

CITY OF MENLO PARK
EMERGENCY WATER SUPPLY PROJECT

**TECHNICAL MEMORANDUM NO. 1: SITE SCREENING AND SELECTION
PROCESS**

Date: September 15, 2010 (updated September 19, 2011)

Subject: **SITE SCREENING AND SELECTION PROCESS**

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The Emergency Water Supply Project would construct several new wells to provide needed emergency potable and firefighting supply serving the Menlo Park Municipal Water District's (MPMWD's) "lower zone," roughly corresponding to the eastern third of the City of Menlo Park. The City is pursuing this wells-only approach in response to community concerns about siting for a larger-footprint reservoir project.

City Staff anticipate that 2 – 3 wells, located on separate sites, would be required to provide the required supply of 3,000 gallons per minute. This memorandum describes the approach proposed to select the sites for well installation, including information on the following topics.

- Project need and history
- Goals of site selection
- Proposed site screening criteria
- Site evaluation and screening process

The proposed screening process integrates consideration of hydrogeologic constraints, engineering constraints, and desires and concerns voiced by the community.

PROJECT NEED

At present, the eastern portion of the City—the MPMWD "lower zone" service area—receives 100% of its water supply from the San Francisco Public Utilities Commission's Hetch Hetchy Reservoir. Supply is delivered via Hetch Hetchy Aqueducts Nos. 1 and 2, which cross several major active faults en route to the Bay Area. There is no water storage in the eastern third of the City, and currently no source of backup supply for this area, so if Hetch Hetchy deliveries were to be interrupted by earthquake damage, a large number of residents and businesses could be without water for as long as 60 days while damage is repaired. The Emergency Water Supply Project is being developed to ensure reliable emergency supply for the eastern portion of the City.

PROJECT HISTORY

Studies conducted for the City in 2000 identified the need for emergency water storage and supply serving the eastern third of the City. In 2003, City Council authorized further investigation of various water storage alternatives to meet the identified need, including the possibility of a joint-use reservoir with the City of East Palo Alto. The joint Menlo Park/East Palo Alto facility was found to be infeasible and the City elected to continue with the development of a single reservoir and well for the City of Menlo Park. Following extensive consideration of potential sites (which focused on sites that would accommodate a reservoir, since storage had been identified as a key need), Seminary Oaks Park was identified – and subsequently approved by Council – as the preferred site for more detailed study and public outreach.

Further studies of the Seminary Oaks site were conducted, including a geotechnical investigation, environmental constraints assessment, and development of several conceptual approaches for construction of a reservoir and backup well. In May 2008, alternative approaches were presented to the public and met with vehement opposition. In response, Council directed City Staff to explore alternatives to the “reservoir + backup well” scenario, and an ensuing feasibility assessment found that a wells-only project, which would avoid the large footprint and longer construction duration associated with reservoir construction, could provide an adequate backup system. In October 2009, Council authorized City Staff to proceed with a study to identify potential well sites. Public outreach and dialogue have been identified as a cornerstone of project success. Outreach efforts to date are summarized in the companion technical memorandum titled *Community Outreach Progress Report, September 2011* (Technical Memorandum No. 2 in this Preliminary Design report).

GOALS OF THE SITE SELECTION PROCESS

The goal of site selection for the Emergency Water Supply Project is to ensure the development and construction of a project that meets the identified emergency supply need of 3,000 gallons per minute, satisfies potable water standards, *at a minimum* is acceptable to the community, and *ideally* has strong community support.

In support of this goal, the site selection process has been developed to meet the following objectives.

- Incorporate community input
- Identify sites that can meet the identified water quantity and quality need
- Identify sites that are feasible from an engineering standpoint
- Identify sites that can satisfy all regulatory requirements
- Identify sites where well facilities can be constructed safely and with a low level of impact to the community
- Identify sites that provide sufficient access for safe operation and maintenance of the well

- Identify sites where the long-term presence of the well facility will not result in unmitigated adverse impacts to the community
- Identify sites where the project can benefit the community, by replacing undeveloped or blighted property with an attractively designed and landscaped facility or by providing community amenities

SITE SELECTION PROCESS

The site selection process comprises three phases:

- **Phase 1: Preliminary Screening** will identify a broad range of potentially suitable sites that merit further evaluation. City Staff hope to identify at least 10 – 12 potential sites through the Phase 1 process.
- **Phase 2: Site Ranking** will use a combination of engineering, regulatory, environmental, and community-based criteria to rank the sites on the preliminary list, identifying a “short list” of 5 – 6 sites that should be studied in detail. The short list of 5 – 6 sites, and the initiation of the detailed studies phase, if required, will be subject to City Council approval.
- **Phase 3: Detailed Engineering and Hydrologic Evaluation** will focus on the short-listed sites and will entail detailed engineering feasibility assessment and drilling of test wells, to select the best sites for well installation. City Staff anticipate that 2 – 3 well sites will be needed. The City Council will approve the final selected sites and will authorize final design of the well facilities.

The following sections describe each phase in more detail.

Phase 1: Preliminary Screening

The purpose of Phase 1 preliminary screening is to identify a comprehensive list of potential sites. The goal at this stage of the process is to be inclusive rather than exclusive, in order to ensure that as many potentially suitable sites as possible are thoroughly considered. However, to avoid in-depth consideration of clearly infeasible sites, the first step in the Phase 1 process is to define the general geographic area within which wells would be expected to meet the needed production and water quality targets, based on available hydrogeologic information. This evaluation is proceeding based on the following logistical and technical factors.

- Well sites must be within or in close proximity to the City limit, and, to avoid the need for extensive additional infrastructure, must be within or in close proximity to the “lower zone” service area
- Well sites must be within the extent of the San Francisquito Cone, the subsurface alluvial deposit that contains the area’s producing aquifers

- To avoid potential saltwater contamination, well sites should be approximately 0.5 mile or more from surface salt water, including the San Francisco Bay margin and salt evaporation ponds
- To meet production needs, wells should be sited in the portion of the San Francisquito Cone where aquifer specific capacities are greater than 10 gallons per minute per foot (gpm/foot)¹
- For best production, well sites should be located where the San Francisquito Cone is thicker
- To avoid interference with other wells, well sites should be a minimum of 500 – 1,000 feet from existing wells

The favorable area for well siting identified based on these criteria is shown as shaded in **Figure 1**, with the darker shading indicating areas likely to be preferable.

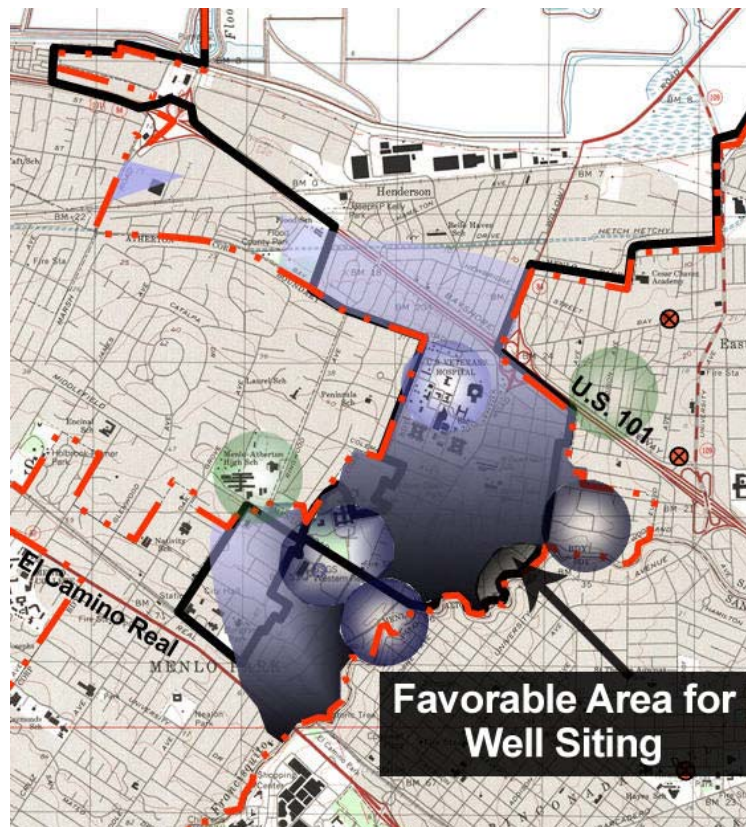


Figure 1 – Favorable Area for Well Siting

¹ *Specific capacity* describes an aquifer's ability to produce water. It is defined as the relationship between the rate at which a well produces water and the rate at which the water level in the well decreases (well drawdown). Specific capacity is commonly measured in units of gallons per minute per foot of drawdown (gpm/foot).

Phase 2: Site Ranking

In Phase 2, all potential sites identified in Phase 1 will be evaluated based on engineering feasibility factors and community “livability” factors. The engineering and community evaluations for each site will then be combined, and the sites will be ranked based on the combined outcome. Engineering evaluation will include consideration of regulatory and environmental factors because these have the potential to constrain design and construction.

Engineering evaluations will use a quantitative scoring process to evaluate sites as *Favorable*, *Conditionally Acceptable*, or *Unfavorable* for well installation. Community livability evaluation will be based on non-quantitative factors identified as important by attendees at the June 30, 2010 and September 9, 2010 community workshops, and will also result in *Favorable*, *Conditionally Acceptable*, or *Unfavorable* ratings.

The following sections describe the engineering and community evaluation approaches and the combined evaluation and ranking process in more detail.

Engineering Evaluation. Phase 2 engineering evaluation will begin with a quantitative scoring process based on the factors listed in **Table 1**. The evaluation process is structured so that a higher score corresponds to a more favorable site. Note however that some criteria are considered so fundamental that an unsatisfactory score would eliminate a site from further consideration. These “deal-breakers” are identified in the *Comments* column in **Table 1**.

Table 1 – Phase 2 Engineering Evaluation Criteria

Criterion	Parameter	Score	Definition	Comments
1—Acquisition Feasibility	1A—Property ownership	3	Property owned by City	Privately owned sites will be eliminated from further consideration if the owner is not open to sale or establishment of an in-perpetuity easement
		1	Property privately owned; owner would consider sale or establishment of permanent easement	
		0	Property privately owned; owner not open to sale or easement establishment	
2—Site Hydrogeology	2A—Specific capacity	3	More than 25 gpm/foot	Evaluation to be based on information from available literature
		2	Between 10 and 25 gpm/foot	
		1	Less than 10 gpm/foot	
	2B—Potential for water quality impairment due to salinity/elevated TDS levels	3	Available information suggests that water quality will not be impaired by elevated salinity/TDS levels.	Sites will be assessed individually based on available hydrogeologic data (potentially including information on water quality and yields from existing wells, proximity to surface salt
1		Water quality may be affected by elevated salinity/ TDS levels but is expected to meet standards for short pumping durations.		

Criterion	Parameter	Score	Definition	Comments
		0	Available information suggests that water quality will be substantially impaired by elevated salinity	water, stratigraphic data, etc.). ²
	2C—Distance from other wells	3	More than 1,000 feet	These distances will be used as a general guideline, since the potential for well interference also depends on aquifer characteristics and typical pumping rates.
		2	Between 500 and 1,000 feet	
		1	Less than 500 feet	
		0	Less than 200 feet	
3—Construction Feasibility	3A—Site access	3	Adequate construction access exists	This parameter evaluates only the feasibility of providing construction access to site ; construction disturbance is addressed separately in the Community Factors evaluation
		2	Adequate access could feasibly be provided	
		1	Adequate access could be provided, but would be problematic and/or costly	
		0	Adequate access cannot feasibly be provided	
	3B—Staging availability	3	Adequate staging exists on or adjacent to the site	This parameter evaluates only the feasibility of providing construction staging ; construction disturbance is addressed separately in the Community Factors evaluation
		2	Adequate staging could feasibly be provided on or adjacent to the site	
		1	Adequate staging could be provided, but would be problematic and/or costly	
		0	Adequate staging cannot feasibly be provided at the site	
4—Operational/Maintenance Feasibility	4A—Access for operations and maintenance	3	Adequate long-term access exists	This parameter evaluates only the feasibility of providing adequate long-term access to the site; disturbance is addressed separately in the Community Factors evaluation
		2	Adequate long-term access could feasibly be provided	
		1	Adequate long-term access could be provided, but would be problematic and/or costly	
		0	Adequate access cannot feasibly be provided	

² Scoring for this criterion is designed to ensure that all potentially viable sites receive full consideration, regardless of their distance from the Bay margin.

Criterion	Parameter	Score	Definition	Comments
5—Regulatory Compliance	5A—Presence of or proximity to features that would constrain site use or facilities design due to regulatory requirements (sanitary sewer, storm drains, surface drainage, etc.)	3	Site has no such constraints	
		2	Site has limited constraints but a work-around is feasible and straightforward	
		1	Site has extensive constraints requiring work-arounds, <i>or</i> site has limited constraints that would require a problematic or costly work-around	
		0	Site has potentially preclusory constraints	
6—Hydraulic Considerations	6A—Impact of the location of well on water system hydraulics	3	Minor or no improvements required for system hydraulics to perform satisfactory with well in operation	Hydraulic modeling will be used to assess and score each site ³
		2	Moderate system improvements required for system hydraulics to perform satisfactorily with well in operation	
		0	Excessive system improvements required to meet satisfactory performance of water system hydraulics with well in operation	
7—Environmental Factors	7A—Site contamination	3	Site is not known or suspected to be near any potentially contaminating activities and has a high physical barrier effectiveness (i.e., aquifer is confined, with few or no pathways for contamination)	Sites with a score of “0” for this criterion will be eliminated from further consideration <i>The terms potentially contaminating activity (PCA) and physical barrier effectiveness (PBE) are taken from, and will be used in a manner consistent with, the Drinking Water Source Assessment (DWSAP) process required by the State of California for all potable supply wells</i>
		2	Site is near minor potentially contaminating activities and/or has a moderate physical barrier effectiveness	
		1	Site is near a potentially contaminating activity or activities and has a low physical barrier effectiveness	
		0	Site is known to have substantial contamination issues (for example, inclusion on the Superfund NPL list or close proximity to an NPL-listed site), such that remediation would be infeasible, costly, and/or result in delays to the project	

³ Note that theoretically, any site could be “made to work” in terms of interfacing a new well with the existing water main system, but some sites would require more extensive modifications to existing infrastructure than others. This may relate partly to distance but is more likely to be driven by the characteristics of the existing system—a site at a greater distance from a large existing main would probably require less extensive infrastructure modification than a site located close to a smaller main that is undersized to accommodate the new deliveries.

Criterion	Parameter	Score	Definition	Comments	
	7B—Presence of special-status species	3	Site offers no habitat for special-status species		
		2	Site offers limited migratory bird and/or special-status bat roosting habitat		
		0	Site offers extensive and/or high-quality habitat; site could not be used without substantial loss of habitat value		
	7C—Construction traffic concerns	3	Construction at this site would not result in significant roadway or intersection LOS degradation or traffic safety concerns		This criterion focuses specifically on the potential need for traffic engineering and/or traffic control during construction ; community disturbance and safety concerns are separately in the Community Factors evaluation
		2	Construction at this site could degrade LOS or create a safety concern, but concerns could be adequately addressed through best practices		
		1	Construction at this site would result in substantial traffic-related challenges that could be difficult or infeasible to address through best practices		
8—Cost	8A—Construction cost	4	This site would offer a cost advantage		
		3	Construction at this site would be cost-effective		
		2	Construction cost for this site would be moderate		
		1	Construction cost for this site would be high		
	8B—Operation and maintenance (O&M) cost	3	Facility would not have any special O&M requirements		
		2	Due to site constraints or other issues, facility design would require moderate additional effort to perform O&M functions		
		1	Due to site constraints or other issues facility design would require excessive additional effort to perform O&M functions		

Scores will be tabulated and converted to a percentage for ease of comparison. The distribution of scores will then be evaluated, and sites will be ranked as *Favorable*, *Conditionally Acceptable*, or *Unfavorable*. To allow easy visual assessment, each rank will translate to a color (*Favorable* = green, *Conditionally Acceptable* = yellow, *Unfavorable* = red). Color “scores” will be carried forward to the combined site ranking stage, which is intended to be nonquantitative and visually based, as discussed in more detail below.

Community Factors Evaluation. Community-based evaluation will be qualitative, based on the criteria presented in **Table 2**, which were developed based on input collected from attendees at the June 30 and September 9, 2010 community workshops. Additional information on the workshop process and the specific feedback received is presented in the companion technical memorandum titled *Community Outreach Progress Report, September 2011* (Technical Memorandum No. 2).

For each of the community criteria, sites will be evaluated as *Favorable*, *Conditionally Acceptable*, or *Unfavorable*. Ratings are assigned colors, as shown in **Table 2**, so the overall evaluation of each site becomes a non-quantitative visual exercise.

Table 2 – Phase 2 Community “Livability” Evaluation Criteria

Criterion	Parameter	Evaluation	Definition	Comments	
1—Site Access	1A—Use of residential streets for site access	Favorable	No use of residential streets required for access		
		Conditionally Acceptable	Limited use of residential streets required for access		
		Unfavorable	Extensive or otherwise problematic use of residential streets required for access		
	1B—Access via cul-de-sac	Favorable	Access does not involve cul-de-sac		
		Conditionally Acceptable	Access involves limited travel on cul-de-sac, <i>or</i> cul-de-sac provides alternate access		
		Unfavorable	Site can only be accessed from cul-de-sac		
	1C—Adequate temporary access for heavy construction equipment	Favorable	Adequate construction access already exists		This criterion focuses on the potential for construction traffic to create disturbance and/or safety hazards to the community due to access constraints; construction traffic control needs are addressed separately in the Engineering Factors evaluation
		Conditionally Acceptable	Adequate construction access could feasibly be provided		
		Unfavorable	Adequate construction access does not exist and could be problematic to provide		
Conditionally Acceptable		Adequate maintenance access could feasibly be provided			
Unfavorable		Adequate maintenance access does not exist and could be problematic to provide			
2—Noise Disturbance Potential	2A—Proximity to residences (including outdoor areas—yards, patios, decks, etc.); potential for construction of project facilities adjacent to residential receptor	Favorable	Site is not in residential area		
		Conditionally Acceptable	Site is in residential area, but is not immediately adjacent to residences, <i>or</i> is large enough to provide a buffer		
		Unfavorable	Site is in residential area, is immediately adjacent to residence, and is too small to provide a buffer		

Criterion	Parameter	Evaluation	Definition	Comments
	2B—Proximity to other sensitive receptors (school, hospital, library, park, etc.); potential for construction of project facilities adjacent to nonresidential sensitive receptor	Favorable	Site is not in vicinity of nonresidential sensitive receptors	
		Conditionally Acceptable	Site is near or adjacent to nonresidential sensitive receptors but is large enough to provide a buffer; this site could be used without constructing project facilities immediately adjacent to nonresidential sensitive receptor(s)	
		Unfavorable	Site is adjacent to nonresidential sensitive receptor and is too small to provide a buffer; use of this site would construct project facilities adjacent to nonresidential sensitive receptor(s)	
3—Aesthetic Concerns	3A—Ability of site to support aesthetically appropriate design for context	Favorable	Location is not aesthetically sensitive, <i>or</i> site is large enough and configured in such a way as to support acceptable design	Sites in residential areas and park sites will be treated as sensitive for aesthetics. For other types of sites, aesthetic sensitivity will be evaluated on a site-specific basis. Sites where the project would offer the potential for aesthetic benefits may be given a bonus.
		Conditionally Acceptable	Site is located in an aesthetically sensitive area but would support limited visual amenities	
		Unfavorable	Site is located in an aesthetically sensitive area and is too small to support aesthetic design	
4—Parkland Concerns	4A—Potential for loss of parklands	Favorable	Site is not in a park	This criterion is binary; <i>Conditionally Acceptable</i> scores will not be given
		Conditionally Acceptable	<i>Does not apply</i>	
		Unfavorable	Site is in a park	
	4B—Extent of parkland loss	Favorable	Site is within a park, but facility footprint would be small by comparison with park acreage and facility could be sited and designed to avoid disruption of park uses	
		Conditionally Acceptable	Site is within a park; facility would unavoidably create some (limited) disruption to park uses, but disruption/loss of uses would not be extensive	
		Unfavorable	Site is within a park, and facility footprint would be larger by comparison with	

Criterion	Parameter	Evaluation	Definition	Comments
			park acreage, and/or facility could not be sited in a location that avoids disruption to park uses	
5—Land Use Planning Consistency	5A—Consistency with General Plan policies	Favorable	Use of this site for a well facility would be consistent with relevant General Plan policies	This criterion is binary; <i>Conditionally Acceptable</i> scores will not be given
	5A—Consistency with General Plan policies (continued)	Conditionally Acceptable	<i>Does not apply</i>	
		Unfavorable	Use of this site for a well facility would not be consistent with relevant General Plan policies	
5B—Consistency with current site zoning		Favorable	Well facility is a permissible use under existing site zoning	
		Conditionally Acceptable	Well facility would be allowed with conditional use permit	
		Unfavorable	Well facility is not allowed under existing site zoning; project would require re-zoning	
6—Site Efficiency	6A—Ability of site to support timely project completion	Favorable	Site characteristics would support efficient, timely completion of project	This criterion is binary; <i>Conditionally Acceptable</i> scores will not be given Site efficiency will be evaluated based on site’s overall characteristics, project design needs, potential environmental issues, and known community concerns
		Conditionally Acceptable	<i>Does not apply</i>	
		Unfavorable	Site characteristics could result in delays to project schedule	

In addition to the basic community criteria, some sites may receive a “bonus” based on unusual suitability to support green design, or the potential to combine the wells installation with another proposed project, reducing costs and construction impacts. These are factors identified as desirable by the community but given less weight than the basic community livability criteria. Since the bonus criteria are not essentials to meet the project’s stated goal, and since they likely will not apply to all sites, there is no penalty if these criteria do not apply to a site. If they do apply, they will be evaluated as shown in **Table 3** on the following page. Site-specific concerns and the potential for community benefits may also be identified at this stage in the process, and will be noted verbally.

Table 3 – Community “Bonus” Factors

Criterion	Parameter	Evaluation	Definition
7—Bonus Factors	7A—Potential to combine projects (binary criterion, no penalty)	Favorable	Site offers potential to “piggyback” on other planned project(s)
		N/A	Site does not offer potential to “piggyback” on other planned project(s)
	7B—Potential for green design (binary criterion, no penalty)	Favorable	Site is unusually suitable to support greener design
		N/A	Site is not unusually suitable to support greener design

Once each site has been evaluated under the individual criteria, the color ratings will be carried forward into the matrix shown in **Figure 2** and combined into an overall evaluation for community factors.

Site	Summary Evaluation															Overall
	Site Access				Noise Disturbance Potential		Aesthetic Concerns	Parkland Concerns		Land Use Planning Consistency		Site Efficiency	Bonus Options		Notes	
	1A	1B	1C	1D	2A	2B	3A	4A	4B	5A	5B	6A	7A	7B		
Site 1																
Site 2																
Site 3																
Site 4																
Site 5																
Site 6																
Site 7																
Etc.																

Figure 2 – Summary Site Evaluation Form, Community Factors

The overall evaluation is intended to be visual and nonquantitative, based on color distribution and frequency, and should be guided by the following definitions.

- **Overall Favorable for Community Factors (Green)** – Site evaluation is dominantly favorable (green), with no preclusory concerns identified
- **Overall Conditionally Acceptable for Community Factors (Yellow)** – Site evaluation mixed, but no preclusory concerns identified

- **Overall Unfavorable for Community Factors (Red)** – Site evaluation is dominantly unfavorable (red), *or* has one or more preclusory concerns identified

Engineering Plus Community Factors—Combined Site Ranking. This phase will combine the final engineering and community factors ratings and will rank the potential sites based on the combined evaluation. **Figure 3** shows the form that will be used to combine the ratings. When completed, this form is designed to give an “at-a-glance” visual assessment of each site’s suitability for wells installation, and to allow easy, visually-based comparison between the various sites being considered.

<u>Site</u>	<u>Overall Engineering Evaluation</u>	<u>Overall Community Factors Evaluation</u>
{insert site name}	{fill with appropriate color}	{fill with appropriate color}
{insert site name}	{fill with appropriate color}	{fill with appropriate color}
{insert site name}	{fill with appropriate color}	{fill with appropriate color}
{insert site name}	{fill with appropriate color}	{fill with appropriate color}
{insert site name}	{fill with appropriate color}	{fill with appropriate color}
{insert site name}	{fill with appropriate color}	{fill with appropriate color}
{insert site name}	{fill with appropriate color}	{fill with appropriate color}

Figure 3 – Combined Site Ranking Form, Blank

Figure 4 shows a hypothetically completed version of the combined evaluation form.

<u>Site</u>	<u>Overall Engineering Evaluation</u>	<u>Overall Community Factors Evaluation</u>
Site #1		
Site #2		
Site #3		
Site #4		
Site #5		
Site #6		
Site #7		
Site #8		
Site #9		
Site #10		
Site #11		
Site #12		

Figure 4 – Completed Combined Site Ranking Form, Sites Not Yet Ranked

Sites will be ranked as follows based on the form shown in **Figure 4**.

- 1st tier: green-green
- 2nd tier: green-yellow, yellow-green
- 3rd tier: yellow-yellow

Engineering and community ratings will have equal weight in the ranking. Any sites with an overall *Unfavorable* (red) rating for either engineering factors or community livability factors will be eliminated from further consideration at this stage. If 6 or fewer sites remain in consideration once these unfavorable sites have been eliminated, all remaining sites can be carried forward to Phase 3. If more than 6 sites remain, additional screening, discussed below, will be needed to reduce the number of sites for Phase 3 evaluation to somewhere in the range of 5 – 7. This is necessary to constrain costs.

In **Figure 5** on the next page, the example **Figure 4** form has been re-organized to show the ranking of the sites. In this example several sites with the same combination of color evaluations are listed sequentially but actually have the same priority rank – #11, #3, and #8 (all 1st tier), #2, #7, and #9 (all third tier). Sites 5, 12, 4, 10, and 6 would all be eliminated from further consideration because of an *Unfavorable* rating or ratings.

As discussed above, the goal of Phase 2 site ranking is to identify no more than 6 sites for detailed engineering and hydrologic evaluation. However, if more than 6 sites are identified in Phase 2, they will be carried forward to Phase 3, and additional “intake” screening will occur at the beginning of Phase 3, to focus detailed studies on the most promising of the remaining potential sites.

<u>Site</u>	<u>Overall Engineering Evaluation</u>	<u>Overall Community Factors Evaluation</u>
Site #11		
Site #3		
Site #8		
Site #1		
Site #2		
Site #7		
Site #9		
Site #5		
Site #12		
Site #4		
Site #10		
Site #6		

Figure 5 – Completed Combined Site Ranking Form, Sites Ranked

Phase 3: Engineering and Hydrologic Evaluation

Phase 3 will entail field verification of the suitability of the remaining highest-ranked sites to select the best 2 – 3 sites for well installation. Preliminary site development plans will be prepared for each of the remaining sites to show the potential orientation and layout of buildings, vehicle access, and site improvements. Based on these conceptual designs and information gathered during site reconnaissance, the documentation required for compliance with the California Environmental Quality Act (CEQA) will be identified; this information is not expected to be decisional but will be useful to Council and Staff for project planning. In addition, test wells will be drilled to verify the potential production well yield and water quality. The selection of the final number and location of sites recommended for well installation will depend critically on the results of test well drilling (i.e., the number of wells required to meet the identified supply target, and their locations).

If more than 6 sites are identified as overall *Favorable* in Phase 2, then additional screening will be needed to focus Phase 3 on the most promising of the Favorable sites. This is not expected to occur, but in the event it does, an additional “intake” screening process will be developed based on the characteristics of the specific sites under consideration, as they relate to the engineering and community factors identified in Phase 2. Depending on the specific sites that remain, additional discriminators relevant to engineering or community livability may also be identified. Community and engineering factors will be given equal weight in this additional screening. “Intake” screening is expected to be quantitative so that it will provide a ranking of the sites that remain in consideration following Phase 2. The 6, or approximately 6, highest-ranked sites will undergo Phase 3 study.