

To: Dan Pauly, City of Wilsonville and Chris Zahas, Leland Consulting Group
Date: May 4, 2023
From: Todd Chase and Tim Wood, FCS Group
CC: Frog Pond East/South Funding Work Group
RE: Scaled System Development Charge (SDC) Research Findings

A. PURPOSE

The City of Wilsonville (City) received a planning grant from the Oregon Department of Land Conservation and Development (DLCDD) to identify and evaluate potential approaches and “best practices” for varying SDCs for residential development, based on structure size.

The purpose of this Memorandum is to:

- Review current SDC methods used by the City of Wilsonville.
- Explore new methods that could be used to vary SDCs by dwelling unit size and type.
- Gather and summarize any available information on the varying rates of impact of different housing types compared to detached single-family on varying types of infrastructure especially transportation, sanitary sewer, and parks.
- Provide research from Oregon cities and nationally where scaled SDCs have been deemed legally defensible.
- Evaluate the advantages and disadvantages regarding alternative approaches to SDC scaling methodologies.
- Provide a preliminary calculation of a sized-based fee schedule for single-family residences (including detached, attached, plexes, and ADUs) for each SDC imposed, based on current rates and charges.

This memorandum is organized as follows:

- A. Purpose**
- B. Current Practice**
- C. Research on SDC Scaling**
- D. Variable SDC Examples**
- E. Summary and Conclusions**

B. CURRENT PRACTICE

The City of Wilsonville originally adopted its local SDC Ordinance No. 386 in 1991 to establish charges on new development within the city and in areas that will connect to the sanitary sewer, water, stormwater drainage, transportation and parks systems of the city. Ordinance 386 clearly

identifies the administrative procedures that are applicable to SDC charges and comports with Oregon SDC rules and regulations.

Over the past 20 years, the City has periodically updated its local SDC charges to reflect changes in its Capital Improvement Program (CIP), growth assumptions, and construction cost inflation. Please refer to **Appendix A** for a list of SDC ordinances and resolutions adopted by the City.

The City currently collects system development charges (SDCs) to help finance growth related improvements needed to serve that new development. The existing SDCs are collected from all new residential development, with the exception of accessory dwelling units (ADUs).

The City of Wilsonville's current SDC administrative procedures do not directly consider the costs of land in its annual inflation adjustment. While the City has periodically updated and indexed its SDCs over time, it is likely that such adjustments have not kept up with the pace of actual construction due to increasing right-of-way costs for land as well as other factors that may not be accurately reflected by the current index that is applied per Ordinance No. 386: McGraw-Hill *Engineering News Record, Construction Cost Index (ENR CCI) for the Seattle Region*.

For example, the price of housing in Oregon increased by a factor of 53.9% over the five-year period between December 2017 to December 2022 (source: Federal Housing Finance Administration). In comparison, the ENR Seattle CCI recorded an escalation of 36.3% during this same time frame.

To reflect construction costs of public facilities, the City of Hillsboro and Washington County have adopted an annual escalation factor that is based on a weighted combination of a Real Estate Index and the Seattle ENR CCI for annual adjustments to transportation SDCs for Hillsboro and Transportation Development Tax (TDT) rates for Washington County.

The Hillsboro Transportation SDC annual index adjustment is based on the following indices:

- 1. The Washington County Transportation Development Tax Real Estate Index (weighted thirty three percent or 33%); and*
- 2. The Mc-Graw Hill Engineering News Record, Construction Cost Index for the Seattle Area (weighted seventy five percent or 67%)*

Exhibit 1 reflects the residential land use categories and the methodology used by the City of Wilsonville based on the current adopted SDC fee schedule and supporting resolutions (see **Appendix A**).

Exhibit 1: Wilsonville SDCs for New Housing

Fee Per Unit		Current Methodology
Parks SDC		
Single Family/Duplex	\$ 7,349 DU	Parks SDC based on avg. occupancy for single family and multifamily dwellings based on U.S. Census estimates.
Multi-family per Dwelling Unit	\$ 5,645 DU	
Sewer SDC - Residential		
Fee Per Unit		
Single Family Dwelling	\$ 6,631 DU	Sewer SDCs based on Equivalent Dwelling Unit (EDU) estimates using Sewer Master Plan. SDCs are charged based on EDU factors for various housing types using utility customer data.
Multi Family Dwelling	\$ 4,975 DU	
Manufactured Home	\$ 6,631 DU	
Water SDC - Residential		
Fee Per Unit		
5/8' x 3/4'	\$ 11,492 Meter size	Water SDCs based on meter capacity equivalent (MCE) estimates using Sewer Master Plan and utility customer data. SDCs are charged based on water meter size.
3/4' x 3/4'	\$ 17,238 Meter size	
Transportation SDC - Residential		
Fee Per Unit		
Single Family Dwelling	\$ 16,099 DU	Transportation SDCs are based on 25-year capital facilities plan from the Transportation System Plan, using average daily vehicle trip estimates by dwelling type using ITE Trip Gen. Handbook, 9th Edition data.
Apartment	\$ 11,076 DU	
Condominium/Townhouse	\$ 9,630 DU	
Manufactured Home	\$ 8,352 DU	
Stormwater SDC - Residential		
Fee Per Unit		
Dwelling Unit	\$ 2,227 DU	Stormwater SDCs are based on the Stormwater Master Plan, and calculated based on ERUs (assumes 1 single family ERU = 2,750 SF of impervious area).
Impervious Surface Area (ISA)	\$ 0.83 ISA SF	

Source: see Appendix A for hyperlinks to specific public facility methodology reports and supporting resolutions.

Existing System Development Charges. City of Wilsonville (as of 1/1/2023)

Public Facility Type	Single Family	Townhome	Apartment	Notes
	Detached	Unit	Unit	
Parks	\$7,349	\$7,349	\$5,645	1
Transportation	\$16,099	\$9,603	\$11,076	2
Sewer	\$6,631	\$4,975	\$4,975	3
Water	\$11,492	\$9,950	\$9,950	4
Stormwater	\$2,227	\$0.83	\$0.74	5
ISA per unit		750 SF	375 SF	
Total SDC per unit	\$43,798	\$32,500	\$31,924	

Source: Adopted Wilsonville charges.

Acronyms: kSF = 1,000 SF of building floor area, ISA = impervious surface area.

Notes:

- Charge per kSF for non res, and per dwelling unit for res.
 - Charge per dwelling unit for res. Per email from DKS on 1.10.2023
- | | | | |
|-------------------------|------|------|------|
| Peak Hour Trips per ERU | 0.94 | 0.57 | 0.51 |
|-------------------------|------|------|------|
- Charge per EDU for non res, and per dwelling unit for res.
 - Estimated water SDC charge for SFD with 3/4" x 3/4" meter, other uses assume 2 x sewer charge.
 - Charge per SF of impervious surface area (ISA).

ERU=Equivalent Dwelling Unit

C. RESEARCH ON SDC SCALING

Oregon Legal Requirements

Oregon Revised Statutes (ORS) 223.297 – 223.314 provides “a uniform framework for the imposition of system development charges by governmental units” and establishes “that the charges may be used only for capital improvements.” An SDC can be formulated to include one or both of the following components: (1) a reimbursement fee, intended to recover an equitable share of the cost of facilities already constructed or under construction; and (2) an improvement fee, intended to recover a fair share of future, planned, capital improvements needed to increase the capacity of the system. In addition, administration fees may also be included in the SDC calculation.

“Improvement fee” means a fee for costs associated with capital improvements to be constructed. Improvement fees may be spent only on capacity increasing capital improvements, including expenditures relating to repayment of debt for such improvements. An increase in system capacity may be established if a capital improvement increases the level of performance or service provided by existing facilities or provides new facilities. The portion of the improvements funded by improvement fees must be related to the need for increased capacity to provide service for future users.

“Reimbursement fee” means a fee for costs associated with capital improvements already constructed, or under construction when the fee is established, for which the local government determines that capacity exists. Reimbursement fee revenues are less restricted than improvement fees and may be used for any portion of a capital improvement being funded wholly or in part with system development charge revenues pursuant to ORS 223.309.

“Compliance fees” include the costs for complying with the provisions of ORS 223.297 to 223.314; including the costs of developing system development charge methodologies and providing an annual accounting of SDC expenditures.

SDCs, defined by ORS 223.297 - 223.314, are one-time fees imposed on new development or certain types of “major redevelopment.” They are intended to recover a fair share of the costs of existing and planned facilities that provide capacity to serve growth.

ORS 222.299 defines “capital improvements” as facilities or assets used for:

- Water supply, treatment and distribution;
- Wastewater collection, transmission, treatment and disposal;
- Surface water collection, retention, and treatment and flood control;
- Transportation (includes roadway, pathway, bicycle and transit facilities); and
- Parks and recreation (includes land acquisition, easements, trails, open space, and habitat restoration).

After determining the “maximum defensible” SDC amount per unit of growth, municipalities consider technical, financial, political/legal considerations and precedence when creating or updating SDCs.

Case Study Research

This section explores methods that cities have implemented that vary SDCs by dwelling unit size and type. Such methods are generally intended to enhance equity of the charge by demonstrating a nexus between dwelling unit size and system demand. Varying SDCs by home size in combination with other local policy techniques may also encourage construction of smaller, more affordable homes.

FCS compiled information from all know Oregon cities that have implemented scaled SDCs by home size. In addition, FCS reviewed national literature regarding SDC practices in other states to determine other innovative practices being used around the U.S.A.

It should be noted that SDCs comprise a relatively small yet measurable portion of overall housing costs. As shown in the example below, for a typical 2,800 square foot single family detached home, the estimated construction and land costs (as of December 2022) is estimated to range from approximately \$240 to \$256 per square foot. Depending upon location, the SDC share of the total cost is expected to range from about 1% to 7% of total housing cost (**Exhibit 2**).

Exhibit 2: Typical Cost for a New Single Family Detached Home in Oregon

Home Size in SF:		2,800		
Cost Item	Cost	Cost per SF	Dist. % *	
Site work	\$ 24,570	\$ 8.77	4%	
Foundation	\$ 39,926	\$ 14.26	6%	
Framing	\$ 62,960	\$ 22.49	9%	
Exterior	\$ 50,675	\$ 18.10	7%	
Utilities (in home)	\$ 50,675	\$ 18.10	7%	
Interior Finishes	\$ 105,956	\$ 37.84	15%	
Landscaping	\$ 26,105	\$ 9.32	4%	
Other/Permitting	\$ 15,356	\$ 5.48	2%	
Land	\$ 141,275	\$ 50.46	20%	
Financing	\$ 12,285	\$ 4.39	2%	
Marketing	\$ 7,678	\$ 2.74	1%	
Commissions	\$ 26,105	\$ 9.32	4%	
Builder Overhead and Profit	\$ 104,421	\$ 37.29	15%	
Subtotal	\$ 667,986	\$ 239	96%	
Impact Fees or SDCs				
Low estimate	\$ 5,000	\$ 1.79	1%	
High estimate	\$ 50,000	\$ 17.86	7%	
Total with Low Impact Fee	\$ 672,986	\$ 240	97%	
Total at midpoint	\$ 695,486	\$ 248	100%	
Total with High Impact Fee	\$ 717,986	\$ 256	103%	
* computed at midpoint.				
Source: https://www.homedit.com/average-cost-to-build-a-house/ adjusted to 2022 dollars based on FHFA regional housing price index.				

Lowering the SDC for smaller homes, such as cottages, duplexes and apartments may help reduce development costs if other factors such as developer profit and overhead remain equal.

According to a publication by the U.S. Dept. of Housing and Urban Development, *Impact Fees and Affordable Housing, 2008*, if SDC reductions can be calculated in a manner that reduces construction of housing costs (and rents) for smaller housing types, there may be a beneficial impact to lower-income households, whereby less household income would be devoted to housing costs.

Key findings of the study include:

- ***The potential effect of impact fees on housing affordability is hotly debated, with evidence seemingly supporting all views. Impact fees are likely here to stay but that does not mean they are rigidly implemented instruments of public policy. To the contrary, the impact fees of the 1970s bear little resemblance to those of the 2000s. One significant area of evolution is in calculating the fees. Much can be achieved to soften the potentially adverse effect of impact fees on housing affordability. And if that is still not enough there exists other approaches in which potentially adverse effects can be softened further if not eliminated entirely.***
- ***The case studies cited in this report utilize a variety of methods for assessing SDCs based on dwelling types, unit size, number of bedrooms, and/or lot size.***

A more recent publication by the California Department of Housing and Community Development, *Residential Impact Fees in California, 2019*, also examined innovative practices used by cities in California to implement the Mitigation Fee Act.

Key findings included:

- ***Some localities highlighted the importance of using a legally defensible multiplier—one more strongly correlated with impacts. In one case, city staff noted that they wished to switch their impact fees from a per-dwelling-unit to a per-square-foot basis to encourage smaller, more affordable units and higher density. However, they heard from nexus consultants that some categories of fees, such as utilities, have the same impact on infrastructure costs irrespective of changes in unit size. For example, a 2,000 square foot home and a 1,500 square foot home may impact a water system similarly. Therefore, requiring developers to pay more in fees for a larger home might leave the jurisdiction susceptible to litigation.***
- ***Accessory Dwelling Units (ADUs) are more affordable to build, since they are smaller, with no expensive parking structures, elevators, or construction materials, and homeowners already own the land. These savings are often passed onto renters; 58 percent of owners with ADUs on their property rented them below the current market rate. As a result, ADUs are seen as an important avenue for increasing the supply of more affordable housing options.***
- ***Impact fees can have a larger effect on ADU feasibility because they are typically built by homeowners rather than large-scale developers, and at much lower cost than single-family homes.***
- ***While adjusting the structure of fees may provide opportunities to lower fees and incentivize the production of more affordable housing, policymakers and stakeholders have primarily focused on:***
 - ***Adjusting rates for submarkets within a jurisdiction when sufficient variation between areas of the jurisdiction exists: Varying rates according to local housing***

markets or changes in project impacts can ease the impact of fees on weaker areas and ensure that fees accurately reflect project impacts.

- **Increasing fees incrementally:** *Rather than applying the full amount of a fee or fee increase when approved, localities can stage implementation in steps over a period of time to give the housing and land markets a chance to adjust to the higher cost of development.*
- **Incentives other than impact fees to promote more attainable housing:** *such as limited tax abatement for rent-restricted rentals, affordable housing in lieu payments, construction excise taxes, zoning incentives (i.e., increasing allowable building heights, reduced parking requirements) for developments that include attainable housing.*

City Case Studies

Exhibit 3 reflects cities in Oregon and other states that have successfully adopted SDCs that are scaled based on home size.

Exhibit 3: Selected Cities with SDCs Scaled by Home Size

SDC Service Area	Methodology Applied	Examples (year adopted)
Transportation	Trip Generation by Home Size. Based on ITE Handbook trip generation factors.	Newport (2017) and North Plains (2021); Hayden, Idaho (2022)
Parks	Occupancy by Home Size. Based on American Housing Survey occupancy data.	Newport (2017), Albany (2021), Portland (2008), North Plains (2021); Hayden (2022)
Water	ERUs based on Meter Size factored by estimated fixture units in single family dwelling size typologies (small, standard, large)	Newport (2017) and North Plains (2021)
Wastewater	ERUs based on Meter Size factored by estimated fixture units based on single family dwelling size typologies (small, standard, large)	Newport (2017)
Stormwater	Impervious Surface Area (ISA in SF). Based on localized G.I.S. analysis of ISA by development type.	Newport (2017)

ERUs = equivalent residential units.

In addition to varying SDCs by home size (floor area) some jurisdictions have adopted methods that vary SDCs by number of bedrooms, development type (i.e., for Planned Unit Developments) and by lot size. These examples include:

- **Sandpoint, Idaho.** Impact fees for single family dwellings are calculated and charged based on the number of bedrooms in a dwelling unit. The fees are separated for homes with 0-3 bedrooms, and 4+ bedrooms.
- **Sante Fe, New Mexico.** Impact fees for recycled water used for irrigation take into account lot size.

While all case study cities listed above have adopted legally defensible scalable SDCs by home size, the methods with the highest precedence entail scaling SDCs by heated floor area (square feet); or by ERU factors that reflect single family home size groupings such as small, standard and large.

As shown in **Exhibit 4**, the City of Newport scales its SDC based on ERU factors for single family structures (1 to 4 dwellings per structure) by public facility type based on the assumptions provided in **Appendix B**. It should be noted that Newport does not scale the multifamily SDCs by dwelling unit size.

The City of North Plans also used a similar approach for deriving ERU factors based on average occupancy by home size for its water, transportation and parks SDCs (see **Appendix C**).

Exhibit 4: Newport SDC Factors for Equivalent Residential Units

Type	Small Home (under 1,700 SF)	Standard Home (1,701 to 2,900 SF)	Large Home (over 2,900 SF)
Water	0.63	1.00	1.38
Sewer	0.63	1.00	1.38
Transportation	0.50	0.95	1.47
Stormwater*	0.84	1.00	1.41
Parks	0.47	0.94	1.58

Source: Compiled by FCS GROUP based on Appendix B-1, B-2 and B-3. * Actual stormwater charge may be less or more depending upon construction plans.

Abbreviations: SF = usable floor area (excludes unfinished attics, garages and carports); ADU = accessory dwelling unit.

D. VARIABLE SDC EXAMPLES

This section presents concepts for approaches to potential equitable and defensible methods for varying SDCs in Wilsonville based on housing type and home size. This section includes a number of assumptions and calculations. However, these assumptions and numbers have not been vetted or verified as actual options for adoption. Generally, they are more simplified than an actual calculation would be. The examples should be understood as illustrations of potential general approaches and types of calculations that would need to be made rather than representations what future SDCs in Wilsonville could or should be.

Occupancy and Fixture Units by House size

Data from the U. S. Census Bureau, American Housing Survey for the Greater Portland Region indicate that, up to a point, the number of occupants in a single-family dwelling unit is positively correlated with that dwelling unit’s floor area in square feet (SF). The American Housing Survey also

indicates that the number of water fixture units in a single-family dwelling unit is positively correlated with house size.

These data are shown in **Exhibit 5** and **Exhibit 6** with supporting details in **Appendix D**.

Exhibit 5

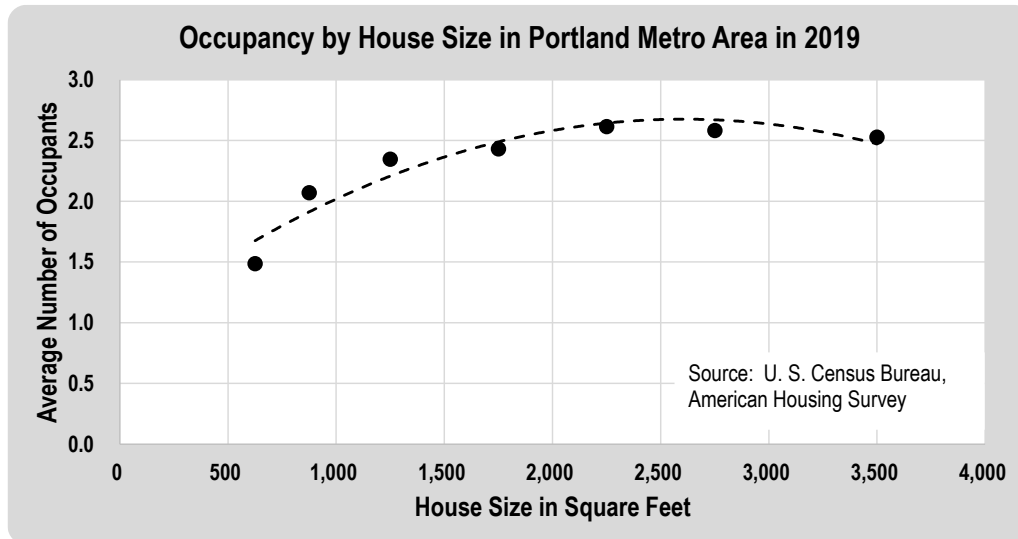
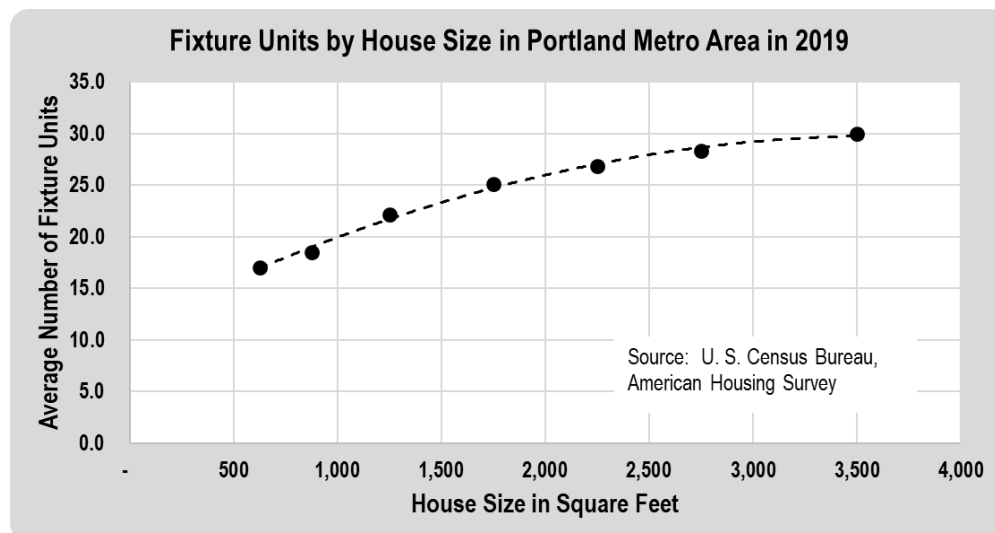


Exhibit 6



Based on the U.S. Census data for the greater Portland Region, at 2,605+ square feet, there is no longer a positive statistical correlation between square footage and occupancy.

The average single-family home in the City of Wilsonville is estimated at 2.71 occupants based on U.S. Census Bureau data (2021 estimate derived from **Appendix D**).

City occupancy data varies from the regional data noted above. Wilsonville planning staff estimate that the average new constructed house size for a single-family home (both attached and detached) in the City is approximately 2,000 square feet. That means that on average there are 0.001355 occupants per square foot. Further, the smallest detached single-family home that could support one occupant is assumed to be 738 square feet.

City of Wilsonville Single Family Occupancy Estimates, 2021

Average House Size in Wilsonville	2,000
Average Occupancy in Wilsonville	2.71
Average Occupants per Sq. Ft.	0.001355

Staff Comment: The average house size in Wilsonville has not been verified and 2,000 Sq.Ft. of heated floor area is a preliminary number for illustrative purposes only.

As shown in **Exhibit 6** and **Appendix E**, the number of fixture units for housing units generally varies by the number of bathrooms and tends to increase with home size. Based on the U.S. Census data for the greater Portland Region, at 3,648+ square feet, there is no longer a positive statistical correlation between square footage and the number of fixture units. Further, based on American Housing Survey data for the greater Portland Region, at minimum, a home is expected to have 17 fixture units. According to these Census statistics, the minimum number of fixture units for a new home is assumed to include: 7.5 bathroom fixture units: sink (1), water closet (2.5), shower/bath (4); and 9.5 other plumbing fixture units: kitchen sink (1.5), clothes washer (4), dishwasher (1.5), hose bib (2.5).

As discussed below, the methodology for scaling water and sewer SDCs by home size would also take into account meter size to ascertain the potential system demand capacity and related charge.

The assumptions regarding water and sewer demand derived from the case study examples generally provide a nexus for scaling system demand based on plumbing fixture units by home size, which is an indicator of how the City’s water and sewer system capacity is sized. While this approach has not been challenged in the courts so far, a preferable nexus could be made using the City’s utility billing data to reflect actual water usage based on structure size. However, such analytical data was not available for this analysis

Scalable Transportation SDC Example

Vehicle Trips by House size

Wilsonville, like most cities, relies upon data from the *Institute of Traffic Engineers, Trip Generation Handbook* to determine the nexus between land use and vehicle trip generation. The most recent version of the *ITE Handbook (10th Edition)* can be applied to determine a nexus between vehicle trips and housing occupancy as shown below.

PM Vehicle Trips per Single Family Home	0.99
PM Vehicle Trips-Ends per Resident	0.28

Source: ITE Manual, 10th Edition.

Trip Generation Assumptions	National Est.	Wilsonville Est.	Local Variance
Avg. Residents per Single Family Home	2.46	2.71	0.25
PM Vehicle Trips per Single Family Home	0.99	1.00	0.01
Implied PM Vehicle Trips-Ends per Resident	0.28	0.37	0.09

Source: ITE Manual, 10th Edition, and U.S. Census, American Community Survey, City of Wilsonville.

The City currently charges its transportation SDC based on Average Daily Vehicle Trip ends. Since trip ends are generated largely by occupants, a defensible, scalable transportation SDC can be created using home size to estimate the number of occupants, and therefore PM peak trip impacts.

The current citywide transportation SDC per trip end is \$16,099 for single-family homes in Wilsonville. If the average single-family home in Wilsonville has 2.71 occupants, the equivalent SDC would equate to \$5,942 per occupant.

Staff Comment: A number of example methodologies in this analysis use linear relationships between square footage and number of residents. Additional data would likely show a more complex relationship.

If we assume average-sized single-family homes in Wilsonville are 2,000 SF, that means that the transportation SDC for a 738 square foot home would be \$5,942, and the SDC for every additional square foot would be \$8.05, or \$805 per 100 square feet, and the maximum transportation SDC at 2,605 square feet would be \$20,972.

These calculations are summarized in **Exhibit 7**.

Exhibit 7: Analysis of Example Scalable Transportation SDCs for Wilsonville

Transportation SDC Schedule for a Single-Family Home	Square Feet	Residents	SDC
SDC per resident	738	1.0000	\$5,942
SDC per square foot of single-family residence	1	0.0014	\$8.05
Maximum SDC per single-family residence	2,605	3.5294	\$20,972

Scalable Water SDC Example

The City currently charges its water SDC based on the number of meter capacity equivalents (MCEs). Under this system, a single-family home, which generally has either a 5/8” or 3/4” meter, requires one MCE. The number of MCEs required for other developments is calculated based on the maximum flow of their meters relative to the 5/8” meter. With larger homes that need a 3/4” meter the equivalent MCE factor is (1.5 X).

According to Census Data discussed in the previous section, the average size new single-family home in Wilsonville (2,000 square feet) should have 22.55 fixture units. That means that on average, one MCE is equal to 22.55 fixture units in Wilsonville. Therefore, for a home that using a 5/8” meter, an SDC of \$11,492 per MCE is equivalent to a charge of \$509.68 per fixture unit.

Using this approach, a larger home that uses a 3/4” meter would be assessed 1.5 MCE, which equates to \$764.52 per fixture unit (1.5 x \$509.68).

According to the regional Census data described previously in **Exhibits 5-6** and **Appendix E**, the smallest home in Wilsonville should have 17 fixture units. Further, at 3,648 square feet, a home in Wilsonville is estimated to have 29.95 fixture units.

Therefore, the minimum water SDC for a home with a 5/8” meter based on square footage should equal the charge for 17 fixture units, or \$8,665. For every additional square foot between 800 SF and 3,648 SF, the charge should be \$2.24 per square foot.

For a home that uses a 3/4” meter, the maximum charge should be for 29.95 fixture units at 3,648 square feet, or \$15,265.

These calculations are summarized in **Exhibit 8A and 8B**.

Exhibit 8A: Analysis of Example Scalable Water SDCs for Wilsonville Homes with 5/8” Meters

Current Water SDC per MCE	\$	11,492	<i>5/8 x 3/4 inch meter</i>	
Expected Fixture Units per MCE		22.55		
Water SDC per Fixture Unit	\$	509.68		
Water SDC Schedule for a Single-Family Home				
		Square Feet	Fixture Units	SDC
Starting SDC per single-family residence		738	17.00	\$8,665
SDC per square foot of single-family residence		1	0.0044	\$2.24
Maximum SDC per single-family residence		3,684	29.9495	\$15,265
Source: American Housing Survey, 2019 (fixture unit data)				

Exhibit 8B: Analysis of Example Scalable Water SDCs for Wilsonville Homes with 3/4” Meters

Current Water SDC per MCE	\$	17,238	<i>3/4 x 3/4 inch meter</i>	
Expected Fixture Units per MCE		22.55		
Water SDC per Fixture Unit	\$	764.53		
Water SDC Schedule for a Single-Family Home				
		Square Feet	Fixture Units	SDC
Starting SDC per single-family residence		738	17.00	\$12,997
SDC per square foot of single-family residence		1	0.0044	\$3.36
Maximum SDC per single-family residence		3,684	29.9495	\$22,897
Source: American Housing Survey, 2019 (fixture unit data)				

Water SDC Schedule by Square Footage					
Home Size (SF)		5/8 x 3/4 inch		3/4 x 3/4	
		meter	inch	meter	inch
738	\$	8,665	\$	12,997	
750	\$	8,692	\$	13,037	
1,000	\$	9,252	\$	13,877	
1,250	\$	9,812	\$	14,718	
1,500	\$	10,372	\$	15,558	
1,750	\$	10,932	\$	16,398	
2,000	\$	11,492	\$	17,238	
2,250	\$	12,052	\$	18,078	
2,500	\$	12,612	\$	18,918	
2,605	\$	12,847	\$	19,271	
2,750	\$	13,172	\$	19,758	
3,000	\$	13,732	\$	20,599	
3,250	\$	14,292	\$	21,439	
3,500	\$	14,853	\$	22,279	
3,648	\$	15,184	\$	22,776	

It should be noted that there are other methods that could be used to arrive at a scalable water SDC calculation. The North Plains example (shown below in **Exhibit 9** and Appendix E) illustrates an approach that applies a SDC adjustment factor based on the number of primary plumbing fixture units by home size in 3 categories: small, standard and large.

There are also a few national examples, where water SDCs can be varied by lot size. While such cases are limited and have not been utilized in Oregon, they do reflect the relative water demand based on irrigation water usage, especially when recycled water is provided for this purpose by the city.

As noted previously, a preferable nexus could be made using the City’s water utility billing data to reflect actual water usage based on structure and lot size. However, such analytical data was not available at for this analysis.

Exhibit 9: North Plains Example

Water SDC Adjustment Factors for Single Family Dwelling Units

Home Size Category	Dwelling Unit Size Range (living area sq.ft.)	Avg. Home Size (SF)	Avg. People Per Dwelling (Adjusted for Local Conditions)	Primary Fixtures*	Water SDC Adjustment Factor
Small	under 1,499 SF	1,250	2.08	5	0.56
Standard	1,500 to 2,999 SF	2,500	2.71	9	1.00
Large	over 3,000 SF	4,200	3.34	13	1.44
Total/Average		2,650	2.99	9	

** primary fixture unit assumptions:*

Home Size	Water Closets	Lavatory	Tub or Shower	Total
1,250 SF	2	2	1	5
2,000 SF	3	4	2	9
3,000 SF	4	6	3	13

Source: IBC Building Code Calculator; complies with IBC/IPC/CPC requirements.

Scalable Wastewater SDC Example

The City currently charges its wastewater SDC based on MCEs, just as it charges its water SDC. However, unlike for the water utility, the number of fixture units is not as well correlated with system demand as it is with the number of occupants. Therefore, the scalable wastewater SDC will use square footage to estimate the number of occupants, not the number of fixture units.

The wastewater SDC per MCE is \$6,631. If the average single-family home with a 5/8" water meter in Wilsonville has 2.71 occupants, the equivalent SDC is \$2,448 per occupant.

Based on Census Bureau data, the smallest home that could support one occupant is 738 square feet, at which point the charge would be \$2,448. Every additional square foot supports 0.0014 occupants, which is charged at \$3.32 per square foot, or \$332 per 100 square feet. However, at 2,605 square feet, Census Bureau data would suggest that there is no relationship between house size and number of occupants, which caps the SDC at \$8,638.

These calculations are summarized in **Exhibits 10A and 10B**.

Exhibit 10A: Example of Scalable Wastewater SDCs for Wilsonville Homes with 5/8" meter

Current Sewer SDC per DU	\$	6,631
Average residents per DU		2.71
Current Sewer SDC per Resident	\$	2,448

Sewer SDC Schedule for a Single-Family Home	Square Feet	Residents	SDC
Base SDC per single-family residence	738	1.0000	\$2,448
SDC per square foot of single-family residence	1	0.0014	\$3.32
Maximum SDC per single-family residence	2,605	3.5294	\$8,638

Exhibit 10B: Example of Scalable Wastewater SDCs for Wilsonville Homes with 3/4" meter

Current Sewer SDC per DU	\$	9,947	<i>3/4 x 3/4 inch meter</i>
Average residents per DU		2.71	
Current Sewer SDC per Resident	\$	3,671	

Sewer SDC Schedule for a Single-Family Home	Square Feet	Residents	SDC
Base SDC per single-family residence	738	1.0000	\$3,671
SDC per square foot of single-family residence	1	0.0014	\$4.97
Maximum SDC per single-family residence	2,605	3.5294	\$12,957

Sewer SDC Schedule by Square Footage		
Home Size (SF)	<i>5/8 x 3/4 inch</i>	<i>3/4 x 3/4 inch</i>
	<i>meter</i>	<i>meter</i>
738	\$2,448	\$3,671
950	\$3,150	\$4,725
1,000	\$3,316	\$4,973
1,250	\$4,144	\$6,217
1,500	\$4,973	\$7,460
1,750	\$5,802	\$8,703
2,000	\$6,631	\$9,947
2,250	\$7,460	\$11,190
2,500	\$8,289	\$12,433
2,605+	\$8,638	\$12,957

As noted previously, the city could opt to apply ERU factors based on housing size typologies (as shown in Newport and North Plains examples). Also, as with the water SDC methodology, a preferable nexus could be made using the City’s wastewater utility billing data to reflect actual sewer usage based on structure and lot size. However, such analytical data was not available at for this analysis.

Scalable Stormwater SDC Example

The current Wilsonville stormwater SDC is \$2,227 per Equivalent Service Unit (ESU), where an ESU represents the average impervious surface area of a single-family residence in Wilsonville. The City’s current methodology assumes that the average impervious surface area for single family homes is 2,750 square feet. Using that definition, the stormwater SDC may also be charged as \$0.83 per square foot, or \$83 per 100 square feet of impervious surface area.

Other cities have calculated the average amount of impervious surface area based on dwelling unit types or land use categories using Lidar data and Geographic Information Systems (GIS) mapping analysis. As shown in the Newport example below, the impervious surface area was found to vary from 950 SF for a ADUs, 1,350 SF for small homes, 1,600 SF for standard homes, and 2,250 SF for larger homes. Stormwater SDCs are charged based on the resulting ISA adjustment factors X the ESU average SDC rate.

Exhibit 11: Newport Example, Impervious Surface Area by Home Size

Stormwater Impervious Surface Area Assumptions (SF)

Impervious Area Assumptions	Standard			
	ADUs (600 SF)	Small Home (under 1,700 SF)	Home (1,701 to 2,900 SF)	Large Home (over 2,900 SF)
Roof top	600	1,000	1,250	1,750
Parking	350	350	350	500
Total	950	1,350	1,600	2,250
Relative ISA Factor	0.704	0.844	1.000	1.406

Scalable Parks SDC Example

The City currently charges its parks SDC based on dwelling unit type. Since occupants of a dwelling unit create demand for parks, a defensible, scalable parks SDC should use square footage to estimate the number of occupants.

The parks SDC per dwelling unit is \$7,349, and single-family homes in Wilsonville are charged for one dwelling unit. If the average single-family home in Wilsonville has 2.71 occupants, the equivalent SDC is \$2,713 per occupant.

As in the previous cases for wastewater and transportation, that means that the parks SDC for a 738 square foot home would be \$2,713, the SDC for every additional square foot would be \$3.67, or \$367 per 100 square feet, and the maximum transportation SDC at 2,605 square feet would be \$9,574. These calculations are summarized in **Exhibit 12**.

Exhibit 12: Analysis of Example Scalable Wastewater SDCs for Wilsonville

Current Parks SDC per DU	\$ 7,349
Average residents per DU	2.71
Current Parks SDC per Resident	\$ 2,712.52

Parks SDC Schedule for a Single-Family Home	Square Feet	Residents	SDC
SDC per resident	738	1.0000	\$2,713
SDC per square foot of single-family residence	1	0.0014	\$3.67
Maximum SDC per single-family residence	2,605	3.5294	\$9,574

E. SUMMARY AND CONCLUSIONS

Using the City’s current SDC charges as a baseline and the analysis described herein, the example citywide water, wastewater, transportation, parks, and stormwater SDCs in Wilsonville would range from: \$20,467 for a 738 SF dwelling (excluding ADUs which are exempt from SDCs at this time); to \$57,829 for a 3,648+ SF dwelling. Currently, for new homes with a 5/8” water meter, those five SDCs in Wilsonville total \$47,208 per dwelling unit, regardless of its size.

The stormwater SDC is assumed to be charged based on impervious footprint on the single-family lot, not heated floor area, which for this analysis is assumed to equate to approximately 1.427 SF of impervious surface area (ISA) per each SF of heated floor area.

The citywide example SDCs at various square footages are provided in **Exhibit 13A and 13B**.

Exhibit 13A: Summary of Example Scalable SDCs for Wilsonville Homes with 5/8” Meter

Preliminary Citywide SDC Scaling Analysis, City of Wilsonville								
Sq. ft.	Residents	Water	Sewer	Transportation	Parks	Storm	Total	
738	1.00	\$ 8,665	\$ 2,448	\$ 5,942	\$ 2,713	\$ 700	\$ 20,467	
950	1.29	\$ 8,692	\$ 3,150	\$ 7,647	\$ 3,491	\$ 901	\$ 23,880	
1,000	1.35	\$ 9,252	\$ 3,316	\$ 8,050	\$ 3,675	\$ 948	\$ 25,240	
1,250	1.69	\$ 9,812	\$ 4,144	\$ 10,062	\$ 4,593	\$ 1,186	\$ 29,797	
1,500	2.03	\$ 10,372	\$ 4,973	\$ 12,074	\$ 5,512	\$ 1,423	\$ 34,354	
1,750	2.37	\$ 10,932	\$ 5,802	\$ 14,087	\$ 6,430	\$ 1,660	\$ 38,911	
2,000	2.71	\$ 11,492	\$ 6,631	\$ 16,099	\$ 7,349	\$ 1,897	\$ 43,468	
2,250	3.05	\$ 12,052	\$ 7,460	\$ 18,111	\$ 8,268	\$ 2,134	\$ 48,025	
2,500	3.39	\$ 12,612	\$ 8,289	\$ 20,124	\$ 9,186	\$ 2,371	\$ 52,582	
2605+	3.53	\$ 12,847	\$ 8,638	\$ 20,972	\$ 9,574	\$ 2,471	\$ 54,503	
2,750		\$ 13,172	\$ 8,638	\$ 20,972	\$ 9,574	\$ 2,608	\$ 54,965	
3,000		\$ 13,732	\$ 8,638	\$ 20,972	\$ 9,574	\$ 2,845	\$ 55,762	
3,250		\$ 14,292	\$ 8,638	\$ 20,972	\$ 9,574	\$ 3,083	\$ 56,559	
3,500		\$ 14,853	\$ 8,638	\$ 20,972	\$ 9,574	\$ 3,320	\$ 57,357	
3,648+		\$ 15,184	\$ 8,638	\$ 20,972	\$ 9,574	\$ 3,460	\$ 57,829	

Exhibit 13B: Summary of Example Scalable SDCs for Wilsonville Homes with 3/4” Meter

Sq. ft.	Residents	Water	Sewer	Transportation	Parks	Storm	Total	
738	1.00	\$ 12,997	\$ 3,671	\$ 5,942	\$ 2,713	\$ 700	\$ 26,023	
950	1.29	\$ 13,037	\$ 4,725	\$ 7,647	\$ 3,491	\$ 901	\$ 29,801	
1,000	1.35	\$ 13,877	\$ 4,973	\$ 8,050	\$ 3,675	\$ 948	\$ 31,523	
1,250	1.69	\$ 14,718	\$ 6,217	\$ 10,062	\$ 4,593	\$ 1,186	\$ 36,775	
1,500	2.03	\$ 15,558	\$ 7,460	\$ 12,074	\$ 5,512	\$ 1,423	\$ 42,026	
1,750	2.37	\$ 16,398	\$ 8,703	\$ 14,087	\$ 6,430	\$ 1,660	\$ 47,278	
2,000	2.71	\$ 17,238	\$ 9,947	\$ 16,099	\$ 7,349	\$ 1,897	\$ 52,529	
2,250	3.05	\$ 18,078	\$ 11,190	\$ 18,111	\$ 8,268	\$ 2,134	\$ 57,781	
2,500	3.39	\$ 18,918	\$ 12,433	\$ 20,124	\$ 9,186	\$ 2,371	\$ 63,033	
2605+	3.53	\$ 19,271	\$ 12,957	\$ 20,972	\$ 9,574	\$ 2,471	\$ 65,246	
2,750		\$ 19,758	\$ 12,957	\$ 20,972	\$ 9,574	\$ 2,608	\$ 65,870	
3,000		\$ 20,599	\$ 12,957	\$ 20,972	\$ 9,574	\$ 2,845	\$ 66,948	
3,250		\$ 21,439	\$ 12,957	\$ 20,972	\$ 9,574	\$ 3,083	\$ 68,025	
3,500		\$ 22,279	\$ 12,957	\$ 20,972	\$ 9,574	\$ 3,320	\$ 69,102	
3,648+		\$ 22,776	\$ 12,957	\$ 20,972	\$ 9,574	\$ 3,460	\$ 69,740	

Green = SDCs at the average house size in Wilsonville
 Yellow = The maximum Sewer, Transportation, and Parks SDCs
 Pink = The maximum water SDC

Based on the preliminary assumptions stated herein, the relative variation in SDC costs based on home size is likely to result in a lower SDC for new detached homes under 2,250 SF and a higher SDC for homes with over 2,250 SF in heated floor area. For townhomes and plexes (with 2-4 units per structure) the relative cost decrease/increase occurs for homes under/over 1,500 SF. For multifamily dwellings (5+ units per structure) the under/over cost variation occurs at 1,000 SF (Exhibits 14A.-B.).

Exhibit 14A: Example of Combined Scalable SDCs for Wilsonville Homes with 5/8” Meter

Home Size (Sq. ft.)	Current SDC Method			Scalable SDC Example			Difference		
	SF Detached*	Townhome/ Plexes	Multifamily Apts.	SF Detached*	Townhome/ Plexes**	Multifamily Apts.***	SF Detached*	Townhome/ Plexes**	Multifamily Apts.***
ADU	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
950	\$ 43,798	\$ 32,500	\$ 31,924	\$ 20,467	\$ 20,467	\$ 27,969	\$ (23,331)	\$ (12,033)	\$ (3,955)
1,000	\$ 43,798	\$ 32,500	\$ 31,924	\$ 23,880	\$ 23,880	\$ 29,441	\$ (19,918)	\$ (8,619)	\$ (2,483)
1,250	\$ 43,798	\$ 32,500	\$ 31,924	\$ 25,240	\$ 25,240	\$ 36,801	\$ (18,558)	\$ (7,260)	\$ 4,877
1,500	\$ 43,798	\$ 32,500	\$ 31,924	\$ 29,797	\$ 29,797	\$ 36,801	\$ (14,001)	\$ (2,703)	\$ 4,877
1,750	\$ 43,798	\$ 32,500	\$ 31,924	\$ 34,354	\$ 34,354	\$ 36,801	\$ (9,444)	\$ 1,854	\$ 4,877
2,000	\$ 43,798	\$ 32,500	\$ 31,924	\$ 38,911	\$ 38,911	\$ 36,801	\$ (4,887)	\$ 6,411	\$ 4,877
2,250	\$ 43,798	\$ 32,500	\$ 31,924	\$ 43,468	\$ 38,911	\$ 36,801	\$ (330)	\$ 6,411	\$ 4,877
2,500	\$ 43,798	\$ 32,500	\$ 31,924	\$ 48,025	\$ 38,911	\$ 36,801	\$ 4,227	\$ 6,411	\$ 4,877
2,605	\$ 43,798	\$ 32,500	\$ 31,924	\$ 52,582	\$ 38,911	\$ 36,801	\$ 8,784	\$ 6,411	\$ 4,877
2,750	\$ 43,798	\$ 32,500	\$ 31,924	\$ 54,503	\$ 38,911	\$ 36,801	\$ 10,705	\$ 6,411	\$ 4,877
3,000	\$ 43,798	\$ 32,500	\$ 31,924	\$ 54,965	\$ 38,911	\$ 36,801	\$ 11,167	\$ 6,411	\$ 4,877
3,250	\$ 43,798	\$ 32,500	\$ 31,924	\$ 55,762	\$ 38,911	\$ 36,801	\$ 11,964	\$ 6,411	\$ 4,877
3,500	\$ 43,798	\$ 32,500	\$ 31,924	\$ 56,559	\$ 38,911	\$ 36,801	\$ 12,761	\$ 6,411	\$ 4,877
3,650	\$ 43,798	\$ 32,500	\$ 31,924	\$ 57,357	\$ 38,911	\$ 36,801	\$ 13,559	\$ 6,411	\$ 4,877

Notes:

* water SDC assumes 5/8 x 3/4 inch meter.

** assumes townhome and duplex SDCs are capped at 2,000 SF per unit.

*** assumes 900 GSF per average multifamily dwelling unit, gross to net SF factor of 0.83 and cap established at 1,250 GSF.

Note to Exhibits 14A-B: the illustrative SDC scaling example shown assumes an SDC cap at 2,000 square feet for townhomes/duplex units and 1,250 SF for apartment units. Without such a cap, the rate of SDC increase with the scaled approach would be significantly higher than the current fixed SDCs in the City and may render apartments, townhomes and duplex projects financially infeasible. More accurate data regarding dwelling unit size and system impacts is required to determine if such a cap is required.

Exhibit 14b.: Example Changes in SDC costs with Scalable SDCs for Wilsonville Homes with 5/8” Meter

Home Size (Sq. ft.)	Change in SDC costs with Scaling		
	SF Detached*	Townhome/ Plexes**	Multifamily Apts.***
ADU	0%	0%	0%
950	-53%	-37%	-12%
1,000	-45%	-27%	-8%
1,250	-42%	-22%	15%
1,500	-32%	-8%	15%
1,750	-22%	6%	15%
2,000	-11%	20%	15%
2,250	-1%	20%	15%
2,500	10%	20%	15%
2,605	20%	20%	15%
2,750	24%	20%	15%
3,000	25%	20%	15%
3,250	27%	20%	15%
3,500	29%	20%	15%
3,650	31%	20%	15%

Notes:

* water SDC assumes 5/8 x 3/4 inch meter.

** assumes townhome and duplex SDCs are capped at 2,000 SF per unit.

*** assumes 900 GSF per average multifamily dwelling unit, gross to net SF factor of 0.83 and cap established at 1,250 GSF.

The advantages and disadvantages of scalable SDCs are summarized in **Exhibit 15**. The findings indicate that there are accepted methods in use to calculate SDCs based on home size. If a city determines that a variable approach is a fair representation of system impacts, a scaled SDC should be more equitable to home builders and developers than more *traditional* SDC calculation methods which vary SDCs by housing type rather than size.

The potential risks of adopting a scaled SDC approach centers upon documentation of an accurate nexus between home size and system capacity demand. Currently, the nexus between home size and capacity demand appears strongest for transportation, parks and stormwater systems. As such, the City of Wilsonville would benefit from additional analysis of water and sewer utility system demand based on home size. Such analysis should be monitored and updated periodically (every 5-10 years) to account for temporal fluctuations in demand attributed to changing household size, water-efficient plumbing fixtures, and other factors.

Exhibit 15: Advantages and Disadvantages of Scalable SDCs

	Advantages	Disadvantages
Legal Precedence	<ul style="list-style-type: none"> * Increasing number of jurisdictions now using a scaled SDC approach in Oregon and nationally. * Scaled rates for smaller units are typically tied to evidence of lower development impacts, which is well within the discretion allowed under statute. 	<ul style="list-style-type: none"> * Mixed support from large developers and homebuilders regarding appropriate scaling methods. * Limited court decisions nor rulings in Oregon regarding scaled SDCs based on home size.
Implementation	<ul style="list-style-type: none"> * Scaling SDCs would be most favorable by "small home" builders, and could lead to minor partitions and a more efficient use of the UGB for infill housing over time. * More efficient use of land inside the UGB could delay need for major capital facility expansion projects. 	<ul style="list-style-type: none"> * Evidence for demonstrating a strong nexus between home size and system impacts requires additional statistically valid assumptions relative to the current methods used to determine SDCs. * Fee calculations would be more complex than current methods.
Impact on Home Prices	<ul style="list-style-type: none"> * Since SDC costs make up only about 3-7% of housing costs; SDC cost reductions could result in up to a 3.5% reduction in overall housing development costs. 	<ul style="list-style-type: none"> * SDC scaling could result in a increase in SDC costs for detached homes over 2,250 SF, and increase in SDC costs for townhomes over 1,500 SF and apartments over 1,000 SF. * The city has no assurance that any SDC cost savings would be passed on to home owners or renters.
Admin. Costs		<ul style="list-style-type: none"> * Scalable SDC approach would increase cost for staff time to administer compared with current approach. * Scalable SDCs should be recalibrated every 5-10 years to ensure the city is not undercollecting SDC revenue.
Public Perception and Risks	<ul style="list-style-type: none"> * Potential policy and community support for varying SDCs if it results in a more equitable distribution of costs based on system impacts based on home size. 	<ul style="list-style-type: none"> * Until adequate local data regarding nexus between system impacts and home size is available, there is a risk of under-collection of SDC revenue which could result in delayed project construction and lower level of service.

Appendix A

Wilsonville System Development Charges - Ordinances and Resolutions

System Development Charge Ordinance

Number	Title	Adopted
<u>386</u>	An Ordinance Regarding System Development Charges; Repealing ordinance No.113; Repealing Wilsonville Code, Chapter 11, Section 11.020 And Section 11.050; And Declaring An Emergency.	July 1, 1991

Muni Code Chapter 11, Section 11.090. Fees, System Development Charges

<u>676</u>	An ordinance Amending the Wilsonville Comprehensive Plan, Implementation Measure 4.1.4.bb, Concerning Accessory Dwelling Units (ADUs) within the City.	Feb. 10, 2010
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System Development Charge Resolutions

Number	Title	Adopted
<u>2724</u>	A Resolution of The City Of Wilsonville Adopting The Water System Development Charge Methodology Report And Establishing The Charge Rate And Amending Resolution No. 1624	December 6, 2018
<u>2634</u>	A Resolution of The City Of Wilsonville Adopting The Transportation System Development Charge Methodology Report And Establishing The Charge Rate.	June 5, 2017
<u>2353</u>	A Resolution of The City Of Wilsonville Establishing Just and Equitable System Development Charge and A Stormwater Fee For Stormwater Management And Repeals Resolution No. 1732.	April 16, 2012
<u>2133</u>	A Resolution Establishing and Imposing Just And Equitable Parks, Recreation And Off Street Trail Facilities Systems Development Charges And Repealing Resolution No. 1145 And Resolution No. 1362.	October 6, 2008
<u>2098</u>	A Resolution Establishing and Imposing Just And Equitable Street Systems Development Charges For Arterial, Collector And Connectivity Streets And Traffic Control Facilities, And Establishing Administrative Review Procedures.	April 7, 2008
<u>1996</u>	A Resolution Confirming, Approving and Ratifying A Two And Four Tenths Percent (2.4%) Systems Development Charge Inflationary Cost Impact Increase, With The Exception Of A Sewer SDC Increase, As Measured By The Annual Change In The Pacific Northwest Construction Cost Index.	May 15, 2006

<u>1987</u>	A Resolution Establishing And Imposing Just And Equitable User Fees, System Development Charges And Charges For Connection To The Sewage Disposal System For Sewer Service; Providing For The Manner Of Payment Collection, Enforcement And Disbursement Of Such Fees And Charges; Providing Rules And Regulations For Control Of The Sewer System; And Replacing Resolution 1279	April 3, 2006
<u>1936</u>	A Resolution Confirming, Approving and Ratifying A Three And Two Tenths Percent (3.2%) System Development Charge Inflationary Cost Impact Increase As Measured By The Annual Change In The Pacific Northwest Construction Cost Index.	May 16, 2005
<u>1865</u>	A Resolution Confirming, Approving and Ratifying a Three and Two-Tenths (3.2 %) Percent System Development Charge Inflationary Cost Impact Increase as Measured by the Annual Change in the Pacific Northwest Construction Cost Index.	May 17, 2004
<u>1834</u>	A Resolution Confirming, Approving and Ratifying A One And Nine Tenths Percent (1.9%) System Development Charge Inflationary Cost Impact Increase As Measured By The Annual Change In The Pacific Northwest Construction Cost Index.	June 16, 2003
<u>1760</u>	A Resolution Confirming, Approving and Ratifying A Three Percent (3.0%) System Development Charge Inflationary Cost Impact Increase As Measured By The Annual Change In The Pacific Northwest Construction Cost Index.	May 6, 2002
<u>1732</u>	A Resolution Of The City Of Wilsonville Establishing Just And Equitable System Development Charges And A Surcharge Fee For Storm Water And Storm Water Quality Management And Repeals Resolutions No. 843 And 1129.	November 19, 2001
<u>1708</u>	A Resolution Confirming, Approving And Ratifying A Two And Six Tenth Percent (2.6%) Street, Supplemental Street, Sewer, Parks, Water And Storm Sewer System Development Charge Inflationary Cost Impact Increase As Measured By The Annual Change In The Pacific Northwest Construction Cost Index.	May 21, 2001
<u>1624</u>	A Resolution Adopting A Revised Water Capital Improvements Plan And Establishing And Imposing Just And Equitable User Fees, System Development Charges, Meter Installation Charges, And Deposits For Water Service For The Water System Of The City Of Wilsonville; Providing For The Manner Of Payment, Collection, Enforcement And Disbursement Of Such Fees; Providing Rules And Regulations For Control Of City Water Service, Changing The Water Utility Billing Cycle From Bimonthly To Monthly; And Repealing Resolution 1502.	March 20, 2000

1640

A Resolution Confirming, Approving and Ratifying a Three and One Tenth Percent (3.1%) Street Supplemental Street, Sewer, Parks And Storm Sewer System Development Charge Inflationary Cost Impact Increase As Measured By The Annual Change In The Pacific Northwest Construction Cost Index. May 15, 2000

Appendix B: Newport SDC Assumptions

Appendix B – System Demand Assumptions

Table B-1

Water and Wastewater Adjustment Factors for Single Family Dwelling Units

Home Size Category	Dwelling Unit Size Range (living area sq.ft.)	Avg. Home Size (SF)	Avg. People Per Dwelling (Adjusted for Local Conditions)	Max # of Occupants	Primary Fixtures*
Small	under 1,700 SF	1,250	1.04	8	5
Standard	1,701 to 2,900 SF	2,500	2.07	10	8
Large	over 2,900 SF	4,200	3.48	16	11
Total/Average		2,650	-		8

* primary fixture assumptions:

Water Closets	Lavatory	Shower	Total
2	2	1	5
3	3	2	8
4	4	3	11

Source: Building code calculator; complies with 2013-2016 IBC/IPC/CPC requirements.

Table B-2

Stormwater Impervious Surface Area Assumptions (SF)

Impervious Area Assumptions	ADUs (600 SF)	Standard		
		Small Home (under 1,700 SF)	Home (1,701 to 2,900 SF)	Large Home (over 2,900 SF)
Roof top	600	1,000	1,250	1,750
Parking	350	350	350	500
Total	950	1,350	1,600	2,250
Relative ISA Factor	0.704	0.844	1.000	1.404

Table B3

Transportation and Parks Adjustment Factors by Single Family Dwelling Size

Parks SFD Adjustment Factors

Home Size Category	Dwelling Unit Size Range (living area sq.ft.)	Avg. Home Size (SF)	TSDC Adjustment Factor (revenue neutral)			Avg. People Per Dwelling (Adjusted for Local Conditions)	Parks SDC Adjustment Factor
			ADVT per 1,000 SF	ADVT per Dwelling	TSDC Adjustment Factor (revenue neutral)		
Small	under 1,700 SF	1,250	4.28	5.36	0.50	1.04	0.47
Standard	1,701 to 2,900 SF	2,500	4.04	10.10	0.95	2.07	0.94
Large	over 2,900 SF	4,200	3.72	15.62	1.47	3.48	1.58
Total/Average		2,650	4.02	10.64		2.20	

Source: compiled by FCS Group based on: National Association of Home Builders, *Characteristics of Home Buyers*, Feb. 8, 2013; and National Cooperative Highway Research Program, *Report 365: Travel Estimation Techniques for Urban Planning*, 1998. Census, ACS 2011-15 avg. household size; **Abbreviations:** ADVT = average daily vehicle trips; TSDC = Transportation System Development Charge.

Appendix C: North Plains SDC Assumptions

Impact Fee Schedule (single family housing units)

Alternative Methodology for Scaling SDCs based on home size and type

	North Plains	National Average	North Plains factor
Avg # of Residents per SF detached home	2.99	2.46	1.22
New Parks SDC per Resident (pop)	\$ 2,948		
New Transportation SDC per Peak Trip	\$ 2,870		
New Water SDC per MCE or ERU	\$ 7,780		

Source : City average from U.S. Census Bureau, 2019 American Community Survey. National average from US Census Bureau, 2019 American Housing Survey.

Transportation SDC

Single-family Residential Fee Schedule				
	Square Feet	Residents	PM Peak Hour Trip Ends	SDC
Impact Fee per PM peak hour vehicle trip end				\$ 2,870
Base Fee per single-family residence	0	1.52	0.4249	\$1,219
Fee per square foot of single-family residence	1	0.0006	0.0002	\$0.51
Average	2,100	2.99	1.0000	\$2,870
Maximum	3,448	3.70	1.2358	\$3,547

Source : US Census Bureau, 2019 National American Housing Survey; Institute of Transportation Engineers, Trip Generation Manual, 10th edition.

North Plains Local SDCs based on Single Family Dwelling Unit Size

Impact Fee Assumptions	Average	Tinv/ADU	Small	Mid	Medium	Large	Estate
House size in square feet*	2,100	500	1,000	1,500	2,000	3,000	4,000 +
Implied average local occupancy*	2.99	1.50	2.08	2.40	2.71	3.34	3.70
Implied PM peak hour vehicle trip ends**	1.00	1.00	1.00	1.00	1.00	1.12	1.24
Parks SDC	\$8,823	\$4,422	\$6,141	\$7,070	\$7,999	\$9,856	\$10,899
Transportation SDC	\$2,870	\$2,870	\$2,870	\$2,870	\$2,870	\$3,209	\$3,547
Water SDC	\$7,780	****	\$6,051	\$7,780	\$7,780	\$9,509	\$11,238
Water system demand factor***	1.00	0.56	0.78	1.00	1.00	1.22	1.44
Total North Plains SDCs	\$19,473	\$7,292	\$15,062	\$17,720	\$18,649	\$22,574	\$25,684

* Based on national and local averages from U.S. Census, 2019 American Housing Survey.

** Trip data based on the Institute of Transportation Engineers, Trip Generation Manual, 10th edition.

*** Derived from factors shown in Appendix C.

**** No water SDC is expected if dwelling is connected to primary water meter.

North Plains Local SDCs based on Single Family Dwelling Unit Size

Impact Fees per Square Foot	Average	ADU	Small	Mid	Medium	Large	Estate
House size in square feet*	2,100	500	1,000	1,500	2,000	3,000	4,000 +
Parks SDC per SF	\$4.20	\$8.84	\$6.14	\$4.71	\$4.00	\$3.29	\$2.72
Transportation SDC per SF	\$1.37	\$5.74	\$2.87	\$1.91	\$1.44	\$1.07	\$0.89
Water SDC per SF	\$3.70	*	\$6.05	\$5.19	\$3.89	\$3.17	\$2.81
Total North Plains SDCs per SF	\$9.27	\$14.58	\$15.06	\$11.81	\$9.32	\$7.52	\$6.42

Source: based on previous tables. ADU = a accessory dwelling unit.

0.7 0.9 0.6

Proposed North Plains Local SDCs based on Single Family Dwelling Unit Size*

	Accessory Dwelling (less than 900 SF)	Small or Mfg. Home (less than 1,200 SF)	Standard Home (1,201 to 2,500 SF)	Large Home (2,501+ SF)
North Plains SDCs				
Parks SDC	\$8.84	\$4.30	\$3.28	\$1.63
Transportation SDC	\$5.74	\$2.01	\$1.13	\$0.53
Water SDC	**	\$4.24	\$3.18	\$1.69
Total (Marginal SDC per SF)	\$14.58	\$10.54	\$7.58	\$3.85
Example, House Size	750 SF	1,200 SF	2,100 SF	3,100 SF
North Plains SDCs	\$10,938	\$12,652	\$19,476	\$24,821

Source: calculated based on prior tables.

* Includes housing units with 1-3 dwellings per structure. Square feet = heated floor area, excludes unfinished attics, garages, decks).

** No water SDC is expected if accessory dwelling is connected to primary water meter.

Appendix D: Wilsonville Housing Occupancy Estimates

City of Wilsonville Single Family Occupancy Estimates, 2021

Average House Size in Wilsonville	2,000
Average Occupancy in Wilsonville	2.71
Average Occupants per Sq. Ft	0.001355

Units in Structure	10,707
1, detached	4,491
1, attached	1,085
2	105
3 or 4	393
5 to 9	1,348
10 to 19	1,144
20 to 49	496
50 or more	1,482
Mobile home	163
Boat, RV, van, etc.	-

Source: Census Bureau, American Community Survey 5-Year Estimates, 2021 (Table B25024)

Total Population in Occupied Housing Units	24,470
Owner occupied:	13,769
1, detached or attached	13,128
2 to 4	216
5 or more	117
Mobile home	308
Boat, RV, van, etc.	-
Renter occupied:	10,701
1, detached or attached	1,979
2 to 4	868
5 or more	7,840
Mobile home	14
Boat, RV, van, etc.	-

Source: Census Bureau, American Community Survey 5-Year Estimates, 2021 (Table B25033)

Appendix E: Plumbing Fixture Units by House Size: Greater Portland Region, 2019

Plumbing Fixtures				House Size in Square Feet									
Bathrooms	Bathroom Fixture Units	Other Fixture Units	Total Fixtures	Less than 500	500 to 749	750 to 999	1,000 to 1,499	1,500 to 1,999	2,000 to 2,499	2,500 to 2,999	3,000 to 3,999	4,000 or more	
				1	7.50	9.50	17.00	26.10	69.30	110.70	71.50	11.20	5.40
1 1/2	11.00	9.50	20.50	S	S	10.40	36.60	21.00	8.70	S	S	S	
2	15.00	9.50	24.50	S	S	25.10	113.60	90.60	39.60	12.90	5.50	S	
2 1/2	18.50	9.50	28.00	.	S	S	25.80	55.90	57.70	32.20	24.50	S	
3	22.50	9.50	32.00	S	.	.	S	11.90	25.30	15.90	26.00	14.90	
More than 3	26.00	9.50	35.50	.	.	S	.	S	S	S	4.40	S	
Average Number of Fixture Units				17.00	17.00	18.54	22.11	25.11	26.81	28.30	29.95	32.00	
Number of Samples				26.10	69.30	146.20	247.50	190.60	136.70	61.00	60.40	14.90	

Overall Weighted Average Num. of Fix. Units **23.37**

S sample size in thousands.

Source: U.S. Census Bureau, American Housing Survey, Portland-Vancouver-Hillsboro, OR-WA MSA, 2019.

Summary of Regression Analysis

Area in Square Feet	Area Squared	Average Number of Fixture Units	SUMMARY OUTPUT	
625	390,625	17.00		
875	765,625	18.54		
1,250	1,562,500	22.11		
1,750	3,062,500	25.11		
2,250	5,062,500	26.81		
2,750	7,562,500	28.30		
3,500	12,250,000	29.95		
			<i>Regression Statistics</i>	
			Multiple R	0.99750899
			R Square	0.99502418
			Adjusted R Square	0.99253628
			Standard Error	0.42543255
			Observations	7