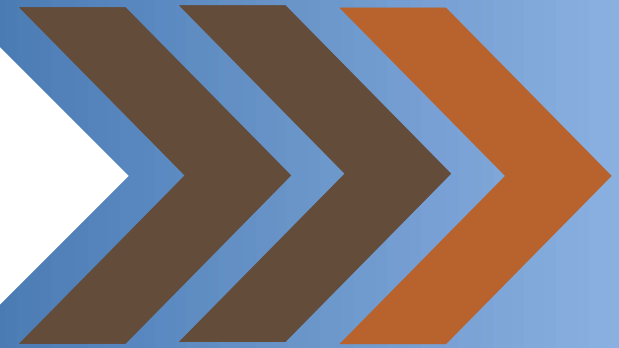




# City of SeaTac



## Trip-Based Stormwater Rates

March 7, 2018



# Discussion Points

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1. Overview of Stormwater Utilities
2. Typical Rate Approach
3. Trip Generation Approach
4. Case Study



# The Utility Concept

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- Stand-alone entity within City government (usually an enterprise or special revenue fund)
- Financially self-sufficient
- Revenues reliable; dedicated for stormwater management
- Revenues can secure debt
- Equitable cost recovery
- Well suited to meet regulatory pressures (e.g., NPDES)
- Accountable to public (reporting requirements)



# Area Experience



## County Stormwater Utility Formations

- Kitsap County
- San Juan County
- Skagit County



## County Stormwater Rate Studies

- King County
- Pierce County
- Skagit County
- Snohomish County



## Special Stormwater Funding Studies

- Bainbridge Island
- King County
- Lake Stevens UGA
- Skagit County
- Snohomish County



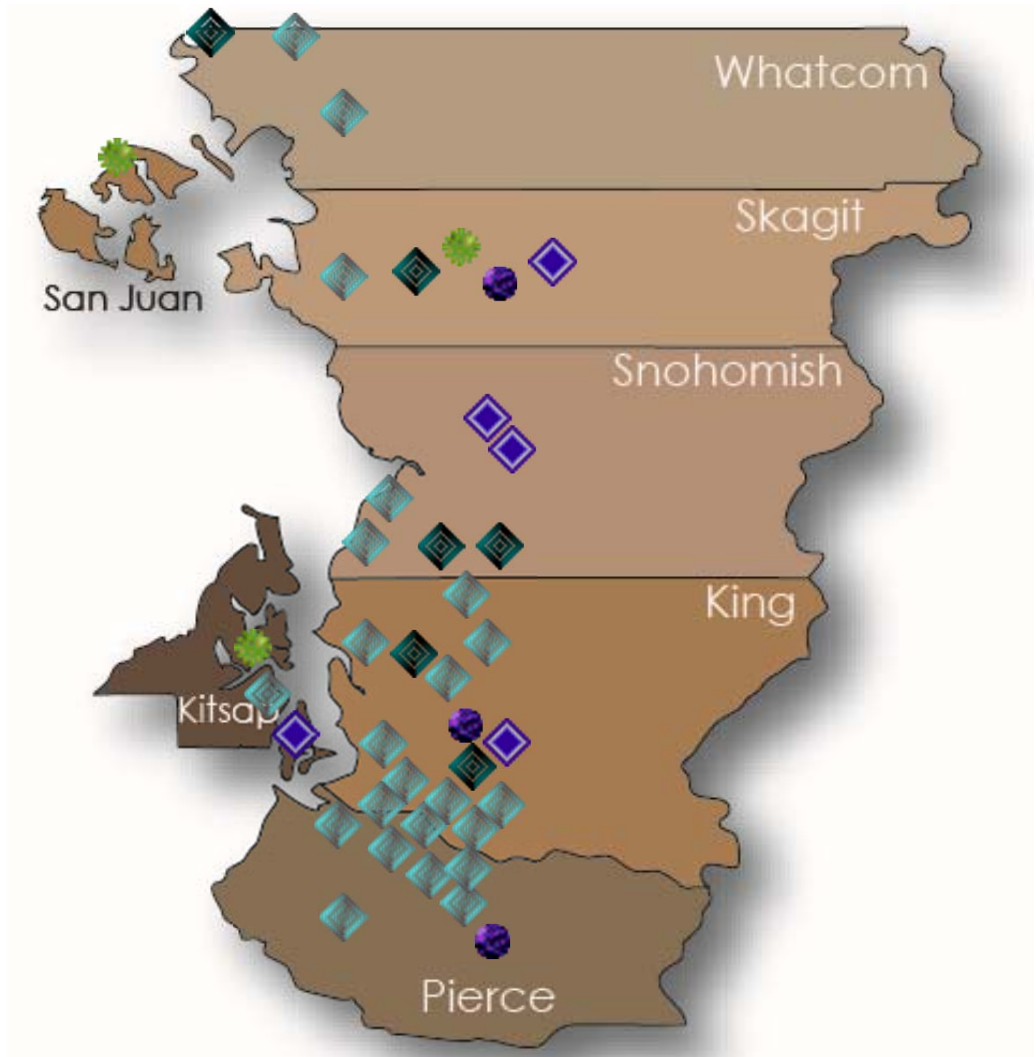
## City Stormwater Utility Formations

- Birch Bay
- Burlington
- Kirkland
- Mill Creek
- Monroe
- North Bend



## City Stormwater Rate Studies

- Auburn
- Bellingham
- Blaine
- Bothell
- Bremerton
- Des Moines
- Duvall
- Edgewood
- Edmonds
- Fife
- Issaquah
- Kent
- Kirkland
- Lakewood
- Lynnwood
- Mt Vernon
- Orting
- Puyallup
- Redmond
- Renton
- Sammamish
- SeaTac
- Snoqualmie
- Sumner
- Tumwater
- University Place





# Stormwater's Mandated Environment





# Industry Trend

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# City of SeaTac Existing SWM Rates

Class	% Impervious	Rate
Residential (R) *	NA	\$ 149.91 / parcel / year
Very Light (VL)	0 – 10%	\$ 89.62 / acre / year
Light (L)	10 – 20%	\$ 305.08 / acre / year
Moderate (M) **	20 – 45%	\$ 631.87 / acre / year
Moderately Heavy (MH) **	45 – 65%	\$ 1,220.29 / acre / year
Heavy (H) **	65 – 85%	\$ 1,547.95 / acre / year
Very Heavy (VH) **	85 – 100%	\$ 2,027.78 / acre / year
City Roads, State Highways	NA	***

\* The charge for a residential parcel which is owned by and is the personal residence of a person or persons determined by the King County Assessor as qualified for a low income senior citizen rate adjustment or a low income disabled citizen rate adjustment pursuant to RCW 84.36.381, or as the same may hereafter be amended, shall be 36.1 percent (36.1%) of the residential rate set forth above.

\*\* The minimum service charge for parcels within the VL class shall be equivalent to the charge for one (1) acre in the VL class, and the minimum service charge for parcels within the L, M, MH, H, and VH classes shall be equivalent to the residential rate.

\*\*\* The rate charged to the City of SeaTac for roads shall be 26.3 percent (26.3%) of the rate for comparable developed parcels. The rate charged to the Washington State Department of Transportation for public highways, roads and rights-of-way will be determined in accordance with RCW 90.03.525.



## Why Impervious Surface Area?

Impervious surface area is most widely accepted as an appropriate measure of a property's contribution of runoff, providing a clear relationship, or "rational nexus," to service received from a stormwater program.

The increased velocity and volume of runoff, plus the pollutants it carries, cause dramatic changes in hydrology and water quality that result in a variety of problems, including

- Flooding
- Stream channel degradation
- Habitat loss
- Changes in water temperature
- Contamination of water resources
- Increased erosion and sedimentation





## Roads and Runoff

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Roads, highways, and bridges are a source of significant contributions of pollutants to our nation's waters. Contaminants from vehicles and activities associated with road and highway construction and maintenance are washed from roads and roadsides when it rains or snow melts. A large amount of this runoff pollution is carried directly to water bodies. (U.S. EPA)

Contaminants in runoff pollution from roads, highways, and bridges include:

- Sediment
- Oils and Grease
- Heavy Metals
- Debris
- Road Salts
- Fertilizers, Pesticides, and Herbicides



## Why Trip Generation?

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- **Nexus between motor vehicles and water quality degradation**
  - Trip generation valid measure of that impact
- **Development regulations often require 100% on-site retention**
  - Runoff in/from public right-of-way becomes program focus
  - Trip generation valid measure of use of right-of-way



## Applicability of Trip-Based Fees

- Trip-based fees are already familiar (albeit not in stormwater)
  - Institute of Transportation Engineers (ITE) *Trip Generation Manual*
- Transportation impact fees
- Transportation utility fees (other states)



# Comparison of Rate Bases

Customer Type	Key Characteristics	Trip Generation		Impervious Surface	
		ADTs <sup>1</sup>	Bill/mo.	ESUs <sup>2</sup>	Bill/mo.
Single Family Residence	2,500 s.f.; 3,500 s.f. impervious	9.45	\$ 4.50	1	\$ 5.75
Multi-Family 4-Plex	8,000 s.f.; 9,000 s.f. impervious	26.00	\$ 12.38	3.00	\$ 17.25
Convenience Market	4,000 s.f.; 10,000 s.f. impervious	740.43	\$ 352.60	3.33	\$ 19.17
Discount Superstore	40,000 s.f.; 120,000 s.f. impervious	1,538.40	\$ 732.60	40.00	\$ 230.02
General Office	20,000 s.f.; 8,000 s.f. impervious	167.60	\$ 79.81	2.67	\$ 15.33
Office Park	20,000 s.f.; 30,000 s.f. impervious	170.00	\$ 80.96	10.00	\$ 57.50
Light Industrial	40,000 s.f.; 100,000 s.f. impervious	210.40	\$ 100.19	33.33	\$ 191.68
Quality Restaurant	6,000 s.f.; 12,000 s.f. impervious	224.52	\$ 106.92	4.00	\$ 23.00

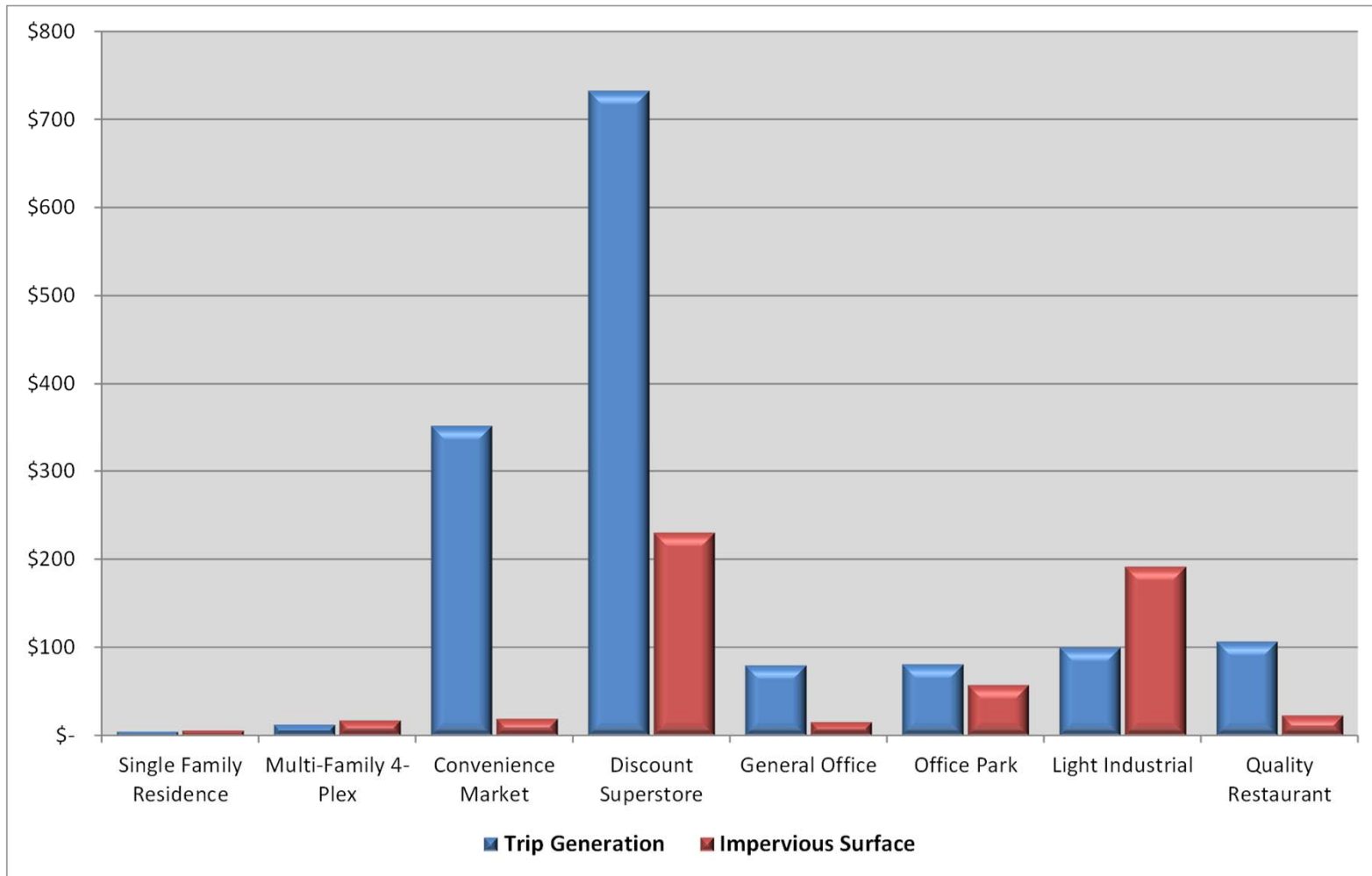
<sup>1</sup> Adjusted for diverted linked / pass-by trips.

<sup>2</sup> One ESU assumed to equal 3,000 s.f. impervious area.

Examples only – your results will vary.



# Comparison of Monthly Bill Impacts





## Case Study: Redmond, Oregon

- Stormwater retention required by code (Section 8.0286.5.G and Section 8.3035.7.A)
- Our engagement: stormwater utility formation
- Revenue requirement analysis
- Calculation of trip-based charge
- Results



# Trip Generation Examples

ITE Code	Land Use	Rate Basis	Average Daily Trips
110	General light industrial	1,000 square feet	5.26
140	Manufacturing	1,000 square feet	3.03
151	Mini-warehouse	1,000 square feet	2.37
210	Single-family residence	Dwelling unit	9.53
220	Apartment	Dwelling unit	6.50
320	Motel	Room	5.63
560	Church	1,000 square feet	13.22
710	General office building	1,000 square feet	8.34
720	Medical-dental office	1,000 square feet	27.31
813	Free-standing discount superstore	1,000 square feet	39.69
814	Specialty retail center	1,000 square feet	40.58
851	Convenience market	1,000 square feet	204.87
862	Home improvement superstore	1,000 square feet	19.43
932	High-turnover restaurant	1,000 square feet	75.40
934	Fast food restaurant	1,000 square feet	267.53
945	Gasoline station w/ convenience market	Fueling position	68.62

Average daily trips are from ITE's Trip Generation, 8<sup>th</sup> edition, and are adjusted (where appropriate) for pass-by trips based on ITE's Trip Generation Handbook.



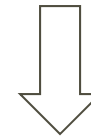
# Two-Component Rate

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2013-14 Stormwater Revenue Requirement:  
\$851,702



Fixed program &  
water quantity:  
\$5.52 per account  
per month



Residential water  
quality: \$1.19 per  
month

Non-residential water  
quality: \$0.07 per trip  
per month





## Rate Scenarios

Customer Category	Implementation	
	2013-14	2016-17
Single-family residence	\$ 6.72	\$ 8.45
Industrial customer 36,426 s. f. of "general light industrial"	\$ 18.48	\$ 22.92
Real estate office 3,056 s. f. of "general office building"	\$ 7.25	\$ 9.10
Supermarket 54,743 s. f. of "shopping center"	\$ 81.84	\$ 100.93
Gas station with conv. market Per fueling position	\$ 7.09	\$ 8.90
Coffee kiosk 364 s. f. of "coffee/donut shop no seating"	\$ 11.72	\$ 14.60
Sit-down restaurant 2,000 s. f. of "quality restaurant"	\$ 10.55	\$ 13.16
Book store 2,500 s. f. of "specialty retail center"	\$ 12.38	\$ 15.41

*Sources: Trip Generation, Deschutes County Assessor, and City staff*



# Takeaways

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- Trip-based fees are appropriate when use of the public right-of-way is the primary cost driver.  
and / or
- Trip-based fees are an appropriate way to charge for stormwater when developed lots retain their runoff.  
and / or
- Trip-based fees are an appropriate way to charge for stormwater water quality-related services in an urban environment.

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