

Staff Report

STORMWATER BILLING

September 21, 2010

Background

Since its inception, the Storm Sewer Utility has generated revenue based on a uniform flat monthly fee per utility account. In response to a citizen request, the City Council directed the City staff to develop alternatives for billing based on impervious area. On November 17, 2009, the City staff presented at a Council workshop four alternatives that reflected this new billing philosophy. At that meeting, the City Council then directed staff to explore two additional alternatives for consideration. The original four alternatives as well as the two new alternatives are reflected in this report.

Storm Sewer Funding

The money paid and collected for Storm Sewer funds is expended for the purpose of constructing, operating, repairing, and maintaining all kinds of conduits, drains, storm water detention devices, flow impediments, ponds, ditches, sloughs, streams, filter strips, rip-raps, erosion control devices, and all other facilities useful to the proper control, management, collection, drainage, and disposition of storm water in the City. Capital Improvement Projects financed from the Storm Sewer Fund include the Storm Sewer Intake Rehabilitation Program, the Storm Sewer Facility Rehabilitation Program, Low Point Drainage Improvements, Southwest Ames Storm Water Management Improvements (improvements to Greenbriar Park), and Storm Sewer Outlet Erosion Control (College Creek Restoration project as part of this program from 2008-2010). Activities included in the City's operating budget include illicit discharge detection and elimination, storm sewer maintenance and cleaning, permit administration, public outreach/education, municipal employee training, construction site erosion control inspection, pesticide and fertilizer management, geographic information system (GIS) mapping of the storm sewer network, the rain barrel grant program, the rain garden grant program, the stream bank stabilization grant program, and the annual Clean Water Festival.

Existing Billing

At present, the City charges a flat fee per utility account for stormwater. This charge is currently \$3.00 for every one of the approximately 24,780 utility accounts in the City. This fee generates approximately \$74,340 a month (\$892,080 annually) in revenue for stormwater improvements. There are currently 18,276¹ residential utility accounts, which represent 74% of the total storm sewer utility accounts.

Impervious/Pervious Analysis

The first step in looking at impervious fee scenarios is to analyze the data in our GIS system. In 2008, Ames had planimetrics taken with aerial photography. This data included streets, sidewalks, driveways, and any structures over 150 square feet. Using the GIS, we were able to look at the City and generate the percentage of

¹ This is the number of utility accounts on parcels with a residential Assessor's designation and the estimate of residential accounts on mixed use property. It is not based current residentially billed accounts.

imperviousness per classification. The percentages are shown below and were derived from City Assessor classifications²:

- Residential = 46.9%
- Commercial = 32.9%
- Industrial = 7.1%
- Tax Exempt = 13.0%
- Agriculture = 0.1%

Iowa State University is not included in these calculations, because the University has its own Municipal Separate Storm Sewer System (MS4). In discussions with the Iowa Department of Natural Resources (DNR), they clarified that Iowa State's permit covers all land owned and/or used by the University within the City of Ames corporate limits. It is also the opinion of Legal staff and the DNR that this would prevent them from being billed based on impervious area³.

Billing for Impervious/Pervious

In researching how other cities are billing for impervious area, it was found that many are using the Estimated Residential Unit (ERU) process (see Attachment 1). This process is accomplished by using GIS to estimate the average impervious area on residential lots. This number is then used to divide the impervious area of all properties to give each property an ERU value.

Staff used the City's GIS to calculate an average impervious area for residential parcels within the City. The GIS showed that an average residential parcel in Ames has 3,050 square feet of impervious area. After analyzing the data, staff is recommending that one ERU would equal 4000 square feet. This is being suggested since our planimetrics do not capture all impervious area on a parcel. Things not captured would include patios and non-public sidewalks on residential parcels. This calculation did not include mixed use parcels which include residential units. The 4,000 square feet would also potentially reduce the number of appeals of ERU calculations.

This formula was then used to do all of the analysis for this report. An example of this formula would be that a parcel with 8000 square feet of impervious area would have an ERU equal to two ($8000 \text{ sf} / 4000 \text{ sf} = 2 \text{ ERUs}$). Having 4000 square feet equal to one ERU results in 87.2% of residential properties and 80.2% of all properties in the City being less than or equal to one ERU.

Assumptions

Staff needed to make several assumptions to analyze an ERU system for billing. The first is that the minimum ERU would be equal to one. This means that properties with less than 4000 square feet of impervious area would be charged one ERU. The second assumption is that, for the purpose of billing, the calculated ERU would be rounded to the nearest half ERU. An example would be that a property with a calculated ERU of 10.24 would be rounded to 10 ERUs for the purpose of billing. The rounding calculation of ERUs results in 93.6% of residential properties and 86.6% of all properties being less than or equal to one ERU. All calculations in this report are done with these two assumptions for the purpose of billing.

² Does not include Iowa State University land or City of Ames properties; only billable parcels.

³ Iowa City does not charge the University of Iowa properties

Staff has also assumed that Assessor codes would be used when looking at residential versus other classifications. Currently the City's utility billing system has different residential versus commercial classifications based on the type of utility. An example would be on a commercially classed parcel that contains apartments. For the Electric utility, the apartments would be billed as residential while common area Electric accounts of the apartment would be billed as commercial. For the purpose of this report, staff has assigned all accounts by their assessor codes. In the example above, all accounts on the parcel would be assigned as commercial.

For the purposes of this study, staff assumed that mixed use development is residential. This is due to the fact that residential utility accounts are 99% of the accounts in the mixed use parcels

ERU Billing Analysis

In looking at a system to bill by ERUs staff has come up with six alternatives. It should be noted that these calculations use the assumptions noted above. The six alternatives are as follows:

- Alternative 1: Leave existing flat fee in place
- Alternative 2: Billing per parcel ERUs
- Alternative 3: Billing Residential at 1 ERU per utility account and all others based on ERUs
- Alternative 4: Billing a minimum of 1 ERU per utility account on all parcels. Only use ERUs for properties with more ERUs than utility accounts.
- Alternative 5: Billing per parcel based on ERUs with a minimum per utility account
- Alternative 6: Billing per ERU with flat fee for four categories

The following alternatives have a corresponding table showing the revenue that could be generated per month by the different alternatives. **For all alternatives it is assumed that the ERU charge for residential classification will be \$3.00, which is the current charge per utility account, and that the other classifications charges are modified to get approximately the same net amount of revenue as the current system.**

Alternative 1: Leave existing flat fee per utility account in place

This alternative would involve leaving the existing flat fee in place. The flat fee is assigned to all utility accounts in the City. This means that on a parcel basis, a residential 8-plex that has ten utility accounts would pay the fee on all ten accounts, regardless of classification of the 8-plex. This alternative would maintain the current system, but we could add any properties not currently billed as in other alternatives.

Table 1: Alternative 1 Revenue

Classification	Accounts	Charge per Account	Total Per Month
Residential	18276.0	\$3.00	\$54,828.00
All Others	6504.0	\$3.00	\$19,152.00
	Total Revenue per Month		\$74,340.00

Alternative 2: Billing based on ERUs per parcel

This alternative would use the rounded ERU number for the basis of billing regardless of classification per parcel. For the purposes of billing, the ERU number for the parcel would be divided by the number of utility accounts. An example would be a parcel that has 3 ERUs and 10 utility accounts. If this parcel was designated as residential the accounts would be billed at 0.30 ERUs (.30 x \$3.00). If the same parcel was commercial it would also be billed at 0.30 ERUs per account. This alternative is the closest to mirroring the impervious nature of properties. However, some properties under this alternative would pay less than the cost to issue the bill, as in the case of apartment complexes.

Table 2: Alternative 2 Revenue

Classification	ERUs	Charge per ERU	Total Per Month
Residential	13338.5	\$3.00	\$40,015.50
All Others	11505.5	\$3.00	\$34,516.50
	Total Revenue per Month		\$74,532.00

Alternative 3: Billing Residential at 1 ERU per utility account with all others based on ERUs

This alternative would use the current system for stormwater billing on residential properties only. This means that each utility account of a residential property would be charged one ERU. All other classifications of properties would be charged by the ERU per parcel. Using the same example of a parcel with 3 ERUs and 10 utility accounts for this alternative would show that a residential parcel would pay 10 ERUs. A commercial parcel would pay 0.3 ERUs per account under this alternative. This alternative keeps residential rates the same so apartment accounts would pay the same as single family dwellings.

Table 3: Alternative 3 Revenue

Classification	ERUs	Charge per ERU	Total Per Month
Residential	18484.5	\$3.00	\$55,453.50
All Others	12538.0	\$1.65	\$20,687.70
	Total Revenue per Month		\$76,141.20

Alternative 4: Billing a minimum of 1 ERU per utility account on all parcels. Only use ERUs for properties with more ERUs than utility accounts

This alternative would use a minimum of one ERU per utility account on all parcels. This would mean that a parcel would pay 1 ERU per utility account unless the ERUs divided by the number of utility accounts was greater than 1. For the example used above, this would mean that the parcel of 3 ERUs and 10 utility accounts would pay 10 ERUs regardless of classification of the parcel. In this scenario, a parcel with 10 utility accounts would have to have an ERU of 10.5 or greater to show more than 1 ERU per utility account. An example of this would be that a parcel with 12 ERUs and 10 utility accounts would pay 1.2 ERUs per utility account. This alternative mirrors Alternative 2 except that each account would have to pay at least one ERU. This would alleviate the issue of some accounts not paying enough to cover billing.

Table 4: Alternative 4 Revenue

Classification	ERUs	Charge per ERU	Total Per Month
Residential	18967.0	\$3.00	\$56,901.00
All Others	15770.0	\$1.20	\$18,924.00
Total Revenue per Month			\$75,825.00

Alternative 5: Billing per parcel based on ERUs with a minimum per utility account

This alternative would use the rounded ERU number as in Alternative 2, but would add a minimum charge component to each utility account. This would set the minimum, and each account would pay that amount regardless of ERUs on the parcel. It is important to note that all of the City's other utilities currently have a service charge that is billed each month in addition to usage charges. As an example, a typical residential customer would be billed the following service charges: Electric \$5.25, Water \$8.05, and Sewer \$6.55. This alternative uses the same methodology as Alternative 2, but adds a minimum charge to cover billing costs.

Table 5: Alternative 5 Revenue

Classification	ERUs	Charge per ERU	Total Per Month
Residential ⁴	11917.1	\$3.00	\$35,751.30
All Others	11713.4	\$2.70	\$31,626.29
Minimum Charge Accounts	8557	\$1.00	\$8,557.00
Total Revenue per Month			\$75,934.59

Alternative 6: Billing per ERU with flat fee for four categories

This alternative closely mirrors Alternative 1, the current system, in that a flat fee is charged per utility account. However, Alternative 6 divides properties into four statistically generated impervious area classifications. Class 1 includes accounts from all classifications and includes all residential properties regardless of impervious area. Classes 2-4 include commercial, industrial and exempt properties, respectively. Each classification is assigned a flat fee amount and billed per utility account. As in previous methods, the Alternative 6 illustration remains revenue neutral and leaves residential accounts virtually unchanged from current practice. This alternative would expand the

⁴ Does not include Residential accounts that are included in the minimum charge

current flat fee system to allow for incremental changes as the impervious areas increase.

Table 6: Alternative 6 Revenue

Classification	ERU Range	Accounts	Charge per Account	Total Per Month
Class 1	1.0 – 8.5	21747.00	\$3.00	\$65,241.00
Class 2	9.0 – 41.0	2161.00	\$3.25	\$7,023.25
Class 3	41.5 – 127.0	445.00	\$3.50	\$1,557.50
Class 4	127.5 – 371.5	113.00	\$4.00	\$452.00
		Total Revenue per Month		\$74,273.75

Table 7 shows the minimum and maximum charges per utility account for the six alternatives. It should be noted that Table 7 is not representative of the largest impervious area as it is per utility account. A given parcel may have one or many utility accounts.

Table 7: Maximum and Minimum Charges per utility account for Alternatives

	Residential		All Others	
Billing Strategy	Minimum Charge	Maximum Charge	Minimum Charge	Maximum Charge
Alternative 1	\$3.00	\$3.00	\$3.00	\$3.00
Alternative 2	\$0.12	\$40.50	\$0.12	\$577.50
Alternative 3	\$3.00	\$3.00	\$0.06	\$317.63
Alternative 4	\$3.00	\$40.50	\$1.20	\$231.00
Alternative 5	\$1.00	\$40.50	\$1.00	\$519.75
Alternative 6	\$3.00	\$3.00	\$3.00	\$4.00

To illustrate the impact of these alternatives on different types of properties, the following five examples are attached:

- Figure 1 – 2500 Northwestern Avenue (Single Family Residential)
- Figure 2 – 2900 Hoover Avenue (St. Cecilia Church)
- Figure 3 – 1921 Ames High Drive (Ames High School)
- Figure 4 – 3311 E. Lincoln Way (Barilla)
- Figure 5 – 2801 Grand Avenue (North Grand Mall)

Staff Costs to Set Up ERU Billing System

Before the City could begin billing on an ERU system, there would be associated start-up steps needed to set up the system. The first is that there are approximately 357 parcels in the City that have impervious area but no utility account. These parcels would have to be entered and set up with a utility account under the ERU system. Using GIS, we have also identified approximately 96 parcels that have been constructed since the 2008 planimetrics (e.g., the new Fareway store) that would need to have the impervious area mapped in GIS. It is anticipated that both of these tasks would cost approximately \$3,500 in staff time to accomplish. By using the GIS it is anticipated that minimal staff time would be needed to insert the ERU numbers into our utility billing system. It is also

anticipated that there will be staff time devoted to verifying and checking the calculated ERU values for accuracy.

Staff Costs to Maintain ERU Billing System

With the change to an ERU system, it is anticipated that more staff time would be required from the Customer Service staff. Currently the Utility Customer Service Program costs are allocated to the Sanitary Sewer, Water, and Electric utilities based on the number of charges billed. If the Storm Sewer Utility was calculated into this same system, it would account for 28.6% of the Customer Service Program costs. Using the financial amount from the latest fiscal year, this would amount to approximately \$292,390 that would be charged to the Stormwater fund.

Currently the Stormwater utility does not pay any of the costs of the Customer Service Program. The amount calculated using the charges billed would account for 33% of the current funding generated by the Storm Sewer fee. Another option could be to cover only the incremental increase generated by the new system. This strategy would cost approximately \$6,134 using the same fiscal information.

Another item that affects the Customer Service Department is classification of billing. If the cost per ERU is the same for all accounts there will be no issue with this. However, if we do different costs per ERU for residential and a different cost for all other classifications it will require extra coordination for implementation. This is due to the fact that utility accounts might have different classifications for their current utility account then the parcel is classified as (e.g., an apartment on a commercial parcel is currently billed as residential). One option for this could be to set the cost per ERU as a dollar amount but then apply an adjustment factor to ERUs for non-residential properties. Since the ERU calculation will be done in GIS it would be handled before any classification issues.

Besides the Customer Service function, it is anticipated that there would be minimal additional staff time devoted to an ERU System. By utilizing the existing Development Review Committee (DRC) review process, it would be possible to calculate the ERUs calculated for all non-residential projects. For residential homes, the Public Works Stormwater Specialist currently reviews each lot for compliance with our stormwater ordinance. As part of that process, we would add the review of ERUs for each lot. It is not anticipated that we would re-calculate ERUs for lots based on additions, but rather to review the ERU calculations when new planimetrics are received. This is currently on a 5-year cycle.

Additional Staff Comments

In order to keep the administration of this new approach as simple as possible to avoid further costs, the proposed ERU system under any one of the proposed alternatives would not offer credits for ERU reduction. The only way to change the ERU would be to reduce impervious area (i.e. reducing paved parking area or installing pervious pavements).

Regardless of which alternative is ultimately selected by the Council, it is recommended that every property that has impervious service be charged a stormwater fee. Currently, only those properties with a utility account is charged.

The City Council should remember that as part of our MS4 permit, the City will soon be required to implement water *quality* standards on top of the existing *quantity* standards. This will involve added up-front and on-going costs to developers, as well as more administrative costs for City staff.

It is also important to emphasize that the alternatives offered for Council consideration are revenue neutral. However, while the revenue total that is generated from each option equals the current budgeted level, individual customers with larger impervious areas will be required pay more per month with this switch in billing philosophy. In addition, the impact of these fees on owners of large impervious areas such as churches, schools, commercial, industrial, etc. will likely be further increased in the near future. With the recent flash flooding event there has been a call to improve our storm water facilities throughout the City which could result in a need to significantly increase the overall revenue generated from the Storm Water Utility fee.

ATTACHMENT 1		
Cities Researched that are using ERU Billing in Iowa		
City	ERU = Square feet	Fee Per ERU monthly
Urbandale	3200	\$1.50 Per ERU for non-residential , All Residential charged 1 ERU
Waukee	2973	4.75 Per ERU for non-residential , All Residential charged 1 ERU
Des Moines	2349	\$7.87
Ankeny	4000	\$4 one and two family residences. \$3 for commercial, industrial, and multi-family.
West Des Moines	4000	\$4.25
Clive	3667	\$5.00
Forest City	2200 residential, 3520 nonresidential units	\$5 Residential \$8.30 non-residential unit
Davenport	All single family pay 1 ERU (2600), all non-residential pay based on ERU	\$1.60 single family, \$0.80 duplexes, non residential \$1.60 X ERU's (2600)
Dubuque	2917	\$5.25
Bettendorf	2500; Charge 1-5 ERU's	\$2.00
Iowa City	Flat fee + \$2.00 ERU for other than residential	2.00 for Residential single family , \$1.00 for each Apartment
Cities Researched that are using Flat Fee Billing in Iowa		
City	Flat Fee	Fee Per Month
Dewitt Iowa	Flat Fee	\$2.75 Residential, \$6.50 commercial, \$11.00 Industrial
Hiawatha	Flat Fee for Residence	\$2.00 non-residential, \$1.50 Residential
Perry	Flat Fee	\$3.00
State Center	Flat Fee	\$3.06, \$6.16, \$10.27 residential, commercial, industrial
Sac City Iowa	Flat Fee	\$3, \$7, \$15, \$10 (Based on Classification)
Manhattan, KS	Flat Fee	Residential \$3.50
Cedar Rapids	Flat Fee (Currently exploring ERU)	Residential \$3.60
Ames	Flat Fee	Residential \$3.00