

## 3rd Draft Recon Model

I took comments from Oct meeting, touched base with Dana, David B, Sarah, Doug, Bob and Rosemary and made some changes (which are noted below). -CF

Yellow highlights are changes since last meeting

### Implementability

**Note:** The likelihood of getting this approach done.

**Question:** How much does each subcriterion matter to you in meeting the requirements for implementability?

#### Technically Feasibility

**Note:** Technical feasibility is an estimate of whether this approach would work as envisioned.

**Question:** How feasible is this approach technically?

**Scale:** *Proven in cities, Demonstrated in field, Promising in 3-5 years, Promising in 6-10 years, Not promising*

*Note: If the planning horizon is 50 years and the "speculative technology" horizon is 10 years, that may be a bit of a disconnect. On agenda for November meeting and a very good topic for first stage of Real Deal.*

#### Legal Feasibility

**Note:** This addresses siting, water rights or other legal rights relevant to implementing this approach as envisioned. If you feel that changes to the law are required and should be pursued, please make a comment to that effect (we don't want the need for new laws to be a 'fatal flaw' but nor do we want to make a whole separate subcriterion "needs change in law.")

**Question:** Are the necessary rights currently held?

**Scale:** *Rights are secured and unambiguous, Rights are secured but ambiguous, Rights to be acquired, Rights controversial, Rights not obtainable*

#### Regulator Feasibility

**Note:** This addresses environmental and regulatory review.

**Question:** Is the approach likely to receive easy and quick regulatory approval? If you feel this is unlikely or highly unlikely, please comment on why (environmental, earthquake hazard, human health etc.)

**Scale:** *Easy and quick, Some complexity, Uncertain, Unlikely, Highly Unlikely*

*Note: I split legal and regulatory feasibility and adjusted the scales per conversation with David..*

#### Political Feasibility

**Note:** Extent to which an approach will claim and retain the support of formal political entities as well as informal social and political groups. This applies to demand reduction (e.g. volunteerism, finances for incentives or enforcement of regulations) and to supply (e.g. majority public vote requirement for desalination, willingness to make large capital investments or concerns about oversupply and water immigration.)

**Question:** What level of political reaction is this approach likely to have?

*Broad Enthusiastic, Solid, Moderate, Indifference, Active Resistance*

## Cost-Effectiveness

### Cost to the City: Upfront costs

**Note:** This addresses siting, planning, designing, obtaining rights and permits and other upfront costs.

**Question:** What are the upfront costs for this approach?

**Scale:** *Numeric scale in \$/MG*

### Cost to the City: Operation and Management

**Note:**

**Question:** What are the operation and management costs for this approach?

**Scale:** *Numeric scale in \$/MG*

### Cost to the Customer (may be more than one subcriterion)

**Note:** This cost is based on a (simplified) lifecycle cost (capital cost divided life of project plus annual O&M converted to cost per gallon) and compared to the estimated cost of a gallon of water to an average single family residential customer in 2018 which is about 1 penny per gallon. An average single family residential customer uses 8 ccf (hundred cubic feet) per month.

**Question:** How does the cost of this option compare to the cost an average single family residential customer's cost for a gallon of water in 2018?

**Scale:** Numeric scale in pennies per gallon

## Community Well-being

Encompasses a range of social and community values.

*The next two subcriteria are meant to surface differences about traditional and climate-adapted approaches as manifested in the “look and feel” of outdoor SC. Rick is right, this is very much about water availability, especially in the peak season. If people do in fact weigh these two differently, the scale will probably be useful in Recon. The issue, ‘landscape’ is really a proxy for bigger things. Nicholas pointed out that according to the survey, people actually cared more about toilet flushing than gardens, so maybe this is a misleading proxy? (But if so, please could someone else write the toilet criterion?)*

### Traditional Landscape

**Note:** This addresses the desire to have a future Santa Cruz whose gardens and landscapes look and feel much as they do now, preserving generational continuity and a traditional sense of place. It also hints at ease: the avoidance of regulation and not having to make difficult tradeoffs between indoor or outdoor use. It avoids social shaming/regulation/harsh rate structures or other provisions where policy might be seen to trump personal choice.

In setting the scale, we imagined what the top and bottom would be for someone who gives a great deal of weight to this criterion.

**Question:** Would this proposal tend to protect individual users’ ‘breathing room’ to preserve, create and enjoy traditional landscapes?

**Scale:** *Tradition stable/ Mostly stable/ Some risk/ Under siege/ SC wasteland*

### Climate-Adapted Landscape

**Note:** The look and feel of the community as it relates to a climate-adapted paradigm. Santa Cruz’s appearance could change, but the change could be as beautiful or pleasing as the present landscape or character, while being more sustainable. The point is that the community creates a less water-intensive landscape. This change would be embraced by the community rather than imposed through regulation or aggressive rate structures.

The term ‘native’ in the scale does not imply that the exact suite of plants that existed in Santa Cruz hundreds of years ago would be reproduced. Some would have been native to a slightly dryer climate. Also, in ‘natives abundant,’ roses would still be part of the mix, but irrigated less often.

Again, the bottom of the scale is the bottom for people who want this subcriterion.

**Question:** How well does this approach foster a shift towards a community character that differs from the present: to what extent do water customers embrace climate-adapted landscape strategies?

**Scale:** *Enthusiastic, Natives Abundant/ Voluntary, Natives Abundant/ Compliant some Natives / Grudging fewer natives / Natives Irrelevant*

### Regional Water Stability

**Note:** This gets at approaches that would not only redound to the benefit of SC water customers, but to the region.

**Question:** To what extent does this approach improve regional water stability?

*Across County, Across 2 or more, Not at all*

### Local Economy

**Note:** This refers to the health of Santa Cruz's economy.

**Question:** How might this proposal affect Santa Cruz's economy?

*Water isn't an issue, Water a mild concern, Water concerns drag, Key worry in BUSI plans, Major disincentive* [BUSI is the official abbreviation for 'business.' Doug, could I please use 'biz?']

## Environmental Well-being

**Note:** This criterion relates to the degree to which a water supply or demand management strategy contributes to or impacts the quality and sustainability of the natural environment.

**Question:** How important are the subcriteria to you in evaluating the criterion "Environmental Well-being?"

### Energy Intensity

**Note:** The degree to which a proposal will demand energy from cradle to grave: the making of component parts, the building or installation of materials or facilities including delivery systems, operation and maintenance as well as disposal.

**Question:** Taking the entire cycle into account, from producing parts to disposal, how much energy will this approach require per MG of water?

*Numeric scale in tonnes/MG*

### Marine Ecosystem Health

**Note:** I'd like to have a better scale--how does it harm? Then the bottom of the scale would be "creates severe turbidity" or "confuses fish" or whatever the feared impact is....

**Question:** How would this approach affect marine ecosystem health?

Note:

*Negligible effect, May harm, Will harm*

**Need better scale**

### Freshwater and Riparian Ecosystem Health

**Note:** This rating encompasses the positive (e.g. when restoring watersheds or by making it easier to leave more water in the river) as well as potential harm.

**Question:** If this approach were implemented, how would it affect freshwater ecosystems?

*Plentiful water, About as it is now, Degraded ecosystem health*

**Moved Riparian from Terrestrial to Freshwater**

### Terrestrial Health

**Note:** This would apply, for instance, with offstream storage

**Question:** How does this approach affect terrestrial or riparian health?

*Actively restores, Allows restoration, Does not affect, Depletes Resource, Greatly Depletes Resource*

### Groundwater Resources

**Note:**

**Question:** How would this approach affect groundwater resources?

*Actively restores large amount, Allows restoration, Does not affect, Depletes Resource, Greatly Depletes Resource*

## Adaptability

**Note:** Characteristic of a supply project that relates to how well the approach can be modified over time to respond to changing conditions.

**Question:** How important are the subcriteria to you in evaluating the criterion 'Adaptability?'

### Infrastructure Resilience

**Note:** 'Infrastructure resilience' has to do with how well the water supply system would withstand natural disasters such as fire or flooding or other disturbances. When evaluating an approach for 'infrastructure resilience' consider the existing system and ask whether this approach would make the system more resilient than it now is. For instance, does it diversify or make management more flexible?

**Question:** How much would this approach improve the existing system's ability to withstand natural disasters and other disturbances?

*Greatly improves, Moderately, Somewhat, Hardly improves, Not at all*

### Reliable Supply

**Note:** Reliability of water supply relates to how much water can be produced under various climate conditions such as drought or extreme precipitation.

**Question:** How much would this approach improve the existing system's reliability?

*Greatly improves, Moderately, Somewhat, Hardly improves, Not at all*

### Scalability

**Note:** Scalability measures the extent to which an approach can be scaled up or down as needs change.

**Question:** How easily can this approach be scaled up or down while still working as envisioned?

*Easy, broad range / Less easy, small range / Not scalable*

### Preserves Future Choices

**Note:** One factor in choosing among approaches is the benefit of leaving future options open. Losing siting opportunities or making large capitol investments are examples of steps that could reduce future planning options.

**Question:** How well does this approach preserve future choices?

*Many options kept open, Some kept open, Few closed off, Some closed off, City locked in*

## Effectiveness

**Note:**

The ability for a particular alternative to align supply and demand.

**Question:** How well will this alternative align supply and demand?

---

### Yield

**Note:** Reduction in demand or increase in supply.

**Question:** How much water will this approach save or produce?

*Numeric scale*

### Flexibility

**Note:** The degree to which this approach increases management flexibility that in turn helps the system "get by with less" while still meeting resilience, reliability and other goals. (This is particularly designed for approaches that don't actually increase supply or reduce demand, but might nevertheless be useful.)

**Question:** To what extent does this approach increase flexibility?

*Maximizes, Greatly increases, Moderately increases, Somewhat increases, Does not increase*

### Addresses Peak Demand

**Question:** Does this approach address peak demand?

*Yes, Maybe, No*

---