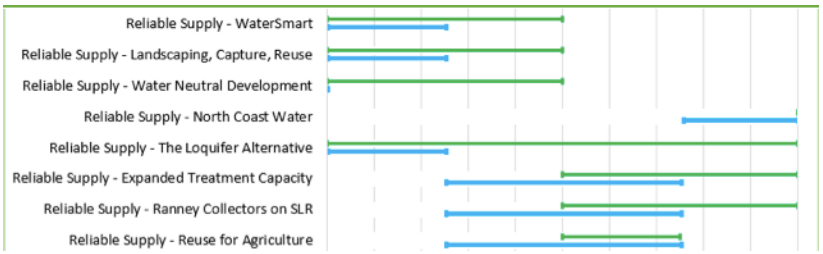
Esteemed Ctte Members-- This document is intended to support and focus the criteria discussion you asked for, about the criteria and scales. I made a table with the existing definitions, the scales (except for cost), some notes based on your conversations and a graph that shows the City uncertainty in blue and the Ctte variance in green. In these graphs, if the varriance is relatively small and nests into the uncertainty I take that as a good sign:

City's blue uncertainty encompasses the Ctte's green variance.

But if the Ctte variance lies outside the City's uncertainty, then I take that as a hint of something awry:



The variance in the Ctte's green ratings seems to be all over the place. A sign there is something awry with the definition or scale?

I didn't use these tables for the 3 remaining cost criteria. I think the cost discussion should be framed differently—by a memo from Bill which you'll get tomorrow.

Going through the materials, I only see three criteria that are (I think) 'done':

- Yield
- Flexibility and
- Cost to Individual.

That leaves 18 criteria to do in ~100 - 140 minutes. (The exact agenda details need to be discussed.)

If you wish this marathon (and I know some of you do, but I will check with all of you), how to accomplish it?

1. If you can, please flip through these pages—there's one page per criterion—and make a note of issues I haven't captured. Be ready.
2. It's useful to think about the source of the problem:
    a. Murky definitions
    b. Stupid scales
    c. Insufficient information as yet (and we are not solving that today!)
3. When thinking about dumping criteria, things to consider are:
    a. Do I need this criterion to discriminate among options?
    b. Does it communicate something to people that it is important for you to communicate?
4. Some of the issues simply won't emerge without a bit of discussion—think of the downstream piece in *Cost to Individual*.
5. Scales are the quality control for definitions, so you can't avoid those. And sometimes, to test what's right or wrong about a definition, you have to delve into the actual ratings-by-proposal to see where the sticking point might be. But don't go further than that. This is not a discussion about the actual ratings.

6. We will start at the end and work backwards because the end criteria get consistently less attention. If, as we go, you see a better logic for prioritizing, ok. But let's plunge in with this rule to begin with.
7. Lay all your issues on the table; don't wait for near-resolution and then pop us with a new one.
8. Make your point once. Only once.
9. We're going to have a timer. In the 3 to 4 minute range I'll do a quick triage
    a. Go for resolution
    b. Go for problem identification and future resolution*

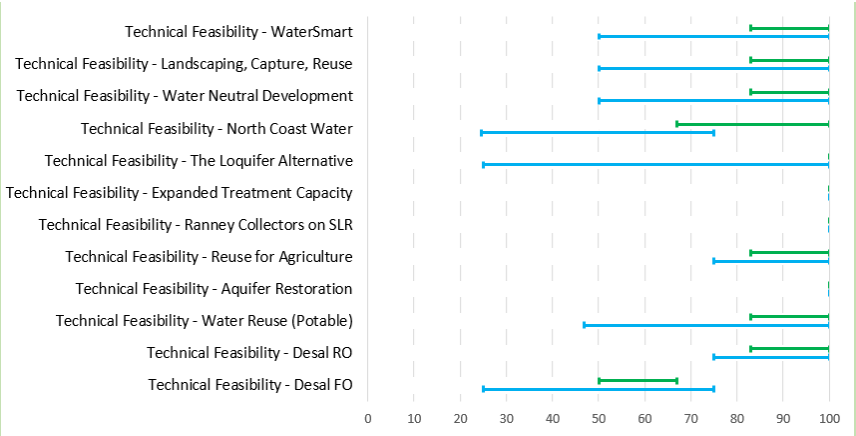
    If the latter, then we'll also identify the people who care a great deal about this criterion and seem to have something to contribute to its resolution.

    Please try to avoid dickering about whether the triage is right or not—if that meta discussion drags on you'll never get the 18 criteria done.

    Thanks. Take your vitamins!

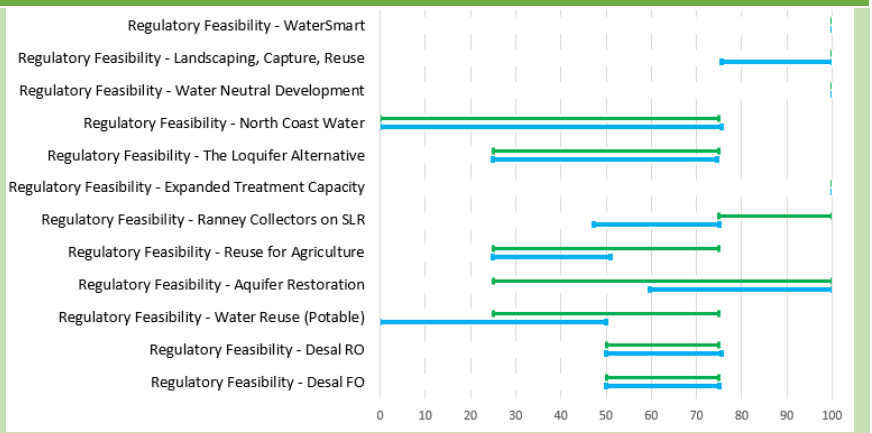
    Carie

    *On Wednesday you said that you didn't want to farm this problem to the RDPlanning Subctte because it seems that many of the rich points came from non-sctte-members. Excellent point. I do think that there is likely to be a constellation of people who emerge for a given criterion. If a criteria definition can't be agreed to in the meeting, I suggest you create ad hoc subgroups to hash them out and bring some ideas back to the next Ctte meeting.

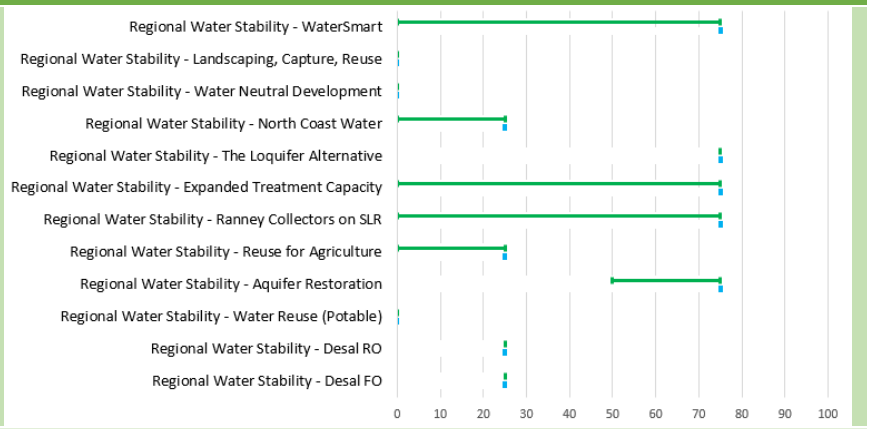
Subcriterion	Definition	Scale	Ratings min-max: Cmtee spread (Green) and City Uncertainty (Blue) in the 650 MG scenario.
Technical Feasibility	Technical feasibility is an estimate of whether this approach would work as envisioned. For complex proposals, rated on the basis of core elements. When rating, City staff used the 10-year horizon on the assumption that it would be very difficult to make predictions about what technical innovations would occur more than 10 years out. If you want to change the ratings and look at a longer timeframe, the scale gives you the leeway to do that.	Widely used, Demonstrated in field, Promising in 3-5 years, Promising in 6-10 years, Maybe 10-20 years, More than 20, Never	
notes	Generally speaking the Ctte variance nests within the City's uncertain estimates (exception: North Coat). So unless Ctte members flag other issues, assume that the criterion and scales themselves are ok. (One possible issue: whether should look as far out as >20)		
Resolution			
Next Steps	People:		

	Legal Feasibility		
Legal Feasibility	This addresses siting, water rights, environmental and other legal rights relevant to implementing this approach as envisioned. As you learned from Martha Lennihan, to have a water right is only the beginning: numerous factors affect the way the right can be exercised. A water right that has limitations or questions about how it can be exercised would rate as having 'some ambiguities.'	Unambiguous yes, Yes but some ambiguities, Can probably acquire, Difficult to acquire, Very unlikely	Graph not relevant
Notes	Suggestion to roll regulatory and legal together and tweak the scale accordingly.		
Resolution			
Next Steps	People:		

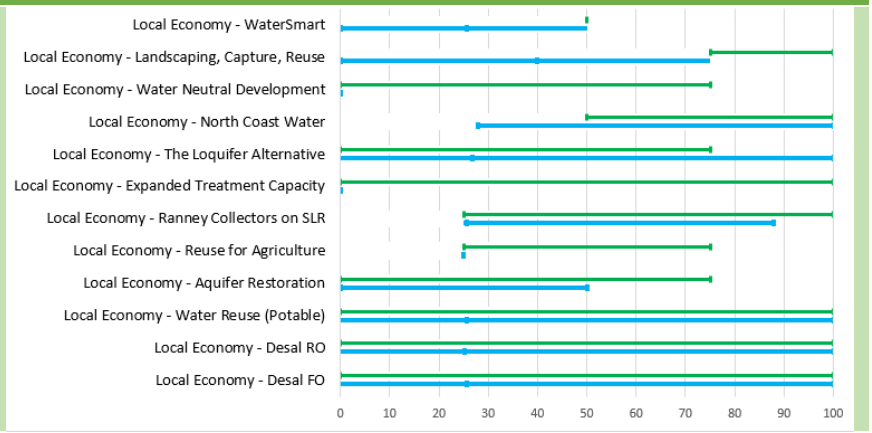
Regulatory Feasibility

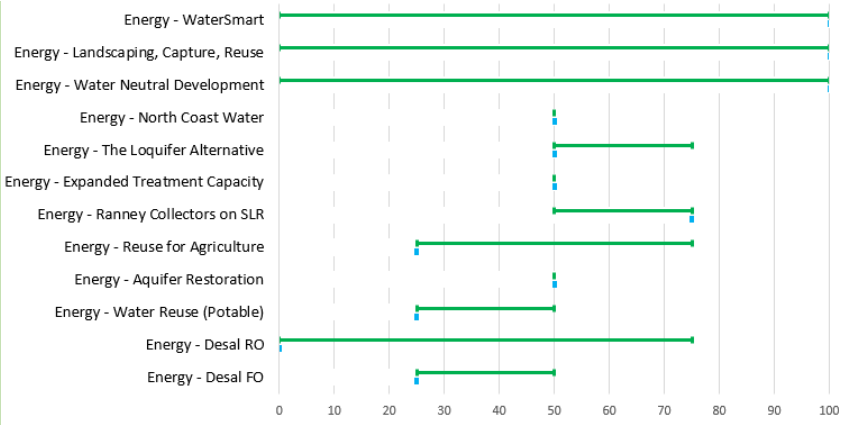
Regulatory Feasibility	This addresses environmental and regulatory review. When rating, the City staff looked at the difficulty of getting regulatory approvals under existing regulations as well as the possible necessity of responding to or taking advantage of potential new regulations that might come into place over the next decade.	Easy and quick, Slow but relatively sure, V slow no regulatory chng, Up to 10 year new reg, Not feasible (regulatory)	
Notes	The mismatch between City uncertainty (blue) and Ctte variance (green) on Ranney, Ag Reuse, Aquifer and Potable Reuse suggests that there is a problem with this one—scale would be a good place to look.		
Resolution			
Next Steps	People:		

Political Feasibility			
Political Feasibility	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 inmigration).	Enthusiasm now, Acceptable now, Active resistance now, Acceptable in 5 years, Acceptable in 10 years, Acceptable in 20 years, Likely never	Graph not relevant
Notes			
Resolution			
Next Steps	People:		

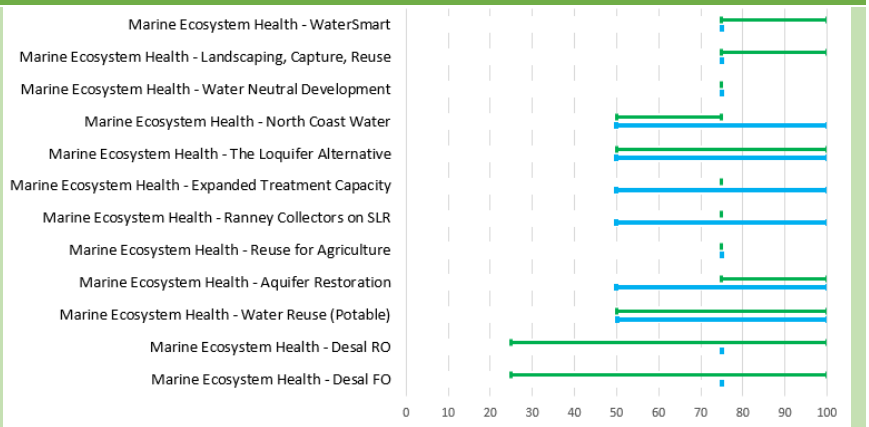
	Regional		**C**
Regional Water Stability		Across County, 4 jurisdictions, 3 jurisdictions, 2 jurisdictions, SC Water only	
Notes	Graph differences hard to interpret. Suggestion make this two point scale: one jurisdiction and more than one jurisdiction		
Resolution			
Next Steps	People:		

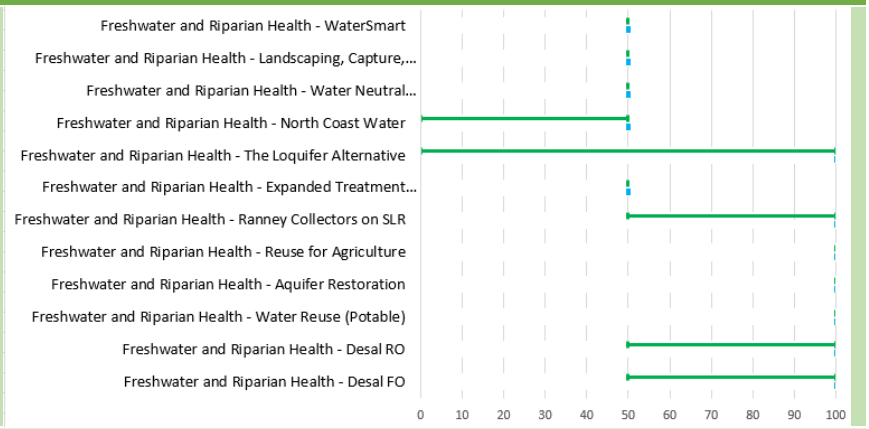
Local Economy

Local Economy	This criterion is measured in terms of numbers of jobs and is meant to synthesize the effect of water supply, water reliability, confidence and local jobs as they might affect local economy.	Positive local job, Slight positive, No effect, Slight negative, Negative for local jobs	
notes	Many issues.		
Resolution			
Next Steps	People:		

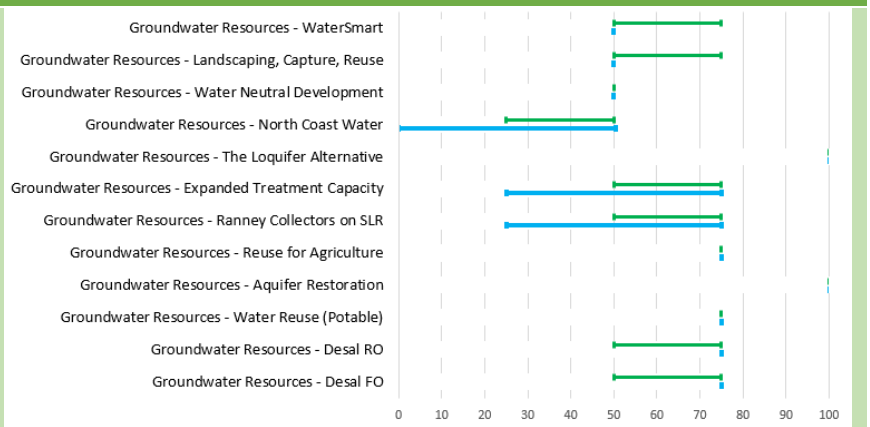
Energy			
Energy	City staff considered the energy usage of the City's current treatment plant as a 4 and rated the others with respect to that. The City recently compared energy intensity of the treatment of desal vs traditional sources (surface and groundwater) as 15, 1.5 and 2.1 kWh/1000 gallons respectively.	5, 4, 3, 2, 1	
Notes	Several problems: first, the scale was odd because 5 was the best (and it did appear on top in the website) but in all the other scales the higher numbers were the worse scores. Second, it is not clear what you care about here—is it energy as a (perhaps erratic) component of cost, or is it the carbon footprint? If the former then why not model it as part of the cost estimates? If it is the latter, need a lot more research to get the numbers. Either way, this should be a numeric scale.		
Resolution			
Next Steps	People:		

Marine

Marine Ecosystem Health		Positive effect, does not harm, may harm, cumulative harm, Sig harm to population	
Notes	Nobody seemed to think that any of the proposals would have a 'significant harm' to the population, so may want to drop that. What does it mean to have a 'positive effect'? Why do Watersmart or Landscaping etc have a positive effect? Why would desal? Do you want a 3-pt scale?		
Resolution			
Next Steps	People:		

Freshwater			
Freshwater and Riparian Health	This rating encompasses the positive (e.g. when restoring watersheds or by creating an easier option to leave more water in the river) as well as potential harm. One of the commenters on the Convention model referred to the former as 'direct beneficial impact' and the latter as 'indirect beneficial impact.'	Plentiful healthier water, About as it is now, Degraded ecosystem health	
Notes	Loquifer got the full spread—why? Disagreement about whether Desal (but not Reuse) would make water 'plentiful'—why? This scale begs the issue, so top of scale really means "would make it easier to leave more water in the river" aside from the length why not say that?		
Resolution			
Next Steps	People:		

Groundwater

Groundwater Resources	The word "active" in the scale means putting water back not just resting wells.	Actively restores, Allows restoration, Does not affect, Depletes Resource, Greatly Depletes Resource	

notes

The Ctte variance seems to nest nicely inside the City uncertainty, so perhaps this one…

Ooops! No. Desal was downgraded from 'Allows Restoration' to 'Does not Affect' yet potable reuse was left as is. Why?

Note: these types of questions are meant to get at any possible flaws/ambiguities in the definition or scale, not to resolve what the proper rating for Desal is.

Resolution

Next Steps

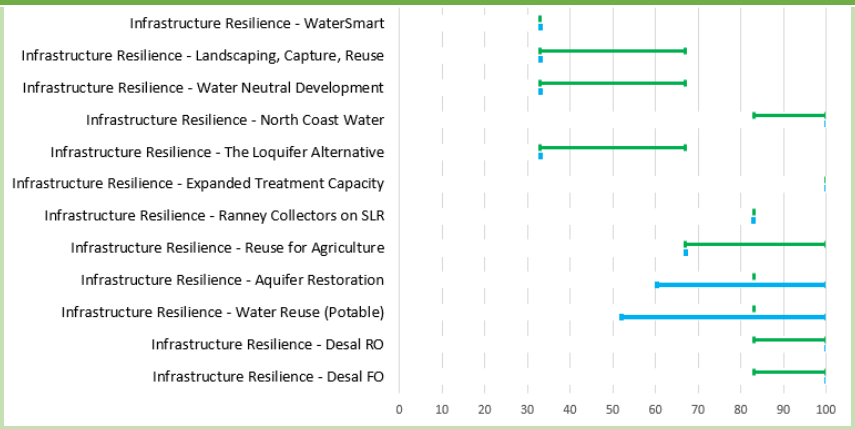
People:

Terrestrial Impacts			
Terrestrial Resources			
notes	This is just a reminder that terrestrial impacts was quite erroneously taken out because none of the 12 were off stream storage. But… what about piping! Should have been a criterion.		
Resolution			
Next Steps	People:		

Infrastructure Resilience

Infrastructure Resilience

Infrastructure resilience relates to the extent to which this approach will help the overall system to withstand natural disasters such as earthquakes, fires, floods, tsunamis and or systemic power outages related to the above--but not drought. Potable reuse rated lower than desal for resilience because desal uses another source of supply (the ocean) and would be a brand new facility built to all current seismic codes. In an earthquake, these factors would be assets compared to possible impacts of losing the wastewater treatment, which in turn would affect the reuse plant.



Most challenges well, Many moderately well,
Some somewhat,
Few barely, Doesn't improve resilience,
Slightly degrades,
Significantly degrades

Notes

At the approach level (as opposed to Portfolio) some approaches may be immune to earthquakes but they don't make a big difference to the system, so there is a confounding with yield.

Demand mngt needs discussion.

Resolution

Next Steps

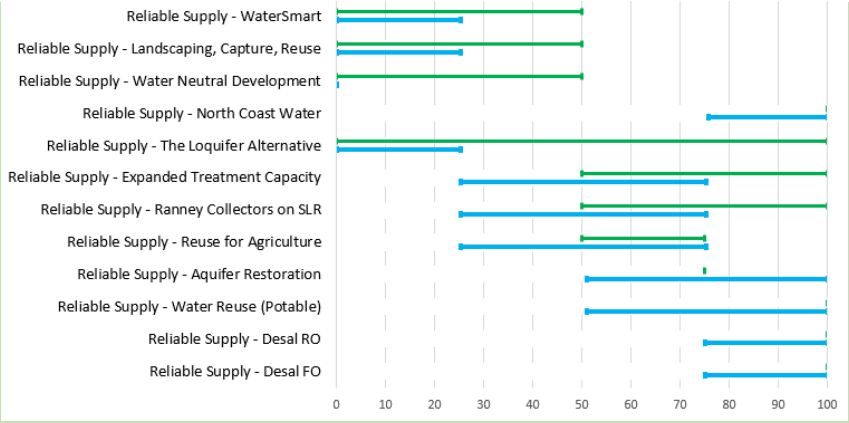
People:

Reliable Supply

Reliable Supply

Reliable Supply

Reliability of water supply relates to how much water can be produced under various climate conditions such as drought or extreme precipitation. Remember that in the extreme climate change simplified scenario (the billion gallon shortfall), less rainfall isn't the only issue: turbidity, timing of storm events or other factors may also affect the supply. In rating the alternatives against this subcriterion, City staff saw demand strategies as potentially reducing the reliability of supply. They felt that the water demand offset program generally makes the system less reliable. With demand management actions being used to offset growth, new customers can be added without increasing supply. But at the same time, all customers are living closer to some reasonable limit of possible reduction in water use or increases in water use efficiency. This means that if the supply drops even further, there is no cushion--little or no discretionary water use that can be eliminated or reduced--so curtailments would be more difficult for customers and, in worst case scenarios could significantly cut in to the water used to protect public health and safety.



Makes system sig more rel,
Somewhat more reliable,
Slightly more reliable,
No change,
Makes system less reliable

Notes

As Roy pointed out, reliable supply is probably pretty close to your goal (and yet it didn't get much weight).
Part of the complexity here is that you haven't defined 'reliability' –or you haven't defined the sweet spot of reliability.
Then there is the difference in how you view demand management!
Some Ctte members wanted to give Ranney Collectors and Exp Trtmnt higher ratings for reliable supply.

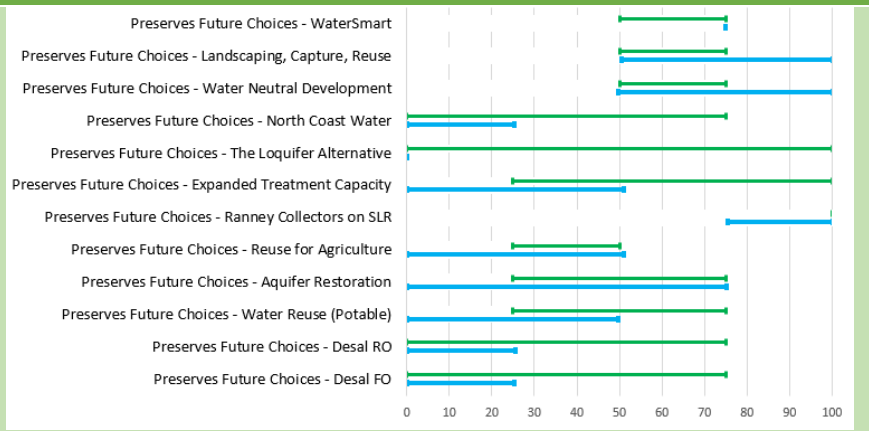
Resolution

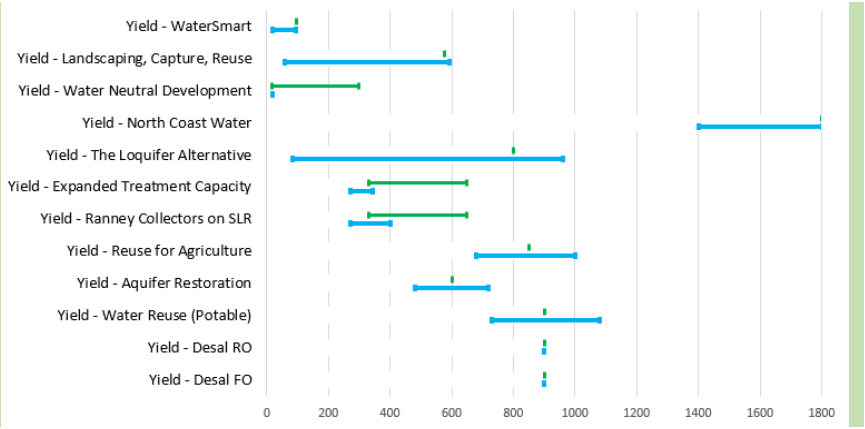
Next Steps

People:

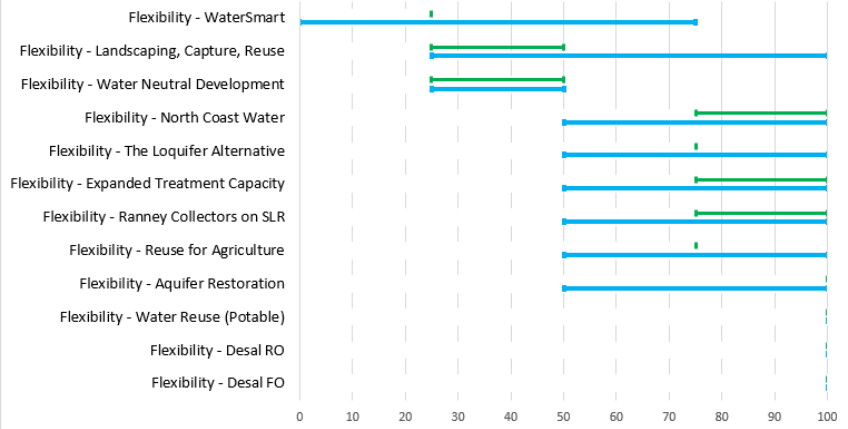
Scalability

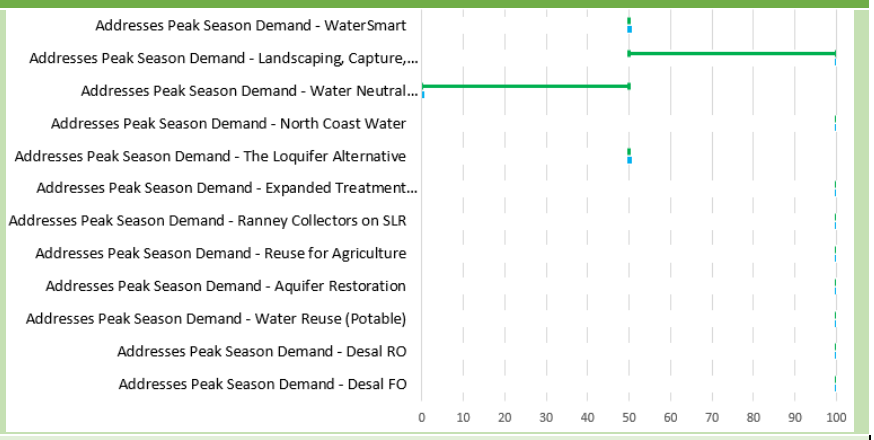
Scalability	Scalability measures the extent to which an approach can be scaled up as needs change. Note that for Loquifer, as with some of the other proposals, the design is scalable but once you commit to one of the designs, the project is not. One of the Ctte members had asked for a negative scale for scalability, but that just didn't make sense; it was hard to imagine a circumstance where adding one of these approaches would make the system less scalable.	Scales up w no limit, Can scale to ~1BG gap, Can scale to ~650 MG gap, Can scale to ~ 300 MG gap, Not scalable	
Notes	Doubts about Exp Trtmnt being a mere 'can scale to 300 MG' I think the City may have gotten confounded with "why would you want to?" as opposed to "can you?" Q about how scalable water neutral dev't or watersmart are. What does 'can scale up with no limit' mean?		
Resolution			
Next Steps	People:		

Future Choices			
Preserves Future Choices	In general, this rating was about the extent to which large capital investments might lock the city in to a certain set of solutions. The Ranney collectors rated well because they would be helpful in perfecting the Felton water right at a higher level. What is missing in the structure of the model is a way to send a signal about options lost by INaction.	Increases choice, Somewhat inc choice, No effect, Reduces choice, City locked in	
Notes	Yeah. This one is weird. Since physical limitations don't seem to be an issue, is this maybe just about cost (or upfront cost)?		
Resolution			
Next Steps	People:		

Yield			
Yield		[17-1,800]	
Notes	I think this one is fine for now.		

Flexibility

Flexibility	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.) In rating 'flexibility,' the City staff looked at an approach's ability to provide diversity, the ability to create a cushion in terms of water availability and other factors. For instance, reuse and desal were seen as "adding another treatment plant" and therefore tended to rate well for flexibility.	Greatly increases, Moderately increases, Somewhat increases, Does not increase, Decreases	
Notes	No problemo?		

Addresses Peak Season Demand			
Addresses Peak Season Demand	This subcritierion addresses the extent to which a proposal reduces peak season demand or provides water that is not dependent on winter rains.	Yes, Maybe, No	
Notes	Explore why water neutral dev't reduces peak season demand in particular?		
Resolution			
Next Steps	People:		