Software Requirements Specification for

Waste Water Reporting, Editable Fixed Costs and Tiered water rate structure in the Siemens Intelligent & Integrated Developments (SIID) Plug-in & STEWARD app

1. Introduction

1.1 Purpose

The purpose of this document is to outline the requirements for development of the addition of separate waste water reporting, editable fixed costs and tiered water rate structure in the Siemens Intelligent & Integrated Developments (SIID) Plug-in and STEWARD app for the Sterling Ranch Community project.

1.2 Intended Audience and Reading Suggestions
- Siemens Subcontractor (Software Development Team)
- Siemens Industry, Inc.
- Sterling Ranch Water Allotment Information Attachment
- Sterling Ranch Homeowner Fees Attachment

1.3 Project Scope

The SIID plug-in currently uses scratchpad rules to estimate the monthly cost of utility usage for Gas, Electric & Water. This scope of work adds three different features to the existing SIID Plug-in. The first feature is a separate tile that displays the estimated cost for waste water usage. The second feature is the ability for the STEWARD user to edit a fixed cost associated with each utility type and have that fee added to the estimated monthly total on the summary tile on the "Utilities Dashboard" screen. The third feature is to enhance the calculations on the water usage to accurately reflect the Sterling Ranch Tiered Billing Structure.

2. Overall Description

Right now we are showing the cost of the indoor water usage and waste water all combined into the indoor water tile. A new tile will need to be added under the water meter section that breaks out the waste water usage and the indoor water usage.

A fixed cost will need to be displayed in STEWARD under each individual meter's settings. For the gas meter this will only ever be 1 meter. For the electric metering there may be any number of meters so the number displayed under each meter's settings should be editable from any meter and then update across the rest of the electrical meters in the system. The water meters will need to have one fixed cost that is applicable to the Indoor & Outdoor meters and an additional fixed cost that is applicable for the "Waste Water" which is an additional reading that is being added in this scope of work.

The tiered water rate structure is described in detail below, and is different for indoor water usage and outdoor water usage. The STEWARD system will need to allow the user to input their lot size in order to automatically determine the appropriate properties for the outdoor tiered

structure and also allow the user to input their "Average Winter Consumption" (AWC) in order to determine the appropriate properties for the Indoor tiered structure.

2.1 Addition of the Waste Water Tile

- REQ-01: **Add a Waste Water Tile**
  - Add a new waste water tile under the water metering section of the utilities page that has its own rate and editable fixed cost. The usage calculation will be based on the indoor water meter usage data, but the rate and fixed cost will be different so this need to be broken out into its own tile.

2.2 Editable Fixed Costs addition to SIID Plug-in & STEWARD Requirements

- REQ-01: **Gas Meter Fixed Cost**
  - For the gas meter the user will need to be able to input an "Estimated Fixed Cost" under the gas meter settings in the STEWARD app.
  - When the user clicks the gas meter tile In STEWARD the settings for the gas meter should display and there should be a field called "Estimated Fixed Cost" that the user can edit.
  - The estimated fixed cost should only be added to the summary tile on the "Utilities Dashboard" and not to the individual meter tile
- REQ-02: **Electric Meter Fixed Cost**
  - For the electric metering the user will need to be able to input an "Estimated Fixed Cost" under the electrical meter settings in the STEWARD app.
  - There may be several electric meters in a single STEWARD system. When the user clicks on any electric meter tile In STEWARD the settings for the electric meters should display and there should be a field called "Estimated Fixed Cost" that the user can edit. If they edit that fixed cost it should also update across all the other electric meters in STEWARD.
  - The estimated fixed cost should only be added to the summary tile on the "Utilities Dashboard" and not to the individual meter tile
- REQ-03: **Solar Meter Fixed Cost**
  - For the solar metering the user will need to be able to input an "Estimated Fixed Cost" under the solar meter settings in the STEWARD app.
  - When the user clicks on the solar meter tile In STEWARD the settings for the electric meters should display and there should be a field called "Estimated Fixed Cost" that the user can edit.
  - The estimated fixed cost should only be added to the summary tile on the "Utilities Dashboard" and not to the individual meter tile/
- REQ-04: **Indoor & Outdoor Water Meter Fixed Cost**
  - For the Indoor and Outdoor water metering the user will need to be able to input an "Estimated Fixed Cost" under the water meter settings in the STEWARD app.
  - When the user clicks on either the Indoor or Outdoor Water meter tile In STEWARD the settings for the water meters should display and there should be

a field called "Estimated Fixed Cost" that the user can edit. If they edit that fixed cost it should also update to the other water meter.

- o The estimated fixed cost should only be added to the summary tile on the "Utilities Dashboard" and not to the individual meter tile

- REQ-05: **Waste Water Fixed Cost**
    - o For the waste water the user will need to be able to input an "Estimated Fixed Cost" under the waste water meter settings in the STEWARD app
    - o When the user clicks on either the Indoor or Outdoor Water meter tile In STEWARD the settings for the water meters should display and there should be a field called "Estimated Fixed Cost" that the user can edit. If they edit that fixed cost it should also update to the other water meter.
    - o The estimated fixed cost should only be added to the summary tile on the "Utilities Dashboard" and not to the individual meter tile

2.3 Tiered water rates for indoor & outdoor water metering

- REQ-01: **Tiered rates for indoor water metering**
    - o There needs to be an editable field called "Average Winter Consumption" under the indoor water meter setting that the STEWARD user can edit. This value needs to default to 8000 gal/month.
        - ▪ The indoor water tiered rate structure is based on the "Average Winter Consumption" (AWC) from the previous winter. Each year the AWC is re-calculated during December, January & February and reported to the home owner through their water bill.
    - o The scratchpad rules in SIID need to then calculate the estimated monthly cost based on the tiered system that is detailed in the Sterling Ranch Home Owner Fees attachment.
        - ▪ If the home owner uses more indoor water that their AWC then they will enter tier 2 or tier 3 rates as described in the attachment
- REQ-02: **Tiered rates for outdoor water metering**
    - o There needs to be two editable fields under the outdoor water meter setting that the STEWARD user can edit. One called "Lot Size" with units of square feet and one called "Budget" with units of gal/year. The user should be able to enter data into either field and have the other update based on the table shown in the Sterling Ranch Water Allotment Information attachment.
        - ▪ Once the user puts in this information SIID & the STEWARD app should automatically detect what their budget is for the current month.
    - o The scratchpad rules in SIID need to then calculate the estimated monthly cost based on the tiered system that is detailed in the Sterling Ranch Home Owner Fees attachment.
        - ▪ If the home owner uses more indoor water that their AWC then they will enter tier 2 or tier 3 rates as described in the attachment

2.4 System Help

- REQ-11: Axios will edit the STEWARD user's guide to include all of the added features.
- REQ-12: Provide comments in the source code so that future Siemens development teams can make changes if necessary.

STERLING RANCH OUTDOOR WATER ALLOTMENT

ALL FEES SUBJECT TO CHANGE BY RESOLUTION OF THE COMMUNITY AUTHORITY BOARD OF DIRECTORS

OUTDOOR WATER ALLOTMENT BY LOT SIZE		ALLOTMENT BY MONTH - Tiered Rates Apply to Excess Used in ANY Month						
Lot Size w/out ROW (square feet)*	Gallons/Year Allotted **	APR	MAY	JUN	JUL	AUG	SEP	OCT
0 to 3,000	10,000	700	1,600	1,900	2,100	1,900	1,300	500
3,001 to 4000	12,500	875	2,000	2,375	2,625	2,375	1,625	625
4001 to 5,000	15,000	1,050	2,400	2,850	3,150	2,850	1,950	750
5,001 to 6,000	27,000	1,890	4,320	5,130	5,670	5,130	3,510	1,350
6,001 to 7,000	32,000	2,240	5,120	6,080	6,720	6,080	4,160	1,600
7,001 to 8,000	39,000	2,730	6,240	7,410	8,190	7,410	5,070	1,950
8,001 to 11,000	49,000	3,430	7,840	9,310	10,290	9,310	6,370	2,450
11,000 to 20,000	60,000	4,200	9,600	11,400	12,600	11,400	7,800	3,000
20,001 to 30,000	80,000	5,600	12,800	15,200	16,800	15,200	10,400	4,000
30,001 to 70,000	100,000	7,000	16,000	19,000	21,000	19,000	13,000	5,000
70,001 and greater	100,000	7,000	16,000	19,000	21,000	19,000	13,000	5,000

*   Right of Way ("ROW") refers to the Tree Lawn which is the landscaped area between the street and sidewalk

**   Gallons per year is the TOTAL ALLOTMENT for combined Lot Areas and Tree Lawn Areas

STERLING RANCH INDOOR WATER ALLOTMENT

ALL FEES SUBJECT TO CHANGE BY RESOLUTION OF THE COMMUNITY AUTHORITY BOARD OF DIRECTORS

TO FAIRLY REFLECT THE INDOOR WATER USE OF EACH FAMILY, THE FOLLOWING
METHOD IS USED TO DETERMINE THE TIER 1 RATE FOR EACH HOME

- When a home is purchased, the Indoor Water Allotment is set at 8000 gallons per month. This will be the initial Tier 1 rate you are charged until April following your closing.
- During December, January and February after closing, water use for your family is totaled and averaged. This is called your Average Winter Consumption ("AWC") rate, which is also your indivdualized Tier 1 rate.
- The bill you receive in April (for March water use) is based on the most recent AWC rate for your home. This is also the rate at which you will be charged for the next 11 months.
- If you exceed your most recent AWC rate in any month, you will be charged Tier 2 or Tier 3 rates.
- Each April, your family's AWC will be re-calculated the same way - by combining usage from the previous December, January, and February and averaging the use to create a new AWC. This ensures that changes in your family circumstances can be adjusted each year.
- If the home is sold to a new owner, the Water Allotment resets to 8000 gallons per month and a new AWC is established based on the next December-January-February use for the new family.

STERLING RANCH
C O L O R A D O

2017 STERLING RANCH ESTIMATED PROPERTY OWNER FEES
All listed fees are preliminary and subject to change. This may not be a complete list of fees.

WATER AND SEWER			(Indoor and Outdoor Water Use is metered separately)
Domestic Water			
Base Fee per month	$	**56.00**	
PLUS			
Indoor Water Use - Tier 1	$	6.65 per 1000 gallons	0% - 100% Indoor Water Allotment
Indoor Water Use - Tier 2	$	8.20 per 1000 gallons	100% - 120% Indoor Water Allotment
Indoor Water Use - Tier 3	$	12.25 per 1000 gallons	120% or more Indoor Water Allotment
PLUS			
Outdoor Water Use - Tier 1	$	8.20 per 1000 gallons	0% to 100% Outdoor Water Allotment
Outdoor Water Use - Tier 2	$	12.25 per 1000 gallons	100% - 120% Outdoor Water Allotment
Outdoor Water Use - Tier 3	$	16.35 per 1000 gallons	120% - 140% Outdoor Water Allotment
Outdoor Water Use - Tier 4	$	20.00 per 1000 gallons	140% or more Outdoot Water Allotment
Sewer			
Base Fee per month	$	**31.00**	
PLUS			
Gallons per month	$	6.65 per 1000 gallons	Based on Indoor Water Gallons per month
Stormwater			
Base Fee per month	$	**12.50** Per month ($150/annual)	Invoiced through Community Authority

TRASH PICKUP (WEEKLY) AND RECYCLING (EVERY TWO WEEKS)			
Fee per month	$	**12.40** Per month	Invoiced through Community Authority

STREET LIGHTING			
Fee per month	$	**5.00** Per month	Invoiced through Community Authority

TECHNOLOGY CONNECTIVITY			
Century Link (CTL) connectivity fee	$	**85.00** per month	includes connectivity for utility meters
(Internet access)			

MILL LEVY	Douglas County Total Mill Levy is 153.70 (estimated) including 2017 Sterling Ranch Metro District Mill Levy of 75.00

		ACTUAL VALUE *	X	ASSESSMENT %	=	ASSESSED VALUE
TO CALCULATE TAX:	STEP 1					
		$300,000	**x**	**7.96**	**=**	**$23,880**
Example from		ASSESSED VALUE	X	MILL LEVY	=	TOTAL TAX
Douglas County	STEP 2					
Treasurer's website		**$23,880**	**x**	**0.1537**	**=**	**$3,670**

*   *"Actual Value" is determined by Douglas County Assessor, not on Sales Price*

June 26, 2017