



MEMORANDUM

DATE: February 15, 2022

TO: Dennis Pay, P.E.
City Engineer
City of South Salt Lake
195 W Oakland Avenue
South Salt Lake City, UT 84115

FROM: Kayson Shurtz, P.E.
Steve Jones, P.E.

Hansen, Allen & Luce, Inc. (HAL)
859 W. South Jordan Pkwy. Ste. 200
South Jordan, UT 84095

SUBJECT: Storm Drain Utility Fee Recommendation

PROJECT NO.: 126.49.100

INTRODUCTION

South Salt Lake asked Hansen, Allen, and Luce (HAL) to assist them in developing a storm drain utility. The goal of a storm drain utility is to create an equitable fee structure to fund operation and maintenance expenses as well as needed capital improvement projects associated with the storm drainage system. Impervious areas generate significantly more runoff than pervious areas. As such, impervious area is often the metric used to define an equivalent residential unit (ERU) for storm drain systems. This memo will describe the method that was used to define a storm drain ERU for South Salt Lake as well as a summary of the anticipated costs including operation and maintenance and capital improvements. The anticipated costs and total number of ERUs were used to calculate a monthly fee.

IMPERVIOUS AREA CALCULATION

It is proposed that the impervious area for a typical residential lot be the basis for the storm drain utility. Nonresidential parcels will be charged based on their calculated impervious area. If the calculated impervious area is 5 times greater than the typical residential impervious area, they will be charged 5 times the typical amount.

Impervious areas were estimated based on the National Agriculture Imagery Program (NAIP) imagery. This particular dataset includes infrared images which can be combined with the typical RGB images to identify healthy vegetation. This process is known as the Normalized Difference Vegetation Index (NDVI) approach. While this data is often used to identify healthy vegetation, the same process can be used to isolate areas that are impervious by using parts of the spectrum that are opposite the growing vegetation areas. An example of the impervious grid that was

produced using this remote sensing approach is shown in Figure 1.



FIGURE 1. EXAMPLE OF IMPERVIOUS AREA DEFINED BY REMOTE SENSING DATA

The City provided parcel data (excluding roadways) that was classified as residential, commercial, institutional, or multi family. The calculated average impervious area for all the residential parcels in South Salt Lake City was approximately 3,700 sq feet. We recommend that this value be used to represent a storm drain ERU for South Salt Lake. Based on this standard number the City of South Salt Lake has a total of 29,597 storm drain ERUs. Table 1 summarizes the impervious areas and monthly storm drain utility fees that neighboring communities are using as a reference. The calculated impervious area per ERU for the City of South Salt Lake is about the average of the communities presented in Table 1. The average monthly fee for the communities included in Table 1 is about \$7.50.

TABLE 1. SUMMARY OF TYPICAL IMPERVIOUS AREA PER ERU AND STORM DRAIN MONTHLY FEES FOR NEIGHBORING COMMUNITIES

City	Impervious Surface (sq ft)/ERU	Monthly Fee
Draper	3,000	\$ 9.00
Holladay	5,200	\$ 6.50
Midvale	3,000	\$ 9.00
Mill Creek	4,000	\$ 10.26
Murray	3,400	\$ 6.95
North Salt Lake	3,900	\$ 6.00
South Salt Lake	3,700	N/A
West Jordan	3,000	\$ 6.04
West Valley City	2,830	\$ 6.00

STORM DRAIN BUDGET REQUEST

Corby Talbot provided HAL some budgetary numbers for the storm drain system to allow for operation and maintenance as well as capital improvement projects. In his spreadsheet he proposed a budget assuming the storm drain utility fee was \$4, \$5, and \$6 per month respectively (provided at the end of this memo).

OPERATION AND MAINTENANCE AND CAPITAL IMPROVEMENT NEEDS

There are trade-offs when considering each of the proposed fees. The most pronounced would be the level of maintenance that can be provided as well as the savings that can be achieved for capital improvement projects.

The maintenance of a storm drain system can be costly, but typically extends its useful life. The South Salt Lake crews have indicated that the level of maintenance the system needs is approximately \$225,000/year (reflected in the \$6/month column in the attached spreadsheet). The level of maintenance would be less than half of that (\$95,000/year) in the \$4/month fee scenario.

The Capital Improvement Plan that was produced as part of the 2017 Storm Drain Master Plan estimated the costs for South Salt Lake to address deficiencies in the storm drain system at \$11,054,000. Since the Master Plan was completed there has been a surge in construction costs due to the pandemic. In recent construction project bids HAL is seeing an increase of construction costs of approximately 50% as opposed to pre-pandemic numbers. We recommend that the City account for these increases in the utility fee so sufficient funds will be available to address the needs of the storm drain system moving forward. This would increase the estimated Capital Improvement Plan total to about \$16.5 million.

Approximately \$825,000/year would be needed each year assuming the projects will all be addressed over a 20-year period. Even the higher \$6/month fee would only provide around \$700,000/year for capital projects and would fall short of the total projected price tag. A monthly fee of \$7.16 would be required to save the \$825,000/year for capital projects assuming all other line items in the \$6/month budget remained unchanged. While it is impossible to predict the actual costs of the proposed projects, putting money away now is prudent and will be more likely to result in a self-funding utility as opposed to having an issue with the system and not having sufficient funds to address it.

RECOMMENDATION SUMMARY

In light of rising construction and material costs and the maintenance needs of the storm drain system we recommend a storm drain utility fee be set to at least \$6/ERU. Non-Residential properties would then be charged based on their calculated impervious area with 3,700 square feet representing 1 ERU. This monthly fee would fund the City's storm drain needs for operation and maintenance and also create a funding mechanism to address the needs that have been identified in the City's capital improvement plan.

