach, the key elements of the program would be accurate and complete estimates of costs, expectations for workload and for productivity, appropriate metrics for imposing charges (flat fee, quantity-based, time-based, etc.), and a financial management structure that can endure the variations in revenues and workload that normally occur.

    a. Revenue Sufficiency: The program would aim for full cost recovery, though this would be based on various assumptions and subject to variability (both high and low) from the targeted amount. Fluctuation of revenues from budgeted/actual expenditures would remain a reality of the system.

    b. Revenue Reliability: Development services are prone to volatility from economic/development cycles and variability in productivity relative to revenues. There is also some seasonality to the activity pattern, meaning that adequate staffing for peak periods may leave idle capacity at other times (or staffing for average load leaves a capacity deficit during peaks). The City would be able to manage this through a reserve structure scaled to stabilize net revenue patterns – the reserve might initially be funded from existing rate-generated reserves, but full cost recovery might indicate that the charges should include a provision to accumulate an appropriate reserve over some period of time (and removed or phased out once the target is attained). This margin also provides partial protection in the interim against adverse performance.

    c. Equity: This option is generally consistent with cost-of-service principles in that the charges are intended to recover costs from customers who impose the burden. Since the City's stormwater utility functions as an enterprise, financial and infrastructure resources are entirely attributable to payments

from its customers. Undeveloped properties have not supported these costs and do not yet have a financial position in the system – while redeveloping properties have borne system costs, it is only consistent with the prior level of development.

d. Authority: The City has clear statutory authority to impose cost-based fees and charges for utility services; this would include full cost-recovery models for new development. The inclusion of a reserve-generating margin might result in a charge in excess of direct costs but, similar to rates, this reserve could be argued to be a related cost and part of the revenue requirement. Also, this approach is likely less costly to development than a more conservative assumption on productivity or activity levels, which would lead to higher charges in general.

2. Partial Cost Recovery: This approach would establish a target level of cost recovery from the recipients of development services that is below the full estimated cost of service. Key elements of the program would remain an accurate estimate of costs, expectations for workload and productivity, appropriate metrics for imposing charges (flat fee, quantity-based, time-based, etc.), and a financial management structure that can endure the variations in revenues and workload that normally occur. In addition, an explicit element of cost recovery would remain in the utility rate revenue base.

   Inherent in this approach is a definition of an appropriate or acceptable level of cost recovery from the development fees. A policy could simply define this objective without an explicit quantitative basis. Alternatively, a quantitative basis might use related (though perhaps not definitive) factors to set a target level. Finally, a more detailed analytical approach might outline or calculate a basis for an explicit recovery level. Examples of the possible approaches to setting a target might include:

   - A policy-based approach might select a target (e.g. 50% or 75%) based on general considerations of appropriate fee levels or a sense of equity. Consistent with general ratemaking, the decision would ultimately be based on the reasonable judgement of the legislative body (City Council).

   - A more quantitative, but still somewhat subjective, approach might consider direct costs rather than fully loaded costs or set fees assuming revenue generation at full capacity, and then estimate revenues based on reasonable expectations for actual utilization. The difference in either case would be borne by the utility rate revenue base.

   - An economic evaluation of costs and benefits could provide a more explicit quantification of costs, benefits, and cost-sharing principles. For example, to what extent are City and developer objectives met through the services provided, and can these be quantitatively compared? Beyond the proprietary interests of the utility, are there also general public benefits deriving from the regulation and review that could be considered and quantified. This evaluation could approach a "triple bottom line" type of assessment of the utility development services program that would then be segregated into private and public environmental, economic, and social benefits to determine a proportionate share of costs to be borne.

   Under any of these approaches, a metric could be determined and applied to define a basis for the development fees. The considerations relative to the criteria outlined above are also generally consistent.

   a. Revenue Sufficiency: The program would target less than full cost recovery, and an explicit level of funding from rates would need to be defined and budgeted. However, the net cost would still be

based on various assumptions and remain subject to variability, both high and low, from the cost-recovery objective.

b. Revenue Reliability: While reliance on a volatile revenue source is proportionately lessened, revenue reliability can remain a significant issue. Further, the development and rate cycles have some commonality, such as from boom and recession cycles, meaning that the total risk may remain comparable and warrant a reserve provision to address this variability. In this case, it may be more appropriate to consider this as a rate-generated reserve and managed relative to the volatility of the entire revenue (and expense) stream, including utility development services.

c. Equity: This option moves from a direct cost/revenue relationship to a basis that is less consistent with cost-of-service principles. In other cities, new development is commonly expected to bear the growth-related costs both through the requirement for local facilities and through payment of connection charges for capacity-bearing infrastructure.

d. Authority: The City has clear statutory authority to impose cost-based fees and charges for utility services; this would include full cost-recovery models. While the intentional reduction of fees from this level and reliance on other cost-based sources to supplement those revenues may begin to deviate from a cost-based system, reasonable policy and/or quantitative considerations could be expected to validate such a practice.

3. No Direct Cost Recovery: Consistent with the City's current practices, this approach treats development services as a business expense of the enterprise to be recovered through utility rates. Under this approach, the costs are budgeted within the utility, like operating or administrative costs, and recovered through rates. No unique financial management elements are needed.

   a. Revenue Sufficiency: The program would fully fund program costs through stormwater utility rates.

   b. Revenue Reliability: Rate revenue reliability has already been addressed through contingency features such as operating reserves. As the target balance for operating reserves is typically based on operating expenses, it adjusts automatically to accommodate the added costs.

   c. Equity: This option poses several equity challenges. First, costs are attributable to a specific activity or service are recovered as general administrative costs rather than through direct fees. Second, to the extent that the utility has historically required past development to bear these costs, there is potentially an issue of generational equity where those same customers who paid directly are now expected to indirectly pay for another round of development costs on behalf of current and future development.

   d. Authority: The City has clear statutory authority to impose cost-based fees and charges for utility services; this would include rates that cover ancillary costs related to managing the utility business. Other parallels would include non-fee customer service functions or utility planning efforts, which have a major element related to growth yet are funded as utility system costs. It is likely that the City has the authority to recover costs in this fashion.

4. Incorporate Costs into a Capital Recovery Fee: This approach would be similar to Option #3 in that no fees would be imposed, but it would target cost recovery from new development through a capital

recovery fee rather than rates. The budgeted costs would be recognized as growth-related costs that are part of the system and included in the calculation of the capital recovery fee. A critical factor in this approach is the ability to consider these costs as part of the "cost of the system" and either capitalizable or conceptually valid as part of the system cost that forms the basis for the capital recovery fee. While legal opinion must be part of the evaluation of this option, our experience is that non-traditional system costs such as system plans have at times been included as part of the "cost of the system" even if not capitalized as fixed assets of the utility enterprise. It is worth noting that the City currently has capital recovery fees in place for its water and sewer utilities but not its stormwater utility – the City would need to establish a stormwater capital recovery fee in order to pursue this alternative.

a. Revenue Sufficiency: The program would be funded through capital recovery fee revenues, which are also volatile. A manageable approach would be to fund the program through rates but budget an offsetting revenue derived from a share of capital recovery fee revenues.

b. Revenue Reliability: While rates may mitigate the revenue reliability issue, the expectation of a revenue stream from capital recovery fees that supports ongoing expenses creates a similar issue. While reliance on a volatile revenue source may be lessened, it would not be eliminated. A reserve provision would remain appropriate to address this variability.

c. Equity: This option moves from a direct cost/revenue relationship to a generalized basis through the capital recovery fee – even so, costs remain attributable to growth and to some degree proportional to scale of development. Without a direct fee structure, there would be a reduced nexus between costs and charges, but one that is readily accepted in utility practice. Further, a general expectation that costs are related to development scale may remain valid, so that this approach retains rough proportionality. The approach would be consistent with the perspective that new development is expected to bear growth-related costs, in this case through the capital recovery fee.

d. Authority: The City has clear statutory authority to impose cost-based fees and charges for utility services; this would include full cost-recovery models. The City's authority to recover costs through the capital recovery fee relates to proportionate shares of the cost of the system; this approach relies on the reasonableness of the decision to include direct development services in that cost.

5. Hybrid Models: These could vary in approach, but an obvious model to consider might logically include a partial charge structure with the remaining cost identified for inclusion in a capital recovery fee.

a. Revenue Sufficiency: The program would be funded through a combination of capital recovery fees and other development fee revenues, which share volatility – however, a program could be constructed with the intent to fully recover program costs, even with some disconnect in timing and structure.

b. Revenue Reliability: In this approach, reliance on two volatile and closely linked revenues would again argue for consideration of appropriate reserve structures.

c. Equity: This option partially moves from a direct cost/revenue relationship to a generalized basis through the capital recovery fee, but costs remain attributable to growth. The approach would be consistent with the perspective that new development should bear growth-related costs, in this case through capital recovery fees and other development fees. To the extent that the City has recovered

the cost of development services through development fees in the past, it also retains generational consistency with respect to the recovery of growth-related costs.

d. Authority: The City has clear statutory authority to impose cost-based fees and charges for utility services; this would include full cost-recovery models. The City's authority to recover costs through the capital recovery fee relates to proportionate shares of the cost of the system; this approach relies on the reasonableness of the decision to include a portion of development services in that cost.

RECOMMENDATION

Based on this conceptual review, our preliminary recommendation would be to move to a full cost recovery structure for utility development services. Such a step may require a user fee study to establish direct and indirect costs, resource utilization factors, appropriate metrics, and fee structures. It is worth noting that under this approach, the City would target full cost recovery through development fees in a long-term sense. Given the sensitivity of development cycles to economic conditions, there will be times when the revenue from development fees is inadequate to fully cover the cost of development services and the stormwater utility must cover the difference. During times of relative economic prosperity, development fee revenues may exceed the cost of development services and effectively "reimburse" the utility for these outlays.

ISSUE PAPER #5
RECOVERY OF SOURCE CONTROL PROGRAM COSTS

INTRODUCTION

To comply with the 2019 Western Washington Phase II Municipal Stormwater Permit, the City of Longview will be required to implement a stormwater pollutant source control program aimed at businesses and industries with the potential to generate stormwater pollution that could reach the municipal stormwater system. It is estimated that the new program will cost roughly $100,000 per year (for labor and vehicle costs) engaging businesses regarding activities that could impact the stormwater system. Given that these costs will be attributable to a defined inventory of commercial, industrial and institutional properties, the City is interested in considering the possibility of recovering these costs directly from those utility customers rather than embedding them in the utility's overhead costs and allocating them across the entire customer base.

DISCUSSION

The City has two primary options for recovering the cost of the stormwater source control program:

1. Embedding the cost in the stormwater utility operating budget and recovering it from all customers.

This is the simpler of the two approaches and consistent with the stormwater utility's historical practice of recovering all of its costs from all of its customers. The City's 2020 Budget projects $5,407,570 in stormwater rate revenue which, along with $10,000 in miscellaneous operating revenue must cover $4,725,380 in operation and maintenance expense, $248,610 in debt service payments, and $443,580 in capital outlay. To maintain revenue neutrality, a $100,000 increase in ongoing annual operating costs would trigger a stormwater rate increase of 1.9% – given the current stormwater rate of $14.50 per equivalent residential unit (ERU) per month, this would equate to an increase of $0.27 per ERU per month for all customers.

2. Allocating the cost directly to the customers driving the need for the program.

The alternative approach is to establish a monthly surcharge for commercial users based on the cost of the source control program. While the City could establish this surcharge as a monthly charge per ERU to apportion the cost amongst these customers in a manner proportionate to their monthly rate payments, it is worth considering that the cost of the source control program primarily relates to staff visiting businesses and interacting with business owners – there is not necessarily a strong link between the impervious area of a business and the cost that the City would incur to engage with them on source control program issues.

For this reason, it may make sense to establish the surcharge as a monthly charge per parcel in the source control program. If 300 commercial/industrial parcels are in the source control program, the monthly surcharge of the source control program to these customers would be on the order of $28.00 per month. The monthly charge per parcel will generally decrease as the number of parcels in the source control program increases, assuming that the total labor and vehicle expenditures required for the source control program

remain reasonably consistent with the $100,000 per year that the City has projected. While this approach would be more equitable, it would disproportionately impact smaller businesses.

RECOMMENDATION

When deciding whether to recover specific costs from specific customers, it is important to recognize that they may be paying more than their allocable share of other parts of the revenue requirement under the existing rate structure. The City's stormwater utility provides a variety of services including:

- Maintaining the City's drainage and stormwater management infrastructure
- Protecting the environment and water quality
- Complying with applicable state and federal regulatory requirements
- Funding the City's urban forestry, sidewalk repair, and street sweeping programs

Under the City's existing stormwater rate structure, customers bear the cost of these services in proportion to their assigned number of ERUs. However, the costs of these services are arguably attributable to all customers equally as they do not necessarily provide additional benefit to larger, more heavily developed parcels. Considering that the services provided through the source control program overlap with services outlined above that are currently embedded in the existing stormwater rate structure, the City could potentially be asked to justify a decision to recover the costs of the source control program in a manner that is different from how it recovers the costs of its other stormwater programs. For these reasons as well as simplicity and consistency with the utility's historical cost-allocation practices, we recommend that the City include the cost of the source control program in the general stormwater utility revenue requirement allocated to all customer classes.