# Council Study Session

## May 2, 2022

| Agenda Item | Update on the Water and Storm Drain System Development Charges Project | |
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| **From** | Scott Fleury PE | Public Works Director |
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| **Item Type** | Requested by Council ☐ Update ☐ Request for Direction ☐ Presentation ☒ | |

## SUMMARY

Before the Council is an update on the water and storm drain System Development Charge (SDC) project. The Galardi Rothstein Group was selected through a public solicitation process to update the City's water and storm drain SDCs. Work associated with the SDC Committee has been completed and they have developed numerous recommendations for Council to consider as part of their charge. Deb Galardi will provide the Council with an overview of the process and recommendations to date. This includes recommendations to update the SDC methodology and municipal SDC code, specifically to support multifamily development.

## POLICIES, PLANS & GOALS SUPPORTED

City Council Goals:
Essential Services

- Drinking Water System
- Stormwater

Continue to leverage resources to develop and/or enhance Value Services

Department Goals:
- Maintain existing infrastructure to meet regulatory requirements and minimize life-cycle costs
- Deliver timely life cycle capital improvement projects
- Maintain and improve infrastructure that enhances the economic vitality of the community
- Evaluate all city infrastructure regarding planning management and financial resources

## BACKGROUND AND ADDITIONAL INFORMATION

The recently adopted Water and soon to be Storm Drain and TAP Master Plans include Capital Improvement projects (CIP) that differ from the existing and previously developed CIPs, which were used to establish current SDC rate structures (*water 2016, storm water 2002*).

Updates to SDCs are important as they ensure the appropriate fee capture of new development impacts to the City's infrastructure systems. SDC fees are only used for project costs associated with infrastructure capacity enhancements. Defined capital improvements in the master plans vary in SDC capacity charge ability from 0% to 100% SDC "eligible".

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In order to update the SDCs based on new project lists, the Council authorized a professional services contract with Galardi Rothstein at the January 5, 2021 Business Meeting to update the Water and Storm Drain System Development Charges (Staff Report).

As part of the SDC update process, Deb Galardi and Public Works staff previously provided the Council with a background presentation on SDC charges and associated rules surrounding SDC updates at the May 3, 2021 Business Meeting (Staff Report).

When evaluating SDC updates a must be established by the Mayor as required of Resolution 2001-17.

**Committee Charge**: The committee shall review the method of computing the system development charges and recommend such changes as it deems necessary to the City Council.

At the April 6, 2021 Business Meeting the Council approved the Mayoral appointments to the SDC Committee.

> **SDC Committee Representation Recommended Appointments**
> (2) Homebuilders: Robert Kendrick and Gil Livni
> (2) "Public at large": George Kramer and Steve Russo
> (1) Chamber of Commerce: Gary Blake
> (1) Planning Commission or Budget Committee: David Runkel
> **SDC Committee Ex-Officio Members**
> (1) City Council representative: Shaun Moran
> (2) City Staff Community Development Director or designee
>       Public Works Director or designee

After approval of the SDC Committee members, Galardi Rothstein and City staff met with the Committee four times to discuss and develop updated SDC methodologies for the water and storm drain enterprise funds. Packets and minutes for the SDC Committee meetings are referenced below in the attachment section. A primary focus of the SDC Committee was to incentivize multifamily development and moderate SDC charge increases. Staff would like to thank all members of the Committee for their participation in the project.

SDC Update Process:
The Water and Storm Drain SDC Update is broken into these major tasks:
1. Cost & Capacity Basis
2. Development of Unit Costs and SDC Schedules
      a. Nonresidential and Residential SDC Structures
3. Methodology Report
4. SDC Code Review

**Cost & Capacity Basis Framework**
To be defensible, SDCs must recover costs from new development in proportion to projected capacity requirements.  The capacity framework analysis provides the basis for existing facility available capacity and for making the determination of what portion of Capital Improvement Project (CIP) costs are improvement-SDC eligible based on the type of facility and nature of the improvement (e.g., new facility expansion vs. system performance upgrades or replacements.). As part of this task, Galardi Rothstein reviewed the Water, TAP and Storm Drain Master Plans and associated background information. Galardi Rothstein then developed a formalized project list using the existing
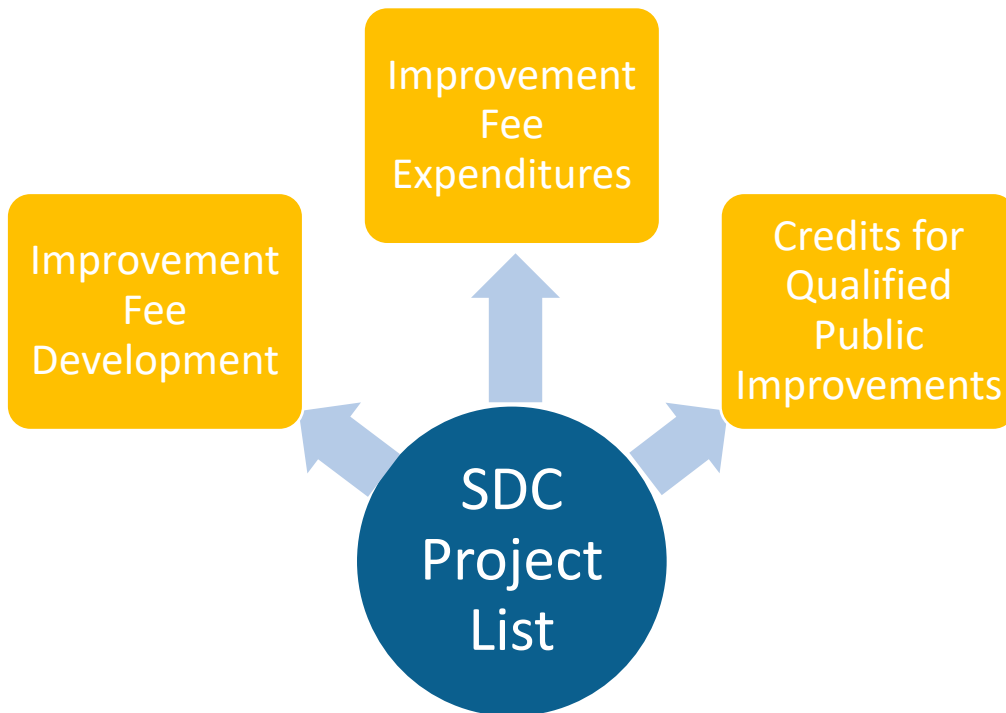
Water, TAP and Storm Drain Master Plans. The project list and the projected growth components were used moving forward to develop the unit costs and schedule.

The project list was presented to the SDC Committee multiple times and updated accordingly during the process to account for updated costs and other forms of funding to be applied to projects (grants).

**Develop Unit Costs and SDC Schedules**
The reimbursement and improvement costs attributable to growth are divided by the total projected growth units to determine the system-wide unit costs of capacity. Growth units for water are measured by projected maximum day demand and impervious area is used for storm drainage units of service. Using the project list and the projected water demand forecast and storm drain impervious area increase forecast, Galardi Rothstein calculated updated unit costs for both system SDCs.

As part of this exercise, the Committee requested the development of a second project list and associated calculation that did not include construction of a new water treatment plant, only rehabilitation of the existing plant. Both project lists and associated unit costs were presented before the Committee for discussion. The Committee was informed by staff that even though this calculation was included that the policy decision about the project remains with the City Council and that staff and Galardi Rothstein will present all of the information to the Council for consideration.

Improvement Fee Expenditures

Improvement Fee Development

Credits for Qualified Public Improvements

SDC Project List

**Nonresidential & Residential SDC Structures**
Once the unit costs of capacity were calculated, the fees for different types and sizes of development were determined based on projected claims on system capacity.

For nonresidential development, SDCs are currently scaled based on water meter size (water) and impervious area (storm drain).  For residential development the City has a long-standing policy of

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assessing SDCs based on heated living area (water) and site impervious area (stormwater) to recognize the system impact of larger living units.
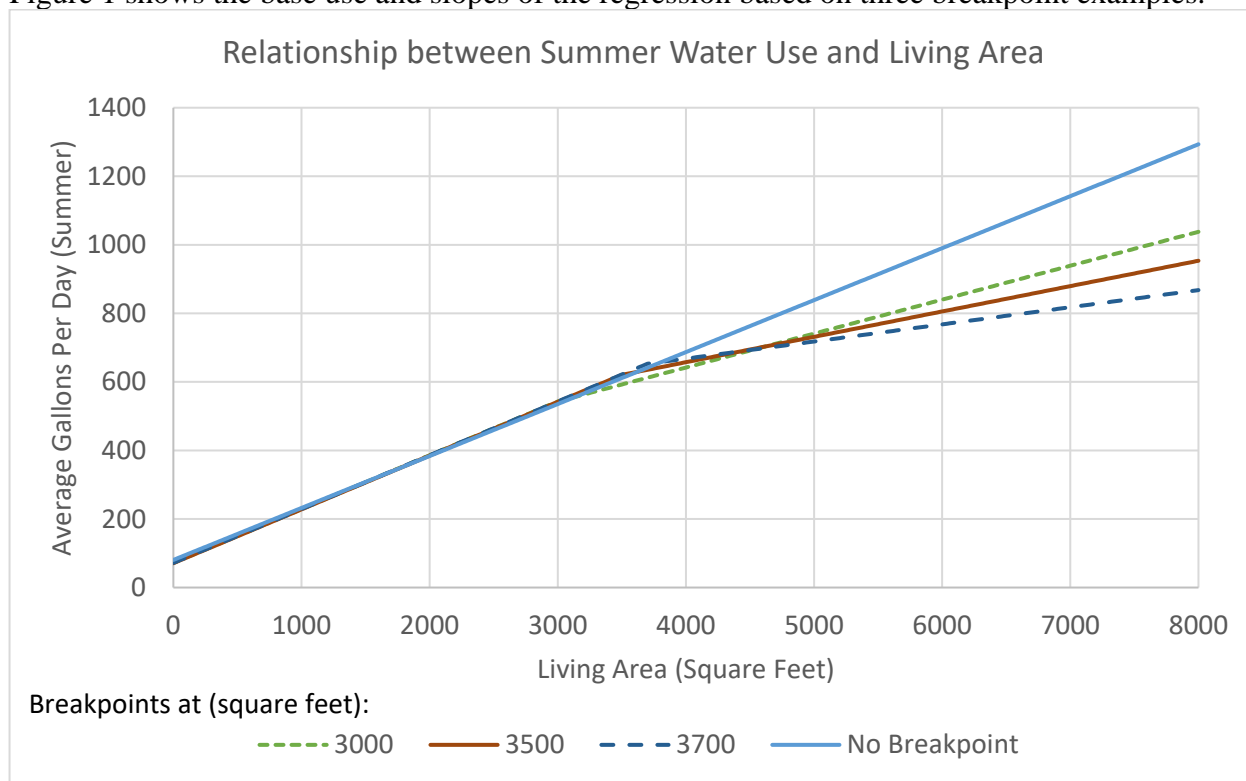
Using historical data from the City's billing and GIS systems, Galardi Rothstein evaluated the relationship between water use – both summer and winter average – and residential house size (based on living area). The same analysis was also done for multifamily development.

For single family occupancy, the regression analysis determined the functional relationship between summer water use (a consideration in water system facility sizing) and both the size of the lot and size of dwelling unit (in SQ FT). Based on the analysis, acreage was not a significant factor for controlling for variations in the regression results, which means the significance is largely dominated by the living area of the structure, consistent with the City's existing basis for charges.

While the analysis supports a relationship between amount of summer water use and house size, it was also found the functional relationship improved when two adjustments are made to the regression equation:

1. **Base use quantity is added** – The analysis indicated adding a base use of 71-72 gallons per day (gpd) as a constant for all development improves the regression results.
2. **Breakpoint added above 3,000 SQ FT** – The analysis showed a non-linear relationship between living area and average gpd at a point somewhere above 2,500 SQ. Ft.  In other words, as the living area of a house increases, there is a point in which larger households use less water per SQ FT, and the slope of that relationship decreases. Based on the statistical analysis, the point at which the slope changes fall between roughly 2,500 and 3,700 SQ FT).

Figure 1 shows the base use and slopes of the regression based on three breakpoint examples.



Relationship between Summer Water Use and Living Area

Breakpoints at (square feet): -----3000  ——3500  – – –3700  ——No Breakpoint

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After review of the single family occupancy analysis the Committee recommended the following:

**Motion by Kramer:**
I move to adopt a single family SDC without a baseline and a 3,000 square foot breakpoint.
2nd by Kendrick, motion passed unanimously.

For multifamily, the regression analysis determined a functional relationship between summer water use and both the size of the multifamily structure (in SQ FT) and average size and number of dwelling units.   However, the most important variable in this relationship—the one primarily driving the use—is the baseline values (GPD for each dwelling unit added). The average size of the dwellings plays a significant, but much smaller role in explaining use (in GPD). Because the total dwellings and total square feet are so correlated, the square footage of dwellings in Ashland is relatively consistent across multifamily households, making the number of dwellings the predominate driver. Furthermore, for multifamily, most other communities use a fixed price for dwelling units as the basis for multifamily SDCs instead of price per square foot of habitable space.

**Motion by Livni:**
I move to adopt a fixed cost per dwelling unit for multifamily.
2nd by Kramer, motion passed unanimously.

Full details of single and multifamily analysis are provided in the memorandums, reference attachment #2 & #3.

For nonresidential, the schedule was updated using the most current meter factors as developed in the American Water Works Association Manual M1, *Principles of Water Rates, Fees and Charges*. Galardi Rothstein presented comparisons to other communities with respect to nonresidential charges and how they utilize the meter factors in their calculation. The Committee did not generate a formal motion with respect to nonresidential SDC fees utilizing the meter size, but in general supported the update to the calculation using the current meter factors in the M1 Manual.

After recommendations were made by the Committee regarding the updated charges associated with residential and commercial, the Committee discussed phasing options for the charges. When the Transportation SDCs were reviewed and updates approved by Council, the actual charge increases were phased over 3-years. Galardi Rothstein presented updated charges that included inflation adjustments through January 2022, and phasing options for the charges to the Committee.

| | Water | | Drainage | |
| --- | --- | --- | --- | --- |
| | Single-Family (1,890 SQ FT) | Multifamily (Per Dwelling Unit) | $/SQ FT | Single-Family (3,000 SQ FT) |
| **Current[1]** | $4,927 | $2,607 | $0.1689 | $507 |
| **Updated SDC (no Phase-In)** | | | | |
| 2021 Costs | $6,065 | $2,757 | $0.7053 | $2,116 |
| 2022 Inflation-Adjusted | $6,351 | $2,887 | $0.7385 | $2,216 |
| **Phase-In (Year 1 SDC)** | | | | |
| *2-year phase-In* | | | | |
| 2021 Costs | $5,496 | $2,682 | $0.4371 | $1,311 |
| 2022 Inflation-Adjusted | $5,639 | $2,747 | $0.4537 | $1,361 |
| *3-year phase-In* | | | | |
| 2021 Costs | $5,306 | $2,657 | $0.3477 | $1,043 |
| 2022 Inflation-Adjusted | $5,402 | $2,700 | $0.3588 | $1,076 |

[1]Multifamily water SDC based on 1,000 SQ FT. Drainage SDC not increased since 2002.

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**Motion by Kramer:**
I move to adopt a 3-year phase in of the SDC charges.
2$^{nd}$ by Runkel, motion passed unanimously.

## Methodology Report
The updated SDC methodologies, project lists and SDC schedules will be documented in draft and final methodology reports. The final report will describe the methodological and policy frameworks and system-specific assumptions and fee calculations.

## Code Review
It is common practice to structure SDCs in such a way that furthers a local jurisdiction's broader objectives related to housing affordability, economic development, and other policies. The Committee spent a significant amount of time discussing the current Municipal Code section relating to SDCs (AMC 4.20, attachment #1). The primary discussion revolved around the collection of charge section of the code. The Committee discussed improvements to the timing of when the SDCs would be collected and associated installment payment options.

The current code allows for deferrals for the development of qualified affordable housing under the City's affordable housing laws and remains in place until the transfer of ownership to an ineligible buyer occurs. This is essentially a SDC fee waiver for affordable housing for the life of the project as long as it meets the eligibility requirements.

The Committee supports the affordable housing deferral process and was focused on recommending improvements that support multifamily housing, not just developments that meet the affordable housing requirements. The Committee discussed options for code updates that change the collection of charge timing components and installment payment requirements.  The SDCs for large multifamily developments can represent a significant upfront cost and the current code requires the SDCs to be paid upon:

1.  A building permit;

2.  A development permit;

3.  A permit for a development not requiring the issuance of a building permit;

4.  A permit or other authorization to connect to the water, sanitary sewer or storm drainage systems;

5.  A right-of-way access permit; or

6.  A planning action or change in occupancy (as defined in the Uniform Building Code) that will increase the demands on any public facility for which systems development charges are charged.

**Motion by Kramer: Multifamily SDCs should be deferred until time of occupancy, and furthermore recommended to Council that they adopt a policy to defer SDC payments for multifamily rentals subject to the above parameters and start two years past date of occupancy, 2$^{nd}$ by Kendrick.**

**The motion was amended to include removal of the current maximum collection of charge cap of $200,000.**

**Motion approved unanimously.**

In order to be more commensurate with revenues generated from multifamily developments, the Committee wanted to defer the collection of SDCs until an actual certificate of occupancy was issued

by the Building Division or for two years from the certificate of occupancy for rental properties. The Committee recommended to update the installment payment section to increase the payback period from 10 to 30 years, tie the interest rate to the prime rate, and also eliminate the maximum amount of $200,000 defined in the code.

This recommendation will require an update to the existing Ashland Municipal Code Section 4.20 if the Council accepts the recommendation of the SDC Committee.

**SDC Background:**
System Development Charges (SDCs) are one-time fees charged on new development, and certain types of redevelopment, to help pay for existing and planned infrastructure to serve development. SDCs are one means of financing growth available to local governments.

State law authorizes local governments to assess SDCs and specifies how, when, and for what improvements they can be imposed. Under ORS 223.297 – 223.314, SDCs may be used for capital improvements for:
• Water supply, treatment and distribution
• Wastewater collection, transmission, treatment and disposal
• Drainage and flood control
• Transportation
• Parks and recreation
The fees may be a *reimbursement fee* by new development for a portion of unused infrastructure capacity and/or an *improvement fee* for planned infrastructure. The fees may not include an improvement fee portion if there is sufficient existing capacity.
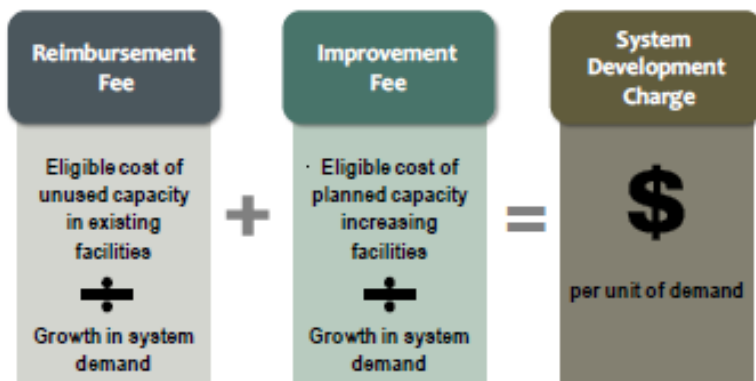


SDC revenues may be levied and used for capital costs, but not for ongoing facility or system maintenance or for projects that either fix existing system deficiencies or replace existing capacity. Cities must establish their SDCs by ordinance or resolution. The methodology must provide a credit for any qualified capital improvement financed by the developer. The calculation methodology must be adopted through a public process and the ordinance must set up a review procedure through which anyone may challenge an expenditure of SDC revenue if it is out of compliance with state restrictions. Prior to imposing SDCs the local body must have in place:
• A capital improvement plan
• A public facilities plan or comparable plan that lists improvement

The recently adopted Water and soon to be Storm Drain Master Plan include Capital Improvement projects (CIP) that differ from the existing and previously developed CIPs, which were used to establish current SDC rate structures (*water 2016, storm water 2002*).

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Updates to SDCs are important as they ensure the appropriate fee capture of new development impacts to the City's infrastructure systems. SDC fees are only used for project costs associated with infrastructure capacity enhancements. Defined capital improvements in the master plans vary in SDC capacity charge ability from 0% to 100% SDC "eligible".

## FISCAL IMPACTS
Indirect fiscal impact associated with approval of appointments is associated with the staff time necessary to bring this action forward to Council and manage the project throughout its duration. Direct fiscal impacts include the fee associated with the Council authorized professional services contract with Galardi Rothstein Group. The original contract amount authorized by the City Council was for time and materials not to exceed $49,660. To date the City has expended $42,510 on the project.

The other fiscal impacts include an increase in the SDC fees collected for new development commensurate with the need to improve existing facilities to meet the growth requirements.

## DISCUSSION QUESTIONS
Does the Council have any questions regarding SDC methodologies or legal requirements?

Does the Council request any additional information from the consultant or staff prior to moving forward with approving an updated methodology resolution?

## SUGGESTED NEXT STEPS
Next steps include coming back to the Council at a future date for approval of an updated SDC resolution that updates the methodology. A 90-day notice is required prior to holding the resolution approval meeting and the methodology report needs to be publicly available 60 days prior to the meeting for review. Staff is working to schedule the public notice and Council meeting for formal adoption of the methodology.

## REFERENCES & ATTACHMENTS
Attachment #1: Ashland Municipal Code 4.20 – System Development Charges
Attachment #2: Memorandum - Residential Water Use (single family)
Attachment #3: Memorandum - Residential Water Use (multifamily)
Attachment #4 (link): SDC Committee Meeting, June 2, 2021 (Minutes, Packet)
Attachment #5 (link): SDC Committee Meeting, August 4, 2021 (Minutes, Packet)
Attachment #6 (link): SDC Committee Meeting, September 1, 2021 (Minutes, Packet)
Attachment #7 (link): SDC Committee Meeting, February 23, 2022 (Minutes, Packet)

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# Chapter 4.20
# SYSTEMS DEVELOPMENT CHARGES

Sections:

## 4.20.010    Definitions

The following words and phrases, as used in this chapter, have the following definitions and meanings:

A.   *Capital Improvement(s).* Public facilities or assets used for any of the following:

1.   Water supply, treatment and distribution;

2.   Sanitary sewers, including collection, transmission and treatment;

3.   Storm sewers, including drainage and flood control;

4.   Transportation, including but not limited to streets, sidewalks, bike lanes and paths, street lights, traffic signs and signals, street trees, public transportation, vehicle parking, and bridges; or

5.   Parks and recreation, including but not limited to mini-neighborhood parks, neighborhood parks, community parks, public open space and trail systems, buildings, courts, fields and other like facilities.

B.   *Development.* As used in Sections 4.20.020 through 4.20.180 means constructing or enlarging a building or adding facilities, or making a physical change in the use of a structure or land, which increases the usage of any capital improvements or which will contribute to the need for additional or enlarged capital improvements.

C.   *Improvement Fee.* A fee for costs associated with capital improvements to be constructed after the effective date of the ordinance codified in this chapter.

D.   *Qualified Public Improvements.* A capital improvement that is:

1.   Required as a condition of development approval; and

2.   Is identified in the plan adopted pursuant to section 4.20.080 and is either:

a.   Not located on or contiguous to property that is the subject of development approval; or

b.   Located on or contiguous to the property that is the subject of development approval and is required to be built larger or with greater capacity than is necessary for the particular development project to which the improvement fee is related.

E.   *Reimbursement Fee.* A fee for costs associated with capital improvements constructed or under construction on the date the fee is adopted pursuant to Section 4.20.040.

F.   *Systems Development Charge.* A reimbursement fee, a public improvement charge or a combination thereof assessed or collected at any of the times specified in Section 4.20.090. It shall not include connection or hook-up fees for sanitary sewers, storm drains or water lines, since such fees are designed by the City only to reimburse the City for the costs for such connections. Nor shall the SDC include costs for capital improvements which by City policy and State statute are paid for by assessments or fees in lieu of assessments for projects of special benefit to a property, or the cost of complying with requirements or conditions imposed by a land use decision. (Ord. 3174 § 1, amended, 03/19/2019; Ord. 2791 § 1, amended, 1997)

## 4.20.020     Purpose

The purpose of the systems development charge (SDC) is to impose an equitable share of the public costs of capital improvements upon those developments that create the need for or increase the demands on capital improvements. (Ord. 3174 § 1, amended, 03/19/2019)

## 4.20.030     Scope

The systems development charge imposed by this chapter is separate from and in addition to any applicable tax, assessment, charge, fee in lieu of assessment, or fee otherwise provided by law or imposed as a condition of development. A systems development charge is to be considered in the nature of a charge for service rendered or

facilities made available, or a charge for future services to be rendered on facilities to be made available in the future. (Ord. 3174 § 1, amended, 03/19/2019)

## 4.20.040    Systems Development Charge Established

A.    Unless otherwise exempted by the provisions of this chapter or other local or state law, a systems development charge is hereby imposed upon all development within the City and all development outside the boundary of the City that connects to or otherwise uses the sanitary sewer system, storm drainage system or water system of the City. The City Manager is authorized to make interpretations of this section, subject to appeal to the City Council.

B.    Systems development charges for each type of capital improvement may be created through application of the methodologies described in AMC 4.20.050. The amounts of each systems development charge shall be adopted initially by Council resolution following a public hearing. Changes in the amounts shall also be adopted by resolution following a public hearing, except changes resulting solely from inflationary cost impacts. Inflationary cost impacts shall be measured and calculated annually by the City Manager and charged accordingly. Such calculations will be based upon changes in the Engineering News Record Construction Index (ENR Index) for Seattle, Washington. (Ord. 3192 § 60, amended, 11/17/2020; Ord. 3174 § 1, amended, 03/19/2019; Ord. 2791 § 2, amended, 1997)

## 4.20.050    Methodology

A.    The methodology used to establish a reimbursement fee shall consider the cost of then-existing facilities, prior contributions by then-existing users, gifts or grants from federal or state government or private persons, the value of unused capacity, rate-making principles employed to finance publicly owned capital improvements, and other relevant factors identified by the City Council. The methodology shall promote the objective that future systems users shall contribute an equitable share of the cost of then-existing facilities.

B.    The methodology used to establish the improvement fee shall consider the cost of projected capital improvements identified in an improvement plan (see AMC 4.20.080) that are needed to increase the capacity of the systems to which the fee is related.

C.    The methodologies used to establish the systems development charge shall be adopted by resolution of the Council following a public hearing.

    1.    The City shall provide written notice to persons who have requested notice of any adoption or modification of SDC methodology at least ninety (90) days before the hearing. If no one has requested notice, the City shall publish notice in a newspaper of general circulation in the City at least ninety (90) days before the hearing.

    2.    The revised methodology shall be available to the public at least sixty (60) days before the first public hearing of the adoption or amendment of the methodology.

D.   A change in the amount of a reimbursement fee or an improvement fee is not a modification of the SDC methodology if the change is based on a change in project costs, including cost of materials, labor and real property, or on a provision for a periodic adjustment included in the methodology or adopted by separate ordinance or resolution, consistent with State law.

E.   A change in the amount of an improvement fee is not a modification of the SDC methodology if the change is the result of a change in the improvement plan adopted in accord with AMC 4.20.080.

F.   The formulas and calculations used to compute specific systems development charges are based upon averages and typical conditions. Whenever the impact of individual developments present special or unique situations such that the calculated fee is grossly disproportionate to the actual impact of the development, alternative fee calculations may be approved or required by the City Manager under administrative procedures prescribed by the City Council. All data submitted to support alternate calculations under this provision shall be site specific. Major or unique developments may require special analyses to determine alternatives to the standard methodology.

G.   When an appeal is filed challenging the methodology adopted by the City Council, the City Manager shall prepare a written report and recommendation within twenty (20) working days of receipt for presentation to the Council at its next regular meeting. The Council shall, by resolution, approve, modify or reject the report and recommendation of the City Manager, or may adopt a revised methodology by resolution, if required. Any legal action contesting the City Council's decision in the appeal shall be filed within sixty (60) days of the Council's decision. (Ord. 3192 § 61, amended, 11/17/2020; Ord. 3174 § 1, amended, 03/19/2019)

## 4.20.060    Authorized Expenditures

A.   Reimbursement fees shall be spent on capital improvements associated with the systems for which the fees are assessed, including expenditures relating to repayment of indebtedness.

B.   Improvement fees shall be spent only on capacity increasing improvements for which the fees are assessed, including repayment of indebtedness. An increase in system capacity occurs if a capital improvement increases the level of performance or service provided by existing facilities or provides new facilities. The portion of such improvements funded by improvement SDCs must be related to the need for increased capacity to provide service for future users.

C.   Notwithstanding subsections A and B of this section, SDC revenues may be expended on the direct costs of complying with the provisions of this chapter, including the costs of developing SDC methodologies, system planning, providing an annual accounting of SDC expenditures and other costs directly related to or required for the administration and operation of this SDC program. (Ord. 3174 § 1, amended, 03/19/2019; Ord. 2791 § 3, amended, 1997)

## 4.20.070    Expenditure Restrictions

A.    SDCs shall not be expended for costs associated with the construction of administrative office facilities that are more than an incidental part of other capital improvements, or for costs of the operation or routine maintenance of capital improvements.

B.    A capital improvement being funded wholly or in part from revenues derived from the improvement fee shall be included in the plan adopted by the City pursuant to section 4.20.080. (Ord. 3174 § 1, added, 03/19/2019)

## 4.20.080    Improvement Plan

A.    Prior to the establishment of a system development charge, the City Council shall prepare a capital improvement plan, public facilities plan, master plan, or other comparable plan that includes:

1.    A list of the capital improvements that the City Council intends to fund, in whole or in part, with revenues from improvement fees;

2.    The estimated cost and time of construction of each improvement and the percentage of that cost eligible to be funded with improvement fee revenue; and

3.    A description of the process for modifying the plan.

B.    In adopting a plan under subsection A of this section, the City Council may incorporate by reference all or a portion of any capital improvement plan, public facilities plan, master plan, or other comparable plan that contains the information required by this section.

C.    The City Council may modify such plan and list, as described in subsection A of this section, at any time. If a system development charge will be increased by a proposed modification to the list to include a capacity increasing public improvement, the City Council will:

1.    At least thirty (30) days prior to the adoption of the proposed modification, provide written notice to persons who have requested notice pursuant to Section 4.20.120;

2.    Hold a public hearing if a written request for a hearing is received within seven (7) days of the date of the proposed modification.

D.    A change in the amount of a reimbursement fee or an improvement fee is not a modification of the system development charge if the change in amount is based on:

1.    A change in the cost of materials, labor, or real property applied to projects or project capacity as set forth on the list adopted pursuant to subsection A of this section;

2.    The periodic application of one or more specific cost indexes or other periodic data sources, including the cost index identified in Section 4.20.040. A specific cost index or periodic data source must be:

a.    A relevant measurement of the average change in prices or costs over an identified time period for materials, labor, real property, or a combination of the three;

b.    Published by a recognized organization or agency that produces the index or data source for reasons that are independent of the system development charge methodology; and

c.    Incorporated as part of the established methodology or identified and adopted by the City Council in a separate resolution, or, if no other index is identified in the established methodology, then the index stated in Section 4.20.040. (Ord. 3174 § 1, added, 03/19/2019)

## 4.20.090    Collection of Charge

A.    The systems development charge is payable upon, and as a condition of, issuance or approval of:

1.    A building permit;

2.    A development permit;

3.    A permit for a development not requiring the issuance of a building permit;

4.    A permit or other authorization to connect to the water, sanitary sewer or storm drainage systems;

5.    A right-of-way access permit; or

6.    A planning action or change in occupancy (as defined in the Uniform Building Code) that will increase the demands on any public facility for which systems development charges are charged.

B.    If development is commenced or connection is made to the water system, sanitary sewer system or storm sewer system without an appropriate permit, the systems development charge is immediately payable upon the earliest date that a permit was required, and it will be unlawful for anyone to continue with the construction or use constituting a development until the charge has been paid or payment secured to the satisfaction of the City Manager.

C.    Any and all persons causing a development or making application for the needed permit, or otherwise responsible for the development, are jointly and severally obligated to pay the charge, and the City Manager may collect the said charge from any of them. The City Manager or his/her designee shall not issue any permit or allow connections described in subsection A of this section until the charge has been paid in full or until an adequate secured arrangement for its payment has been made, within the limits prescribed by resolution of the City Council.

D.    An owner of property obligated to pay a systems development charge may apply to pay the charge in semi-annual installments over a period not exceeding ten years as provided in this section.

1.    The minimum charge subject to payment by installments shall be $2,000.00 and the maximum charge that may be subject to payment by installments shall not exceed $200,000.00. The minimum semi-annual installment shall be $1,000.00. Installments shall include interest on the unpaid balance at an annual rate of

six percent (6%) for a five-year installment loan or seven percent (7%) for a ten-year installment loan. A one-year installment loan shall not be subject to an annual interest rate, provided all charges are paid prior to the City's issuance of the certificate of occupancy, time of sale, or within one year of when the charge was imposed, whichever comes first.

2.    The installment application shall state that the applicant waives all irregularities or defects, jurisdictional or otherwise, in the proceedings to cause the systems development charge.

3.    The application shall also contain a statement, by lots or blocks, or other convenient description of the property meeting the requirements of ORS 93.600, subject to the charge.

4.    A systems development charge subject to installment payments shall be chargeable as a lien upon the property subject to the charge. Pursuant to ORS 93.643(2)(c), the City Recorder shall record notice of the installment payment contract with the Jackson County Clerk. The applicant shall pay the recording charges. (Ord. 3192 § 62, amended, 11/17/2020; Ord. 3174 § 1, renumbered, 03/19/2019; Ord. 2791 § 5, amended, 1997; Ord. 2670, amended, 1992. Formerly 4.20.070)

## 4.20.100    Exemptions

The conditions under which all or part of the systems development charges imposed in Section 4.20.040 may be waived are as follows:

A.    Structures and uses established and legally existing on or before the effective date of the ordinance codified in this chapter are exempt from a system development charge, except water and sewer charges, to the extent of the structure or use then existing and to the extent of the parcel of land as it is constituted on that date. Structures and uses affected by this subsection shall pay the water or sewer charges pursuant to the terms of this chapter upon the receipt of a permit to connect to the water or sewer system.

B.    Housing for low income or elderly persons which is exempt from real property taxes under state law. (Ord. 3174 § 1, renumbered, 03/19/2019; Ord. 2791 § 7, amended, 1997. Formerly 4.20.080)

## 4.20.105    Deferrals for Affordable Housing

A.    The systems development charge for the development of qualified affordable housing under the City's affordable housing laws shall be deferred until the transfer of ownership to an ineligible buyer occurs. Deferred systems development charges shall be secured by a second mortgage acceptable to the City, bearing interest at not less than five percent (5%) per annum. Accrued interest and principal shall be due on sale to an ineligible buyer.

B.    The systems development charge and second mortgage for the development of qualified affordable housing shall terminate 30 years after the issuance of a certificate of occupancy if the housing unit(s) have continued to meet the affordable housing requirements during the 30-year period. (Ord. 3174 § 1, renumbered, 03/19/2019; Ord. 2791 § 8, amended, 1997; Ord. 2670, amended, 1992. Formerly 4.20.085)

## 4.20.110    Credits

A.    When development occurs that gives rise to a systems development charge under AMC 4.20.040, the systems development charge for the existing use shall be calculated and if it is less than the systems development charge for the proposed use, the difference between the systems development charge for the existing use and the systems development charge for the proposed use shall be the systems development charge required under AMC 4.20.040. If the change in use results in the systemss development charge for the proposed use being less than the systems development charge for the existing use, no systems development charge shall be required; however, no refund or credit shall be given.

B.    The limitations on the use of credits contained in this subsection shall not apply when credits are otherwise given under this section. A credit shall be given for the cost of a qualified public improvement associated with a development. If a qualified public improvement is located partially on and partially off the parcel of land that is the subject of the approval, the credit shall be given only for the cost of the portion of the improvement not attributable wholly to the development. The credit provided for by this subsection shall be only for the improvement fee charged for the type of improvement being constructed and shall not exceed the improvement fee even if the cost of the capital improvement exceeds the applicable improvement fee. Credits paid as a permit for development will expire five years after paid. The credit shall be apportioned equally among all single-family residential lots (where such credit was granted for subdivisions). Credits for other types of developments shall be allocated to building permits on a first-come, first-served basis until the credit is depleted.

C.    Applying the methodology adopted by resolution, the City Manager or designee shall grant a credit against the improvement fee for a capital improvement constructed as part of the development that reduces the development's demand upon existing capital improvements or the need for future capital improvements or that would otherwise have to be provided at City expense under then-existing Council policies.

D.    Credits for additions to dedicated park land, or development of planned improvements on dedicated park land, shall only be granted by the City Manager upon recommendation by the Parks and Recreation Commission for land or park development projects identified in the Capital Improvement Plan, referred to in AMC 4.20.070.B.

E.    In situations where the amount of credit exceeds the amount of the systems development charge, the excess credit is not transferable to another development. It may be transferred to another phase of the original development.

F.    Credit shall not be transferable from one type of capital improvement to another. (Ord. 3192 § 63, amended, 11/17/2020; Ord. 3174 § 1, renumbered, 03/19/2019; Ord. 2791 § 9, amended, 1997. Formerly 4.20.090)

## 4.20.120    Notification

A.    The City shall maintain a list of persons who have made a written request for notification prior to adoption or modification of a methodology for any system development charge. Written notice shall be mailed to persons on the list as provided in sections 4.20.050 and 4.20.080. The failure of a person on the list to receive a notice that was mailed does not invalidate the action of the City.

B.   The City may periodically delete names from the list, but at least thirty (30) days prior to removing a name from the list, the City must notify the person whose name is to be deleted that a new written request for notification is required if the person wishes to remain on the notification list. (Ord. 3174 § 1, added, 03/19/2019)

# 4.20.130    Segregation and Use of Revenue

A.   All SDC proceeds are to be segregated by accounting practices from all other funds of the City. SDC proceeds shall be used only for capital improvement of the type for which they were collected and authorized costs and overhead.

B.   The City Manager shall provide the City Council with an annual accounting, based on the City's fiscal year, for SDCs showing the total amount of SDC revenues collected for each type of facility and the projects funded from each account in the previous fiscal year. A list of the amounts spent on each project funded in whole or in part with SDC revenues shall be included in the annual accounting.

C.   The monies deposited into each SDC account shall be used solely as allowed by this chapter and State law, including, but not limited to:

1.   Design and construction plan preparation;

2.   Permitting and fees;

3.   Land, easements, and materials acquisition, including any cost of acquisition or condemnation, including financing, legal and other costs;

4.   Construction of capital improvements;

5.   Design and construction of new utility facilities required by the construction of capital improvements and structures;

6.   Relocating utilities required by the construction of improvements;

7.   Landscaping;

8.   Construction management and inspection;

9.   Surveys, soils, and materials testing;

10.   Acquisition of capital equipment;

11.   Repayment of monies transferred or borrowed from any budgetary fund of the City which were used to fund any of the capital improvements as herein provided; and

12.   Payment of principal and interest, necessary reserves and cost of issuance under bonds or other indebtedness issued by the City to fund capital improvements. (Ord. 3192 § 64, amended, 11/17/2020; Ord. 3174 § 1, added, 03/19/2019)

## 4.20.140    Refunds

A.    Refunds shall be given by the City Manager upon finding that there was a clerical error in the calculation of a systems development charge.

B.    Refunds shall not be allowed for failure to timely claim a credit under AMC 4.20.110, or for failure to seek an alternative systems development charge rate calculation at the time of submission of an application for a building permit.

C.    Refunds may be given on application of a permittee if the development did not occur and all permits for the development have been withdrawn. (Ord. 3192 § 65, amended, 11/17/2020; Ord. 3174 § 1, added, 03/19/2019)

## 4.20.150    Appeal Procedures

A.    As used in this section, "working day" means a day when the general offices of the City are open to transact business with the public.

B.    A person aggrieved by a decision required or permitted to be made by the City Manager or designee pursuant to AMC 4.20.010 through 4.20.130 or a person challenging the propriety of an expenditure of systems development charge revenues may appeal the decision or expenditure by filing a written notice of appeal with the City Recorder for consideration by the City Council. Such appeal shall describe with particularity the decision or the expenditure from which the person appeals and shall comply with subsection D of this section.

C.    An appeal of an expenditure must be filed within two (2) years of the date of alleged improper expenditure. An appeal petition challenging the adopted methodology shall be filed not later than sixty (60) days from the date of the adoption of the methodology. Appeals of any other decision must be filed within ten (10) working days of the date of the decision.

D.    The appeal shall state:

   1.    The name and address of the appellant;

   2.    The nature of the determination being appealed;

   3.    The reason the determination is incorrect; and

   4.    What the correct determination should be.

An appellant who fails to file such a statement within the time permitted waives any objections, and the appeal shall be dismissed.

E.    Unless the appellant and the City agree to a longer period, an appeal shall be heard within thirty (30) calendar days of the receipt of the written appeal. At least ten (10) working days prior to the hearing, the City shall mail notice of the time and location thereof to the appellant.

F.    The City Council shall hear and determine the appeal on the basis of the appellant's written statement and any additional evidence the appellant deems appropriate. At the hearing, the appellant may present testimony and oral argument personally or by counsel. The City may present written or oral testimony at this same hearing. The rules of evidence as used by courts of law do not apply.

G.    The appellant shall carry the burden of proving that the determination being appealed is incorrect and what the correct determination should be.

H.    The City Council shall render its decision within fifteen (15) business days after the hearing date and the decision of the Council shall be final. The decision shall be in writing but written findings shall not be made or required unless the Council, in its discretion, elects to make findings for precedential purposes. Any legal action contesting the Council's decision on the appeal shall be filed within sixty (60) calendar days of the Council's decision. (Ord. 3192 § 66, amended, 11/17/2020; Ord. 3174 § 1, renumbered, 03/19/2019; Ord. 2791 § 10, amended, 1997. Formerly 4.20.100)

## 4.20.160    Prohibited Connection

After the effective date of this chapter, no person may connect any premises for service, or cause the same to be connected, to any sanitary sewer, water system, or storm sewer system of the City unless the appropriate systems development charge has been paid or payment has been secured as provided in this chapter. (Ord. 3174 § 1, renumbered, 03/19/2019. Formerly 4.20.110)

## 4.20.170    Enforcement – Violation

Any service connected to the City water, sewer or storm sewer system after the effective date of this chapter for which the fee due hereunder has not been paid as required or an adequate secured arrangement for its payment has been made is subject to termination of service under the City's utility disconnect policy. In addition to any other remedy or penalty provided herein, any connection to the City water, sewer or storm system made without payment as specified in this chapter shall be considered a Class I violation. (Ord. 3174 § 1, renumbered, 03/19/2019; Ord. 3023, amended, 08/03/2010. Formerly 4.20.120)

## 4.20.180    Classification of the Fee

System development charges as set forth in this chapter are classified as not subject to the limits of Section 11b of Article XI of the Oregon Constitution. (Ord. 3174 § 1, renumbered, 03/19/2019; Ord. 2791 § 11, amended, 1997. Formerly 4.20.121)

**The Ashland Municipal Code is current through Ordinance 3203, passed November 2, 2021.**

Disclaimer: The City Recorder's office has the official version of the Ashland Municipal Code. Users should contact the City Recorder's office for ordinances passed subsequent to the ordinance cited above.

**Note:** This site does not support Internet Explorer. To view this site, Code Publishing Company recommends using one of the following browsers: Google Chrome, Firefox, or Safari.

City Website: www.ashland.or.us
City Telephone: (541) 488-5307
Code Publishing Company

**MEMORANDUM**

| | |
|---|---|
| **PREPARED FOR:** | Scott Fleury, Public Works Director, City of Ashland |
| **PREPARED BY:** | Deb Galardi, Galardi Rothstein Group |
| | Kristi Currans, Clifton-Currans, LLC |
| **SUBJECT:** | Revised Single-Family Residential Water Use Analysis |
| **DATE:** | July 27, 2021 |

## Introduction

The City of Ashland (City) currently assesses water System Development Charges (SDCs) for single-family residential homes based on house size, as measured by habitable area (excluding garage and other non-living areas).  The current charge for the water SDCs is $2.6069 for each square foot (SQ FT) of habitable space created by the development.  SDCs for all other uses are charged based on water meter size.

At the last meeting of the SDC Committee, the preliminary analysis of single-family residential water was presented for purposes of determining the relationship between summer (peak) water use and house size.  Subsequent to that analysis, the City provided an updated data set of single-family households that addressed prior data inconsistencies.  The revised analysis is summarized below, along with follow-up information on base and acreage variables.  Information on the distribution of house sizes based on five years of building permit data that is included in the memo is unchanged from the prior version but included again for completeness.  Information on water use and building size for multifamily developments will be provided at the final SDC Committee meeting in September.

## Updated Regression Analysis

The technical team conducted a regression analysis to determine the functional relationship between summer water use (a consideration in water system facility sizing) and both the size of the lot and size of dwelling unit (in SQ FT).

While our analysis supports a relationship between amount of summer water use and house size, we found the variation to be reduced (functional relationship stronger) when two adjustments are made to the regression equation:

1. **Base use quantity is added** – Our analysis indicates adding a base use of 96-97 gallons per day (gpd) as a constant for all development improves the regression results.
2. **Breakpoint added above 3,000 SQ FT** - Our analysis shows a non-linear relationship between living area and average gpd at a point somewhere above 2,500 SQ. Ft.  In other words, as the living area of a house increases, there is a point in which larger households use less water per SQ FT, and the slope of that relationship decreases. Based on the statistical analysis, the point at which the slope changes fall between roughly 2,500 and 3,700 SQ FT).

Figure 1 shows the updated base use and slopes of the regression based on three breakpoint examples.

**Figure 1: Revised Single-Family Regression**
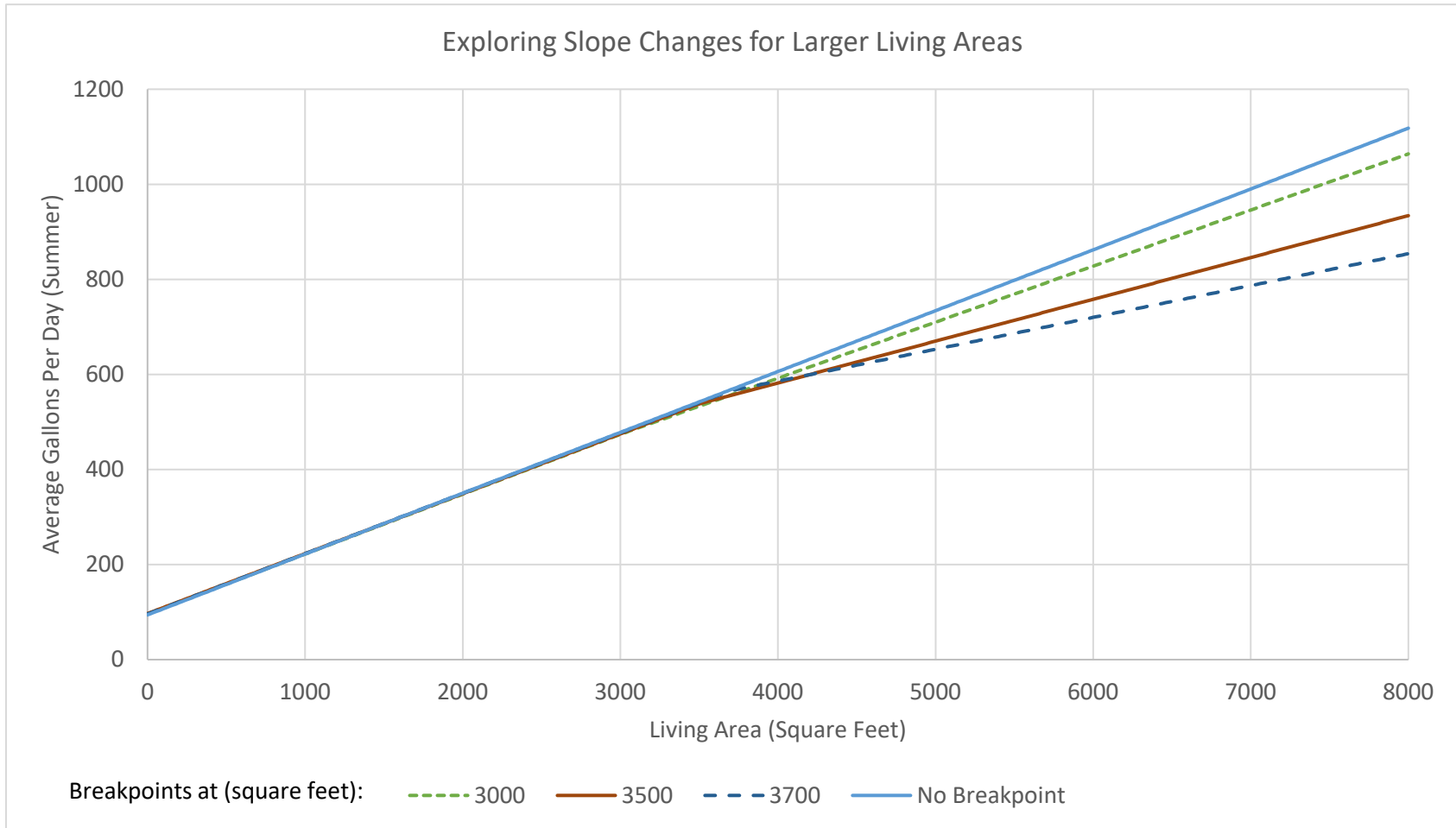
Based on the revised regression analysis, the key variables for estimating water use based on house size are provided in Table 1.

*Table 1: Water use variables for three upper breakpoints*

| | Breakpoint (SQFT) | 3000 | 3500 | 3700 |
|---|---|---|---|---|
| | Base Use (gpd) | 96 | 97 | 96 |
| + | Use (gpd) / SQ FT under breakpoint | 0.126 | 0.126 | 0.127 |
| + | Use (gpd) / additional SQ FT > breakpoint | 0.118 | 0.088 | 0.067 |

Gpd = gallons per day

Examples of what this would look like in practice for a breakpoint at 3,500 SQ FT are provided below based on the following equation:

***Total Use = Base Use (97 gpd) +Living area (<3,500sqft) * 0.126 + Living area (>=3,500sqft) * 0.088***

**Example 1:** For a house that is 2,500 SQ FT, the calculation would be:

- Total Use = 97 + 2500 SQ FT * 0.126 + 0 SQ FT * 0.088 = 412 in gallons per day

**Example 2:** For a house that is 4,100 SQ FT, the calculation would be:

- Total Use = 97 + 3500 SQ FT * 0.126 + 600 SQ FT * 0.088 = 591 in gallons per day

# Response to Committee Questions

## Consider with and without the baseline value

The purpose of the baseline value is to account for the minimum level of use for even the smallest area. Assuming all new residential properties intend to be occupied, even the smallest living areas will include at least one individual. This baseline value is the average estimate for the smallest homes possible. A baseline value of 97 gallons per day (as shown in Table 1), represents the minimum amount of use for single-family residential properties, even if the living area is very small. This provides a strong practical reasoning for including a baseline, minimum value.

However, we can also consider the influence of the baseline in our model regressions. In Table 2, we compare the 3,500 SQ FT break-point model with (model A) and without (model B) the baseline value. We then plot both models as they would be applied to living area (see Figure 2). While the (B) model starts at zero, the initial slope for houses less than 3,500 SQ FT (in this example) increase at a steeper rate than those in model (A) with the baseline. After the breakpoint at 3,500 SQ FT, the slopes are similar for both models (similar charge per square foot), but because the initial slope was steeper for the first 3,500 SQ FT, the larger home rates start at a higher value after 3,500 SQ FT.

*Table 2 Comparing models with and without baseline values*

| Breakpoint (SQFT) | (a) 3,500 SQFT with baseline | (b) 3,500 SQFT break point without baseline |
|---|---|---|
| Base Use (gpd) | 97 | 0 |
| + Use (gpd) / SQ FT under breakpoint | 0.126 | 0.174 |
| + Use (gpd) / additional SQ FT > breakpoint | 0.088 | 0.088 |

These translate to the following two equations:

Total Use (with baseline) = **Base Use (97)** +**Living area (<3,500sqft) * 0.126** + **Living area (>=3,500sqft) * 0.088**

Total Use (**without** baseline) =**Living area (<3,500sqft) * 0.174** + **Living area (>=3,500sqft) * 0.088**

## Figure 1: Comparing Baseline Model to Model without Baseline Value



Figure 1: Comparing Baseline Model to Model without Baseline Value
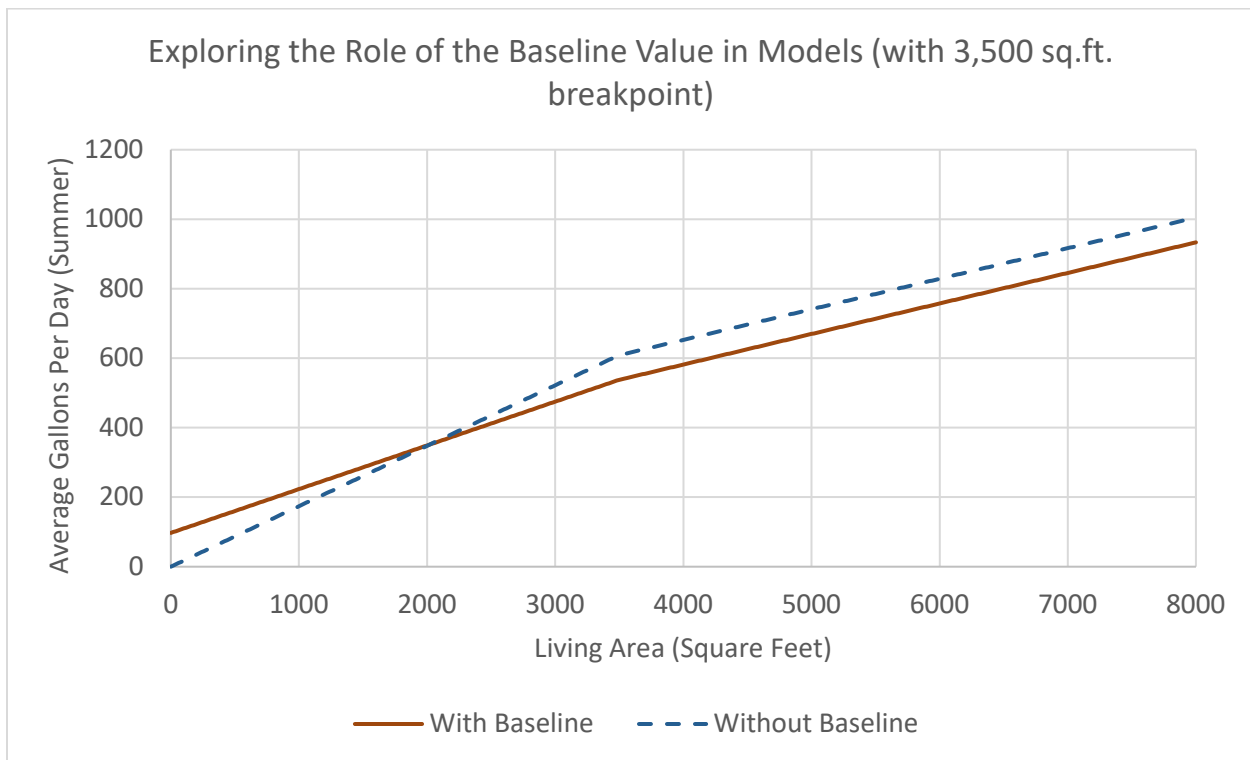
## Consider Models with and without Acreage

Based on our analysis, acreage was not a significant factor for controlling for variation in the regression results, which means that the significance is largely dominated by the living area of the structure, consistent with the City's existing basis for charges.

Adjusted $R^2$ is a statistical metric that tells us how well the models are performing. This indicator tells us how much variation in the data (e.g., noise) can be controlled with the variables we have at hand (mainly living area and acreage).

In Table 3, two regressions are provided. First, we include a simple regression with living area only and a break point held at 3,500 SQ FT. Second, we provide a similar regression, but we have added back "acreage". Statistically speaking, acreage is significantly related to summer water use (p-value < 0.05). However, it contributes very little to improving model performance, which means that the significance is largely dominated by the living area information. In other words, without acreage the living area variables control for about 14.68% of the variation, and with acreage the collection of variations controls for about 14.72% of the variation in water use. This difference (0.04%) is not a significant improvement in performance.

*Table 3 Comparing Summer Water Use Regression With/Without Acreage*

| | (A) Without Acreage | | (B) With Acreage | |
|---|---|---|---|---|
| | Coefficients (Gal per day per variable-unit) | Significance (p-value) | Coefficients (Gal per day per variable-unit) | Significance (p-value) |
| (Intercept) | 97 | <0.001 | 96 | <0.001 |
| Total SQ FT (in 1000s) | 126 | <0.001 | 124 | <0.001 |
| Above the Breakpoint (Dummy variable at 3,500 SQ FT) | 186 | <0.05 | 204 | <0.05 |
| Total SQ FT, above the Breakpoint (3,500 SQ FT) | -38 | <0.10 | -44 | <0.05 |
| Slope above breakpoint | 88 | *NA* | 80 | *NA* |
| Acreage[1] | *NA* | *NA* | 17.7 | <0.05 |
| **Adjusted R2** | 0.1468 | | 0.1472 | |
| [1]For every acre, expect roughly 18 gallons per day more in summer water use. | | | | |

Practically speaking, the size of the coefficient (or slope) estimated for acreage is small as well. In Figure 3, we predict multiple scenarios using the models from Table 3. The dotted green line represents the model without acreage. The remaining lines represent predictions from model B in the above table, each line estimated for a different sized plot (e.g., 0.25-, 0.5-, 1-, 5-acres).

**Figure 2: Predicting Summer Water Use for Different Sized Plots**
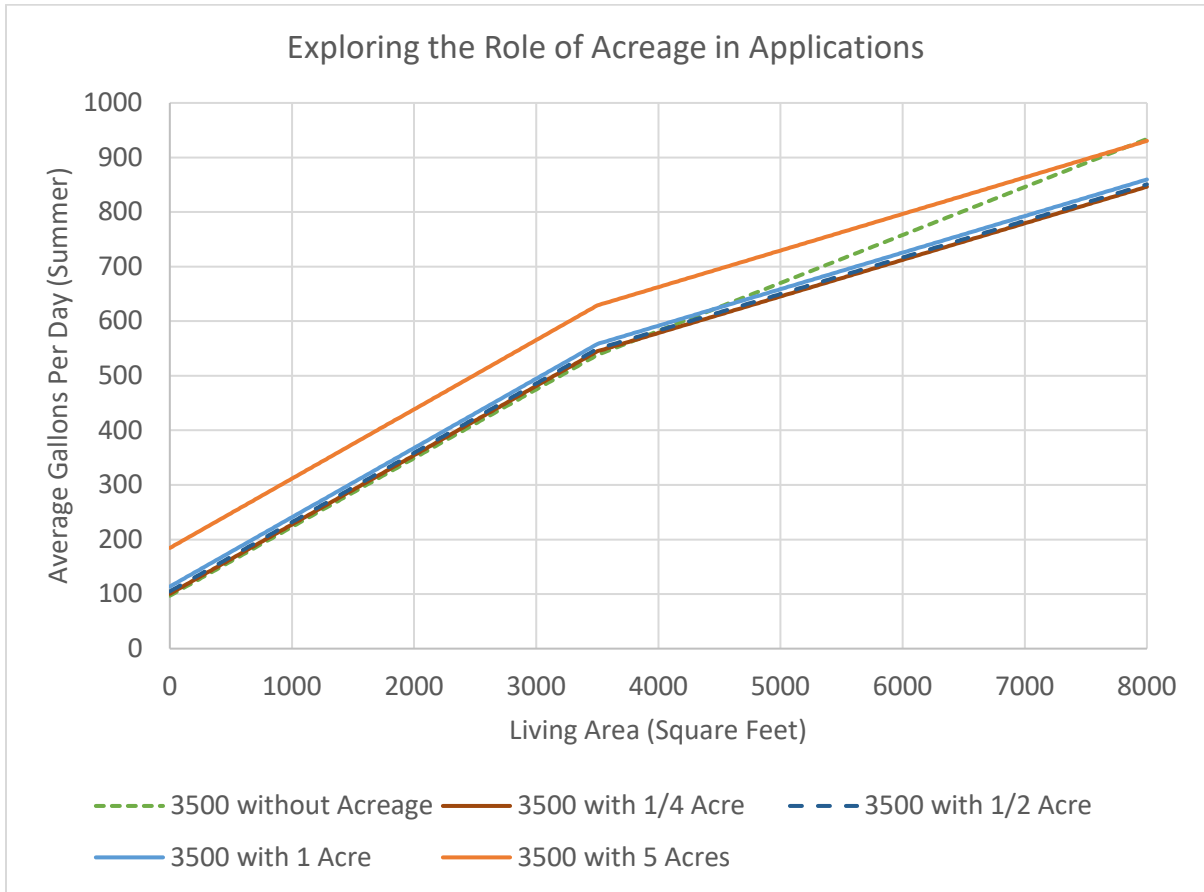


Keep in mind, the average acreage in our dataset—representing a large sample of Ashland properties—is 0.26, 49% of the sample has 0.19 acres or less, 94% of the sample has 0.5 acres or less, and 99.9% of our sample has less than 5 acres of land. From our previous examples, we can estimate the contribution of acreage for a small house:

**Example 1A:** For a house that is 2,500 SQ FT without considering acreage (using regression A in Table 3), the calculation would be:

Total Use = 97 + 2500 sqft * 0.126 + 0 sqft * 0.088 = 412 in gallons per day

**Example 1B:** For a house that is 2,500 SQ FT with a 0.5-acre plot (using regression B in Table 3), the calculation would be:

Total Use = 96 + 2500 sqft * 0.124 + 0 sqft * 0.080 + 0.5 acres * 17.7 GPD Per Acre= 414.4 in gallons per day

A 0.5-acre property would add an average of 8.9 gallons per day of summer water use (0.5 Acres * 17.7 GPD Per Acre). In the context of this example, the additional water use accounts for a 0.7% increase in use.

Using a larger house as an example, we find:

**Example 2A:** For a house that is 4,100 SQ FT (3,500 below the breakpoint and 600 sqft above), the calculation would be (without considering acreage):

- Total Use = 97 + 3500 sqft * 0.126 + 600 sqft * 0.088 = 591 in gallons per day

**Example 2A:** For a house that is 4,100 SQ FT (3,500 below the breakpoint and 600 sqft above) and on a 0.5 acre plot, the calculation would be (with acreage from model B in 3):

- Total Use = 94 + 3500 sqft * 0.124 + 600 sqft * 0.080 * 0.5 acres * 17.7 GPD per Acre = 586 in gallons per day

In this larger home example, acreage accounts for a 0.7% decrease. If we look again at the graphic depiction of these models, we see that the slope for homes above 3,500 square feet decreases for the models which include acreage (green dotted line compared with all other lines). If we leave out acreage, the slope of larger homes accounts for the corresponding larger plots often included with larger homes.

To summarize: although acreage is statistically significant, it contributes very little to explaining summer water use (compared with living area). Given the distribution of acreage in our sample, including acreage in the calculations would account for an average change of <10 gallons per day of water use for the majority of properties (94% of the sample with <0.5 acres at 17.7 gallons per day per acre). Based on the statistical and practical implications of this analysis, we believe it is currently best to focus only on the living area of the households.

## Permit Data

The City provided permit data over five years to determine the distribution of house sizes recently constructed.  The permit data provides total house size (including unfinished spaces); however, of the 201 permits provided, 106 have address information that can be linked directly to water use data (and corresponding habitable space estimates) from a larger dataset. Habitable space was estimated for the other 95 homes, based on the average ratio of total SQ FT to habitable space of 1.3.

Figure 4 shows habitable space (both actual and estimated) for the permitting records (gray) and the distribution of habitable space for the entire water use sample provided by the City (yellow). In both cases, the data shows that a breakpoint at or above 3000 square feet would apply to only about 6-8% of single-family dwellings.
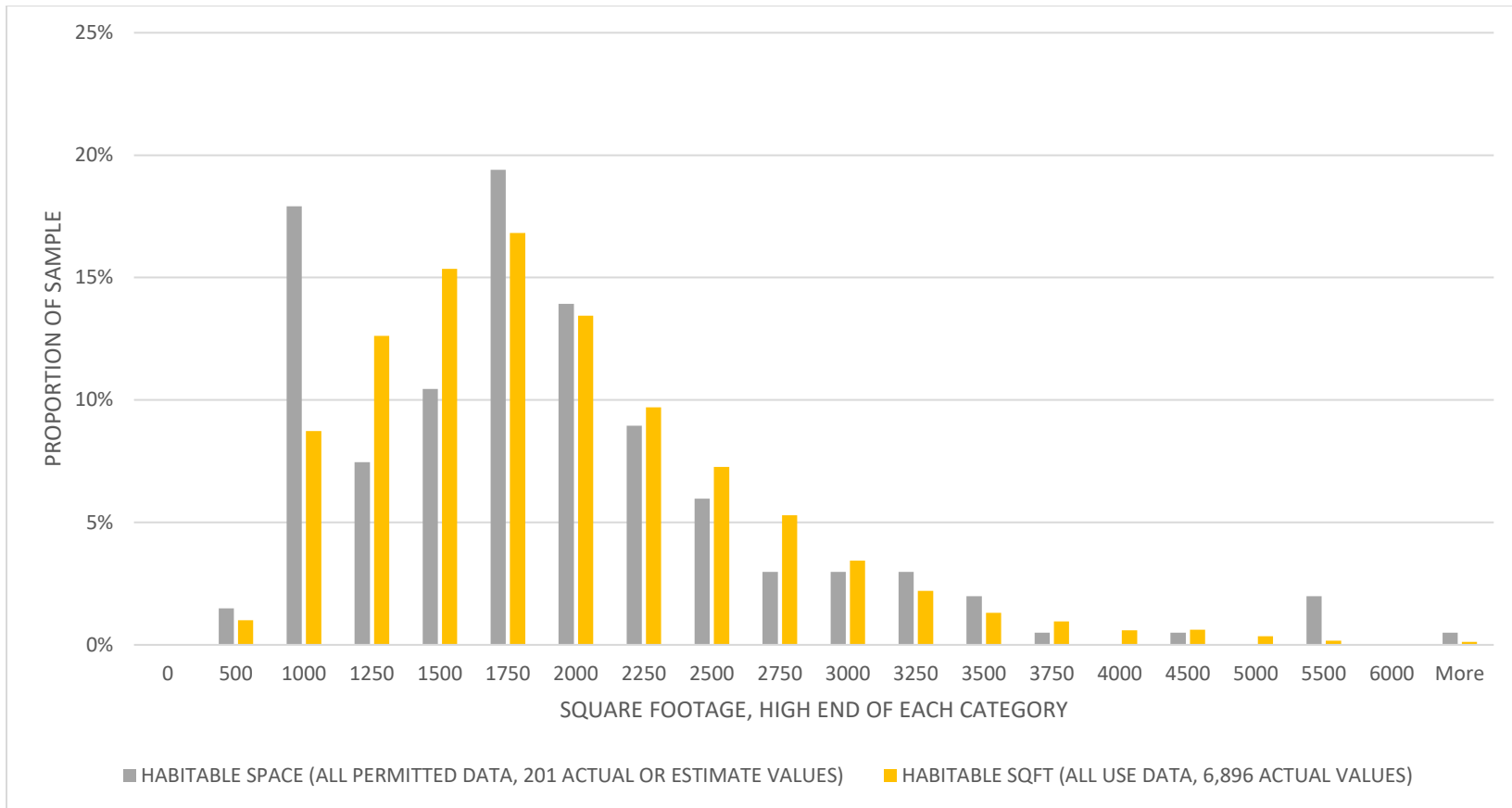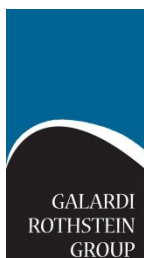
Figure 4: Habitable Space from Permit Data

**MEMORANDUM**

| | |
|---|---|
| **PREPARED FOR:** | Scott Fleury, Public Works Director, City of Ashland |
| **PREPARED BY:** | Deb Galardi, Galardi Rothstein Group |
| | Kristi Currans, Clifton-Currans, LLC |
| **SUBJECT:** | Residential Water Use Options (REVISED) |
| **DATE:** | August 29, 2021 |

## Introduction

The City of Ashland (City) currently assesses water System Development Charges (SDCs) for residential homes based on house size, as measured by habitable area (excluding garage and other non-living areas). The current charge for the water SDCs is $2.6069 for each square foot (SQ FT) of habitable space created by the development.

At prior meetings of the SDC Committee, water use analyses for single-family development were presented that demonstrate the relationship between summer (peak) water use and house size. This memorandum provides information on the relationship of *multifamily* housing structures and dwelling units to summer water use and examples of SDCs under both options.

## Multifamily Regression Analysis

The technical team conducted a regression analysis to determine the functional relationship between summer water use (a consideration in water system facility sizing) and both the size of the multifamily structure (in SQ FT) and average size and number of dwelling units. Like the single-family analysis, our analysis shows a relationship between amount of summer water use and both size of the structure and dwelling unit (DU). Table 1 presents three models for estimating water use for multifamily development.

**Table 1 – Multifamily Regression Model Statistics**

| Statistic | | Baseline + GPD/ SQ FT | Baseline Only | Slope Only GPD/ SQ FT |
|---|---|---|---|---|
| | *Size Basis* | *Dwelling Unit* | *Dwelling Unit* | *Structure* |
| Base Use (gpd/dwelling unit) | | 135 | 146 | - |
| Use (gpd) / SQ FT (total structure) | | - | - | 0.178 |
| Use (gpd) / SQ FT (avg. dwelling unit) | | 0.157 | - | - |
| Adjusted R2 | | 0.87 | 0.85 | 0.90 |

Gpd = gallons per day

The performance of these models is high (Adj. R2 = 0.85-0.90), indicating these variables capture a high degree of variation in the water use. However, the most important variable in this relationship—the one primarily driving the use—is the baseline values (GPD for each dwelling unit added). The average size of the dwellings plays a significant, but much smaller role in explaining use (in GPD). Because the total dwellings and total square feet are so correlated, the square footage of dwellings in Ashland is relatively consistent across multifamily households, making the number of dwellings the predominate driver.

The variables in Table 1 are used to estimated water use as follows:

(A)     **Baseline + Slope** (GPD/SQ FT) = 135 GPD * Total # of DUs + 0.157 GPD per SQFT * Average SQFT per DU

(B)     **Baseline Only** = 146 GPD per DU * Total # of DUs

(C)     **Slope Only** (GPD/SQ FT) = 0.178 GPD per SQFT * Total SQFT of the structure

For a development with 12 dwelling units with a total of 10,000 SQ FT living area and an average of 833 SQ FT per DU, water use under the three models is estimated as follows:

- (A) 135 GPD * 12 DUs + 0.157 * 833 Avg SQ FT = 1,751 GPD
- (B) 146 DUs * 12 = 1,752 GPD
- (C) 0.178 GPD * 10,000 total SQFT = 1,780 GPD

Table 2 provides water use estimates for a 12-unit structure with three different average dwelling sizes (833 SQ FT from the above example and 1,250 and 500 SQ FT).  As shown below, there is little variation (less than 4 percent) between models A and B, across the average dwelling size.

**Table 2 - Water Use Estimates for Developments with Varying Avg. SQ FT per DU**

|  | Variable | Model Estimated Use (GPD) | | |
|---|---|---|---|---|
|  |  | (A) Baseline + GPD/ SQ FT | (B) Baseline Only | (C) Slope Only GPD/ SQ FT |
| *Typical Use per DU* |  |  |  |  |
| Base Use (dwelling units) | 12 | 1,620 | 1,752 | - |
| Variable Use (total structure size) | 10,000 | - | - | 1,780 |
| Variable Use (Avg. Dwelling Unit size) | 833 | 131 | - | - |
| **Total Use** |  | **1,751** | **1,752** | **1,780** |
| Use per DU |  | 146 | 146 | 148 |
| *Large Use per DU* |  |  |  |  |
| Base Use (dwelling units) | 12 | 1,620 | 1,752 | - |
| Variable Use (total structure size) | 15,000 | - | - | 2,670 |
| Variable Use (Avg. Dwelling Unit size) | 1,250 | 196 | - | - |
| **Total Use** |  | **1,816** | **1,752** | **2,670** |
| Use per DU |  | 151 | 146 | 223 |
| *Small Use per DU* |  |  |  |  |
| Base Use (dwelling units) | 12 | 1,620 | 1,752 | - |
| Variable Use (total structure size) | 6,000 | - | - | 1,068 |
| Variable Use (Avg. Dwelling Unit size) | 500 | 79 | - | - |
| **Total Use** |  | **1,699** | **1,752** | **1,068** |
| Use per DU |  | 142 | 146 | 89 |

Figure 1 plots a broader range of structure and dwelling unit sizes under Models A and B. The figure further demonstrates that the contribution of GPD per SQFT/DU is much smaller than the contribution of the number of dwelling units in estimating water use under these models.

**Figure 1**



Comparing Model A - Baseline + Avg SQFT Slope (@5 different avg dwelling sizes) and Model B - Baseline Only
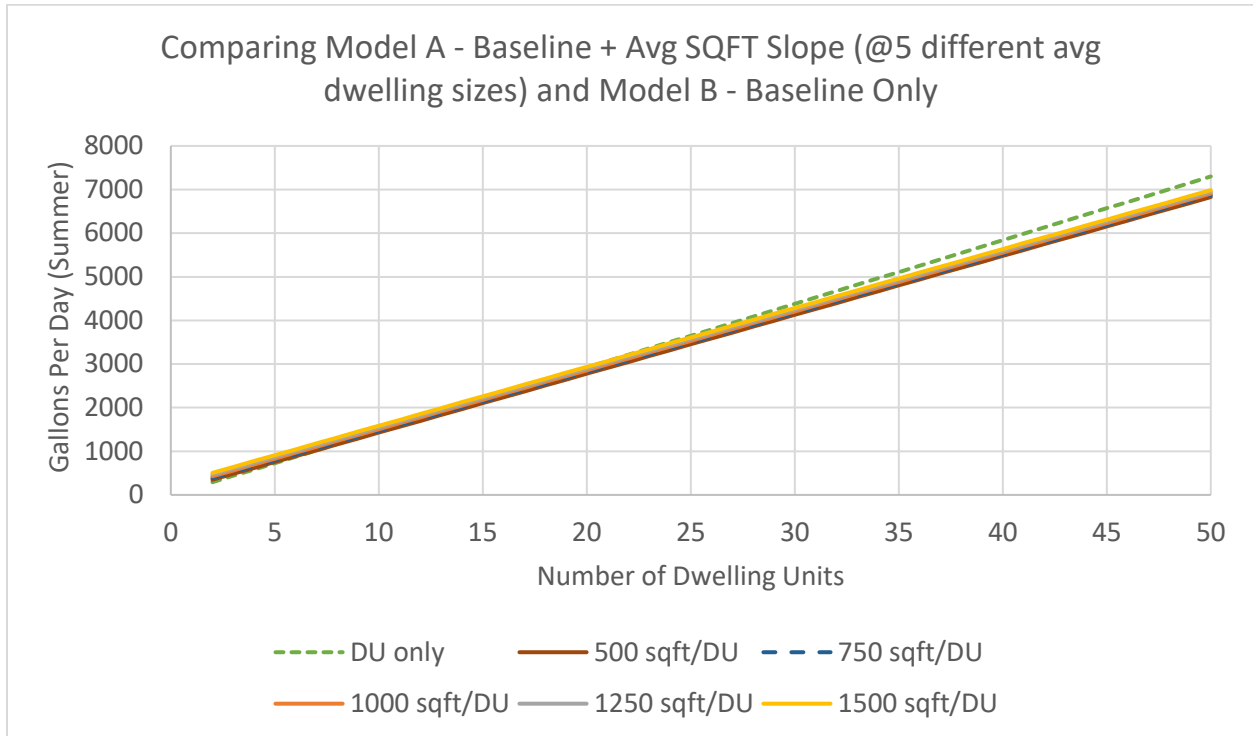
## SDC Impacts

A notable finding of the multifamily analysis is that the estimated GDP per SQ FT of structure (0.178 from Model C in Table 1) is within two percent of the single-family residential slope-only model of 0.174 (when considering single-family dwellings below the 3,500 SQ FT breakpoint).[1] In this case and because the City's current SDC structure is based on application of the same cost per SQ FT for both single family and multifamily, sample SDCs based on Multifamily Models B and C (using the 0.174 GPD per SQ FT estimated developed for single-family dwellings) are plotted in Figure 2 for different size developments[2].

For purposes of illustrating the SDC impacts in Figure 2, the SDCs based on the 2040 project list are used. As shown in the Figure, multifamily developments with smaller average SQ FT per dwelling unit would pay significantly less under the variable (GPD/SQ FT) model, compared to the fixed GPD per dwelling unit model.

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[1] See Table 2 of July 27, 2021 memo from August 4 packet.
[2] To enhance readability and because there is little difference between Models A and B, Figure 2 plots the range of SDCs for Models B and C only.

**Figure 2**
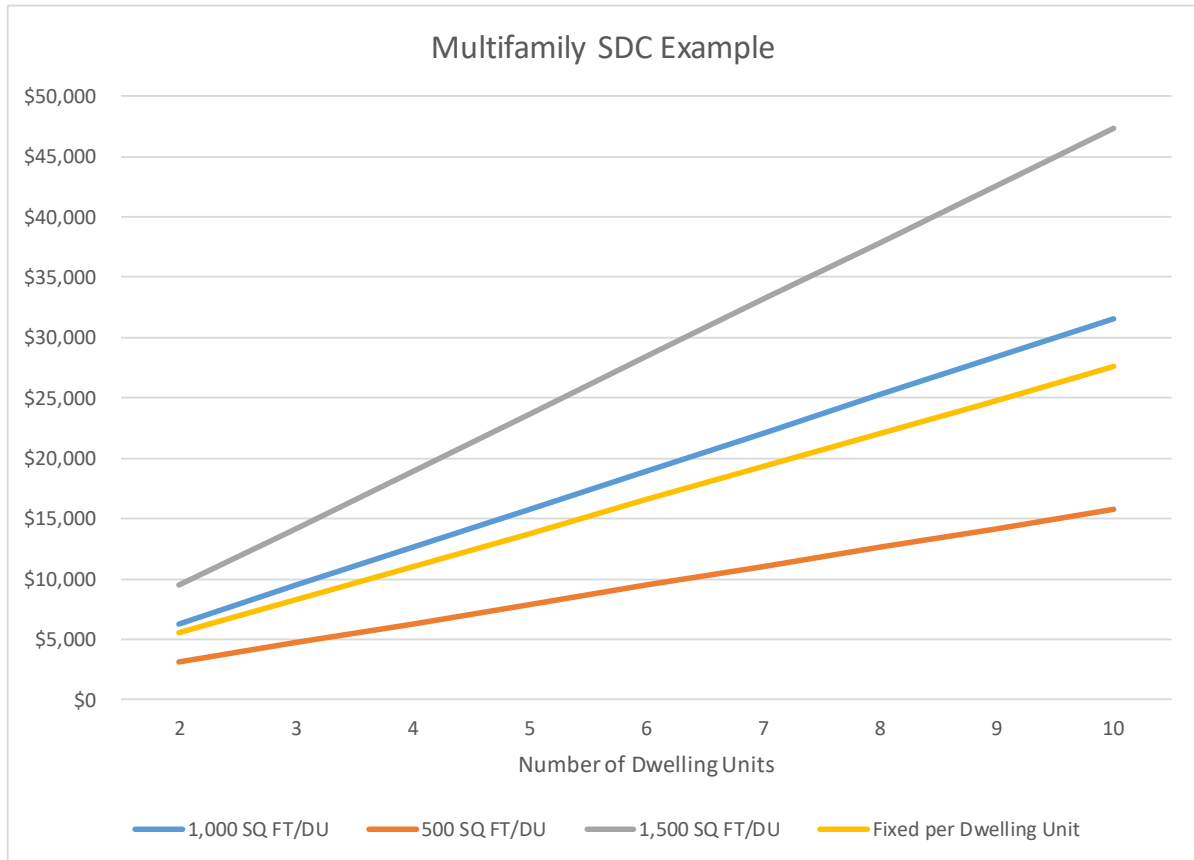


The range of multifamily structure sizes is limited in Figure 2 to one to ten dwelling units to illustrate the impacts of a broad range of average dwelling unit sizes. Data shows that as the number of dwelling units in the structure increases, the average size of the dwelling unit tends to be on the smaller end of the spectrum. The largest variation in dwelling sizes is those of duplexes which make up about 70 percent of the multifamily sample.

In evaluating the multifamily model options, it is important to consider specific affordability goals. Model C provides the greatest SDC reductions for small sized dwelling units. However, if an objective is to encourage larger family sized dwelling units, then Models A or B would provide less variation in dwelling unit sizes.

## Single Family Options

To illustrate the SDC impacts for single-family residential dwellings, the following two models presented in the July 27, 2021 memo are used:

| Breakpoint (SQFT) | (a) 3,500 SQFT with baseline | (b) 3,500 SQFT break point without baseline |
|---|---|---|
| Base Use (gpd) | 97 | 0 |
| + Use (gpd) / SQ FT under breakpoint | 0.126 | 0.174 |
| + Use (gpd) / additional SQ FT > breakpoint | 0.088 | 0.153 |

The same information is provided for the ==3,000 SQ FT breakpoint option==:

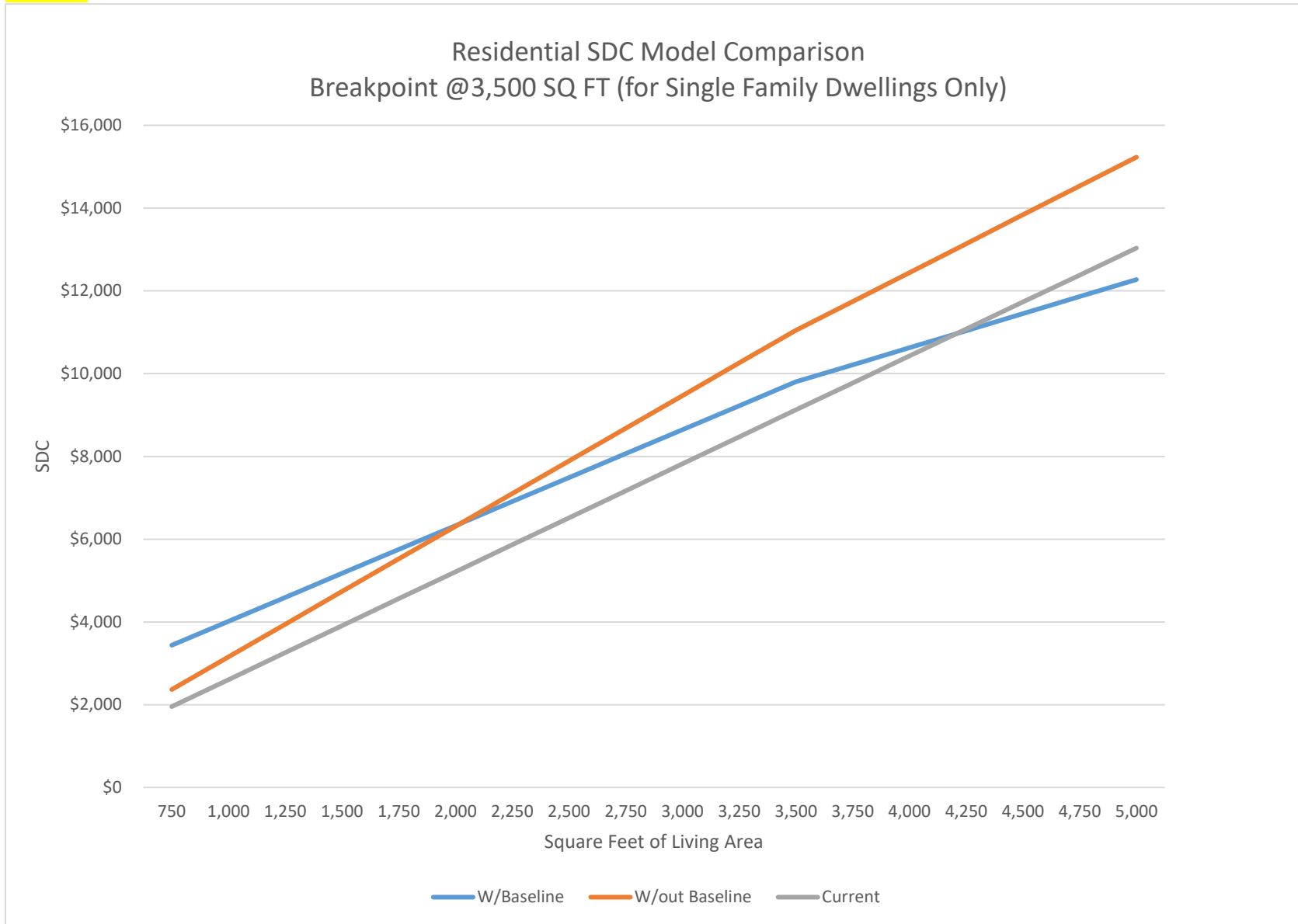| Breakpoint (SQFT) | (a) 3,000 SQFT with baseline | (b) 3,000 SQFT break point without baseline |
|---|---|---|
| Base Use (gpd) | 96 | 0 |
| + Use (gpd) / SQ FT under breakpoint | 0.126 | 0.177 |
| + Use (gpd) / additional SQ FT > breakpoint | 0.118 | 0.154 |

As discussed in the prior memo, the purpose of the baseline value is to account for the minimum level of use for even the smallest area. However, given the SDC Committee's interest in affordability and the City's current "without baseline" approach, the models with and without baseline are used to illustrate potential SDC impacts shown in Figure 3. As for the multifamily SDC impacts, the SDCs are based on the 2040 project list (including the water treatment plant).

As shown in Figure 3, the w/out baseline model provides relatively lower SDCs for smaller homes and higher SDCs for homes over about 2,000 SQ FT than the w/baseline approach. Both updated models have higher SDCs compared to current SDCs up to about 4,200 SQ FT at which point the "w/baseline" model would be slightly lower than the current SDCs. The SDCs in the "w/out baseline" model compared to the current SDCs remain higher throughout the range of home sizes shown.

The revised slopes for both updated (with and without baseline) models reflect more current usage patterns generally and accounts for different usage patterns for larger dwelling units.

Figure 4 shows the same information based on the 3,000 SQ FT breakpoint option.

**Figure 3**



Residential SDC Model Comparison
Breakpoint @3,500 SQ FT (for Single Family Dwellings Only)

**Figure 4**



Residential SDC Model Comparison
Breakpoint @3,000 SQ FT (for Single Family Dwellings Only)