



WATER DEPARTMENT
PLANT SITE SELECTION PROCESS
DRAFT TECHNICAL MEMORANDUM

DATE: April 10, 2013

TO: Heidi Luckenbach

FROM: Catherine Borrowman, Professional and Technical Assistant, Engineering

SUBJECT: Site Selection for Seawater Desalination Treatment Plant

Site Selection Background

The Integrated Water Plan (IWP, 2005) advanced the concept of desalination for further analysis as the water supply component of the IWP. The IWP conceptually described the water supply project (Project) in terms of intake, facility location, treatment, disposal of concentrate, and conveyance of treated water. The Program Environmental Impact Report (pEIR) for the Integrated Water Plan (IWP pEIR) considered three alternative locations where a proposed seawater desalination treatment plant (Plant) could be located. These locations were denoted in the IWP pEIR as Areas A, B and C as described below and shown in **Figure 1**. The three areas, identified as Area A (Industrial Park Area), Area B (Shaffer Road/Antonelli Pond Area), and Area C (Terrace Point/Marine Science Campus Area) were selected based on: (1) proximity to possible intake locations and brine disposal facilities at the City's Wastewater Treatment Facility (WWTF), distribution system infrastructure, and power supply; (2) adequate space requirements; and (3) consistency with surrounding land uses.

Industrial Park Area (Area A): Area A is bounded by the Santa Cruz County Regional Transportation Commission rail line (formerly Southern Pacific rail line) to the north, Natural Bridges to the west, Delaware Avenue to the south, and Swift Road to the east. At the time of the IWP pEIR it was generally described as privately owned parcels consisting of developed and undeveloped areas for manufacturing uses, etc. Arroyo Seco Canyon Creek was realigned west of its original location in 2001. The proposed Plant would either be on undeveloped parcels or

within the footprint of existing buildings on developed parcels¹. The area is surrounded by industrial uses. As described in the IWP pEIR, the environmentally superior area for the proposed Plant was the Industrial Park Area (Area A).

Shaffer Road/Antonelli's Pond Area (Area B): Area B is located between Shaffer Road and Antonelli's Pond – an artificial impoundment along lower Moore Creek. Delaware Avenue and the Homeless Garden Project bound the property to the south and north, respectively. The site is undeveloped and surrounded by other open space uses and residential uses to the south.

Terrace Point Area (Area C): Area C encompasses the UCSC Marine Science Campus property. UCSC owns and manages the lab and research facilities; the Pacific Ocean is to the south; and the railroad corridor to the north. The proposed Plant would have been located in coordination with UCSC as part of their Coastal Long Range Development Plan which at the time of the IWP pEIR was still in development.

Expanded Review of Various Potential Sites

In 2008, after completion of the IWP and IWP pEIR, the **scwd**² Seawater Reverse Osmosis (SWRO) Desalination Pilot Study was well underway at the UCSC Marine Science Campus. The next steps for the **scwd**² Seawater Desalination Program included implementation of the seawater intake studies, and planning for the hiring of consultants to develop the project Environmental Impact Report (EIR) and preliminary design for the proposed Plant. During this time, staff reassessed potential locations for the proposed Plant which had a somewhat larger footprint than previously considered, 4.5+ acres instead of ~3acres. The footprint increased because:

- The design of the facility had been furthered, providing more realistic information about space requirements.
- The **scwd**² SWRO Desalination Pilot Study was evaluating a number of different pretreatment alternatives including slow-sand filters (SSF), which would require more land area.
- Consideration was being given to having a plant with more community benefits, such as tours and other educational opportunities.

Optimal locations for the proposed Plant would be within the City of Santa Cruz close to existing utilities (sanitary sewer, storm drains, etc.), along streets that would physically accommodate a

¹ During preliminary design, **scwd**² and the design team met with the property owners of the Harmony Foods complex and discussed the potential use of the existing industrial buildings for the proposed Plant. The approach to use the existing buildings was dismissed due to technical, safety and regulatory limitations that would likely cost more than new construction on the same or an adjacent site. Detailed information about the limitations is in section 6.2.6 of the *Seawater Desalination Plant Preliminary Design Report Phase I* (CDM Smith, 2012).

raw water main from a seawater intake as well as several other pipelines for brine and treated water. There were very few undeveloped or developed and underutilized parcels that could be considered for this project based on the criteria. **Figure 2** shows the boundaries of parcels that met some but maybe not all of the criteria and were under consideration. **Table 1** defines each of these sites.

Table 1 lists the individual sites being considered as of 2008, which included Areas A, B and C delineated in the pEIR along with a number of other additional sites. (Note that the nomenclature for Areas A, B and C from the IWP pEIR corresponds with the nomenclature in **Table 1** except “Area” is now “Site”.) While sites were added for consideration based on their size and vicinity to existing infrastructure, each site had its own unique challenges and issues, some of which presented barriers for the proposed project and eliminated them from further consideration.

- Since the certification of the IWP pEIR in 2005, the Terrace Point/Marine Science Campus Area (**C** in **Figures 1** and **2**) was eliminated from further consideration, for the following reasons. Since the certification of the IWP pEIR, the UC Regents and the California Coastal Commission (CCC) approved the Coastal Long Range Development Plan for this area. The UCSC Marine Science Campus Coastal Long Range Development Plan CLRDP does not contemplate a desalination plant on this site. Pursuing a desalination plant on this site would require subsequent approvals from the UC Regents and the CCC. For this reason, **C** was no longer being pursued for this project.
- Several of the sites shown in **Figure 2** (**D, E, F, G, K**) were too small to accommodate the proposed Plant, and were therefore eliminated from further consideration. **D** and **E** would have been more difficult to develop for this project because of the location of the railroad track and the multiple underground crossings that would be required.
- Zoning changes would be required for some sites, General Plan amendments for others, and California Coastal Commission review and approval for others.

At this point in the evaluation, remaining sites included **A, B, H, I**, and **J**. **L** was added because at the time future use of the former Texas Instruments building was unknown. These remaining sites were evaluated further either alone or in combination with an adjacent parcel.

However, **I, J-1** and **J-2**, and **L** were eliminated for the following reasons.

I: This parcel is owned by California State Parks and is part of the larger Lighthouse Field State Beach property. There is currently no facility development on this property other than restrooms and the Mark Abbott Memorial Lighthouse at Lighthouse Point on West Cliff Drive. Acquiring property from California State Parks is expected to be difficult and prior development proposals considered for this State Beach in the past have been controversial and have ultimately not been pursued.

J-1 and J-2: These two contiguous parcels are owned by Santa Cruz City Schools. **J-1** and **J-2** are almost entirely occupied with hardscape (buildings and driveways). The remaining open space is small and landlocked. However, **J-2** continues to be considered for the seawater intake pump station, as one of multiple site alternatives. The site for a pump station does not require similar ingress/egress as for the proposed Plant.

L: This parcel is now owned and occupied by UCSC. The property is almost completely developed with buildings and hardscape.

The City hired URS in February 2010 to prepare the Environmental Impact Report for the **scwd**² Regional Seawater Desalination Project. In September 2010 the City hired CDM to do preliminary design of the proposed Plant. At hand was a decision about which sites would be furthered in analysis in the EIR and in design by CDM. The sites remaining at this time were various parcels that make up **A**, **B**, and **H**.

Delineation and Analysis of the Industrial Park Area (A), Antonelli Pond Area (B) and United Methodist Church (H)

As planning progressed, the following activities were conducted by **scwd**² and the design team from early 2011 through mid-2012, prior to the finalization of the Preliminary Design Report:

- Refine area requirements for the proposed Plant facilities
- Identify and visit multiple potential sites on the west side of the City of Santa Cruz
- Review existing survey, geotechnical and environmental data
- Locate nearby utilities
- Contact the property owners for the potential sites and discuss possible sales
- Prepare and evaluate more than 20 conceptual layouts for multiple sites

Developable acreage was ultimately the pass/fail criterion of the remaining potential sites. Was the square footage of buildable land on the site sufficient to accommodate the required footprint of the proposed Plant? Over the course of the next year after the EIR and design consultants were on board, it became apparent that two of the remaining three sites would not be suitable, **B** and **H**. (See **Figure 3**. Note that in this figure, the sites referred to as **B** and **H** in this memo are referred to as site numbers **1** and **2** in **Figure 3**.) The slope of the land and the small amount of acreage on **2** (i.e. **H**) presented too many challenges for its use. And, the California Coastal Commission indicated that there are habitat constraints to development of **1** (i.e. **B**). Specifically, CCC staff informed the EIR consultant for **scwd**² that the wildlife corridor widths and buffers of the UCSC Terrace Point property would be a starting point for determining the developable acreage of the site. Also, the site would need to be studied to determine the habitat

sensitivity of the wetland area.² **1** was eliminated from further consideration as it was highly unlikely that enough land area would be available for the proposed Plant site when taking into consideration environmental constraints and regulatory requirements.

The results of the process of studying the potential sites left only the Industrial Park Area (**A**) for further investigation. Eight footprints for the proposed Plant were developed within **A** ranging from 4 to 7 acres. These distinct footprints were referred to as **3-10** and are shown in **Figures 4 - 11**. One conclusion of the discussion among project team members regarding **A** was that while it would be helpful to define specific footprints within **A** for the purposes of developing preliminary designs and evaluation in the EIR, the EIR analysis would allow other configurations in final design. I.e., the EIR analysis would cover the important aspects of Area **A** from an environmental standpoint.

Each of the eight footprints was evaluated against a range of criteria regarding the physical site, construction on the site, operational functionality and flexibility, and acquisition of the site. See **Table 2**. Each of these broader criteria was also broken down into subcategories for a more detailed analysis.

Scoring and Baseline Weighting of Potential Site Footprints

Each potential footprint was assigned a score for the criteria subcategories in **Table 2** on a scale of 1 to 5, 1 being the lowest or least favorable score and 5 the highest or most favorable score. As can be seen, the criteria and subcategories are fairly objective; assigning a score to each was an easy task due to the lack of subjectivity involved. The scores are shown in the *Evaluation Criteria Scoring Worksheet* (**Table 3**). The total criteria score was the sum of the scores for each subcategory within each criteria. The project team discussed the weighting for each criteria (physical, construction, operations, and acquisition) to reflect the groups' understanding of the priorities of the **scwd**² Seawater Desalination Program and its stakeholders. The recommended weighting for the sensitivity analysis determined by the project team are listed in **Table 2**. The recommended weighting factors were used in **Table 3** to produce a weighted average. The sum of the weighted average metric for each criteria resulted in the Total Score for each site configuration. The resultant site ranking showed the following:

- Site No. **10** was the most favorable (total weighted score of 14.8)
- Site Nos. **3, 4, 5** and **9** were similarly favorable (with total scores between 13.8 and 13.2)
- Site Nos. **6, 7** and **8** were least favorable (with total scores between 11.8 and 10.9).

Sensitivity Analysis

A sensitivity analysis is the study of how uncertainty in the model output, in this case the score or ranking, is apportioned to different sources of uncertainty in the model input, in this case the weighting factors. The sensitivity analysis tests the effects of weighting on the score and

² May 12, 2011 email communication between Susan Craig, Coastal Planner for the California Coastal Commission and Ann Sansevero, URS Corporation, who was tasked with preparing the **scwd**² Project EIR.

ultimately for this application the ranking of the different sites. A sensitivity analysis was conducted to understand if varying the weighting changes the outcome of the site scoring and ranking process in a significant way.

The following steps were taken to perform the sensitivity analysis. The numeric results of this exercise are in **Tables 4 – 7**.

1. The *Evaluation Criteria Scoring Worksheet* (**Table 3**) was used as a tool to calculate the scores (or rankings) for each of the sites (Site Nos. **3-10**) as the weightings of each criteria were changed. **Table 4, Sensitivity Analysis, Physical Site** shows the results for a sensitivity analysis on the Physical Site. The table shows the four criteria at the top left hand side of the matrix as well as the recommended, or baseline, weighting percentages (25%, 15%, 30%, 30%).
2. The tool (**Table 3**) was used a total of 11 times for each Scenario 1-11, to understand to what extent Physical Site weighting impacts the overall ranking. The sites ranking the most favorably have the lowest numbers in the matrix shown in **Table 4**. The “Overall ranking” shows the overall impact of the ranking for this analysis.
3. This exercise was repeated for each of the four criteria. (**Tables 5, 6, and 7.**)

Summary of Sensitivity Analysis

As stated above, results of the recommended weighting of criteria shown in **Table 3** showed Site No. **10** as top ranking and Site Nos. **3, 4, 5, and 9** as similarly favorable with total scores between 13.8 and 13.2. The four subsequent analyses provided an understanding as to the influence each criteria had on each site.

As can be seen from **Tables 4-7**, Site Nos **3, 5** and **10** were fairly consistently ranked 1, 2 and 3 (not necessarily in that order) except for the analysis focused on Physical Site (**Table 4**). In **Table 4**, when Physical Site was weighted higher than the other criteria, Site No. **5** fell in the overall ranking and Site No. **4** rose. Taking a look at **Table 3**, and the subcategories, this is likely due to the fact that Site No. **5** was scored lower for potential habitat and zoning issues that became more apparent with higher weighting.

Another way to view the results of the sensitivity analysis is shown in **Table 8, Summary of Sensitivity Analyses**. This table sums the ranking results of the Baseline and the four sensitivity analyses. As can be seen, Site Nos. **3, 5** and **10** are the topped ranked sites and the three sites that were further developed in terms of preliminary design by CDM and subsequently analyzed by URS in the EIR.

Summary and Next Steps

A baseline analysis was conducted to identify top-ranked sites for further evaluation in both the EIR and the preliminary design. While much of that exercise was objective, there was some level of subjectivity applied to the weighting of the criteria. In order to understand the impact of

weighting on the analysis, a sensitivity analysis was done. In almost all cases, Site Nos. **3**, **5** and **10** were the top-ranked sites.

All three of these sites are situated in the industrial zone on the west side of the City of Santa Cruz between Delaware Avenue, Natural Bridges Drive and the Santa Cruz County Regional Transportation Commission (SCCRTC) rail line. The **scwd**² Seawater Desalination Plant Preliminary Design Report contains a figure (**Figure 12**) presenting an aerial photograph of the area with the boundaries and approximate acreages for the potential sites:

- Alternative No. 1 (A-1) (Site **3**): Natural Bridges Drive at SCCRTC rail line (formerly Union Pacific Railroad)
- Alternative No. 2 (A-2) (Site **5**): Delaware Avenue at Natural Bridges Drive
- Alternative No. 3 (A-3) (Site **10**): Split Site – Delaware Avenue (A-3a) and SCCRTC rail line (formerly Union Pacific Railroad) (A-3b)

Each of these sites is evaluated in the Draft EIR. If a decision is made to move forward with the project, the selection of the site for the proposed Plant is likely to take into account the variables discussed in this technical memorandum as well as any new information that is important for the decision making process.

References

Gary Fiske and Associates, *City of Santa Cruz Integrated Water Plan*, June 2003.

EDAW, Inc., *Draft Program Environmental Impact Report for the City of Santa Cruz Integrated Water Plan*, 2005.

CDM Smith, **scwd**² *Seawater Desalination Plant Preliminary Design Report Phase I*, October 19, 2012.

Figures

Figure 1. Proposed Desalination Site Areas, 2005 Integrated Water Plan Program Environmental Impact Report





scwd² Regional Seawater Desalination Project



Figure 2
Desalination Plant Site Evaluation Alternatives

scwd² Regional Seawater Desalination Project

No Scale



Figure 3
Site 1
Site 2



scwd² Regional Seawater Desalination Project



No Scale



Figure 4
Site 3



scwd² Regional Seawater Desalination Project



No Scale



Figure 5
Site 4



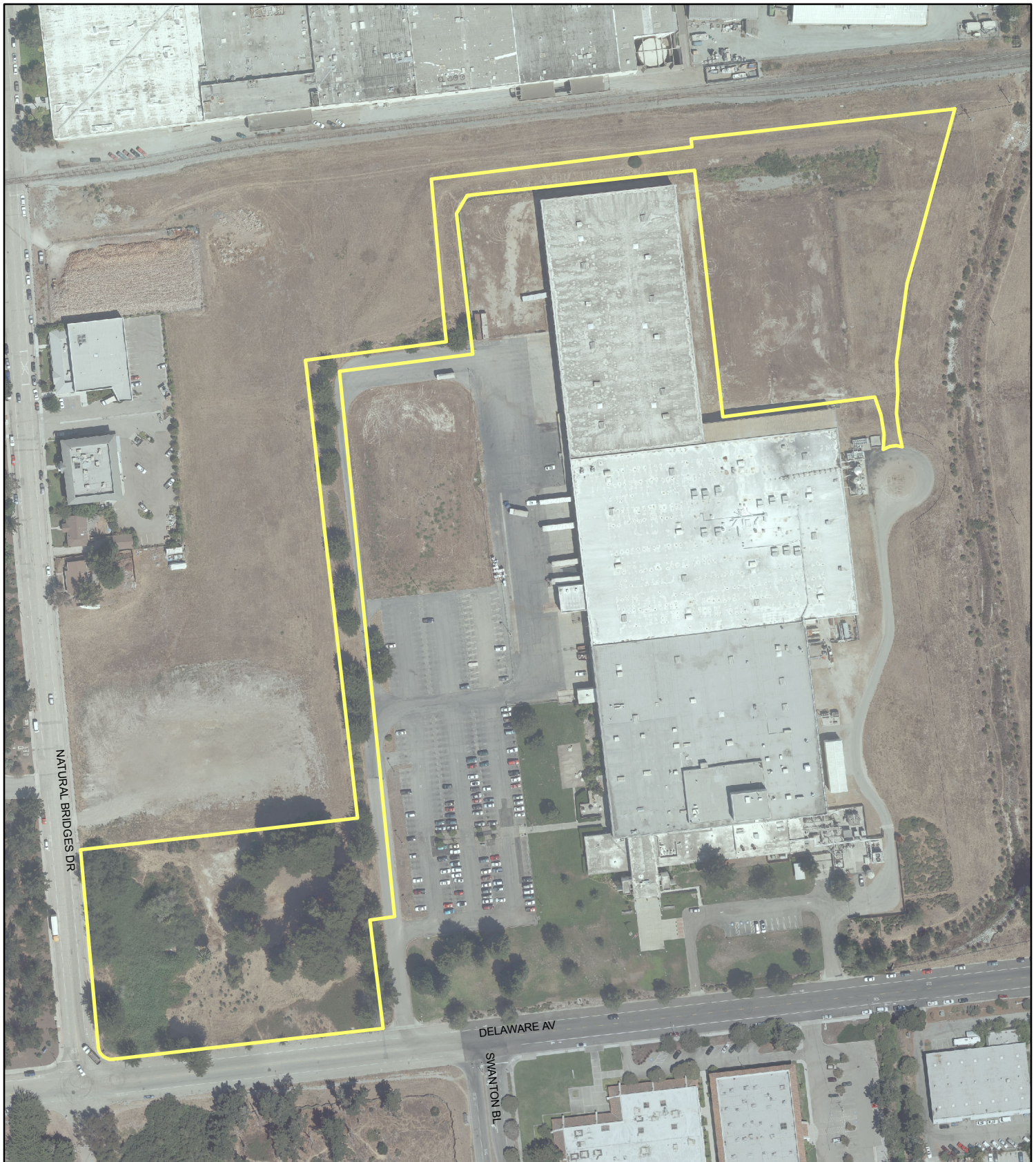
scwd² Regional Seawater Desalination Project



No Scale



Figure 6
Site 5



scwd² Regional Seawater Desalination Project



No Scale



Figure 7
Site 6



scwd² Regional Seawater Desalination Project



No Scale



Figure 8
Site 7



scwd² Regional Seawater Desalination Project



No Scale



Figure 9
Site 8



scwd² Regional Seawater Desalination Project



No Scale



Figure 10
Site 9



scwd² Regional Seawater Desalination Project



No Scale



Figure 11
Site 10



Figure 12. Preliminary Design Report Potential Seawater Desalination Plant Sites A-1-A3

Tables

Table 1. Plant Site Evaluation Alternatives

Site	Location
A	Natural Bridges Dr. and Delaware Ave.
B	Shaffer Road/Antonelli Pond
C	Terrace Point Area
D	Mission St. Extension near Burkett St.
E	University Business Park Mission St. Extension
F	Ingalls St.
G	Almar Ave Triangle
H	United Methodist Church on California St.
I	Lighthouse Field State Beach between Pelton Ave. and West Cliff Drive
J-1, J-2	Santa Cruz City School parcels on Swift St.
K	City Park near Woodland Way
L	Between Antonelli Pond and Natural Bridges Drive, along Delaware Ave (former Texas Instruments site)

Table 2. Site Selection Evaluation Criteria and Weighting

Criteria	Subcategories	Recommended Weighting	Description/Considerations
Physical Site		25%	
	Adequate Size		Is the size of the site large enough to accommodate the required footprint?
	Existing Habitat Issues		Are there known habitat issues such as plant or animal species residing onsite, migratory paths, or water courses crossing the site?
	Existing Burdens		Are there existing slopes, right-of-ways, or easements that restrict or burden the site?
	Zoning/Right-of-Way Acquisition		Is the site zoned for appropriate use? Would the site require acquisition of a new right-of-way or easement?
Construction		15%	
	Accessibility		Will the site be easily accessed during construction of the facility?
	Contiguous Site		Is the site one contiguous site, or is it split into two separate sites? If two separate sites, how remote is the second site?
	Nuisance to Neighbors		Will construction of the facility impact the existing surrounding parcels?
	Additional Facilities Required		Are there additional facilities, pipelines, access roads required because of the site layout or split site configuration?
Operations		30%	
	Accessibility		Will the site be easily accessed during operations at the site?
	Contiguous Site		Is the site one contiguous site, or is it split into two separate sites? If two sites, how remote is the second site?
	Nuisance to Neighbors		Will operation of the facility impact the existing surrounding parcels?
	Flexibility		Does the site provide for operational flexibility
Acquisition of the Site		30%	
	Available for Sale		The proposed site is available for sale, would need to be negotiated, or may need to be condemned.
	Burden to Owner		Use of the site for the seawater desalination plant would burden the owner.
	One vs. Two Owners		The site is owned by one/two owners.
	Beneficial Use of Existing Land		Use of the site for the seawater desalination plant will/will not replace a future beneficial use of the property.

Table 3 Evaluation Criteria Scoring Worksheet

Preliminary Ranking		Physical Site						Construction						Operational						Relative Ease of Acquisition							
Site No.	Site Description	Adequate Size	Existing Habitat	Existing Burdens	Zoning- New R/W	Total	Weighted Average	Accessibility	Contiguous Site	Nuisance to Neighbors	Additional Facilities Required	Total	Weighted Average	Accessibility	Contiguous Site	Nuisance to Neighbors	Flexibility	Total	Weighted Average	Available for Sale	Burden to Owner	One vs. Two Owners	Beneficial Use of Existing Land	Total	Weighted Average	Total Score	Site Ranking
							25%						15%						30%						30%	100%	
1	Antonelli Pond																										
2	Church																										
3	T-shaped, fronts Natural Bridges Dr	5	5	4	5	19	4.8	5	5	1	4	15	2.3	5	5	1	1	12	3.6	2	3	3	2	10	3.0	13.6	3
4	L-shaped, fronts Natural Bridges Dr	5	5	4	5	19	4.8	5	5	1	4	15	2.3	5	5	1	1	12	3.6	2	1	4	2	9	2.7	13.3	4
5	Corner, Natural Bridges Dr/Delaware Av	5	2	5	3	15	3.8	5	5	3	4	17	2.6	5	5	3	1	14	4.2	3	3	3	2	11	3.3	13.8	2
6	Split Site, Southwest/Northeast	5	2	3	3	13	3.3	3	2	4	2	11	1.7	3	2	4	2	11	3.3	4	3	3	2	12	3.6	11.8	6
7	Split Site, Southwest/Northwest	5	2	3	3	13	3.3	4	3	2	4	13	2.0	3	2	2	1	8	2.4	3	3	3	2	11	3.3	10.9	8
8	Split Site, Northwest/Northeast	5	5	3	4	17	4.3	3	2	3	2	10	1.5	3	2	3	2	10	3.0	3	2	3	2	10	3.0	11.8	7
9	Split Site, Northwest	5	5	4	4	18	4.5	4	4	3	3	14	2.1	3	4	3	2	12	3.6	3	2	3	2	10	3.0	13.2	5
10	Split Site, Northeast	5	5	3	4	17	4.3	4	4	4	4	16	2.4	3	4	4	3	14	4.2	4	3	4	2	13	3.9	14.8	1

* Antonelli Pond and the Church sites are not large enough.

Ranking Definitions
High Ranking is most favorable = 5.
Medium = 4, 3, 2
Low Ranking is least favorable = 1

Table 4 *Sensitivity Analysis, Physical Site*

SCENARIO		1	2	3	4	5	6	7	8	9	10	11		
Physical Site		0%	15%	25%	35%	45%	55%	65%	75%	85%	95%	100%		
Construction		20%	17%	15%	13%	11%	9%	7%	5%	3%	1%	0%		
Operations		40%	34%	30%	26%	22%	18%	14%	10%	6%	2%	0%		
Relative Ease of Acquisition		40%	34%	30%	26%	22%	18%	14%	10%	6%	2%	0%		
Total		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Site No.	Site Description			Baseline									Total all Rankings	Overall Ranking
1	Antonelli Pond													
2	California													
3	T-shaped, fronts Natural Bridges Dr	3	3	3	2	2	1	1	1	1	1	1	19	1
4	L-shaped, fronts Natural Bridges Dr	6	5	4	3	3	3	2	2	2	2	1	33	3
5	Corner, Natural Bridges Dr/Delaware Av	2	2	2	4	5	5	6	6	6	6	6	50	5
6	Split Site, Southwest/Northeast	5	6	6	7	7	7	7	7	7	7	7	73	7
7	Split Site, Southwest/Northwest	7	8	8	8	8	8	8	8	8	8	7	86	8
8	Split Site, Northwest/Northeast	8	7	7	6	6	6	5	5	5	5	4	64	6
9	Split Site, Northwest	4	4	5	5	4	4	4	3	3	3	3	42	4
10	Split Site, Northeast	1	1	1	1	1	2	3	4	4	4	4	26	2
COLOR SCALE	1													
	2													
	3													
	4													
	5													
	6													
	7													
	8													

Table 5 Sensitivity Analysis, Construction

SCENARIO		1	2	3	4	5	6	7	8	9	10	11		
Physical Site		29%	28%	25%	22%	19%	16%	13%	10%	7%	4%	0%		
Construction		0%	5%	15%	25%	35%	45%	55%	65%	75%	85%	100%		
Operations		35%	34%	30%	26%	23%	19%	16%	12%	9%	5%	0%		
Relative Ease of Acquisition		35%	34%	30%	26%	23%	19%	16%	12%	9%	5%	0%		
Total		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Site No.	Site Description			Baseline									Total All Rankings	Overall Ranking
1	Antonelli Pond													
2	California													
3	T-shaped, fronts Natural Bridges Dr	2	2	3	3	3	3	3	3	3	3	3	31	3
4	L-shaped, fronts Natural Bridges Dr	5	5	4	4	4	4	4	4	4	4	4	45	4
5	Corner, Natural Bridges Dr/Delaware Av	3	2	2	2	2	2	2	1	1	1	1	19	2
6	Split Site, Southwest/Northeast	7	7	6	6	6	7	7	7	7	7	7	74	6
7	Split Site, Southwest/Northwest	8	8	8	8	7	6	6	6	6	6	6	75	7
8	Split Site, Northwest/Northeast	6	6	7	7	8	8	8	8	8	8	8	82	8
9	Split Site, Northwest	4	4	5	5	5	5	5	5	5	5	5	53	5
10	Split Site, Northeast	1	1	1	1	1	1	1	2	2	2	2	15	1
COLOR SCALE	1													
	2													
	3													
	4													
	5													
	6													
	7													
	8													

Table 6 Sensitivity Analysis, Operations

SCENARIO		1	2	3	4	5	6	7	8	9	10	11		
Physical Site		36%	32%	29%	25%	21%	18%	14%	11%	7%	4%	0%		
Construction		21%	19%	17%	15%	13%	11%	9%	6%	4%	2%	0%		
Operations		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%		
Relative Ease of Acquisition		43%	39%	34%	30%	26%	21%	17%	13%	9%	4%	0%		
Total		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Site No.	Site Description				Baseline								Total All Rankings	Overall Ranking
1	Antonelli Pond													
2	California													
3	T-shaped, fronts Natural Bridges Dr	2	2	2	3	3	3	3	3	3	3	3	30	3
4	L-shaped, fronts Natural Bridges Dr	3	4	4	4	4	4	4	4	4	4	3	42	4
5	Corner, Natural Bridges Dr/Delaware Av	5	3	3	2	2	2	2	2	2	2	1	26	2
6	Split Site, Southwest/Northeast	7	7	7	6	6	6	6	6	6	6	6	69	6
7	Split Site, Southwest/Northwest	8	8	8	8	8	8	8	8	8	8	8	88	8
8	Split Site, Northwest/Northeast	6	6	6	7	7	7	7	7	7	7	7	74	7
9	Split Site, Northwest	4	5	5	5	5	5	5	5	5	5	3	52	5
10	Split Site, Northeast	1	1	1	1	1	1	1	1	1	1	1	11	1
COLOR SCALE		1	2	3	4	5	6	7	8					

Table 7 Sensitivity Analysis, Acquisition

SCENARIO		1	2	3	4	5	6	7	8	9	10	11		
Physical Site		36%	32%	29%	25%	21%	18%	14%	11%	7%	4%	0%		
Construction		21%	19%	17%	15%	13%	11%	9%	6%	4%	2%	0%		
Operations		43%	39%	34%	30%	26%	21%	17%	13%	9%	4%	0%		
Relative Ease of Acquisition		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%		
Total		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%		
Site No.	Site Description				Baseline								Total All Rankings	Overall Ranking
1	Antonelli Pond													
2	California													
3	T-shaped, fronts Natural Bridges Dr	2	2	3	3	3	3	3	4	4	5	5	37	3
4	L-shaped, fronts Natural Bridges Dr	2	4	4	4	5	5	6	7	8	8	8	61	6
5	Corner, Natural Bridges Dr/Delaware Av	4	3	2	2	2	2	2	2	3	3	3	28	2
6	Split Site, Southwest/Northeast	7	7	7	6	6	6	4	3	2	2	2	52	4
7	Split Site, Southwest/Northwest	8	8	8	8	8	8	8	6	5	4	3	74	8
8	Split Site, Northwest/Northeast	6	6	6	7	7	7	7	8	7	7	5	73	7
9	Split Site, Northwest	5	5	5	5	4	4	5	5	6	6	5	55	5
10	Split Site, Northeast	1	1	1	1	1	1	1	1	1	1	1	11	1
COLOR SCALE		1	2	3	4	5	6	7	8					

Table 8 *Summary of Sensitivity Analyses*

Site No.	Site Description	Table 3 Baseline	Table 4 Physical Site	Table 5 Construction	Table 6 Operations	Table 7 Acquisition	Total All Rankings	Overall Ranking
1	Antonelli Pond							
2	California							
3	T-shaped, fronts Natural Bridges Dr	3	1	3	3	3	13	2
4	L-shaped, fronts Natural Bridges Dr	4	3	4	4	6	21	4
5	Corner, Natural Bridges Dr/Delaware Av	2	5	2	2	2	13	2
6	Split Site, Southwest/Northeast	6	7	6	6	4	29	6
7	Split Site, Southwest/Northwest	8	8	7	8	8	39	8
8	Split Site, Northwest/Northeast	7	6	8	7	7	35	7
9	Split Site, Northwest	5	4	5	5	5	24	5
10	Split Site, Northeast	1	2	1	1	1	6	1
COLOR SCALE		1						
		2						
		3						
		4						
		5						
		6						
		7						
		8						