



**King County Department of Natural Resources and Parks
Wastewater Treatment Division**

Equity and Social Justice Review of Facilities

November 2013

Final Draft

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Message from the Director

In 2011, WTD analyzed the location of our facilities throughout our service area to determine if there existed a bias in siting based on neighborhood demographics. That work answered the question, “do we locate our facilities based in certain neighborhoods based on characteristics such as income or race?” In other words, we wanted to check our compliance with King County’s Equity and Social Justice Ordinance to determine if we tended to burden particular neighborhoods with our facilities over others. Not surprisingly, WTD concluded that the location of our facilities- pump stations, regulator stations, and sewer lines- are dictated primarily by topography. For example pump stations, following the laws of gravity, are located in low points (e.g., valleys and water front areas), which means they are situated in neighborhoods more likely representative of the highest and lowest of income brackets.

This document follows our initial findings on location and summarizes work from the staff in WTD to answer the question, “do we design, operate or maintain our facilities throughout our service area differently depending on their location by neighborhood income or race?” What you will find in this report is that overall WTD found no significant correlation between WTD’s quality of facilities in relation to income or racial composition. The facility neighborhood type (residential versus industrial/commercial) and size (treatment plant versus regulator station) have strong influences on the quality of design and maintenance/landscaping. Facility age may also be a factor as community expectations change over time.

However, while our facilities generally meet or exceed standards and are distributed across all neighborhoods, the findings also show that, within the accuracy of the analysis, there may be a weak correlation between income levels and design/maintenance quality. No correlation was found on the basis of percentage minority population.

Based on the findings of this analysis, WTD is committed to monitoring the metrics defined in this report for all projects. With this information WTD commits to make changes as necessary to ensure there is no differential quality of any project design, maintenance, mitigation, community response and all other activities across all communities and neighborhoods of varying income or racial composition.

WTD is committed to our mission of protecting public health and enhancing the environment for all our ratepayers. Our efforts not only serve our ratepayer base, but all people who work, live and recreate in the entire Puget Sound region. We are proud of the work we do to maintain and enhance the quality of life and economic prosperity for this region, and we will continue to improve, measure and ensure we carry out our mission consistent with the King County Equity and Social Justice principles.

Pam Elardo, P.E.
Director, King County Wastewater Treatment Division

Executive Summary

The Equity and Social Justice Ordinance 16948 requires the Wastewater Treatment Division (WTD) to provide services and facilities that are “Fair and Just”. This requires that our facilities are designed, constructed, operated and maintained to the same high standards no matter where they are sited within our service area.

The purpose of this equity assessment is to review the existing design, mitigation measures and maintenance at our wastewater treatment facilities and to identify if there are inequities in our practices between neighborhoods across the service area.

WTD conducted a thorough survey to determine if we are currently meeting the requirements of Ordinance 16948, we began by selecting an even distribution of facilities throughout our geographical service area and a full range of our facility types for this study. A total of 27 facilities were selected: 5 treatment plants, 13 pump stations, and 8 regulator stations.

Each of the facilities were then visited and judged based on a series of carefully selected criteria that fall under the following categories; aesthetics and art, building and architecture, facility and odor control, affect on surroundings and overall site review.

The quantitative survey results for each facility and its location have been compared quantitatively and statistically against the selected equity and social justice criteria of income and ethnic diversity and quantitatively against land use.

Conclusions related to Quantitative Scores: Facilities that are larger, and potentially have a greater impact to the community have higher or better scores than smaller facilities in terms of design and maintenance. This trend, of larger facilities with better design and maintenance is a reasonable result of an agency that prioritizes spending to where it will have the most impact, for the greatest number of people.

Conclusions related to Income: The distribution of the majority of facilities into the lower and higher income categories is attributable to the need for WTD facilities to be located in low geographic points within the service area. These low points are either found inland, and are generally found to be in lower income areas or at low points that are located adjacent to water bodies, that tend to be higher income areas.

The quality of the design, because of its fairly even distribution within the income levels at the two ends of the spectrum (where most of our facilities located) and only a very weak correlation found statistically between higher income and higher quality design, quality of design does not seem to be

related to income level but rather, as discussed in the review of quantitative scores, to be related to the size of facility developed.

In regards to maintenance, facilities that meet high as well as lower standards are distributed across most income categories with a weak correlation between higher income and increased quality of maintenance. Even when considering the weak statistical link, maintenance system-wide does not seem to be related to income level but rather, as discussed in the review of quantitative scores, to be related to the size of facility developed.

Odor control meets higher standards across the board with High, Above Standard and Standard scores distributed relatively evenly across the system from low to high income areas.

Conclusions related to Percentage of Minority population: Quantitatively and statistically, we found no correlation between the percentage of minority populations in a neighborhood and the quality of the design, maintenance and odor control at our facilities. The facilities, within the different minority percentage categories have an even distribution of the levels of quality of design, maintenance and odor control. We see no relationships to the percentage of minority mix within the community and the quality of our facilities as they are developed or maintained.

Conclusions related to land use type: The design and maintenance quality of our facilities tend to meet higher standards when they are located in residential land use areas, essentially, where they are more often seen by more members of the community.

When thinking about the design of our facilities within residential areas, that in general meet higher standards, we may be seeing a correlation between a community that has taken an active role in the community design process versus a facility that has been developed within a commercial area where the community feels less ownership and is less likely to take an active role in the public siting and design process that accompanies each of WTD's projects.

Read the entire report for the details of each step of the process that was undertaken, to view the summarized data, review all of the findings and conclusions and in Chapter 5 and Attachment D additional recommendations.

Chapter 1

Introduction

Purpose

The purpose of this equity assessment is to review the existing design, mitigation measures and maintenance at our wastewater treatment facilities and to assess if there are any inequities in our practices between neighborhoods across the service area. Through the use of the findings in this report, the Wastewater Treatment Division can better inform their planning, design, public involvement processes and the maintenance of current and new facilities assuring the facilities provided and practices used meet the highest standards of equity and social justice.

In 2011, King County's Department of Natural Resources and Parks (DNRP) developed the "Equity and Social Justice Work Plan Summary". The number one objective in the summary was to consider the equity impacts in all decision making for the department. To assist in meeting this objective, WTD was tasked to review the degree that mitigation measures for capital projects are relatively equitably distributed.

Equity & Social Justice Background

2008: In 2008, King County Executive Ron Sims launched the Initiative on Equity and Social Justice (ESJ). Executive Sims asked each department to make an annual commitment to the ESJ Initiative.

2010: The ESJ Ordinance 16948 was adopted to establish definitions and direct implementation steps related to the fair and just principle of the adopted 2010-2014 countywide strategic plan. The ordinance establishes the following:

- Expands the inter-agency team to include all agencies and branches of County government through the Inter Branch Team (IBT)
- Reports annually on ESJ measures with the results available to the public
- Establishes definitions and identifies approaches to implement the "fair and just" principle of the King County Strategic Plan

Definitions

Equity - People have full and equal access to opportunities that enable them to attain their full potential.

Social Justice – All aspects of justice, including legal, political and economic, requires the fair distribution of public goods, institutional resources and life opportunities for all people.

Fair and Just – The County serves all residents by promoting fairness and opportunity and eliminating inequities through actions to which equity and social justice foundational practices are applied.

Determinants of Equity - the social, economic, geographic, political and physical environment conditions in which people in our county are born, grow, live, work and age that lead to the creation of a fair and just society.

Current Links: Websites, links and reports developed to implement the Equity and Social Justice Initiative include:

- King County ESJ Ordinance 16948 Signature Report:
 - <http://your.kingcounty.gov/mkcc/clerk/OldOrdsMotions/Ordinance%2016948.pdf>
- King County ESJ
 - web site: www.kingcounty.gov/equity
 - Annual report: <http://www.kingcounty.gov/exec/equity/~media/exec/equity/documents/EquityReport2012.ashx>
- King County Department of Natural Resources & Parks (DNRP) ESJ
 - web site: <http://your.kingcounty.gov/dnrp/measures/equity.aspx>
 - 2011 ESJ Accomplishments Narrative Summary: DNRP 2011 Equity and Social Justice Accomplishments Narrative summary
 - 2011 ESJ Work Plan Summary: Equity and Social Justice 2011 Work Plan Summary for DNRP
- King County DNRP Wastewater Treatment Division (WTD) ESJ
 - Web site: ESJ page

Chapter 2

Methodology

The ESJ Ordinance 16948 requires us to provide services and facilities that are “Fair and Just”. This requires that our facilities are designed, constructed, operated and maintained to the same high standards no matter where they are sited within our service area.

To determine if the requirements of Ordinance 16948 are being met, WTD conducted a survey. We began by selecting an even distribution of facilities throughout our geographical service area and a full range of our facility types for this study. A total of 27 facilities were selected: 5 treatment plants, 13 pump stations, and 8 regulator stations. All of the treatment plants, West Point, South Plant, Brightwater, Vashon and Carnation, are included in this survey because they are our largest and most prominent facilities.

The pump stations chosen were 53rd Avenue, Belvoir, Bellevue, Black Diamond, Duwamish, Heathfield, Interbay, Interurban, Kenmore, Kirkland, Lake Ballinger, Medina, Pacific, and South Mercer pump station. The regulator stations chosen were Ballard, Dexter, Harbor, King, Log-boom, Norfolk, and South Michigan. The map of all the facilities selected for this study is shown in Map 2.1.

The second step of the survey was to determine the characteristics that we should measure to understand if, in fact, each of our facilities is meeting the requirements of the ordinance. Is the quality of the design, the maintenance and the mitigation measures employed equally distributed throughout our service area? These characteristics need to provide thorough and fair judgment of all of our facilities. The characteristics that best met the requirements of the study and were selected for this evaluation include:

- 1. Aesthetics and Art**
 - a. Quality of maintenance on landscape
 - b. Presence of art and extent
 - c. Quality of landscape installation
 - d. Views into the site
- 2. Building and Architecture**
 - a. Architectural style
 - b. Level of architectural finish
 - c. Physical conditions of overall facility
 - d. Quality of maintenance on building
- 3. Facility and odor control**
 - a. Type of odor control

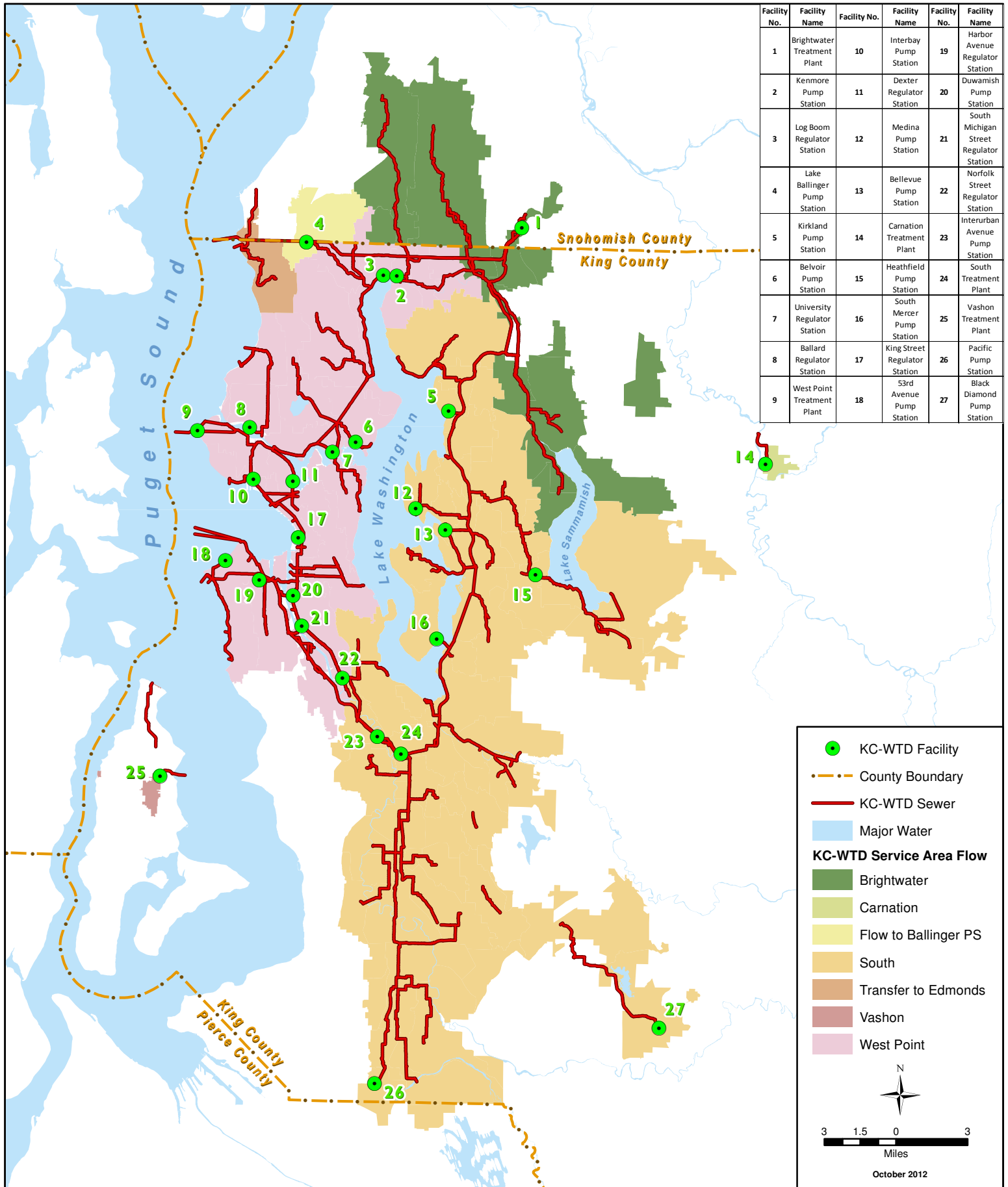
- b. Noticeable odor
 - c. Portions of the facility above and below grade
 - d. Public amenities (on-site)
 - e. Land to building ratio
 - f. Lot size
 - g. Age of facility
 - h. WTD build or WTD Acquired
 - i. General overall impression
4. **Effect on surroundings**
- a. Effect on regional view
 - b. View blockage by facility
 - c. Surrounding land uses – adjacent
 - d. Surrounding land uses – nearby
 - e. Slope
 - f. Elevation (high and low)
 - g. Adjacent water body
5. **Overall site review**

Available records of each facility were gathered. Engineering records and website explanation were obtained to get the general information regarding type of odor control, portion of the facility above and below grade, lot size, age of facility, WTD build or acquired, and elevation. When the lot and building sizes were not available, the approximate area was scaled from the record engineering drawings.

The elevation data shows the elevation of top of the building (indicated as high elevation), ground surface elevation, and lowest point of the building (underground).

Each of the facilities were then visited and judged based of the listed criteria. Pictures of the site and surroundings were taken at each facility. All of the site visit surveys, select pictures, and individual scores of each characteristic measured are shown in Attachment B.

The qualitative survey results were then transferred to quantitative results by numerically grading the selected characteristics of each site on a 0-5 scale (low or below standard to high or excellent). The quantitative results are then further examined against equity and social justice criteria both quantitatively and statistically, which will be elaborated in the next chapter.



Chapter 3

Process of Analysis

The site visits and data gathered were processed into easy to read quantitative tables and graphs. The quantitative survey results for each facility and its location have been compared against the selected ESJ criteria: income, ethnic diversity, land use, and other contributing factors to identify any potential trends or correlations. The tables of the processed data are found in this chapter and the maps showing facility locations against ESJ factors are found in Attachment A. The discussion of the findings is presented in Chapter 4.

Quantitative Results

The quantitative results of the evaluations of characteristics are further grouped into design, maintenance, and odor value categories. The characteristics that compose the design category are: presence of art and extent, quality of landscape installation, views into the site, architectural style, level of architectural finish, public amenities, effect on regional view, and view blockage by facility. The maintenance category includes: quality of maintenance on the landscape, physical condition of overall facility, and quality of maintenance on the building. Noticeable odor is separated into its own category due to the importance of odor control for all the facilities.

Due to an uneven number of evaluation questions in the different categories (design, maintenance, and odor control) the maintenance and odor category scores were scaled up by the factor of 2.6 and 7.8, respectively to be equally weighted with design. This scaling helps us to equate the scores in each category and characteristic evenly.

The scoring range of each quantitative category is shown in Table 3.1.

Table 3.1 Correlation between qualitative and quantitative scoring ranges used for survey results

Definition	Design/Maint./ Odor	Total
High or Excellent	39-34	117-102
Above standard	33-28	101-84
Standard	27-22	83-66
Below Standard	< 22	< 66
Unscored facility	-	-

Each qualitative category is color coded for easier review on the reporting table. The same color palate is applied in all tables for design, maintenance, odor, and total score for consistency. More detailed

comparison across the facilities is provided by use of the quantitative result shown in the center of each color coded box. The total number of the three categories determines the overall site survey result or total score which is shown in Table 3.2.

It should be noted that Kirkland Pump Station was in the early construction stage at the time of survey; hence, it is not scored for the quantitative review.

Equity and Social Justice

The quantitative survey results were analyzed against the selected ESJ criteria, which are income, ethnic diversity, and land use. The data for income and ethnic diversity (percent of non-white population) for each site was obtained from US Census 2010 data that was formatted by WTD's Geographic Information Systems (GIS) analyst. The maps of facility type and location against the Median Household Income and % of Minority Population for King County wastewater facilities surveyed are provided in Attachment A in Maps 3.1 and 3.2, respectively.

The data from the mapping has been translated to tables that compare each facility's scoring on design, maintenance, odor control, and total score against the median household income on one table and the % of minority population on another, at each respective facility location. The results are shown on Tables 3.3 and 3.4.

The site visit data on adjacent and surrounding land use was used to determine the primary land use of each facility. Rural, park, residential, school commercial, industrial, and heavy industrial are the most common land uses surrounding the 27 facilities surveyed. The score of each facility on design, maintenance, odor control, and total score are shown in relation to the respective primary surrounding land use as shown in Table 3.5.

Exposure (visually to high numbers of the general public), foot traffic and public art are three additional characteristics that we recorded as we visited each facility. We thought that they were meaningful elements that should be set up in a table and related to each facility and its total score. This is presented in Table 3.6.

The following tables, Tables 3.2, 3.3, 3.4, 3.5, and 3.6 have been summarized in Chapter 4 along with the Findings and the Conclusions that have been drawn from each table presented.

Table 3.2 Summary of Scaled* Quantitative Scores

Category	Name of Facility	Year Built	Facility Map No.	Survey Score			Total Score
				Design	Maint.	Odor	
Treatment Plant	Brightwater	2011	1	39	39	39	117
	Carnation	2008	14	32	36	39	107
	South	1965, 2011	24	34	39	31	104
	West Point	1966, 1995	9	36	31	31	98
	Vashon	1955, 2006	25	22	29	39	90
Pump Station	Bellevue	1965, 2010	13	34	34	39	107
	Belvoir	1969	6	32	26	39	97
	Heathfield	1968	15	27	31	39	97
	Pacific	2007	26	27	36	31	95
	South Mercer	1965	16	28	31	31	90
	53rd Ave	1965, 2007	18	25	26	39	90
	Interurban	1992	23	32	18	39	89
	Medina	1987	12	26	31	31	88
	Kenmore	1985	2	22	23	39	84
	Lake Ballinger	1989	4	29	29	23	81
	Interbay	1966, 1979	10	22	18	39	79
	Black Diamond	1992	27	19	21	39	79
	Duwamish	1967	20	23	23	23	70
	Kirkland	1968, 2014	5	N/A	N/A	N/A	-
Regulator Station	Dexter	1971, 1982	11	33	31	39	103
	University	1973	7	32	21	39	92
	King	1962	17	20	21	39	80
	Logboom	1985	3	32	31	16	79
	Norfolk	1962	22	24	31	23	79
	South Michigan	1962	21	19	21	39	79
	Ballard	1975	8	20	18	23	62
	Harbor	1969	19	18	18	23	60

Notes:

- 1) Maintenance and odor scores scaled up by the factor of 2.6 and 7.8, respectively.
- 2) The Kirkland Pump Station is not rated because the facility is currently under construction.
- 3) Scores have been rounded up or down as appropriate to display whole numbers only.
- 4) Year Built includes orig. year complete & year of most recent upgrade.

Color code:

Definition	Design/Maint./ Odor	Total
High or Excellent	39-34	117-102
Above standard	33-28	101-84
Standard	27-22	83-66
Below Standard	< 22	< 66
Unscored	-	-

Table 3.3 Facility Ratings and Location against Median Household Income

Category	Name of Facility	No.	< \$45,000							< \$45,000							< \$45,000							< \$45,000						
			Design							Maintenance							Odor							Total Score						
Treatment Plant	Brightwater	1					39							39						39								117		
	Carnation	14					32						36							39								107		
	South	24	34						39								31							104						
	West Point	9					36						31							31								98		
	Vashon	25					22						29							39								90		
Pump Station	Bellevue	13					34						34							39								107		
	Belvoir	6						32						26							39							97		
	Heathfield	15						27					31								39							97		
	Pacific	26			27						36							31							95					
	S. Mercer	16						28					31							31								90		
	53rd Ave	18					25						26							39								90		
	Interurban	23	32						18								39							89						
	Medina	12						26					31								31							90		
	Kenmore	2					22						23							39								90		
	L. Ballinger	4		29						29								23							81					
	Interbay	10			22						18							39								79				
	B. Diamond	27					19						21							39								79		
	Duwamish	20		23						23								23							70					
	Kirkland	5						-																						
Regulator Station	Dexter	11				33						31							39								103			
	University	7	32						21								39							92						
	King	17		20						21								39							80					
	Logboom	3					32						31								16							79		
	Norfolk	22		24						31								23							79					
	S. Michigan	21	19						21								39							79						
	Ballard	8		20						18								23							62					
	Harbor	19				18						18							23							60				

Color code:

Definition	Design/Maint./ Odor	Total
High or Excellent	39-34	117-102
Above standard	33-28	101-84
Standard	27-22	83-66
Below Standard	< 22	< 66
Unscored facility	-	-

Notes:

- 1) The Kirkland Pump Station is not rated because the facility is currently under construction
- 2) Scores have been rounded up or down as appropriate to display whole numbers only.

Table 3.4 Facility rating and Location against % Minority Population

Category	Name of Facility	No.																				
			< 15%	15% - 29.99%	30% - 44.99%	45% - 59.99%	60% and greater	< 15%	15% - 29.99%	30% - 44.99%	45% - 59.99%	60% and greater	< 15%	15% - 29.99%	30% - 44.99%	45% - 59.99%	60% and greater	< 15%	15% - 29.99%	30% - 44.99%	45% - 59.99%	60% and greater
Treatment Plant	Brightwater	1	Design					Maintenance					Odor					Total Score				
	Carnation	14	39					39					39					117				
	South	24		32					36					39					107			
	West Point	9			34					39					31					104		
	Vashon	25		36					32						31				99			
			22					29					39					90				
Pump Station	Bellevue	13			34					34				39		39				107		
	Belvoir	6	32					26					39					97				
	Heathfield	15		27					31					39					97			
	Pacific	26			27					36					31					94		
	S. Mercer	16		28					31					31					90			
	53rd Ave	18	25					26					39					90				
	Interurban	23			32					18					39					89		
	Medina	12		26					31					31					88			
	Kenmore	2		22					23					39					84			
	L. Ballinger	4			29					29					23					81		
	Interbay	10		22					18					39					79			
	B. Diamond	27	19					21					39					79				
	Duwamish	20					23					23				23					69	
Kirkland	5		-					-					-					-				
Regulator Station	Dexter	11		33					31					39					103			
	University	7			32					21					39					92		
	King	17			20					21					39					80		
	Logboom	3		32					31					16					79			
	S. Michigan	21		19					21					39					79			
	Norfolk	22					24					31					23				78	
	Ballard	8		20					18					23					61			
	Harbor	19			18					18					23					59		

Color code:

Definition	Design/Maint./ Odor	Total
High or Excellent	39-34	117-102
Above standard	33-28	101-84
Standard	27-22	83-66
Below Standard	< 22	< 66
Unscored facility	-	-

Notes:

1) The Kirkland Pump Station is not rated because the facility is currently under construction.

2) Scores have been rounded up or down as appropriate to display whole numbers only.

Table 3.5 Facility Ratings Against Land Use

Category	Name of Facility	No.	Rural							Park							Residential							School							Commercial							Industrial							Heavy Industrial										
			Design							Maintenance							Odor							Total Score																															
Treatment Plant	Brightwater	1			39							39							39																																				
	Carnation	14	32							36									39																																				
	South	24																																																					
	West Point	9			36							31																																											
	Vashon	25	22								29									39																																			
Pump Station	Bellevue	13			34							34							39																																				
	Belvoir	6			32							26							39																																				
	Heathfield	15			27							31							39																																				
	Pacific	26																																																					
	S. Mercer	16			28							31							31																																				
	53rd Ave	18		25							26								39																																				
	Interurban	23					32							18								39																																	
	Medina	12			26							31							31																																				
	Kenmore	2																																																					
	L. Ballinger	4			29							29							23																																				
	Interbay	10					22							18								39																																	
	B. Diamond	27	19							21									39																																				
	Duwamish	20																																																					
	Kirkland	5					-																																																
Regulator Station	Dexter	11			33							31							39																																				
	University	7				32							21						39																																				
	King	17					20							21							39																																		
	Logboom	3		32								31							16																																				
	Norfolk	22					24							31								23																																	
	S. Michigan	21						19															39																																
	Ballard	8					20							18																																									
	Harbor	19					18							18																																									

Color code:

Definition	Design/Maint./ Odor	Total
High or Excellent	39-34	117-102
Above standard	33-28	101-84
Standard	27-22	83-66
Below Standard	< 22	< 66
Unscored facility	-	-

Notes:

- 1) The Kirkland Pump Station is not rated because the facility is currently under construction.
- 2) Scores have been rounded up or down as appropriate to display whole numbers only.

Table 3.6 Facility Rating against Exposure, Foot Traffic, Educational Signage, and Presence of Art

Category	Name of Facility	No.	High	Average	Minimal	High	Average	Minimal	Existing	Opportunity	No Opportunity	0	1	2-3	4+
			Exposure			Foot Traffic			Education			Presence of Art			
Treatment Plant	Brightwater	1	117			117			117						117
	Carnation	14		107			107		107					107	
	South	24	104			104				104				104	
	West Point	9			98	98			98				98		
	Vashon	25			90			90			90	90			
Pump Station	Bellevue	13	107				107			107			107		
	Belvoir	6			97		97			97			97		
	Heathfield	15			97			97			97	97			
	Pacific	26		95				95			95	95			
	S. Mercer	16			90			90			90	90			
	53rd Ave	18	90			90				90		90			
	Interurban	23	89				89				89		89		
	Medina	12		88			88			88		88			
	Kenmore	2		84				84			84	84			
	L. Ballinger	4			81		81			81		81			
	Interbay	10			79			79			79	79			
	B. Diamond	27			79			79			79	79			
	Duwamish	20			70			70			70	70			
	Kirkland	5	-			-				-			-		
Regulator Station	Dexter	11	103			103				103		103			
	University	7		92		92				92		92			
	King	17	80			80				80		80			
	Logboom	3	79			79				79		79			
	Norfolk	22		79				79			79	79			
	S. Michigan	21			79			79			79	79			
	Ballard	8	62				62			62			62		
	Harbor	19			60			60			60	60			

Color code:

Definition	Total
High or Excellent	117-102
Above standard	101-84
Standard	83-66
Below Standard	< 66
Unscored facility	-

Notes:

- 1) The Kirkland Pump Station is not rated because the facility is currently under construction.
- 2) Scores have been rounded up or down as appropriate to display whole numbers only.
- 3) Exposure in this study is defined as "degree of visibility to the general public".

Statistical Analysis

As the first step of statistical analysis we standardized the quantitative data. Standardizing a variable with a given sample simply means taking that variable, subtracting the sample mean, and dividing that difference by the sample standard deviation, shown in equation 3.1.

$$Std\ score = \frac{(score - mean)}{\sigma} \quad \text{(Equation 3.1)}$$

For example, the Design score for Brightwater was 39. For the sample of 26 sites, the sample mean of the Design score was 27.19 with a sample standard deviation of 6.00. Therefore, the standardized score for the Design score for Brightwater is $(39-27.19)/6.00 = 1.968$. Standardized scores can be interpreted approximately as how many standard deviations a particular observation is away from the sample mean. That is, 1.968 indicates that the Brightwater score is approximately two standard deviations above the mean Design score. The usefulness of this process can be seen in that it allows for direct comparison of the Design and Maintenance standardized scores. For example, Brightwater is well above average in both categories, with standardized scores of 1.968 and 1.715.

These scores were then used to calculate the correlation between the site's average score and the given demographic categories of Median Household Income and Percent Minority. Correlations range from -1 to 1, with scores close to -1 indicating high negative correlation, scores close to 1 indicating high positive correlation, and scores close to 0 indicating zero or little correlation. There is no general consensus on how to define "close", however. A correlation of 0.31 between survey scores and median household income provides little evidence of a strong positive correlation between "nice" facilities and income. True, the number is not zero, but with a small sample (as was required here because of a limited number of facilities), this number could just as easily be within the margin of error of the data. The correlation of -0.29 between survey scores and percent of minority population provides a similar conclusion. The correlation graphs with trend lines (where you would estimate the data to fall if a correlation were found) of standardize survey scores with Median Household Income and Minority Population of each category are shown in Figure 3.1 – 3.4 along with summarizing statements associated with each.

To view additional statistical analysis of pump stations (as a separate grouping) see Appendix C of this report.

Table 3.7 Summary of Standarized Quantitative Scores

Category	Name of Facility	Facility Map No.	Standardized Scores	
			Design	Maintenance
Treatment Plant	Brightwater	1	1.97	1.71
	South	24	1.13	1.71
	West Point	9	1.47	0.55
	Carnation	14	0.80	1.33
	Vashon	25	-0.87	0.16
Pump Station	Bellevue	13	1.13	0.94
	Belvoir	6	0.80	-0.22
	Pacific	26	-0.03	1.33
	Heathfield	15	-0.03	0.55
	South Mercer	16	0.13	0.55
	Interurban	23	0.80	-1.39
	Lake Ballinger	4	0.30	0.16
	Medina	12	-0.20	0.55
	53rd Ave	18	-0.37	-0.22
	Kenmore	2	-0.87	-0.61
	Interbay	10	-0.87	-1.39
	Duwamish	20	-0.70	-0.61
	Black Diamond	27	-1.37	-1.00
Regulator Station	Dexter	11	0.97	0.55
	Logboom	3	0.80	0.55
	University	7	0.80	-1.00
	Norfolk	22	-0.53	0.55
	King	17	-1.20	-1.00
	South Michigan	21	-1.37	-1.00
	Ballard	8	-1.20	-1.39
	Harbor	19	-1.53	-1.39

Range for Median Household Income:

M.H.I.	
1	<\$45,000
2	\$45,000-\$54,999
3	\$55,000-\$64,999
4	\$65,000-\$74,999
5	\$75,000-\$99,000
6	> \$99,000

Note:

Standardize score will be used to calculate correlation.

Range for Minority Population

Minority	
1	< 15%
2	15% - 29.99%
3	30% - 44.99%
4	45% - 59.99%
5	60% and greater

Color code:

Definition
High or Excellent
Above standard
Standard
Below Standard
Unscored

Median Household Income Correlations

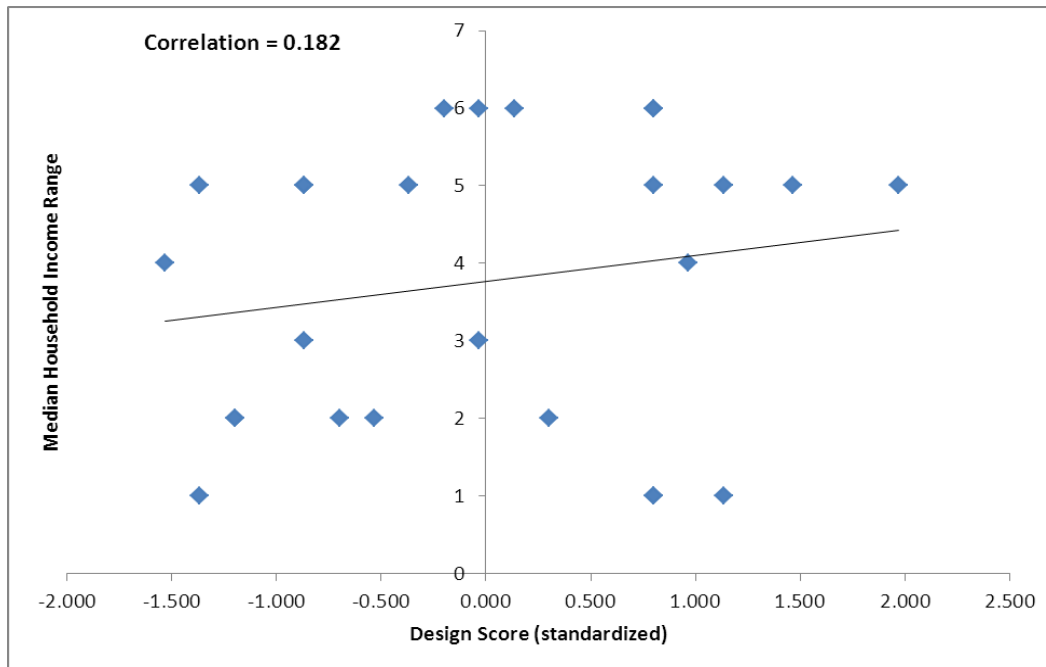


Figure 3.1 Median Household Income distribution against standardize design scores.
A very weak correlation is found between higher income and higher quality of design.

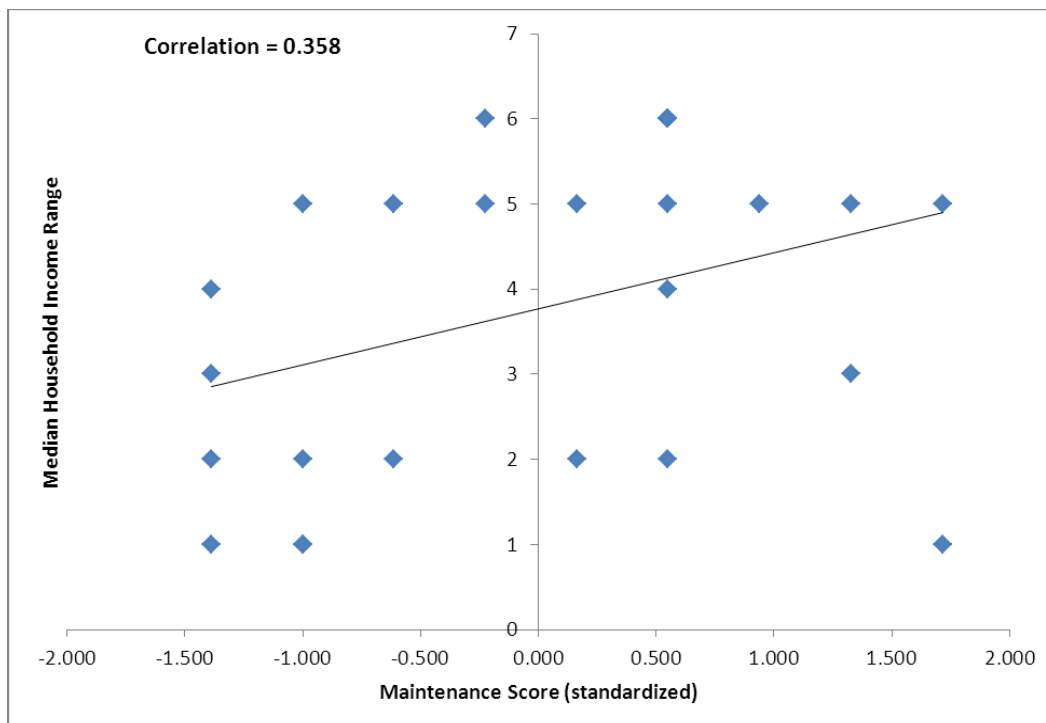


Figure 3.2 Median Household Income distribution against standardize maintenance scores.
A weak correlation is seen between higher income and increased quality of maintenance.

Minority Population Correlations

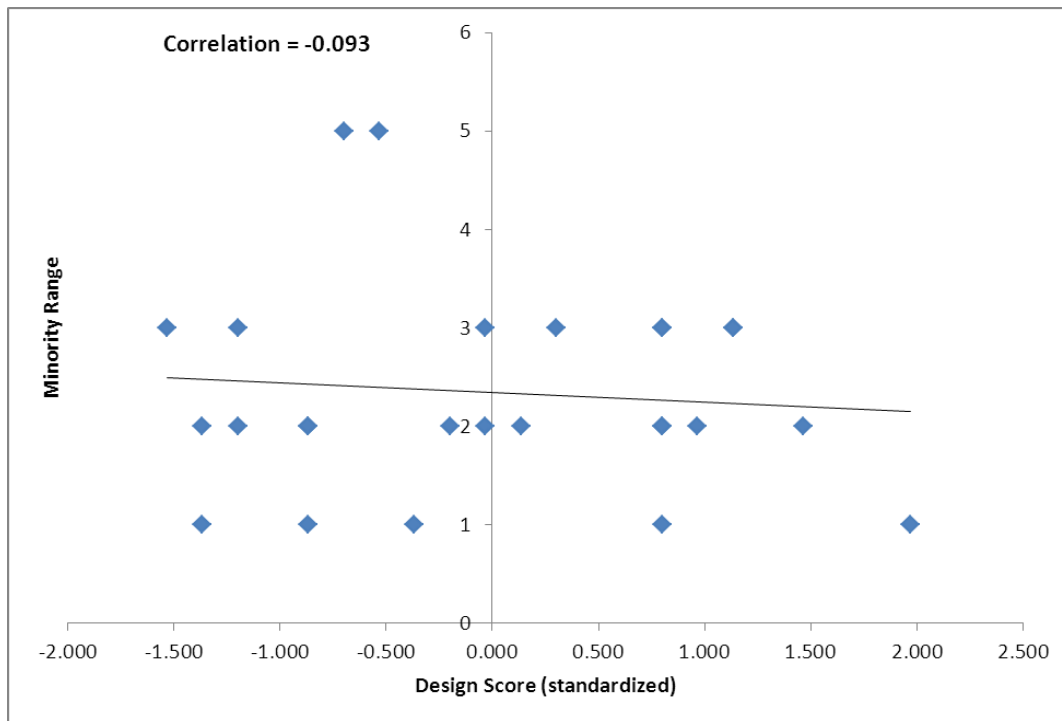


Figure 3.3 Minority population distribution against standardize design scores.

No correlation is found between minority population and quality of design.

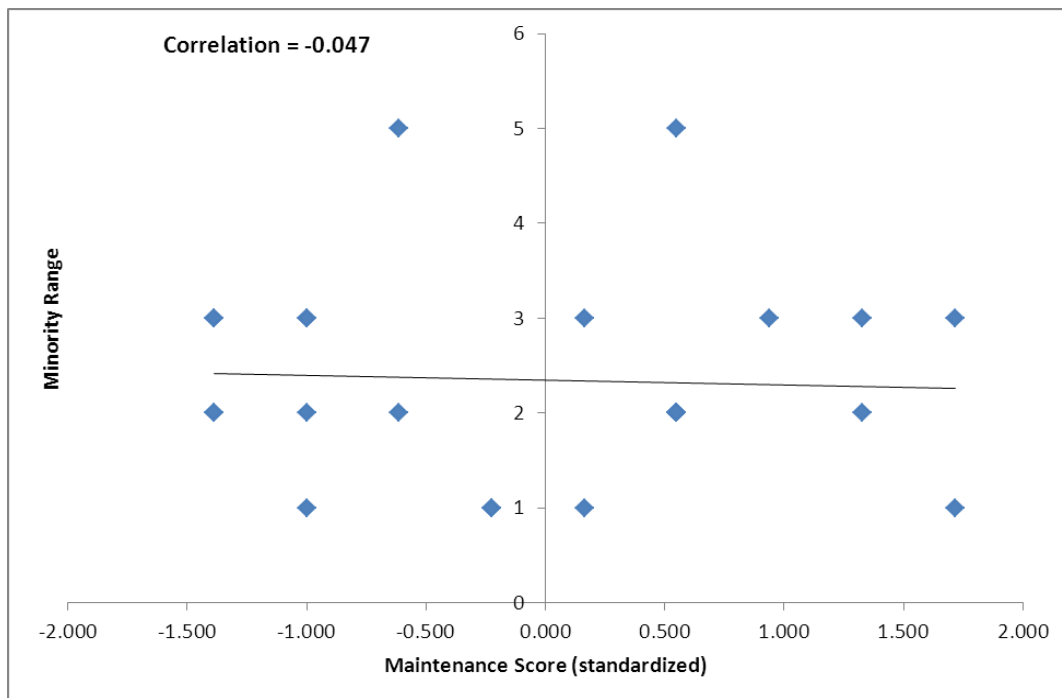


Figure 3.4 Minority population distribution against standardize maintenance scores

No correlation is found between minority population and quality of maintenance.

Additional Odor Analysis

In an attempt to add additional depth to the odor analysis that has been presented in the body of this equity assessment the decision was made to research and review all odor complaints that were made by the public that were associated with any of the WTD facilities studied in this assessment during the calendar year of 2012.

WTD maintains an odor control hotline that is available 24/7 for the public to file odor complaints that they believe to be associated with our facilities. Each complaint is researched by WTD staff and if found to be related to one of WTD's facilities corrected as soon as possible. The person that files a complaint is contacted by WTD to share the results of the investigation. If it is found to be related to a problem with one of WTD's facilities they are told how and when the problem will be corrected. If it is not found to be related to one of WTD's facilities that is explained along with the possible cause or causes of the odor issue that the caller identified.

The complaint records for 2012 were compiled for all facilities studied and are found on the following page. This compilation shows the total number of complaints made, related to each facility. It also shows the number of those complaints that were confirmed as being associated with one of WTD's facilities rather than an unassociated source.

As you see from the data arrayed, a total of 8 complaints were filed regarding 6 different facilities out of the 26 facilities that were reviewed for this equity assessment. Only 3 odor complaints were confirmed as being associated with WTD facilities, 1 at South Treatment Plant, 1 at Heathfield Pump Station and 1 at Medina Pump Station.

Because of the very small number of complaints confirmed, it is very difficult to draw any conclusions from this data. When you attempt to compare the data against level of household income of the surrounding community, you find 1 facility in the lowest income category and 2 of the facilities in the highest of the 6 income categories. As you look at the three facilities against percentage of minority population within the community that surrounds them, you find 1 facility at the mid-point of the 5 categories of percentage of minority population present and 2 facilities in the adjacent category to the mid-point.

No pattern or patterns emerge from this review and no evidence of inequity or social injustice related to odor control at WTD facilities is shown.

Statistical analysis using odor complaints verified at WTD facilities and attempting to compare this information to income and percentage of minority population is not possible based on the extremely small sample size (realized from so few complaints recorded within the year examined).

Table 3.8 Odor complaints to King County Wastewater Treatment Division in 2012 is found on the following page.

Table 3.8 Odor Complaints to King County Wastewater Treatment Division in 2012

Category	Name of Facility	Facility Map No.	All Complaints	Confirmed KC Responsibility
Treatment Plant	Brightwater	1	1	0
	South	24	1	1
	West Point	9	2	0
	Carnation	14	0	0
	Vashon	25	0	0
Pump Station	Bellevue	13	0	0
	Belvoir	6	0	0
	Pacific	26	0	0
	Heathfield	15	1	1
	South Mercer	16	0	0
	Interurban	23	0	0
	Lake Ballinger	4	0	0
	Medina	12	1	1
	53rd Ave	18	0	0
	Kenmore	2	0	0
	Interbay	10	0	0
	Duwamish	20	0	0
	Black Diamond	27	0	0
Regulator Station	Dexter	11	0	0
	Logboom	3	0	0
	University	7	0	0
	Norfolk	22	0	0
	King	17	0	0
	South Michigan	21	0	0
	Ballard	8	2	0
	Harbor	19	0	0
	Total		8	3

Chapter 4

Discussion of Findings and Conclusions

This chapter contains observations or findings that were revealed in the comparative tables and figures that are presented in this equity assessment. Following the findings in each section are conclusions drawn from these findings.

Quantitative Scores

Findings: When reviewing the “Summary of Quantitative Scores” and looking at the categories of design and maintenance, it is apparent that the quality of both the design and maintenance increases in quality as the facility size increases. All treatment plants meet Standard or above, with one ranked Above Standard and three out of the five ranked as High or Excellent.

In design, the majority of the lowest scores (Below Standard) are found within the Regulator Stations. These are WTD’s smallest facilities and, because of their size, are the least imposing on the community that they are constructed within.

The quality of maintenance also has the majority of the lowest scores within the grouping of regulator stations which is followed by the next highest percentage of Below Standard facilities in the category of pump stations.

The Total Score column also reflects this same trend of the larger facilities meeting higher standards than the smaller facilities.

Odor control quality remains higher across the board with a slight drop in quality also related to the reduced size of facility.

Conclusions: The trend that we see here is a reasonable result of an agency that spends its public funding in the most effective manner. Facilities that are larger, and potentially have the greater impact to the community, are allocated more resources for their design and construction. Maintenance processes, with limited funding, focus their resources where they will have the greater effect, that being, the larger facilities.

Income

Findings: In general, when looking at the location of WTD facilities against income, one sees that the majority of our facilities are located in either the higher or the lower income categories with less found in the mid-income ranges.

When looking at the quality of design, it is not found to be related to the income level of its surrounding community but rather is fairly and evenly distributed between the varieties of income levels that the facilities are found within.

Statistically, we find a very weak correlation between higher income and higher quality of design.

The majority of WTD's largest facilities, treatment plants, are found in the next to highest income category.

The quality of odor control across all income categories was rated at Standard or above with most facilities falling into the two categories of Above Standard and High. The one facility that was rated Below Standard is the Logboom facility which is located in the highest income grouping and received a Below Standard rating for odor control (based on performance at the time of site visit).

Within the category of Maintenance, we see a concentration of small regulator facilities with a Below Standard rating but it should be noted that this is distributed across a wide range of income categories. Statistically, we see a weak correlation between higher income and increased quality of maintenance.

Conclusions: The distribution of the majority of facilities into the lower and higher income categories is attributable to the need for WTD facilities to be located in low geographic points within the service area. These low points are either found inland, and are generally found to be in lower income areas or at low points that are located adjacent to water bodies, that tend to be higher income areas.

The quality of the design, because of its fairly even distribution within the income levels at the two ends of the spectrum (where most of our facilities located) and only a very weak correlation found statistically between higher income and higher quality design.

In regards to maintenance, facilities that meet high as well as lower standards are distributed across most income categories with a weak correlation between higher income and increased quality of maintenance.

Odor control meets higher standards across the board with High, Above Standard and Standard scores distributed relatively evenly across the system from low to high income areas.

Ethnic Diversity

Findings: The first thing that you notice when reviewing the charting of ethnic diversity of areas surrounding WTD facilities is that all but two of the facilities are located within the areas that have a minority population of 44.99% or less. The highest minority population areas only have two facilities located within their boundaries while the greatest numbers of facilities are located in the next to lowest minority grouping of 15-29.99% minority population.

The quality of design, maintenance, odor control and total scores have a relatively even distribution going from the top to the bottom of our quality scale within each of these three minority mix categories.

Conclusions: Quantitatively and statistically, we found no correlation between the percentage of minority populations in a neighborhood and the quality of the design, maintenance and odor control at our facilities. Based on assessment criteria WTD facilities have an even distribution of the levels of quality of design, maintenance and odor control within the minority categories and are not disproportionately located in our highly diverse service areas. We see no relationships to the percentage of minority mix within the community and the quality of our facilities as they are developed or maintained.

Land Use

Findings: In general, the highest concentration of facilities that were found to be well designed, maintained and have better odor control systems were found in residential land use areas.

Facilities in rural and commercial or industrial areas are consistent with their surrounding land uses.

Odor control standards were found (of the three characteristics measured) to meet the highest standards across all land use categories with only one, our Logboom facility, falling below standard in odor control at the time that site visits were completed for this study.

Conclusions: The design and maintenance quality of our facilities tend to meet higher standards when they are located in residential land use areas, essentially, where they are more often seen by more members of the community.

When thinking about the design of our facilities within residential areas, that in general meet higher standards, we may be seeing a correlation between a community that has taken an active role in the community design process as the facility has been sited and designed versus a facility that has been developed within a commercial area where the community feels less ownership and is less likely to take an active role in the public siting and design process that accompanies each of WTD's projects.

Other Factors Evaluated: Exposure, Foot Traffic, Educational Information and Presence of Art

Findings: As we visited each of the sites, we evaluated the additional factors of Exposure, Foot Traffic, and Educational Information provided and noted the Presence of Public Art. In terms of exposure (public visibility), we noted the level of exposure that each of our facilities has; high, average or minimal exposure to the general public. With foot traffic, we noted the amount of foot traffic that the facility seems to have based on patterns of use evident at and around the facility. We recorded high, average or minimal foot traffic for each of the facilities visited. We also looked at and noted which facilities have educational information displays and which facilities would be ideal opportunities or lacked opportunities to provide educational information based on their exposure and amount of foot traffic passing the facility.

We noted the public art provided at each facility visited and found that public art is currently limited to a relatively small number of WTD facilities, with most of the art located at the largest facilities, the major treatment plants. Table 3.6 shows the total quantitative scores of each facility against Exposure, Foot Traffic, Educational Information, and Presence of Art.

Conclusions: The level of exposure and the amount of foot traffic are very good indicators of where it would be beneficial to focus additional attention on the maintenance of those facilities if they did not already rate highly in that category. In cases where you find high foot traffic, these would seem to be sites that, if they did not already provide public educational information, would be ideal locations to do so. The presence of public art seems to be linked to the quality of our facilities. Each facility that has public art, with one exception, has total ratings of either Above Standard or High/Excellent at each facility.

I

Chapter 5

Recommendations

Observations

After visiting the WTD facilities listed in this equity assessment, it became apparent that when designing these facilities a high priority was placed on developing a facility of consistent quality that is well suited to its location and more distinctly, to its community. The four main techniques that were used to achieve this were; good quality design, using design elements that allow the building to blend well with its surroundings, making the facility “disappear” by limiting its exposed area such as placing it underground or setting it into a slope or hillside and providing public amenities that suit its surroundings and the people that use them. Over the WTD service area, the facilities are located in diverse locations, a variety of different communities and environments, but in general, the results were consistent, very successful and addressed the goals of equity and social justice. We found no evidence that the quality of design, mitigation, maintenance or operations was linked to income or mix of minority population.

The four techniques are:

- **Good Quality Design** - It was found with few exceptions that the facilities are well designed and, in fact, several of our facilities such as Pacific Pump Station and Kenmore Pump Station set the standard for design within their surrounding area and are providing a technical and visual asset to the community.
- **Community Blending-** It was apparent that many of the facilities were designed to blend with the architectural style of the community. An excellent example of this is the Carnation Treatment Plant which is located in a rural community and designed with a barn like appearance which is very attractive and blends well with its surroundings.
- **Below Grade Facilities-** In some of our high exposure sites such as the Belvoir Pump Station and 53rd Pump Station locations great care was taken to place these facilities fully or partially underground and out of sight. By making the facility “disappear” no views were blocked and you can walk right by these facilities and not even know that they are there or what services are provided within them.



Pacific Pump Station



Carnation Treatment Plant



Belvoir Regulator Station

- **Amenities-** Facilities located with amenities and high foot traffic such as Logboom Pump Station, Dexter Regulator Station, University Regulator Station and Brightwater are heavily visited and used by the general public. In these locations our facilities and their elements of mitigation are an asset to the community in addition to providing a valuable wastewater function.



Brightwater Treatment Plant

Recommendations

After visiting the facilities and completing our analysis the following six recommendations have been generated that will allow WTD to continue to meet high standards system-wide and the county's equity and social justice goals:

1. Educational Informational Signage

In an effort to create a better understanding for the need of wastewater treatment facilities, it is recommended that WTD provide more public educational information about the vital services that are provided at the facilities with high public foot traffic. For example, the 53rd Ave. Pump Station in Alki has a very high volume of public foot traffic and would be an excellent location for educational information that relates to the facility sited in that location and the array of regional services that are provided. Historical and wildlife information panels were observed in the nearby sidewalk areas which were being frequently read by the general public.

WTD has several facilities that are noted in Table 3.6 that have high levels of public foot traffic and would be ideal locations to place educational panels. This could help expand the general public understanding of the services provided by WTD and the importance of the work in the protection of regional water quality.

53rd Pump Station

Alki Beach Wildlife Information Panel

2. **Odor Control**

It is recommended that odor control at the Logboom Regulator Station be addressed. WTD has done a very good job with odor control overall. It was found that, at least during the time of site visits, all but one of WTD's facilities had slight to no odor present. The exception was found to be the Logboom Regulator Station, whose odor was quite noticeable. Logboom Regulator Station odor control should be dealt with on a priority basis, because of its prominent location next to a heavily used trail, public park, and playground.

3. **Maintenance**

It is recommended that maintenance frequency be increased in facilities that are heavily used by the public. Overall, the maintenance of all the facilities observed was good but facilities such as Dexter Regulator Station and University Regulator Station should be put on a tighter schedule for general litter and pressure washing. These facilities have popular amenities that provide seating and shelter for people waiting for buses.

For each facility visited, the area where maintenance was needed has been noted. This information can be found in Appendix C - Maintenance Observed.



Dexter Regulator Station



University Regulator Station

4. **Fencing**

It is recommended that fencing, when required, be kept to a minimum and that attractive, "friendly" fencing be used. In addition, all barbed wire should be eliminated where it is not felt to be required for some special condition. Since some facilities are fenced while others aren't, that raises the question; how much fencing is necessary? All of the buildings visited were found to be secure by design and locked without exception. Very few facilities had barbed wire but where the wire was found it was rusted and made the facility look foreboding, possibly dangerous and certainly did not give the impression of being a good neighbor. With so many of our facilities being good neighbors, the barbed wire fencing does seem to send the wrong message.

5. Landscaping

It is recommended that densely planted masses of shrubs and groundcovers for landscaping should be used whenever possible. This type of landscaping was found to be attractive and gave the appearance of being well maintained while out competing the weeds and reducing the maintenance needed. The shrubs can also provide attractive screening to buffer our facilities.



Heathfield Pump Station



Medina Pump Station



Dexter Regulator Station

6. Periodic Review for Future Land Use Changes

It is recommended that all facilities should be visited to note dramatic changes in the adjacent land uses. This is to evaluate the changes and determine if any modifications might be needed to our facilities or the landscaping. For example, the Kenmore Pump Station is currently in a heavily industrial area, but there are future plans to build a large condominium complex adjacent to that facility. When that construction happens, it would be recommended that additional landscape screening be placed to buffer the facility and a more “friendly” fencing be designed and installed.



Adjacent view of Kenmore Pump Station

Implementing these recommendations will assist WTD in continuing to meet the goals of equity and social justice with, and at, their facilities. These recommendations are not extensive but will help to fine tune a system that has been developed to high standards that addresses the issues of equity and social justice.

Appendix A

GIS Mapping on Income and Ethnic Diversity

Median Household Income for
King County Wastewater Facility Locations

Category	Median Household Income in the past 12 months (in 2010 inflation adjusted \$'s)	# of Wastewater Facilities	Count Tracts within Service Area	Count Tracts with Wastewater Facility	Population within Service Area	Population with Wastewater Facility In Tract	% Population within Service Area	% Population with Wastewater Facility In Tract
A	Below \$45,000	4	55	3	221,723	11,321	13.73%	11.42%
B	\$45,000 - \$54,999	5	44	4	190,005	15,778	11.77%	15.91%
C	\$55,000 - \$64,999	2	57	2	250,278	7,916	15.50%	7.98%
D	\$65,000 - \$74,999	2	58	2	265,457	9,904	16.44%	9.99%
E	\$75,000 - \$99,999	8	117	8	460,088	24,519	28.50%	24.73%
F	\$100,000 & Over	6	64	6	226,857	29,717	14.05%	29.97%

Facility Number	Category	Median Household Income	Census Tract Population	Facility Number	Category	Median Household Income	Census Tract Population
1	E	\$99,256	2,286	15	F	\$103,011	3,888
2	E	\$94,091	4,513	16	F	\$179,010	3,662
3	F	\$114,375	4,294	17	B	\$54,158	2,354
4	B	\$54,773	6,434	18	E	\$75,463	5,290
5	F	\$101,833	7,143	19	D	\$67,672	4,787
6	F	\$110,067	7,789	20	B	\$54,158	2,354
7	A	\$5,000	5,706	21	A	\$37,097	1,287
8	B	\$54,002	6,739	22	B	\$49,886	1,626
9	E	\$88,828	6,001	23	A	\$41,162	4,998
10	C	\$60,972	5,059	24	A	\$41,162	4,998
11	D	\$65,963	6,544	25	E	\$75,402	5,679
12	F	\$175,250	2,953	26	C	\$60,750	3,606
13	E	\$93,698	6,924	27	E	\$90,676	5,728
14	E	\$80,494	5,237				

KC-WTD Facility

County Boundary

KC-WTD Service Area

Major Water

Census Tract Not in
KC-WTD Service Area or
Not Included in Analysis

Median Household Income for 2010 Census Tract
(in 2010 Inflation-Adjusted \$'s)

Below \$45,000

\$45,000 - \$54,999

\$55,000 - \$64,999

\$65,000 - \$74,999

\$75,000 - \$99,999

\$100,000 & Over

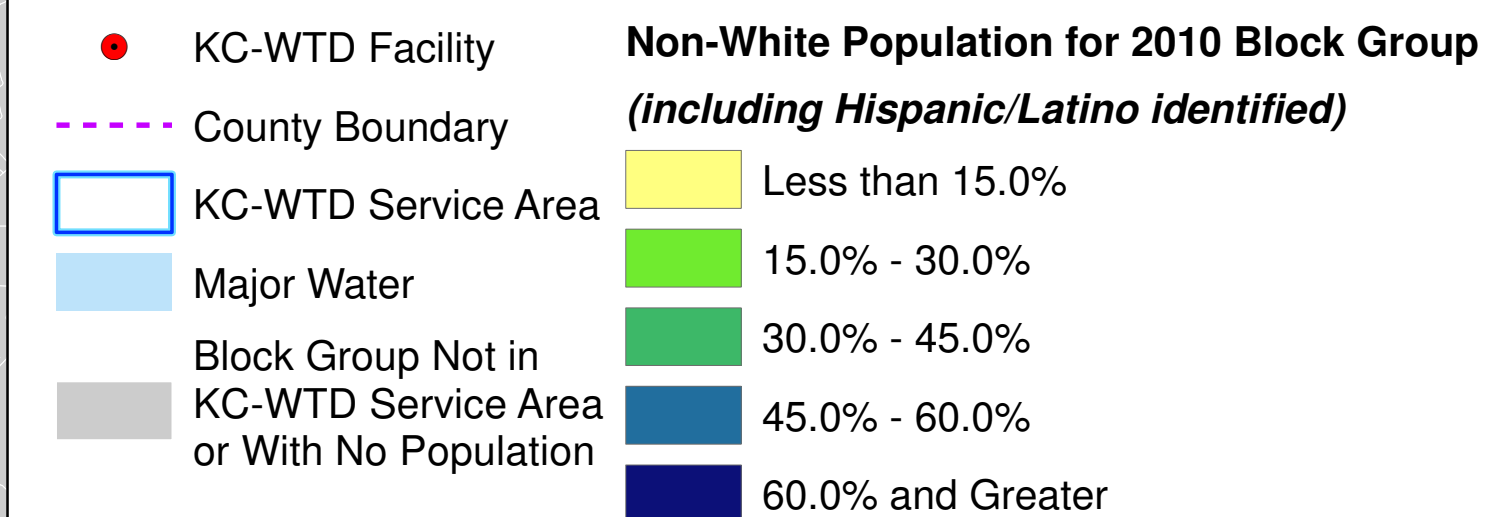
Note: Analysis assumes an even distribution of population across census tracts.



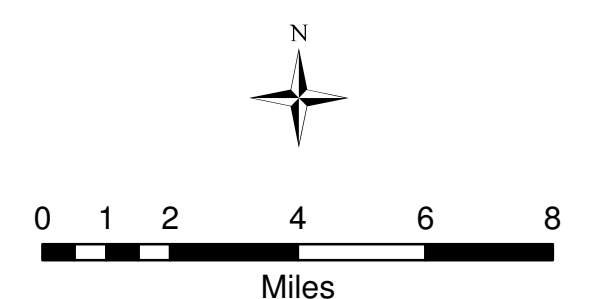
0 1 2 4 6 8
Miles

Category	Minority Population % Range	# of Wastewater Facilities	Service Area Total Population	Block Group with Facility Total Population	Service Area Minority Population	Block Group with Facility Minority Population	% Minority Population within Service Area	% Minority Population with Facility In Block Group
A	Less than 15.00%	5	147,833	5,750	18,736	636	12.67%	11.06%
B	15.00% - 29.99%	12	582,135	15,501	129,289	3,398	22.21%	21.92%
C	30.00% - 44.99%	8	493,398	9,193	181,862	3,464	36.86%	37.68%
D	45.00% - 59.99%	0	238,862	0	123,396	0	51.66%	0.00%
E	60.00% & Greater	2	186,923	1,564	134,640	1,006	72.03%	64.32%

Facility Number	Category	Block Group Total Population	Block Group Minority Population	Facility Number	Category	Block Group Total Population	Block Group Minority Population
1	A	1,373	163	15	B	1,523	418
2	B	823	162	16	B	692	144
3	B	1,471	229	17	C	389	130
4	C	1,259	510	18	A	1,116	127
5	B	2,002	471	19	C	1,009	341
6	A	881	84	20	E	1,149	697
7	C	2,771	1,153	21	B	558	156
8	B	1,939	341	22	E	415	309
9	B	483	79	23	C	181	60
10	B	1,522	309	24	C	181	60
11	B	1,879	518	25	A	1,186	140
12	B	1,574	303	26	C	1,629	563
13	C	1,955	707	27	A	1,194	122
14	B	1,035	268				



Note: Analysis assumes an even distribution of population across census tracts.



Appendix B

Individual Facility Analysis Based on Site Visits

Table of Contents

Treatment Plants

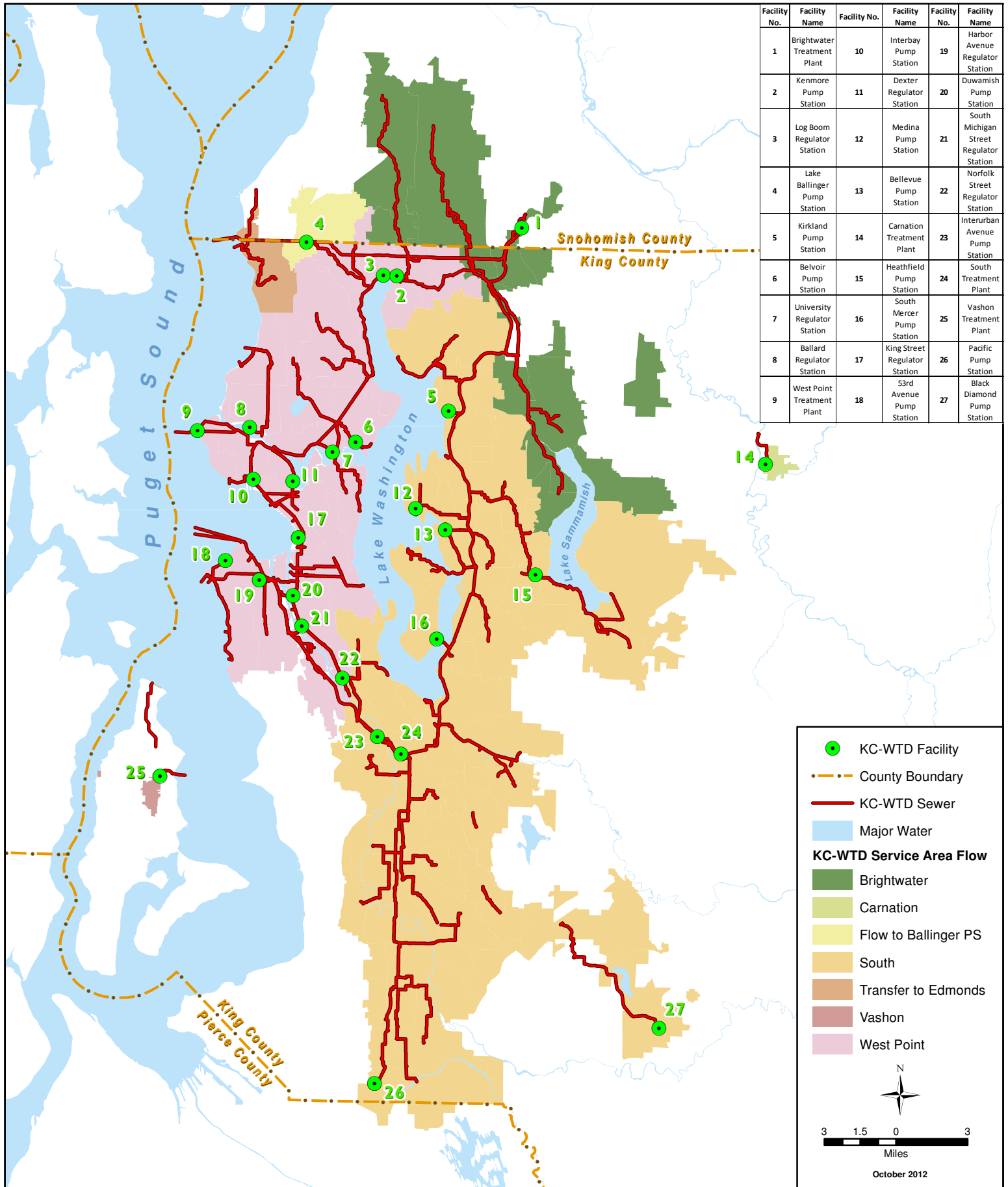
1. Brightwater – (map location #1).....
2. South Treatment Plant - (map location #24).....
3. West Point Treatment Plant – (map location #9).....
4. Carnation Treatment Plant – (map location #14).....
5. Vashon Treatment Plant - (map location #25).....

Pump Stations

6. Bellevue Pump Station – (map location #13).....
7. Belvoir Pump Station – (map location #6).....
8. Pacific Pump Station – (map location #26).....
9. Heathfield Pump Station – (map location #15).....
10. South Mercer Pump Station – (map location #16).....
11. Interurban Pump Station – (map location #23).....
12. Lake Ballinger Pump Station – (map location #4).....
13. Medina Pump Station – (map location #12).....
14. 53rd Ave. Pump Station – (map location #18).....
15. Kenmore Pump Station – (map location #2).....
16. Interbay Pump Station – (map location #10).....
17. Duwamish Pump Station – ((map location #20).....
18. Black Diamond Pump Station – (map location #27).....
19. Kirkland Pump Station – (map location #5).....

Regulator Stations

20. Dexter Regulator Station – (map location #11).....
21. Logboom Regulator Station – (map location #3).....
22. University Regulator Station – (map location #7).....
23. Norfolk Regulator Station – (map location #22).....
24. King Regulator Station – (map location #17).....
25. South Michigan Regulator Station – (map location #21).....
26. Ballard Regulator Station – (map location #8).....
27. Harbor Regulator Station – (map location #19).....



Facility No.	Facility Name	Facility No.	Facility Name	Facility No.	Facility Name
1	Brightwater Treatment Plant	10	Interbay Pump Station	19	Harbor Avenue Regulator Station
2	Kenmore Pump Station	11	Dexter Regulator Station	20	Duwamish Pump Station
3	Log Boom Regulator Station	12	Medina Pump Station	21	South Michigan Street Regulator Station
4	Lake Ballinger Pump Station	13	Bellevue Pump Station	22	Norfolk Street Regulator Station
5	Kirkland Pump Station	14	Carnation Treatment Plant	23	Interurban Avenue Pump Station
6	Belvoir Pump Station	15	Heathfield Pump Station	24	South Treatment Plant
7	University Regulator Station	16	South Mercer Pump Station	25	Vashon Treatment Plant
8	Ballard Regulator Station	17	King Street Regulator Station	26	Pacific Pump Station
9	West Point Treatment Plant	18	53rd Avenue Pump Station	27	Black Diamond Pump Station

KC-WTD Facility
 County Boundary
 KC-WTD Sewer
 Major Water
KC-WTD Service Area Flow
 Brightwater
 Carnation
 Flow to Ballinger PS
 South
 Transfer to Edmonds
 Vashon
 West Point

October 2012

Brightwater Treatment Plant

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	5	M	Good. Very large site. Natural habitat to manicured landscape. Removal of dead trees needed.
Presence of Art and extent	5	D	Extensive art in plant and public spaces. The art is applicable and educational.
Quality of Landscape Installation	5	D	Very high. Native and non-native materials installed. Landforms buffer the plant from Highway. Front trees will screen the site in the long term.
Views into the site	5	D	Controlled and buffered with landscape and large landform. Views will be limited once the landscape matures.
Building			
Architectural Style	5	D	Moderen industrial with extensive sustainable design (recycled wood, etc.). Clean and simple.
Level of Architectural Finish	4	D	High, simple, modern, concrete buildings with elements of steel. Sustainable development. Visitor friendly fencing, black in color to limit visibility.
Physical conditions of overall facility	5	M	Very high. New construction.
Quality of maintenance on building	5	M	High. New construction.
Facility			
Type of odor control	-	Fact	3 stages with 2 chemical treatment and 1 stage of biofiltration.
Noticeable odor	5	O	None.
Portions of the facility above and below grade	-	Fact	3 stories below and 1 or 2 stories above grade.
Public amenities (on-site)	5	D	70 acres of open public space, trails, and environmental education and community center. 43 acres of salmon habitat restoration.
Building Percentage	-	Fact	22%.
Lot size	-	Fact	114 acres (6,272,640 SF).

Characteristic	Score	Type	Comments
Age of facility	-	Fact	New (Opened in 2011).
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Very nice and well integrated with public usage, wetland, and natural habitat. Extensive public art program, educational facility, and sustainable green building features throughout.
Surroundings			
Affect on Regional View	5	D	The site can be seen from Highway 9 currently as landscaping is young. The view will be limited in the long term by buffer and plantings. View from Highway 522 screened by landscaping.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Residential.
Surrounding land uses - nearby	-	Fact	Residential.
Slope	-	Fact	Flat side for treatment facility and slope landforms on fronting Highway 9.
Elevation (high and low)	-	Fact	
Adjacent water body	-	Fact	Little Bear Creek to the west. No Name Creek and 228th Creek on site. 43 acre of salmon habitat on site.
Overall Site Review	5	Fact	Good quality and neighbor. Amazing combination of public access, education, and a major wastewater facility.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	39	39
Maintenance (M)	15	39
Odor (O)	5	39
Grand total		117

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View to the operation center from the educational facility



View from the public parking lot to treatment plant and foreground



View to the Brightwater Environmental Education Community Center

South Treatment Plant

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	5	M	High inside and out.
Presence of Art and extent	4	D	Yes. Fountain at administration building and north end stormwater infiltration pond with multiple art installation along public trail system. Ponds, trails, and art are part of the 1% for art program.
Quality of Landscape Installation	5	D	High. The mature trees and bushes completely screened the view of facility from major roadway.
Views into the site	4	D	Very limited from public roadways.
Building			
Architectural Style	4	D	Mix of industrial form styles from 50's, 60's to present day. Clean, simple, and well done.
Level of Architectural Finish	4	D	Medium to high. Beige building color is maintained throughout the site to creat a consitent architectural approach.
Physical conditions of overall facility	5	M	High.
Quality of maintenance on building	5	M	High. Well maintained throughout treatment facility campus.
Facility			
Type of odor control	-	Fact	Covered source of odor in facilities and wet chemical scrubbers (sodium hypochlorite).
Noticeable odor	4	O	Limited odor within facility (secondary area only). None detected on the surrounding roadways.
Portions of the facility above and below grade	-	Fact	30% above the grade.
Public amenities (on-site)	4	D	Public park and trail surround and integrate with natural stormwater treatment area. Amenities include art along the public trail, benches, and bike racks.
Building Percentage	-	Fact	20%

Characteristic	Score	Type	Comments
Lot size	-	Fact	4,040,702 SF
Age of facility	-	Fact	1965 and upgraded on 2001.
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Well screened from the public view by heavy landscaping. Clear, neat, and campus like buildings. Natural stormwater treatment area provides beautiful public amenity at the north end of the treatment plant side.
Surroundings			
Affect on Regional View	4	D	None at ground level. Affect limited to surrounding higher elevations. Interior landscaping has been provided to reduce the industrial nature of the facility.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Office, industrial, and major roadway.
Surrounding land uses - nearby	-	Fact	Industrial, commercial, office, and downtown Renton.
Slope	-	Fact	Mostly flat with hill on the west boundary of the property.
Elevation (high and low)	-	Fact	High: 180'. Low: 80.0'.
Adjacent water body	-	Fact	Black River.
Overall Site Review	5	Fact	Nice site and well maintained facility. New administration building blends well with older buildings. Berms on road side enhance site screening. North end public amenity area provides high level of community benefit

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	34	34
Maintenance (M)	15	39
Odor (O)	4	31
Grand total		104

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View to the administration building from visitor parking



Aerial view of South Plant treatment facility



View of secondary process area.



Sculpture lining entrance to public trails at natural stormwater treatment area

Westpoint Treatment Plant

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	3	M	Wonderful blend of native plants. Natural but a bit overgrown trees and grass (some pruning and trimming needed). Facility surrounded by 26 acres of park land and densely constructed treatment facility.
Presence of Art and extent	3	D	Security walls and building design provide artistic expression in these facilities.
Quality of Landscape Installation	5	D	Very high. Integrated to discovery park. Trees and berms are installed to cover the site.
Views into the site	5	D	Limited view from the park land. Very limited or non existant from water. Excellent screening for such a large facility.
Building			
Architectural Style	4	D	Simple industrial in process areas. Security walls and buildings that can be seen by the public within the park are natural in character.
Level of Architectural Finish	4	D	High, especially at the entrance where buildings and walls are modelled after natural landforms.
Physical conditions of overall facility	4	M	High.
Quality of maintenance on building	5	M	Well maintained. Some slight dirt and color fading at the tops of buildings due to weather conditions.
Facility			
Type of odor control	-	Fact	2 Stage chemical : Liquid chemical scrubbers (with aluminum chlorohydrate and H ₂ O ₂).
Noticeable odor	4	O	None.
Portions of the facility above and below grade	-	Fact	3 stories below and 1 or 2 stories above.
Public amenities (on-site)	5	D	Surrounded by 26 acres of public park land. Public trails around facility and linking to entrance of Discovery Park, public access to freshwater wetland, and educational signage. Facilities very well blended into natural environment.

Characteristic	Score	Type	Comments
Building Percentage	-	Fact	52%
Lot size	-	Fact	1,207,365 SF.
Age of facility	-	Fact	1966 (1995 secondary treatment).
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Facility was designed to blend with natural environment and be screened from view. Beautiful natural site and design. No odor noticed. Limited noise is noticable but it is located far from residential areas.
Surroundings			
Affect on Regional View	5	D	Extremely limited. Steam can be seen exiting facility.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Beach and parkland.
Surrounding land uses - nearby	-	Fact	Parkland, beach, and single family residenceals.
Slope	-	Fact	Flat with steep hillside behind.
Elevation (high and low)	-	Fact	Low: 86'.
Adjacent water body	-	Fact	Puget sound.
Overall Site Review	5	Fact	Excellent use of tight site and coordination with extensive public use. Wonderful native parkland and native landscape but a little bit overgrown. Good quality site. New building being added adjacent to administratio building does not seem to match original design character of the facility.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	36	36
Maintenance (M)	12	31
Odor (O)	4	31
Grand total		98

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View at the entrance to digester



View of buffer landscape and public trail surrounding facility



Interior plant view to the odor control and solid handling

Carnation Treatment Plant

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	4	M	High. The plant has mostly mowed lawns and trees.
Presence of Art and extent	4	D	None on the plant site. Art is present at wetland/river outfall placed along public trail system. This public trail and art display are very high quality.
Quality of Landscape Installation	4	D	Good, especially along the trail (young landscape).
Views into the site	4	D	Main building screens the site from developed area of town. Back of facility is open to view from rural landscape.
Building			
Architectural Style	5	D	Rural or farmland style (barn look). Well suited to the area. Water storage resembles grain silo in design.
Level of Architectural Finish	4	D	Medium to high. Metal roof and split face concrete block buildings.
Physical conditions of overall facility	5	M	Good. New facility in very good condition.
Quality of maintenance on building	5	M	High.
Facility			
Type of odor control	-	Fact	Carbon Scrubbers.
Noticeable odor	5	O	None.
Portions of the facility above and below grade	-	Fact	30%.
Public amenities (on-site)	3	D	Public trail system on site and adjacent. Additional public trail and art walk at outfall wetlands, fed with reclaimed water from treatment facility.
Building Percentage	-	Fact	18%.

Characteristic	Score	Type	Comments
Lot size	-	Fact	91,880 SF.
Age of facility	-	Fact	2008
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Very high quality design. Blends well with the rural character of the community. No odor noticed. Low hum noticed on adjacent public trail.
Surroundings			
Affect on Regional View	4	D	Blends well with rural community.
View blockage by facility	4	D	None.
Surrounding land uses - adjacent	-	Fact	Farmland, flower fields, river.
Surrounding land uses - nearby	-	Fact	Carnation town center (mix of residential and commercial) and commercial flower farm.
Slope	-	Fact	Flat.
Elevation (high and low)	-	Fact	High: 112.20'. Low: 77.5' (69.0')
Adjacent water body	-	Fact	Snoqualmie River.
Overall Site Review	4	Fact	Nice facility. The right mix of simple and farm like for this community. Good neighbor with simple landscape plantings. Barely noticed as a treatment plant from the town.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	32	32
Maintenance (M)	14	36
Odor (O)	5	39
Grand total		107

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from public roadway



Side view of the site



Back view of the site from trail in open space area

Vashon Treatment Plant

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	3	M	Good. Mainly native trees with some shrub plantings and mowed grass areas.
Presence of Art and extent	0	D	Public art does not seem to be present.
Quality of Landscape Installation	3	D	Good. Mitigation with native plants and shrubs.
Views into the site	3	D	Older portion of facility is apparent from street, the more recent additions are well screened.
Building			
Architectural Style	3	D	Industrial with buildings that are residential in character using metal roof systems.
Level of Architectural Finish	3	D	Average with unpainted concrete.
Physical conditions of overall facility	4	M	In general, good. Older facility area has rusted barbed wire fencing.
Quality of maintenance on building	4	M	Good.
Facility			
Type of odor control	-	Fact	might be installed in the newer site?
Noticeable odor	5	O	None.
Portions of the facility above and below grade	-	Fact	40%.
Public amenities (on-site)	3	D	Small scale habitat restoration area adjacent to site.
Building Percentage	-	Fact	4%.
Lot size	-	Fact	557,619 SF.

Characteristic	Score	Type	Comments
Age of facility	-	Fact	2006
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Clean and neat with a mix of newer and older facilities. A nice scale building that makes it feels residential. Simple and good screening on the east side.
Surroundings			
Affect on Regional View	3	D	None.
View blockage by facility	4	D	None.
Surrounding land uses - adjacent	-	Fact	Residential and undeveloped woods.
Surrounding land uses - nearby	-	Fact	Residential and town center commercial area.
Slope	-	Fact	Slope at the entrance.
Elevation (high and low)	-	Fact	High: 322.5'. Low: 292' (269.6').
Adjacent water body	-	Fact	Close to Puget Sound. Adjacent small creek.
Overall Site Review	3	Fact	Newer facilities look good. It is likely that the screening on the west side will function better when the landscape matures. Dense screening is needed on the older portion of the plant. Maintain solar panel free of blocking vegetation.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	22	22
Maintenance (M)	11	29
Odor (O)	5	39
Grand total		90

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from driveway



View of buffer landscape



View into the process area

Bellevue Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	3	M	Young landscape that looks a little bit under planted. Weeding needed. A few dead trees need to be removed.
Presence of Art and extent	5	D	Free standing delightful elf and cloud sculpture. BPS symbols in two locations are a nice touch.
Quality of Landscape Installation	3	D	Good. Underplanted on the east side.
Views into the site	4	D	Wide open view from 3 sides. Nice looking building from all directions.
Building			
Architectural Style	5	D	Brick with residential scale. Civic building style.
Level of Architectural Finish	5	D	High. Excellent use of brick pattern, banding, and windows. Nice detailing.
Physical conditions of overall facility	5	M	Very high. New facility.
Quality of maintenance on building	5	M	New facility. In great repair.
Facility			
Type of odor control	-	Fact	Carbon Scrubber.
Noticeable odor	5	O	None.
Portions of the facility above and below grade	-	Fact	Rectangular. 33% above the ground (including roof).
Public amenities (on-site)	3	D	Public art.
Building Percentage	-	Fact	7.40%
Lot size	-	Fact	14,770 S.F.

Characteristic	Score	Type	Comments
Age of facility	-	Fact	1965 (upgraded in 2010).
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Excellent design for site and neighborhood. Art is very nice addition. Nice brick building.
Surroundings			
Affect on Regional View	4	D	None. Good addition to neighborhood.
View blockage by facility	5	D	None. Good addition to neighborhood.
Surrounding land uses - adjacent	-	Fact	Playground (multi family park), residential (single family homes).
Surrounding land uses - nearby	-	Fact	Residential.
Slope	-	Fact	Flat.
Elevation (high and low)	-	Fact	High: 140.29'. Low: 132.42' (107.50')
Adjacent water body	-	Fact	Meydenbawer Creek.
Overall Site Review	5	Fact	Excellent facility. Long lived, substantial public structure, very nice building.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	34	34
Maintenance (M)	13	34
Odor (O)	5	39
Grand total		107

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from the roadway



View into the site looking north



South elevation of the building showing landscaping and whimsical public art

Belvoir Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	4	M	High level of maintenance. Hedges and grass are well maintained. Blackberries have been recently removed.
Presence of Art and extent	3	D	Waterfowl silhouettes on the railing system of the rooftop viewing platform are well suited to their location.
Quality of Landscape Installation	4	D	High. Simple landscape that blends with the neighborhood. By incorporating hedges, the facility blends well with its residential neighbors.
Views into the site	5	D	Site is not visible from the main street or neighboring homes. Care was taken to place the building into the slope which removes it from view.
Building			
Architectural Style	3	D	Simple industrial concrete building. Building is daylighted only at one side (almost completely underground).
Level of Architectural Finish	3	D	Medium to low. Simple finish but meets the needs. The concrete building is painted.
Physical conditions of overall facility	3	M	Good, older facility.
Quality of maintenance on building	3	M	Good maintenance. Building looks older but well maintain. No repair needed.
Facility			
Type of odor control	-	Fact	None.
Noticeable odor	5	O	None. Low noise noticed but building is located away from residential and exhaust pointed away from the neighboring homes.
Portions of the facility above and below grade	-	Fact	All below grade from residential street.
Public amenities (on-site)	4	D	Overlook viewing platform on the facility roof and access is provided to wetland and trail system.
Building Percentage	-	Fact	7%.

Characteristic	Score	Type	Comments
Lot size	-	Fact	10,096 SF.
Age of facility	-	Fact	1969
WTD build	-	Fact	WTD Rebuilt.
WTD acquired	-	Fact	Yes.
General Overall impression	-	Fact	Excellent screening and blending with the neighborhood. Building is almost unnoticable. Good odor control.
Surroundings			
Affect on Regional View	5	D	None.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	High end residential neighborhood and adjacent wetland.
Surrounding land uses - nearby	-	Fact	Residential.
Slope	-	Fact	High slope to the west allows screening of the facility.
Elevation (high and low)	-	Fact	High: 33.85'. Low: 6.75'.
Adjacent water body	-	Fact	Yesler swamp (Union Bay natureal area), near the edge of Lake Washington
Overall Site Review	4	Fact	Good neighboor. Facility completely removed from view. Very nice site that is well maintained.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	32	32
Maintenance (M)	10	26
Odor (O)	5	39
Grand total		97

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



Facility tucked into site to screen from roadway and adjacent residential



Rooftop overlook is the only portion of the facility seen from roadway and residential development



View across the site looking north and bordering sidewalk and adjacent roadway

Pacific Pump Station

(Facility address: 100 Frontage St)

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	4	M	Good. Natural grass and trees around 2 sides of the building. Could stand to be weeded a bit.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	4	D	Good. Young landscape installation.
Views into the site	3	D	Visible. Limited screening.
Building			
Architectural Style	5	D	Simple modern with residential detailing. Excellent use of materials, color, and scale. Architectural gem.
Level of Architectural Finish	5	D	High. Dual colored brick with glass blocks and tiled roof.
Physical conditions of overall facility	5	M	High. Clean and neat.
Quality of maintenance on building	5	M	Excellent. No repairs needed.
Facility			
Type of odor control	-	Fact	Carbon scrubber.
Noticeable odor	4	O	Very slight odor.
Portions of the facility above and below grade	-	Fact	Rectangular (above) and circular (pump station and wet well).
Public amenities (on-site)	0	D	None.
Building Percentage	-	Fact	22%.
Lot size	-	Fact	540 SF (on right of way).

Characteristic	Score	Type	Comments
Age of facility	-	Fact	2007
WTD build	-	Fact	No. WTD rebuilt at 2007.
WTD acquired	-	Fact	Yes, but relocated and rebuilt.
General Overall impression	-	Fact	Very nice building with good landscaping which provides habitat. Landscaping is limited due to small size of the site. Slight odor noticed and low hum.
Surroundings			
Affect on Regional View	5	D	None.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Industrial, highway, truck school.
Surrounding land uses - nearby	-	Fact	Heavy industrial with some single family housing.
Slope	-	Fact	Flat.
Elevation (high and low)	-	Fact	High: 175.5. Low: 164.5' (140')
Adjacent water body	-	Fact	Unnamed stream.
Overall Site Review	4	Fact	Excellent building with good use of color. Red detailing of the building makes it easy to notice but pleasant. The address of the facility on the WTD website is incorrect.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	27	27
Maintenance (M)	14	36
Odor (O)	4	31
Grand total		95

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from the roadway



Side view of the facility



Front view and landscape

Heathfield Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	4	M	Mature trees and shrubs. Dense and quite good quality. Some weeds present.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	4	D	Good quality, native in character. Mature trees and shrubs that seems to have been retained during construction. Well screened from residential area.
Views into the site	4	D	Limited view of building and site.
Building			
Architectural Style	5	D	Interesting 1970's building that blends well with the environment. Modern Industrial. Pyramidal character helps it recede from view.
Level of Architectural Finish	4	D	Medium to high. Metal siding in good shape.
Physical conditions of overall facility	4	M	Good. Could use weeding of landscape.
Quality of maintenance on building	4	M	High. In very good condition.
Facility			
Type of odor control	-	Fact	Carbon Scrubber.
Noticeable odor	5	O	None.
Portions of the facility above and below grade	-	Fact	Trapezoidal. 33% above the ground (1 floor building with roof included).
Public amenities (on-site)	0	D	None.
Building Percentage	-	Fact	9%.

Characteristic	Score	Type	Comments
Lot size	-	Fact	29,900 S.F.
Age of facility	-	Fact	1968
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Very well sited and desgined. Good solution, design that dissappears yet is interesting.
Surroundings			
Affect on Regional View	5	D	None. 75% of the site is hidden by the trees.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Residential, new housing of fairly high quality.
Surrounding land uses - nearby	-	Fact	Residential.
Slope	-	Fact	North to south.
Elevation (high and low)	-	Fact	High: 43.0. Low: 2.5'
Adjacent water body	-	Fact	Small creek.
Overall Site Review	4	Fact	Well sited, receeds in view, hidden on 3 sides by mature vegetation, quiet, and a good neighbor.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	27	27
Maintenance (M)	12	31
Odor (O)	5	39
Grand total		97

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from the roadway



Back view and landscaping



View to the rear of the property

South Mercer Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	4	M	Good. The trees are mature so that it covers and hides facility from water views.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	4	D	Good quality for location. Forest area at the back (waterfront) makes it natural in character.
Views into the site	4	D	The site is screened from view. The driveway acts as a roof top parking area and overlook to the lake.
Building			
Architectural Style	3	D	Simple concrete. Some walls are pattered. The style blends with the environment.
Level of Architectural Finish	3	D	Medium to high.
Physical conditions of overall facility	4	M	High. Facility in good condition.
Quality of maintenance on building	4	M	Medium to high. Small cracks in building walls noticed.
Facility			
Type of odor control	-	Fact	Carbon Scrubber.
Noticeable odor	4	O	Very faint odor noticed at the water's edge.
Portions of the facility above and below grade	-	Fact	Rectangular. Exhaust stack above the ground, 2 floor underground (excluding pipe).
Public amenities (on-site)	4	D	The driveway and rooftop form an overlook to the lake.
Building Percentage	-	Fact	27%

Characteristic	Score	Type	Comments
Lot size	-	Fact	7,763 SF
Age of facility	-	Fact	1965
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Very clean, neat, and hidden facility. Nice waterfront location. Dense landscaping makes it more natural looking.
Surroundings			
Affect on Regional View	5	D	None.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Residential, high end.
Surrounding land uses - nearby	-	Fact	Residential, high end.
Slope	-	Fact	Facility tucked into slope of hill.
Elevation (high and low)	-	Fact	High: 136.83'. Low: 121.08 ' (98.75)
Adjacent water body	-	Fact	Lake Washington.
Overall Site Review	4	Fact	One would not know this is an industrial facility. Clean , neat, and well maintained. Low level of noise noticed as the facility located below the grade from roadway.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	28	28
Maintenance (M)	12	31
Odor (O)	4	31
Grand total		90

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View onto the rooftop of the facility from the street end



View from rooftop of the site and landscape screening



Back view of the facility looking west

Interurban Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	3	M	Good. Clean site and well maintained landscape.
Presence of Art and extent	4	D	Yes. Art on the front façade: water fountain, terminal map, and sitting baskets.
Quality of Landscape Installation	4	D	Good. Simple landscape installation at the back and the sides of the building.
Views into the site	4	D	Visible from the major roadways, screened from the golf course at the back.
Building			
Architectural Style	4	D	A little bit classical in nature. Industrial brick building.
Level of Architectural Finish	3	D	High. Feels like train terminal.
Physical conditions of overall facility	2	M	Needs cleaning and minor repairs.
Quality of maintenance on building	2	M	Buildings need to be power washed. Art feature in the front of the facility needs to be repaired. Several broken tiles should be replaced.
Facility			
Type of odor control	-	Fact	Carbon Scrubber.
Noticeable odor	5	O	None.
Portions of the facility above and below grade	-	Fact	Rectangular (above) and circular (scrubber enclosure). 1/3 above the ground (3 floor building with roof included)
Public amenities (on-site)	4	D	Public art on main roadway and public seating area (benches and stairs).
Building Percentage	-	Fact	4.00%
Lot size	-	Fact	39,589 S.F.

Characteristic	Score	Type	Comments
Age of facility	-	Fact	1992 (relocated and rebuilt). Online at 1995.
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Good architectural style but dirty buildings. Façade on roadway is a little bit overdone (too fancy for the surroundings).
Surroundings			
Affect on Regional View	4	D	Facility can be seen from major roadway.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Parkland, golf course, and commercial.
Surrounding land uses - nearby	-	Fact	Main highway and commercial.
Slope	-	Fact	Flat.
Elevation (high and low)	-	Fact	High:135.79' . Low: 60.0'
Adjacent water body	-	Fact	Black River.
Overall Site Review	4	Fact	The buildings need to be power washed. The condition of the building is low when compared to most of our other facilities. Water fountain, art, and tile on the stairs needs to be repaired.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	32	32
Maintenance (M)	7	18
Odor (O)	5	39
Grand total		89

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from major roadway



Side view of additional building, electrical panels, and landscape



Back view of the site and landscape

Lake Ballinger Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	5	M	Good quality and well maintained landscaping. Facility is surrounded by native trees and dense forest.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	4	D	Good to high quality. Dense and mature native trees installed. Landscape allows good screening of the site.
Views into the site	5	D	The only views into the site is from the entrance driveway. The site is surrounded by a well designed fence.
Building			
Architectural Style	4	D	Simple concrete building with modern design. Standby generator and electrical transformers are unsightly but tucked out of sight.
Level of Architectural Finish	3	D	Simple industrial.
Physical conditions of overall facility	3	M	Generally good. No visible repairs required. Could use power washing to improve cleanliness.
Quality of maintenance on building	3	M	Generally in good condition. Side building could use a power washing.
Facility			
Type of odor control	-	Fact	Carbon scrubber (renewed in 1995).
Noticeable odor	3	O	Faint odor noticable during visit.
Portions of the facility above and below grade	-	Fact	Rectangular. 25% above the ground. 1 floor above, 3 floors below (including wet well).
Public amenities (on-site)	3	D	Bat house for habitat improvement. No access to immediate facilities.
Building Percentage	-	Fact	8 % (building only), 31% (building, driveway, electrical panels).

Characteristic	Score	Type	Comments
Lot size	-	Fact	19,611 SF.
Age of facility	-	Fact	1989
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Good quality landscape and building. Clean and modern building. Very well screened with mature native vegetation. Faint odor noticed. Considerably quite pump station.
Surroundings			
Affect on Regional View	5	D	None. Facility blends well with natural surroundings.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Large apartment complex in park like setting, single family residential area, public trail, and native forest.
Surrounding land uses - nearby	-	Fact	Busy roadways and single family homes.
Slope	-	Fact	Slopes from east to west; none at the facility.
Elevation (high and low)	-	Fact	High: 429.50'. Low: 411.62' (354.17')
Adjacent water body	-	Fact	Across the road from Lake Ballinger.
Overall Site Review	4	Fact	Good screening and construction preserved a large part of the surrounding native forest. Good property to have as a neighbor. The facility has slight noticeable odor and low hum.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	29	29
Maintenance (M)	11	29
Odor (O)	3	23
Grand total		81

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from the adjacent roadway



View from adjacent public trail



Electrical panel and bat house located at the back of facility

Medina Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	4	M	Good, well maintained, and well suited to the location.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	4	D	High. Landscape around the building and driveway. Nicely done.
Views into the site	4	D	Views are partially screened from surrounding streets. The view of the building is also nice.
Building			
Architectural Style	4	D	Simple brick 1980's style, institutional.
Level of Architectural Finish	4	D	Simple but well done. Two color brick with creative brick placement on the circular building that improves the looks.
Physical conditions of overall facility	4	M	Good. Roof flashing needs painting.
Quality of maintenance on building	4	M	Good. No repairs needed.
Facility			
Type of odor control	-	Fact	Carbon Scrubber.
Noticeable odor	4	O	Very slight to none. Exhaust fan noise noticable.
Portions of the facility above and below grade	-	Fact	1 storey above and below the grade. 3/5 above the grade.
Public amenities (on-site)	0	D	None.
Building Percentage	-	Fact	34%
Lot size	-	Fact	9400 S.F.

Characteristic	Score	Type	Comments
Age of facility	-	Fact	1987
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Nice facility. Clean and nice building. Facility blends well into surroundings.
Surroundings			
Affect on Regional View	5	D	None.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Medina Elementary School and residential.
Surrounding land uses - nearby	-	Fact	Residential (high end).
Slope	-	Fact	Flat on site, slight slope at driveway.
Elevation (high and low)	-	Fact	Low: 50.5' (26.60').
Adjacent water body	-	Fact	Lake Washington within a few blocks.
Overall Site Review	4	Fact	Well designed but not over done, well suited for the surrounding area. Small interesting building. Nice partial screening to enhance the views of the site.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	26	26
Maintenance (M)	12	31
Odor (O)	4	31
Grand total		88

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from the roadway



Side view of the site and landscaping



Back view of the site from the driveway

53rd Ave Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	0	M	None.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	0	D	None.
Views into the site	5	D	All underground and paved.
Building			
Architectural Style	5	D	None. Burried facility. Roof provides paved walking surface.
Level of Architectural Finish	3	D	Patterned concrete paving with grates and access doors.
Physical conditions of overall facility	5	M	New, good quality.
Quality of maintenance on building	5	M	Good. Clean top surface.
Facility			
Type of odor control		Fact	Carbon scrubber.
Noticeable odor	5	O	None. No noise noticed.
Portions of the facility above and below grade	-	Fact	Rectangular. 2 floor underground (including wet well).
Public amenities (on-site)	2	D	Paved plaza over facility, overlooking Puget Sound.
Building Percentage	-	Fact	Underground building.
Lot size	-	Fact	Existing : 897.75 SF, new addition 2137.33 SF, Total 3035.08 SF.

Characteristic	Score	Type	Comments
Age of facility		Fact	1965 (upgraded on 2007).
WTD build	-	Fact	Acquired then WTD renovated.
WTD acquired	-	Fact	Yes.
General Overall impression	-	Fact	Blends perfectly with the location.
Surroundings			
Affect on Regional View	5	D	None.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Residential and small businesses.
Surrounding land uses - nearby	-	Fact	Residential and small businesses.
Slope	-	Fact	Flat.
Elevation (high and low)	-	Fact	High: 113.5'.
Adjacent water body	-	Fact	Puget sound.
Overall Site Review	3	Fact	Good site and well maintained. Lost opportunity to incorporate public amenities. This would have been a great place for public art and educational panels in paved roof surface (public sidewalk). Seems an appropriate place to add public benches and viewing binoculars.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	25	25
Maintenance (M)	10	26
Odor (O)	5	39
Grand total		90

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



East view of site showing burried facility beneath public walkway



View to the west showing small electrical vault



View of the exhaust stacks, electrical vault, and public walkway

Kenmore Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	3	M	Good. Mature and dense screening at the front of site but lacks of screening on south side. Dead trees need to be removed and replaced.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	3	D	Good. Mature trees on the site. Some new plantings have been added and may provide adequate screening when mature.
Views into the site	3	D	Limited to the two entry points. Surrounded by heavy industrial uses.
Building			
Architectural Style	3	D	Industrial look. Split-face concrete block on rectangular building that resembles a fire station. Circular shaped pump station building with sloped, exposed aggregate panels.
Level of Architectural Finish	3	D	Simple and clean. Circular building adds interest.
Physical conditions of overall facility	3	M	Good condition.
Quality of maintenance on building	3	M	Good. No repairs needed.
Facility			
Type of odor control	-	Fact	Carbon scrubber.
Noticeable odor	5	O	None.
Portions of the facility above and below grade	-	Fact	67' 4" circular diameter for pump station (25% above if 78' main included). Square building for odor control. Smaller rectangular for primary distribution structure
Public amenities (on-site)	0	D	None, no access to the site.
Building Percentage	-	Fact	20%.
Lot size	-	Fact	30,490 S.F.

Characteristic	Score	Type	Comments
Age of facility	-	Fact	1985
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Clean and well maintained building and landscape. High quality for neighboring industrial uses. Lacks of screening along south side. Barbed wire used on fencing is foreboding.
Surroundings			
Affect on Regional View	5	D	None.
View blockage by facility	5	D	None. Provides screening of neighboring industrial properties.
Surrounding land uses - adjacent	-	Fact	Industrial: Kenmore Aggregate Sand and Gravel, Alaska General Foods, and RV sales.
Surrounding land uses - nearby	-	Fact	Industrial and commercial. Near busy highway.
Slope	-	Fact	Flat site.
Elevation (high and low)	-	Fact	Low: (96.0')
Adjacent water body	-	Fact	Near Lake Washington.
Overall Site Review	3	Fact	Clean building with mature and well maintained landscape. The facility looks friendly from exterior views. Consideration should be given to remove barb wire from fencing. Currently very heavy truck traffic on adjacent properties and roadway.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	22	22
Maintenance (M)	9	23
Odor (O)	5	39
Grand total		84

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View of the main entry of 175th st.



View from the secondary entrance into site



View of round building on the east side of facility site

Interbay Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	0	M	None. Facility currently under construction with no landscape installed.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	0	D	None.
Views into the site	4	D	Limited, hidden by elevated roadway.
Building			
Architectural Style	4	D	Two different phases of construction that work well together. Modern and simple style.
Level of Architectural Finish	4	D	Modern and industrial looking. Excellent new building. Older structure with yellow brick and tilt up concrete panels.
Physical conditions of overall facility	4	M	Good in general.
Quality of maintenance on building	3	M	Good.
Facility			
Type of odor control	-	Fact	Carbon scrubber, currently being installed.
Noticeable odor	5	O	None.
Portions of the facility above and below grade	-	Fact	Rectangular. 50% above grade. 1 floor above, 2 floors below (incl wet well).
Public amenities (on-site)	0	D	None.
Building Percentage	-	Fact	32%.
Lot size	-	Fact	15500 S.F.

Characteristic	Score	Type	Comments
Age of facility	-	Fact	1966 (upgraded on 1979).
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Good quality industrial building in very industrial area. Well sited and maintained.
Surroundings			
Affect on Regional View	5	D	None.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Industrial, railroad, commercial, and roadway.
Surrounding land uses - nearby	-	Fact	Industrial and residential on hillside to the east. Port of Seattle Piers to the west.
Slope	-	Fact	Flat.
Elevation (high and low)	-	Fact	High: 133.5'. Low: 114' (83.75').
Adjacent water body	-	Fact	Elliot bay.
Overall Site Review	4	Fact	The location is very tucked away. Generally good industrial building with excellent design on the new building (2012 upgrade). No landscaping needed for this time. Odor control facility is under construction. Fence screening will be installed in the near future.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	22	22
Maintenance (M)	7	18
Odor (O)	5	39
Grand total		79

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View to the south into the older portion of the facility



View from the side road to the newly constructed generator building



View from the adjacent roadway looking south at both old and new portions of the facility

Duwamish Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	3	M	Fair. Mature trees and shrubs but no landscaping on site. Landscaping a bit overgrown outside of the fence.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	3	D	Good.
Views into the site	4	D	Limited by trees along E Marginal Way. Nicely screened by mature trees outside the fence. Slats in the fence block some view but some slats are missing or broken.
Building			
Architectural Style	3	D	Simple, clean block style industrial.
Level of Architectural Finish	3	D	Fair to good. Concrete tilt up with additional white brick of the 1960s.
Physical conditions of overall facility	3	M	Good. Fence is rusted.
Quality of maintenance on building	3	M	Good. Need additional slats in fencing.
Facility			
Type of odor control	-	Fact	None.
Noticeable odor	3	O	Noticable odor at fence line.
Portions of the facility above and below grade	-	Fact	Circular. 50% above grade. 1 flow above grade, 2 floor underground (plus piping).
Public amenities (on-site)	0	D	None.
Land to building ratio	-	Fact	15%.
Lot size	-	Fact	29,700 SF

Characteristic	Score	Type	Comments
Age of facility	-	Fact	1967
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Well suited to its industrial location. Landscape a bit overgrown. Wood slate fence needs repair. Clean and neat public structure.
Surroundings			
Affect on Regional View	5	D	None.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Roadway, industrial, and parking lot.
Surrounding land uses - nearby	-	Fact	Industrial, office, warehouse, and high quality new office building.
Slope	-	Fact	Flat.
Elevation (high and low)	-	Fact	High: 136'. Low: 114.5' (76.5' including pipe).
Adjacent water body	-	Fact	None. Duwamish River nearby.
Overall Site Review	3	Fact	Nice mature trees for screening. Odor is the main issue; not extreme but noticeable.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	23	23
Maintenance (M)	9	23
Odor (O)	3	23
Grand total		70

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View to the north into the site along driveway



Back view from the adjacent parking lot and railroad



View into the site from E Marginal Way

Black Diamond Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	2	M	Only grass (some overgrown) around the site. Right next to a wetland. Should be landscaped.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	2	D	Low, only grass installed. Missed opportunity to enhance adjacent wetland area.
Views into the site	3	D	Limited visibility. Visible only from the road, tucked in with a long driveway.
Building			
Architectural Style	3	D	Residential scale with dormers.
Level of Architectural Finish	3	D	Good. Possibly copper roofing on dormers. Brick building.
Physical conditions of overall facility	3	M	Good for the building (have 4 locks to secure the fence). Fencing seems excessive for location of the facility, could be much reduced.
Quality of maintenance on building	3	M	Good, no repairs needed.
Facility			
Type of odor control	-	Fact	None.
Noticeable odor	5	O	None.
Portions of the facility above and below grade	-	Fact	1/2 above the ground. Rectangular (above, house like) and rectangular wet well underground.
Public amenities (on-site)	0	D	None.
Building Percentage	-	Fact	3.00%
Lot size	-	Fact	356,756 S.F

Characteristic	Score	Type	Comments
Age of facility	-	Fact	1992
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Nice looking building and good location. Needs landscaping. Low hum heard when pump is working.
Surroundings			
Affect on Regional View	3	D	A house looks partially down on facility.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Wetland and single family house (wetland seems to extend into the site).
Surrounding land uses - nearby	-	Fact	Houses and business (Black Diamond Bakery).
Slope	-	Fact	Sloped drive down helps screen but facility site is flat.
Elevation (high and low)	-	Fact	High: 553.00' Low: 540.00' (521.75').
Adjacent water body	-	Fact	Wetland.
Overall Site Review	3	Fact	Good neighbor but could be improved with landscaping and reduced fencing. Nice location.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	19	19
Maintenance (M)	8	21
Odor (O)	5	39
Grand total		79

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from the roadway



Front view of the building



Side view of additional building and electrical transformers

Kirkland Pump Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	-	M	The site is under construction. No landscape planned.
Presence of Art and extent	-	D	Art gates at bus stop and on the street will be placed.
Quality of Landscape Installation	-	D	None.
Views into the site	-	D	From busy surrounding and streets. Three sides of the building are visible.
Building			
Architectural Style	-	D	Split face block, industrial. Maybe a bit industrial for this downtown corner.
Level of Architectural Finish	-	D	Medium. Some tiles on the building with a series of small windows.
Physical conditions of overall facility	-	M	Under construction.
Quality of maintenance on building	-	M	Under construction.
Facility			
Type of odor control	-	Fact	Cabon Scrubber currently being installed. Noise control will also be installed.
Noticeable odor	-	O	None.
Portions of the facility above and below grade	-	Fact	Rectangular. Exhaust stack above the ground. 2 floor below (wetwell included).
Public amenities (on-site)	-	D	Improvements to the street scape are planned that will be the first phase of construction of Kirkland's downtown pedestrian way. Shade trees and pedestrian seating will be provided. The facility will have a bus shelter and artist design gates within the bus shelter and the southern elevation of the building.
Building Percentage	-	Fact	57.00%

Characteristic	Score	Type	Comments
Lot size	-	Fact	3500 S.F.
Age of facility	-	Fact	1968. Upgraded at 2014.
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	The site is currently under construction. Design of the building could have been more suited to its downtown location.
Surroundings			
Affect on Regional View	-	D	Very public intersection, across from and viewed from public library and transit center.
View blockage by facility	-	D	None.
Surrounding land uses - adjacent	-	Fact	Playfields, public library, transit center, and commercial.
Surrounding land uses - nearby	-	Fact	In the heart of downtown Kirkland. Several apartment complexes.
Slope	-	Fact	Flat.
Elevation (high and low)	-	Fact	High: 41.0'. Low: 13.03'
Adjacent water body	-	Fact	Few blocks to Lake Washington.
Overall Site Review	-	Fact	This site is one of our most public properties. The site is currently under construction.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	-	-
Maintenance (M)	-	-
Odor (O)	-	-
Grand total		-

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from future pedestrian way



Front view of the construction site



View from the facility to the northwest

Dexter Regulator Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	4	M	Excellent. Well maintained and well trimmed. Clear and clean area.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	4	D	Good. Well maintained and well trimmed. Trees and ivy work well to create a park like feel.
Views into the site	5	D	Nice views from above as viewed from neighbouring high-rise residential and street. Circular design adds interest. Architectural concrete work very well done and naturalistic in nature.
Building			
Architectural Style	5	D	Simple concrete industrial facility that is organic and similar to West Point treatment facility in character. Blends well into the hillside where it is sited.
Level of Architectural Finish	5	D	High. Good condition and well maintained. Nicely detailed concrete.
Physical conditions of overall facility	4	M	Very good condition.
Quality of maintenance on building	4	M	High on building, low on covered publing seating area. Pressure washing or sand blasting needed to remove graffiti. Maintenance needs to be scheduled more often for this heavily used public seating area.
Facility			
Type of odor control	-	Fact	None.
Noticeable odor	5	O	None. No noticable noise.
Portions of the facility above and below grade	-	Fact	Rectangular. 25% above the ground. Control room above the ground, 3 floor underground (including piping).
Public amenities (on-site)	4	D	Very nicely designed public plaza and waiting area with bench adjacent to bus stop.

Characteristic	Score	Type	Comments
Building Percentage		Fact	7%.
Lot size	-	Fact	6413 SF.
Age of facility	-	Fact	1971 and later renovation on 1982 (??).
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Nice facility and excellent integration into its site. The facility does look good from above (high-rise residential). The facility nicely resembles a pocket park.
Surroundings			
Affect on Regional View	5	D	Good addition to the neighborhood.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Bus stop, commercial, high-rise residential.
Surrounding land uses - nearby	-	Fact	Commercial and high density residential.
Slope	-	Fact	Flat front plaza on street. Facility acts as retaining wall with steep slope behind from west to east.
Elevation (high and low)	-	Fact	High 89.00'. Low: 76.75' (32.5').
Adjacent water body	-	Fact	Lake Union.
Overall Site Review	4	Fact	Good. Facility tucked into the hill and very well designed with park like character. Structure needs to be sand blasted to remove graffiti. Very nice organic wall system, building design and curvilinear seating walls.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	33	33
Maintenance (M)	12	31
Odor (O)	5	39
Grand total		103

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from the public sidewalk and bus shelter



View from the roadway to the covered public seating area



View to the east site from adjacent residential structures

Log-boom Regulator Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	4	M	Good quality. Well maintained and clean site.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	4	D	Excellent quality and scaled to site. The site is nicely screened and planted.
Views into the site	5	D	Good view from the Burke Gilman trail and playground. The site is barely visible from the parking lot.
Building			
Architectural Style	5	D	Building is styled to resemble classic lakeside plaza overlook. Post-modern design done in simple concrete.
Level of Architectural Finish	4	D	High level of detail, appropriate for this facility location.
Physical conditions of overall facility	4	M	High.
Quality of maintenance on building	4	M	Good. No noticable repairs needed.
Facility			
Type of odor control	-	Fact	Carbon scrubber.
Noticeable odor	2	O	Noticeable odor on breezy day.
Portions of the facility above and below grade	-	Fact	Rectangular (21'x15'). 30% above the ground (including 42 force mains underground).
Public amenities (on-site)	4	D	Roof is designed as a public plaza. Bench seats are available on the roof. Facility is linked to Burke-Gilman trail and City of Kenmore Park.
Building Percentage	-	Fact	0.39%.
Lot size	-	Fact	59,677 SF.
Age of facility	-	Fact	1990
WTD build	-	Fact	Yes.

Characteristic	Score	Type	Comments
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Nice building. Integrated well into public uses. Enhances the park area and provides overlook to park and lake. Nice exhaust stack camouflaged as a gate to the roof. Odor is noticable.
Surroundings			
Affect on Regional View	5	D	Improves view as building serves as a viewpoint. From the adjacent public pier, the building is unnoticable as result of vigorous native vegetation retained on the shoreline.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Playground, public trail, park, and waterfront access.
Surrounding land uses - nearby	-	Fact	Residential on west and east, highway, and commercial buildings adjacent to the highway.
Slope	-	Fact	North to south. Steep at road with structure retaining slope.
Elevation (high and low)	-	Fact	High: 130.05'. Low:(105.8')
Adjacent water body	-	Fact	Lake Washington with beach access.
Overall Site Review	4	Fact	Facility well integrated into site, very nice building, noticable odor, and public rooftop plaza providing lake views.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	32	32
Maintenance (M)	12	31
Odor (O)	2	16
Grand total		79

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.



View into the site from adjacent public trail



View to site from Lake Washington



View from parking lot and adjacent playground



Landscape around the facility

University Regulator Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	2	M	Older mature landscape. There are several untrimmed native shrubs. The site needs to be cleaned more often than once a week. Site is heavily used by the public and trash build up is evident. This facility needs to be put on tightly spaced maintenance schedule.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	4	D	Good to high. The landscape blends with campus.
Views into the site	4	D	Minimal but pleasant views in. Building is almost unnoticable.
Building			
Architectural Style	5	D	Modern, circular brick building with covered exterior public seating area.
Level of Architectural Finish	5	D	High.
Physical conditions of overall facility	3	M	Good. The public amenities looks well used. Building needs to be pressure washed.
Quality of maintenance on building	3	M	Good. More maintainance needed on grounds and public outdoor sitting area.
Facility			
Type of odor control		Fact	Carbon scrubber.
Noticeable odor	5	O	None at time of visit. No Noise noticed.
Portions of the facility above and below grade	-	Fact	Circular (overlap 3 circles). 20% above the ground (including wet well underground, rectangular room shape).
Public amenities (on-site)	4	D	Seating area with retaining wall for seating. Nice reprieve for UW Medical Center visitor. Well used but highly littered.
Building Percentage	-	Fact	12%.
Lot size	-	Fact	18,210 SF.

Characteristic	Score	Type	Comments
Age of facility	-	Fact	1973
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Well designed and well used. Building is in good condition but needs more frequent cleaning. Excellent building scale that blends well with the surrounding environment.
Surroundings			
Affect on Regional View	5	D	Almost unnoticable. None.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Busy roadway, UW Medical Center, UW parking facility (underground).
Surrounding land uses - nearby	-	Fact	UW campus, UW stadium, and roadways.
Slope	-	Fact	Minimal small retainage.
Elevation (high and low)	-	Fact	High 79.06'. Low: 68.25' (25.33').
Adjacent water body	-	Fact	None. Close to Lake Washington.
Overall Site Review	4	Fact	Nice design and almost unnoticable (due to location). Very nice public seating area. Building and landscape need to have trash cleaned up more often. Would be an ideal location for educational signage.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	32	32
Maintenance (M)	8	21
Odor (O)	5	39
Grand total		92

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from roadway



View from neighbouring bus shelter to the public amenities



Northside view with surrounding landscape

Norfolk Regulator Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	4	M	High. Well cared for facility.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	4	D	High. Well done for the simple facility it is.
Views into the site	3	D	Visible from the surrounding office buildings but almost unnoticable (due to size) from the adjacent major roadway.
Building			
Architectural Style	4	D	Simple concrete block.
Level of Architectural Finish	4	D	Nicely finished concrete. Simple but nice building.
Physical conditions of overall facility	4	M	High.
Quality of maintenance on building	4	M	High.
Facility			
Type of odor control	-	Fact	None.
Noticeable odor	3	O	Slight odor noticed during visit.
Portions of the facility above and below grade	-	Fact	Rectangular. 1 floor above (control room), 1 floor underground.
Public amenities (on-site)	0	D	None.
Building Percentage	-	Fact	25% (including fenced meter).
Lot size	-	Fact	900 S.F.

Characteristic	Score	Type	Comments
Age of facility	-	Fact	1962 (construction).
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Simple, clean, and well maintained building. It blends well with the surroundings. Adequate landscape for the site.
Surroundings			
Affect on Regional View	4	D	Limited, in the view shed of adjacent industrial buildings.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Office buildings and industrial.
Surrounding land uses - nearby	-	Fact	Boeing field, major roadways, and commercial.
Slope	-	Fact	Flat.
Elevation (high and low)	-	Fact	High 115.43'. Low: 100.63'.
Adjacent water body	-	Fact	None.
Overall Site Review	4	Fact	Good quality. Small and almost unnoticable facility.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	24	24
Maintenance (M)	12	31
Odor (O)	3	23
Grand total		79

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View to the site from the north



Side view of the site with fencing from the southwest



Landscaping surrounding the facility on the west and north side.

King Regulator Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	0	M	None.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	0	D	None.
Views into the site	4	D	Visible from newly constructed public trail system along the western edge of facility.
Building			
Architectural Style	4	D	Simple concrete structure. Thick parapet adds nice scale to structure. Patterened and attractive concrete work.
Level of Architectural Finish	4	D	Good. Recycled plastic fence adds a nice level of finish and design.
Physical conditions of overall facility	4	M	Good conditions and clean building.
Quality of maintenance on building	4	M	Good. No repairs needed.
Facility			
Type of odor control	-	Fact	None.
Noticeable odor	5	O	None.
Portions of the facility above and below grade	-	Fact	Rectangular. 50% above the ground.
Public amenities (on-site)	0	D	None.
Building Percentage	-	Fact	17%
Lot size	-	Fact	1320 SF

Characteristic	Score	Type	Comments
Age of facility	-	Fact	1970
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Good quality structure with nice fence around the transformer. Nice sculpted concrete. No landscaping but a small infiltration area where attractive river rock has been used for cover and to allow infiltration of rainwater.
Surroundings			
Affect on Regional View	4	D	None, blends with the building behind.
View blockage by facility	4	D	Limited.
Surrounding land uses - adjacent	-	Fact	Industrial, roadway, and public central waterfront trail.
Surrounding land uses - nearby	-	Fact	Industrial and commercial businesses of Pioneer Square.
Slope	-	Fact	Flat.
Elevation (high and low)	-	Fact	High: 121.5'. Low: 110' (104').
Adjacent water body	-	Fact	Elliot Bay.
Overall Site Review	4	Fact	Very good quality. Clean and neat small building of high design with good detail. Building blends into the background. Well suited for its location.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	20	20
Maintenance (M)	8	21
Odor (O)	5	39
Grand total		80

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from pedestrian trail to the west



Western wall from the trail



Adjacent public trail extending around Elliot Bay to West Seattle

South Michigan Regulator Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	0	M	None.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	0	D	None.
Views into the site	3	D	Extremely limited. Facility is tucked under elevated roadway.
Building			
Architectural Style	3	D	Painted concrete box.
Level of Architectural Finish	3	D	Industrial but clean. Restroom like building.
Physical conditions of overall facility	4	M	Neat, clean, freshly painted. Tucked under elevated roadway.
Quality of maintenance on building	4	M	Very good. No repair needed.
Facility			
Type of odor control	-	Fact	None.
Noticeable odor	5	O	None.
Portions of the facility above and below grade	-	Fact	15%.
Public amenities (on-site)	0	D	None.
Building Percentage	-	Fact	11%.
Lot size	-	Fact	1,193 SF.

Characteristic	Score	Type	Comments
Age of facility	-	Fact	1962
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Well sited. Clean, neat, small building.
Surroundings			
Affect on Regional View	5	D	None.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Freeway truck parking, and heavy industrial.
Surrounding land uses - nearby	-	Fact	Heavy industrial, roadway, and business.
Slope	-	Fact	0.25":1'.
Elevation (high and low)	-	Fact	High 135'. Low: 120.07' (104.75').
Adjacent water body	-	Fact	Duwamish River nearby.
Overall Site Review	3	Fact	Well done for its location. Fits the site very well. Tucked under elevated roadway.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	19	19
Maintenance (M)	8	21
Odor (O)	5	39
Grand total		79

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View from the south to the north from adjacent roadway



Back and side view of facility (north and west facades)

Ballard Regulator Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	3	M	Minimal landscape with juniper shrubs.
Presence of Art and extent	3	D	Sundial bronze art piece.
Quality of Landscape Installation	2	D	Okay for the present facility but needs additional landscaping as the current expansion is completed.
Views into the site	1	D	Very visible from the adjacent roadway that has heavy industrial use. Site is currently being renovated.
Building			
Architectural Style	2	D	Poor quality industrial screening walls surround facilities. Appears to be modern style for the time period for its original construction and now feels outdated.
Level of Architectural Finish	2	D	Low. Simple but not well suited to well screen current facilities.
Physical conditions of overall facility	2	M	Facility is dated. Poor as wood is in disrepair.
Quality of maintenance on building	2	M	Poor. Patch work painting on the building to address graffiti. Needs pressure washing. Sign and bollard are in disrepair. Needs maintenance and repairs.
Facility			
Type of odor control	-	Fact	None.
Noticeable odor	3	O	Slight odor noticed. Sporadic odor during visit. No noise heard.
Portions of the facility above and below grade		Fact	Rectangular. 1/3 above the ground (including wet well underground).
Public amenities (on-site)	3	D	Bench seat on the front corner of the site in disrepair.
Building Percentage	-	Fact	48%

Characteristic	Score	Type	Comments
Lot size	-	Fact	2478 S.F.
Age of facility	-	Fact	1975
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Industrial, dated, and unsightly screening system. It is not one of our best facilities (located in industrial area). Facility needs additional landscaping and repairs. Construction is currently underway on the eastern portion of the site to add additional facilities. The western portion of the site should be renovated at this time.
Surroundings			
Affect on Regional View	2	D	Rather unsightly facility at the joining edge of industrial and residential neighborhoods. Highly visible.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Business and industrial.
Surrounding land uses - nearby	-	Fact	Industrial, residential, and business.
Slope	-	Fact	Flat.
Elevation (high and low)	-	Fact	High 132.60'. Low: 122.18' (109.25')
Adjacent water body	-	Fact	Salmon Bay.
Overall Site Review	1	Fact	Site needs renovation. Poor design, minimal landscape and poor maintenance. On busy roadway and at the joining edge of industrial and residential neighborhoods.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	20	20
Maintenance (M)	7	18
Odor (O)	3	23
Grand total		62

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site from the adjacent roadway



View along western edge of facility



Side view to the landscape and public seating area

Harbor Regulator Station

Characteristic	Score	Type	Comments
Aesthetic and Art			
Quality of maintenance on landscape	1	M	Medium. Mix of native, volunteer plant materials. Densely overgrown vegetation blocks the view of the facility from the south and west.
Presence of Art and extent	0	D	None.
Quality of Landscape Installation	0	D	No formal landscaping.
Views into the site	3	D	The views into the site are from the sidewalk and adjacent roadways on the southern and western sides of the site. The structure is tucked below the street level into the side slope. The facility is viewed from higher elevation structures, which are mix of commercial and residential uses.
Building			
Architectural Style	3	D	Basic concrete box tucked into hillside.
Level of Architectural Finish	2	D	Fair to low. Painted concrete only.
Physical conditions of overall facility	3	M	Good.
Quality of maintenance on building	3	M	Average, does not appear to need repair.
Facility			
Type of odor control	-	Fact	None.
Noticeable odor	3	O	Slight odor detected near the southwest corner of facility.
Portions of the facility above and below grade	-	Fact	Rectangular. 50% above the ground. 1 floor underground (including piping).
Public amenities (on-site)	0	D	None.

Building Percentage	-	Fact	12.2%.
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Characteristic	Score	Type	Comments
Lot size	-	Fact	2,000 SF.
Age of facility	-	Fact	1969
WTD build	-	Fact	Yes.
WTD acquired	-	Fact	No.
General Overall impression	-	Fact	Simple utilitarian block building tucked into the hillside that blends with native plant material and the surrounding industrial uses. Native vegetation has colonized the south and west sides of the facility providing additional screening.
Surroundings			
Affect on Regional View	5	D	None.
View blockage by facility	5	D	None.
Surrounding land uses - adjacent	-	Fact	Industrial, commercial, and railroad.
Surrounding land uses - nearby	-	Fact	Industrial and residential.
Slope	-	Fact	West slope down to east.
Elevation (high and low)	-	Fact	High 135'. Low: 120.07' (104.75').
Adjacent water body	-	Fact	Elliot Bay.
Overall Site Review	3	Fact	Simple box tucked into corner of industrial area. Native, overgrown plants provide screening. Site is secured with barb wire chain link fence.

Note:

Elevation is calculated from top of building to low point of ground surface elevation.

Building Percentage is the estimated percentage of building area over lot size.

**Type of Characteristic Measured
and Total Survey Scores**

Type	Raw	Final
Design (D)	18	18
Maintenance (M)	7	18
Odor (O)	3	23
Grand total		60

* Equalized score of M and O with D by factor of 2.6 and 7.8 respectively

Scale Used for Scoring Individual Characteristics

Not Applicable	0
Poor	1
Below Standard	2
Standard	3
Above Standard	4
High or Excellent	5



View into the site over the fence from the sidewalk



View from pedestrian walkway to the west of facility



View from the south to the north showing the east elevation of the facility

Appendix C

Statistical Analysis of Pump Station Scores

Statistical Analysis of Pump Station Scores

After completing the statistical analysis of all facilities, the decision was made to look at pump stations as a separate grouping. This was done to determine, if, when we look at a single segment of WTD facilities, would our statistical analysis uncover similar or different results from our analysis of “all facilities” presented in the body of this equity analysis.

The standardized design and maintenance scores for pump stations and their comparisons against minority population and household income follow on pages 4 thru 7.

After careful review, we found that the results from the statistical analysis of the pump stations were very similar to those that we found for “all facilities”. We found no correlation between income of the community surrounding the facility and the quality of design at the facility itself. We did find a weak correlation between higher income of the surrounding community and higher quality maintenance at WTD’s facilities. We found a very weak correlation between higher minority population and higher quality of design and no correlation between minority population and quality of maintenance at WTD’s facilities.

Although the correlations that we found were either weak or very weak these findings, and our understanding of them, will allow WTD to fine tune current maintenance procedures and future design efforts to better meet the County’s goals of equity and social justice throughout our service area. WTD strives to site, design, operate and maintain facilities that meet the same high standards system-wide irrespective of income or minority mix of population. Being aware of the subtle differences found WTD will be able to make corrections and perform to even higher levels.

For a more complete explanation of findings, correlations and recommended actions please refer to the main body of the assessment.

Design Score (Standardized)

Table 1. Pump Station Design Scores

Site	M.H.I.	Minority	Design	M.H.I. Correlation	Minority Correlation
Bellevue	5	3	1.661	-0.0299	0.1443
Belvoir	6	1	1.211		
Pacific	3	3	0.087		
Heathfield	6	2	0.087		
South Mercer	6	2	0.312		
Interurban	1	3	1.211		
Lake Ballinger	2	3	0.536		
Medina	6	2	-0.138		
53rd Ave	5	1	-0.363		
Kenmore	5	2	-1.038		
Interbay	3	2	-1.038		
Duwamish	2	5	-0.813		
Black Diamond	5	1	-1.713		

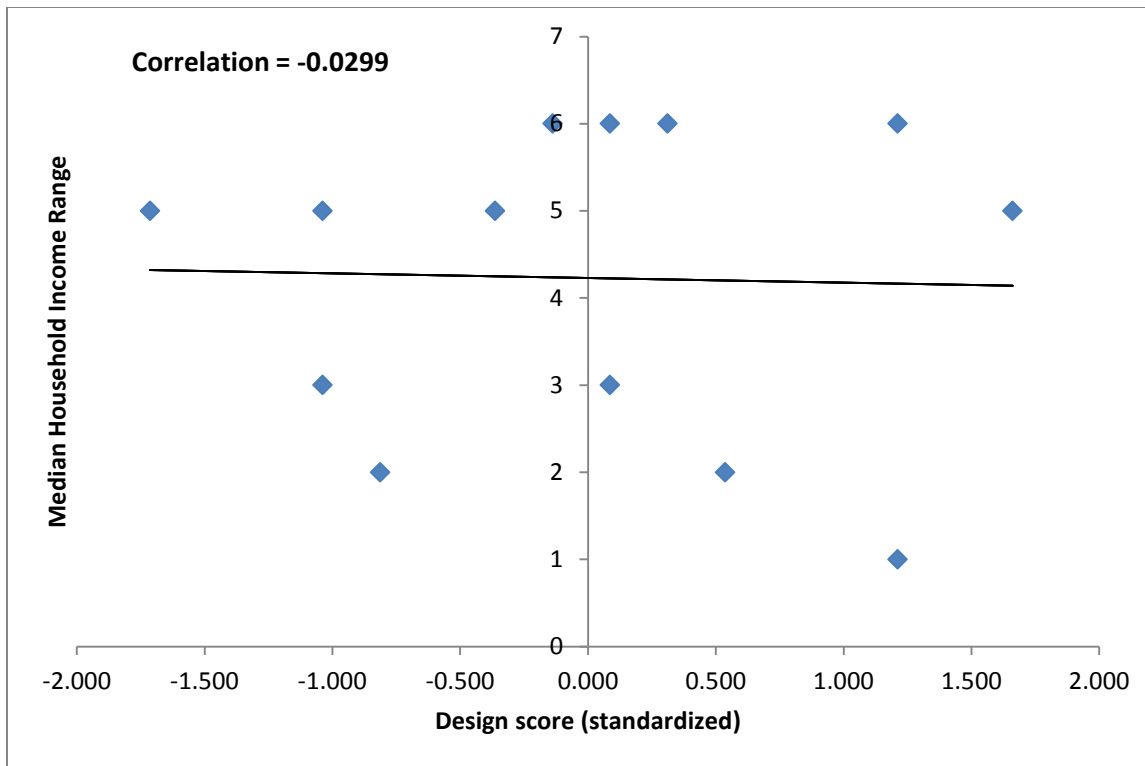


Figure 1.1 Median household income distribution vs. standardized design scores (pump stations only) No correlation is found between income and quality of design.

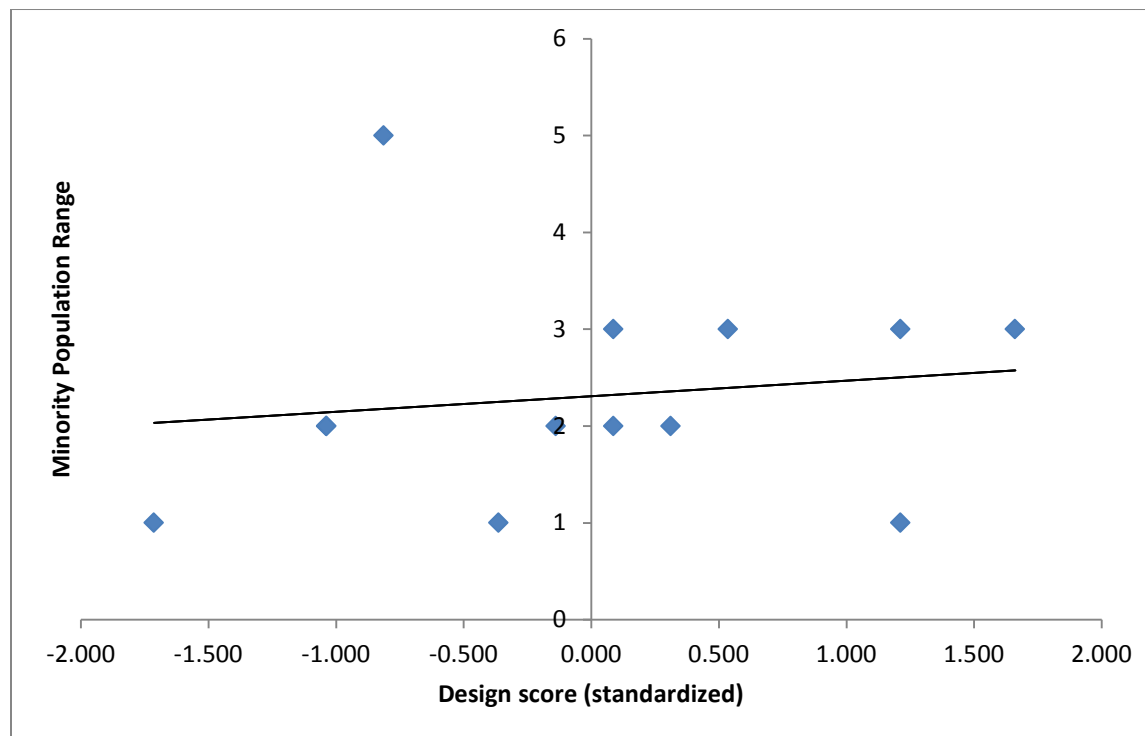


Figure 1.2 **Correlation = 0.1443**. Minority population distribution vs. standardized design scores (pump stations only) A **very weak correlation** is found between higher minority population and higher quality of design.

Maintenance Score (Standardized)

Table 2. Pump Station Maintenance Scores

Site	M.H.I.	Minority	Maintenance	M.H.I. Correlation	Minority Correlation
Bellevue	5	3	1.246	0.3970	0.0798
Belvoir	6	1	-0.118		
Pacific	3	3	1.587		
Heathfield	6	2	0.734		
South Mercer	6	2	0.734		
Interurban	1	3	-1.482		
Lake Ballinger	2	3	0.393		
Medina	6	2	0.734		
53rd Ave	5	1	-0.118		
Kenmore	5	2	-0.630		
Interbay	3	2	-1.482		
Duwamish	2	5	-0.630		
Black Diamond	5	1	-0.971		

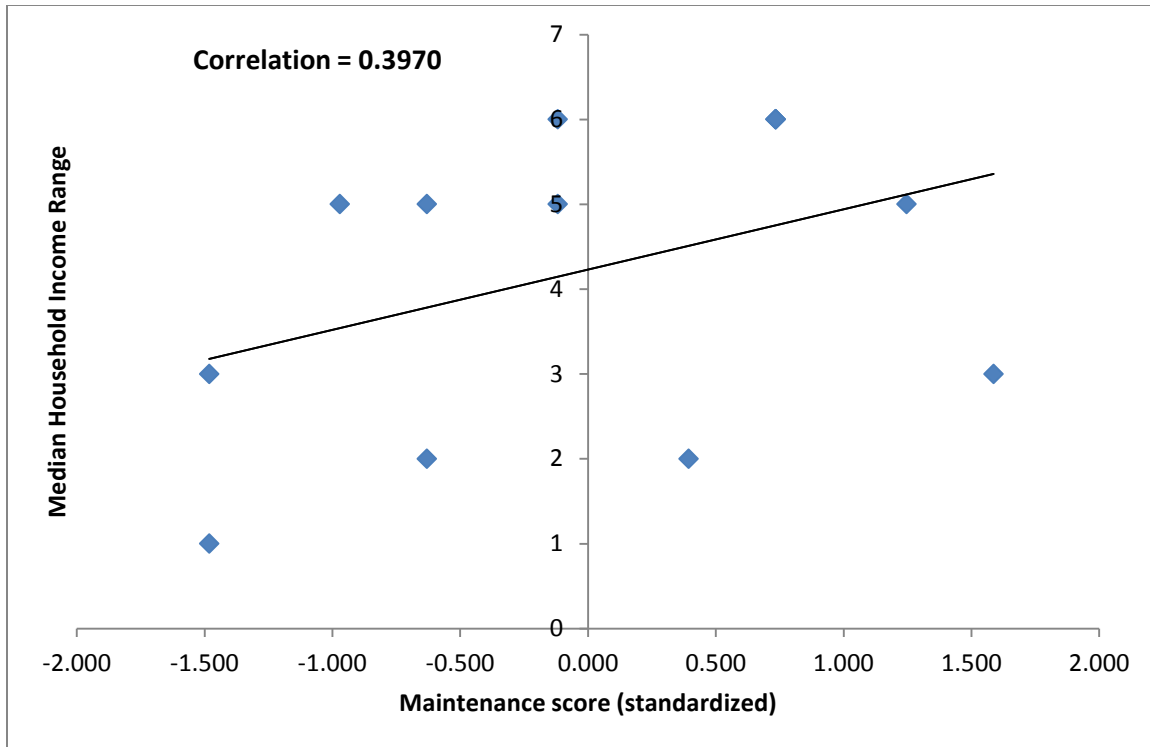


Figure 2.1 Median household income distribution vs. standardized maintenance scores (pump stations only). **A weak correlation is found between higher income and increased quality of maintenance.**

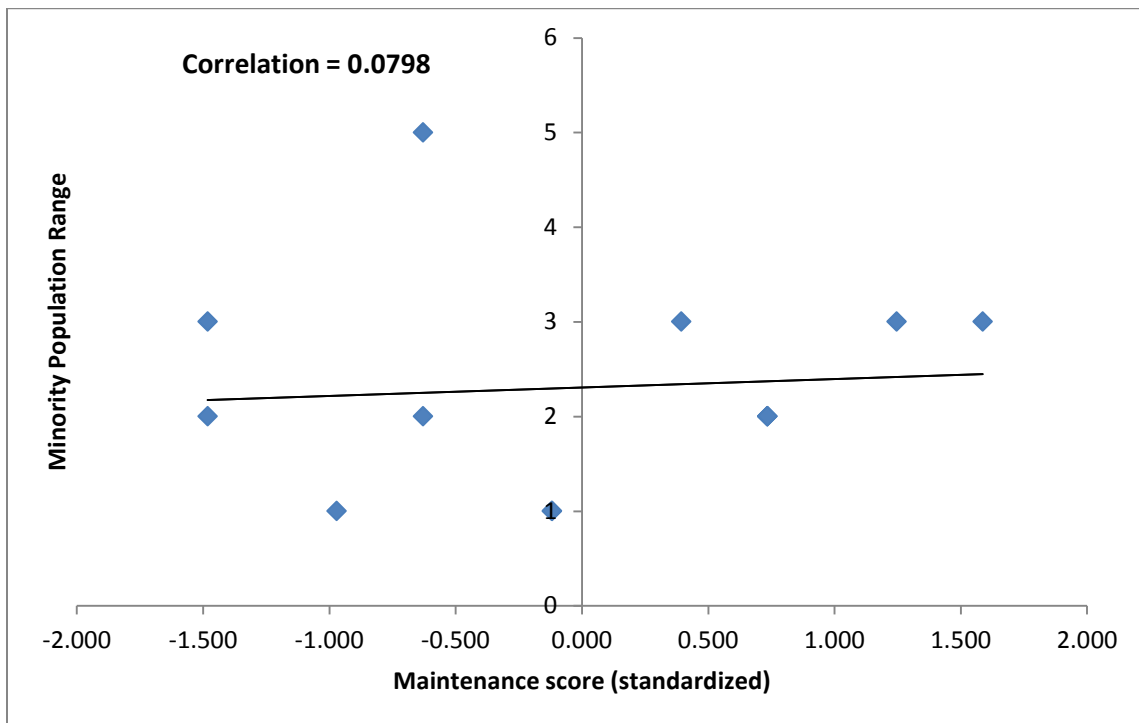


Figure 2.2 Minority population distribution vs. standardized maintenance scores (pump stations only) **No correlation is found between minority population and the quality of maintenance.**

Appendix D

Individual Facility Analysis Suggested Maintenance Activities

Appendix D

Suggested Maintenance Activities *

Treatment Plants

1. Brightwater
 - None
2. South Treatment Plant
 - None
3. West Point Treatment Plant
 - Public landscape overgrown, some pruning and trimming are needed
4. Carnation Treatment Plant
 - None
5. Vashon Treatment Plant
 - Remove rusted barbed wire on perimeter fencing for a more community friendly facility

Pump Stations

6. Bellevue Pump Station
 - Minor weeding required
 - Remove and replace dead trees
7. Belvoir Pump Station
 - None
8. Pacific Pump Station
 - Minor weeding required
9. Heathfield Pump Station
 - Minor weeding required
10. South Mercer Pump Station
 - None
11. Interurban Pump Station
 - Facility, walls and fencing needs to be power washed
12. Lake Ballinger Pump Station
 - Facility needs to be power washed
13. Medina Pump Station
 - Roof flashing needs to be painted
14. 53rd Ave. Pump Station
 - None
15. Kenmore Pump Station
 - Dead trees need to be removed and replaced
 - Remove barbed wire on perimeter fencing for a more community friendly facility

*** Based on observations recorded during the summer of 2012.**

- 16. Interbay Pump Station
 - None
- 17. Duwamish Pump Station
 - Replace chain link fence slats that are broken or missing
- 18. Black Diamond Pump Station
 - Reduce amount of fenced area to just the electrical panels to the North
 - Add landscaping to enhance the wetland located on site
- 19. Kirkland Station
 - Under construction

Regulator Stations

- 20. Dexter Regulator Station
 - Facility needs to be power washed
 - Attempt to better blend graffiti patches so they are less noticable
 - Increase frequency of maintenance due to high public use
- 21. Logboom Regulator Station
 - None
- 22. University Regulator Station
 - Facility and paving surface need to be power washed
 - Increase frequency of maintenance due to high public use
- 23. Norfolk Regulator Station
 - None
- 24. King Regulator Station
 - None
- 25. South Michigan Regulator Station
 - None
- 26. Ballard Regulator Station
 - Wood screening is in disrepair and should be replaced
 - Bench seat is in disrepair and should be replaced
 - Signage is in disrepair and should be replaced
 - Graffiti patch does not blend with the existing condition and should be repainted
- 27. Harbor Regulator Station
 - None

*** Based on observations recorded during the summer of 2012.**