

Creating a Sustainability Index to Compare Water Supply Options: A Southern California Example

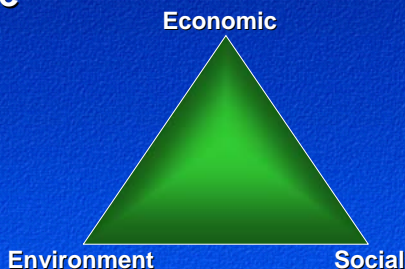
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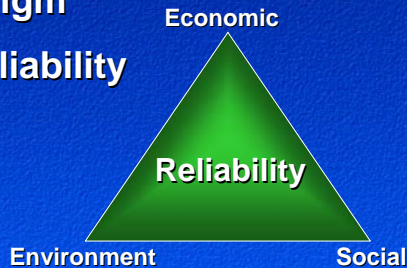
What is Sustainability?

- Finding the right balance between economic, environmental and social needs
- Taking a holistic perspective
- Consideration of the long-term



Why is Sustainability Important in Water Supply Planning?

- With limited resources, its critical to consider multiple benefits
- Stakeholder involvement in decision-making requires new paradigm
- Sustainability is reliability



Traditional Economic Comparison of Water Supply

- Cost of Water
- Cost of Water Treatment
- Cost of Conveyance

Expanded Cost View (Source to Disposal)

- Cost of Water
- Cost of Water Treatment
- Cost of Conveyance
- **Cost of Wastewater Treatment**
- **Cost of Disposal (Outfall)**

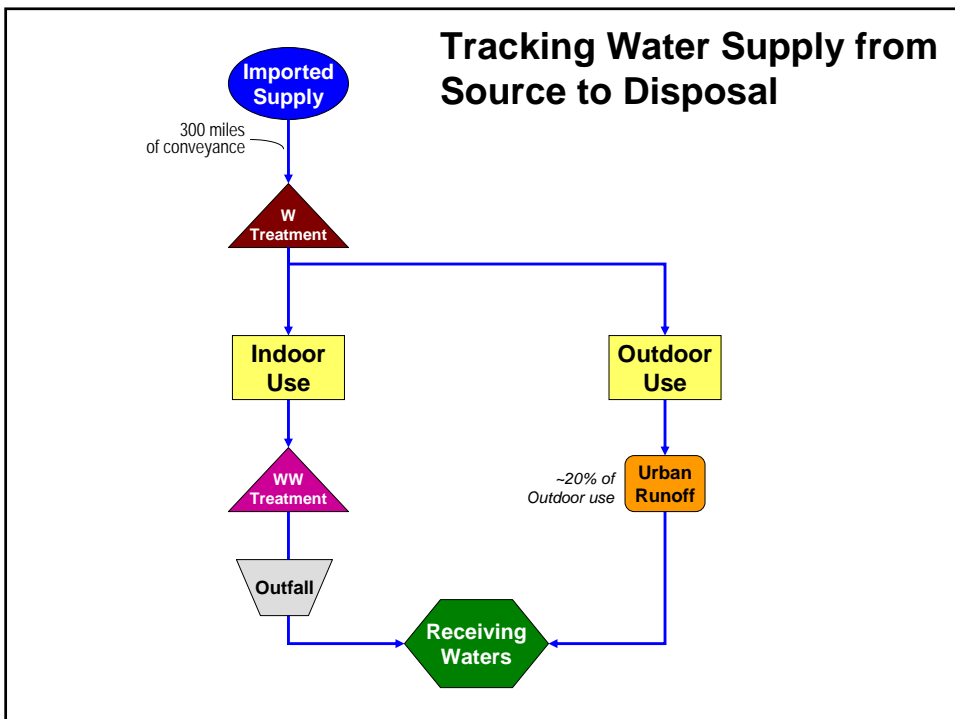
Sustainability Goes Even Further ...

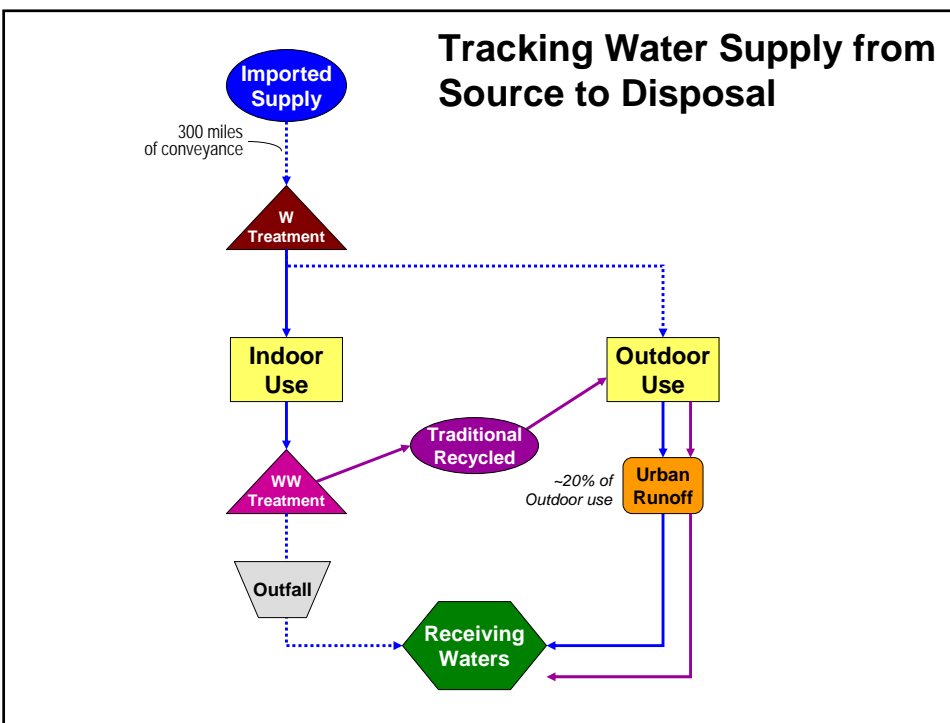
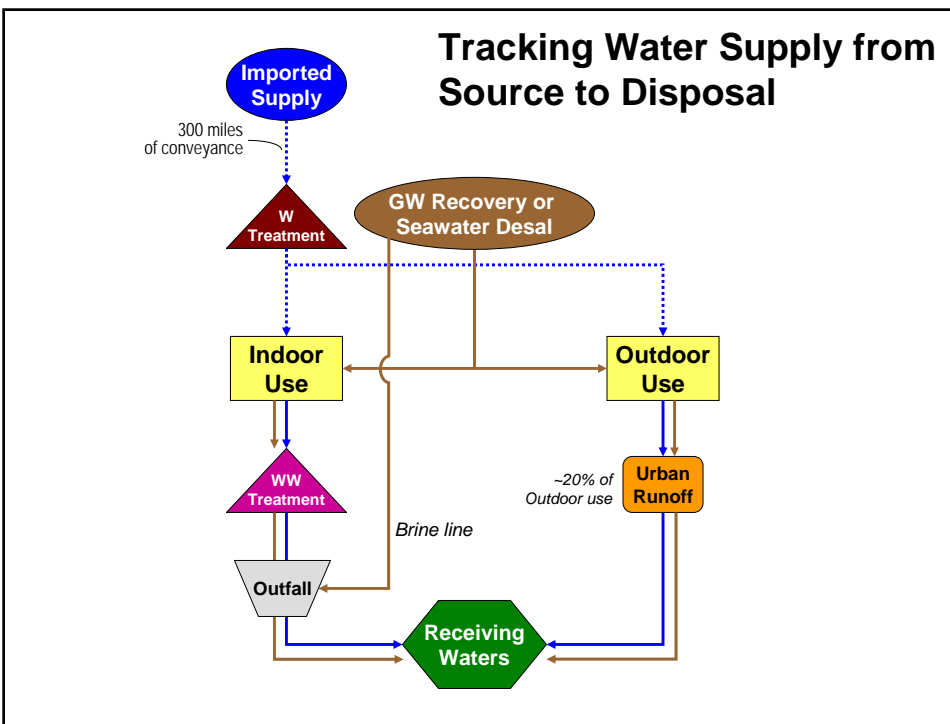
- Cost of Water
- Cost of Water Treatment
- Cost of Conveyance
- Cost of Wastewater Treatment
- Cost of Disposal (Outfall)
- **Reliability & Adaptability**
- **Environmental Impacts**
- **Societal Preferences**

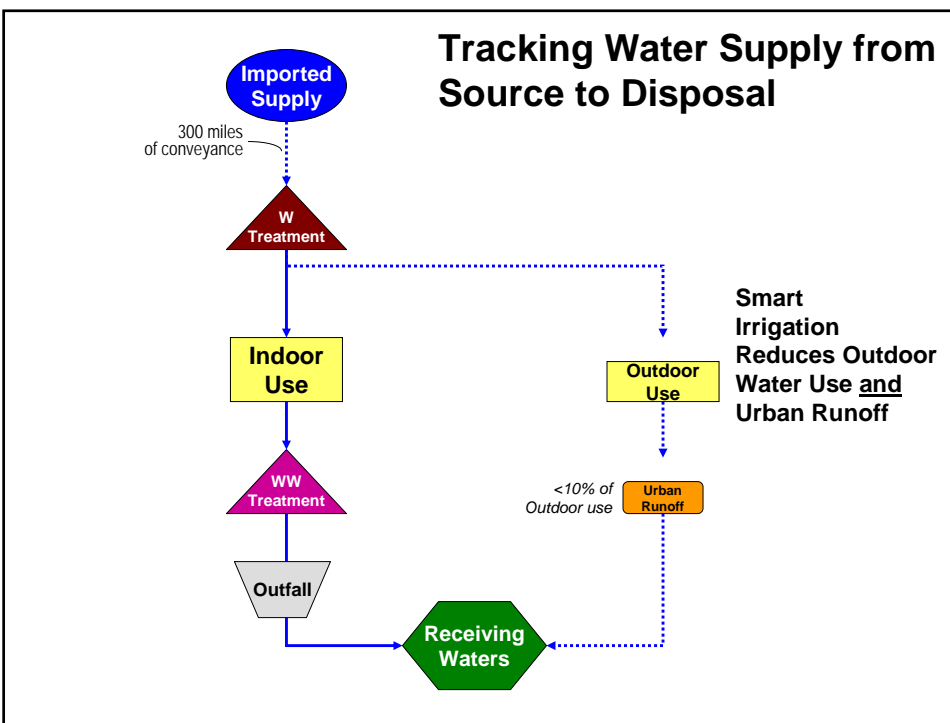
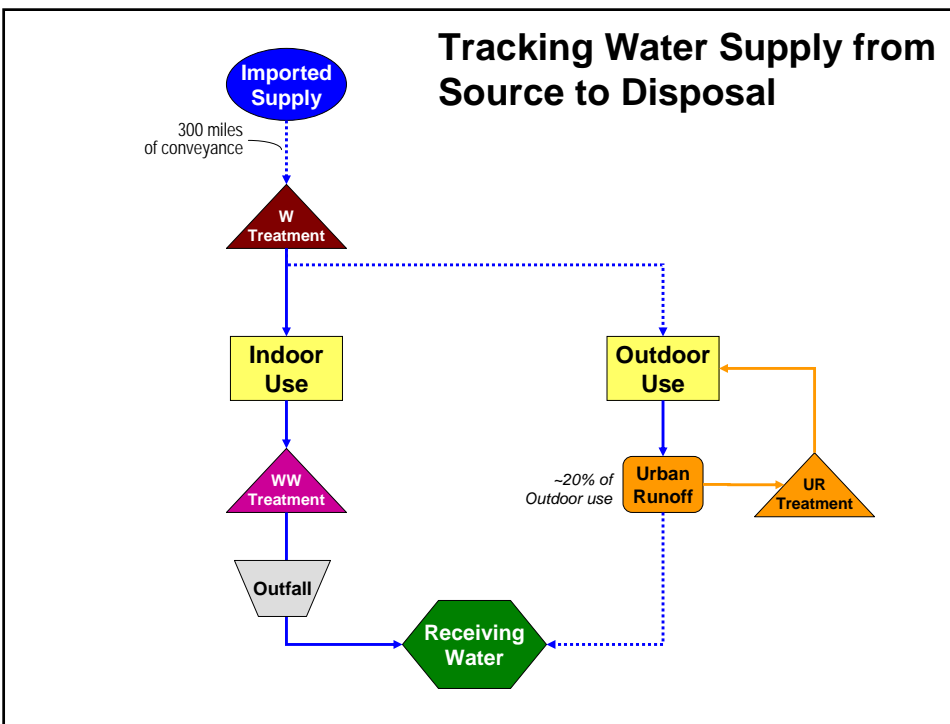
Creating a Sustainability Index for Water Supply

Example: Southern California Water Options

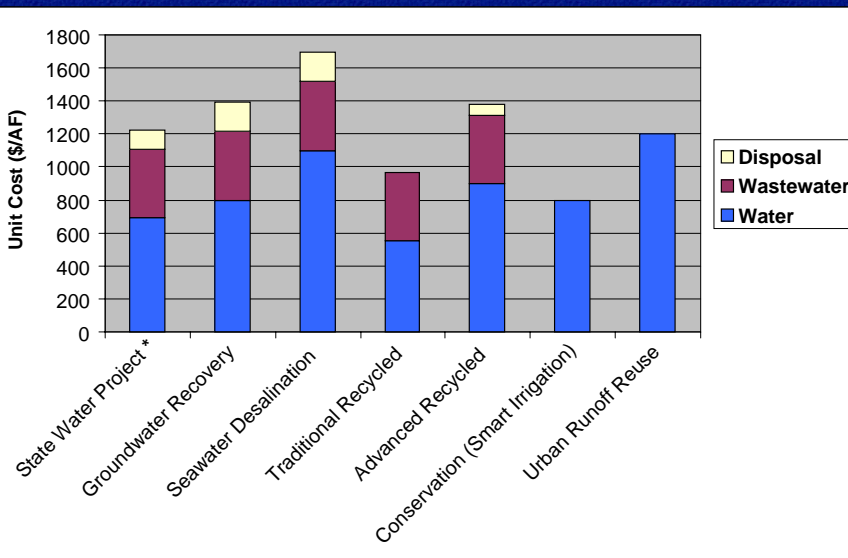
- Imported (State Water Project)
- Groundwater Recovery (Brackish Desal)
- Seawater Desalination
- Traditional Recycling (Tertiary)
- Advanced Recycling (MF/RO)
- Conservation (Smart Irrigation)
- Urban Runoff Reuse



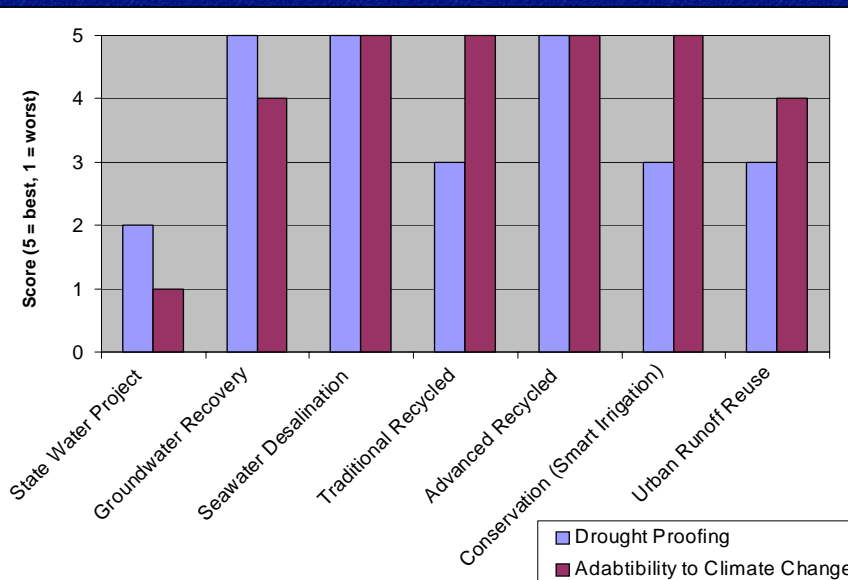




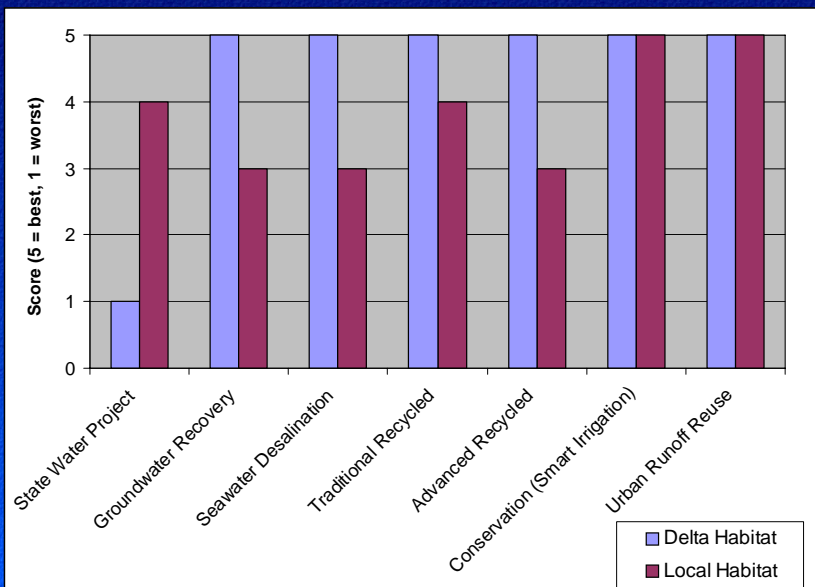
True Cost of Supply Options



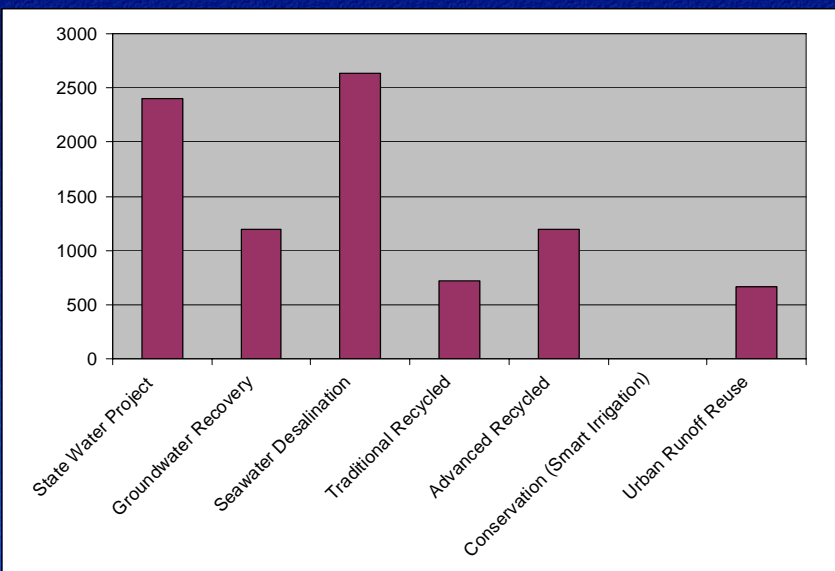
Reliability Score



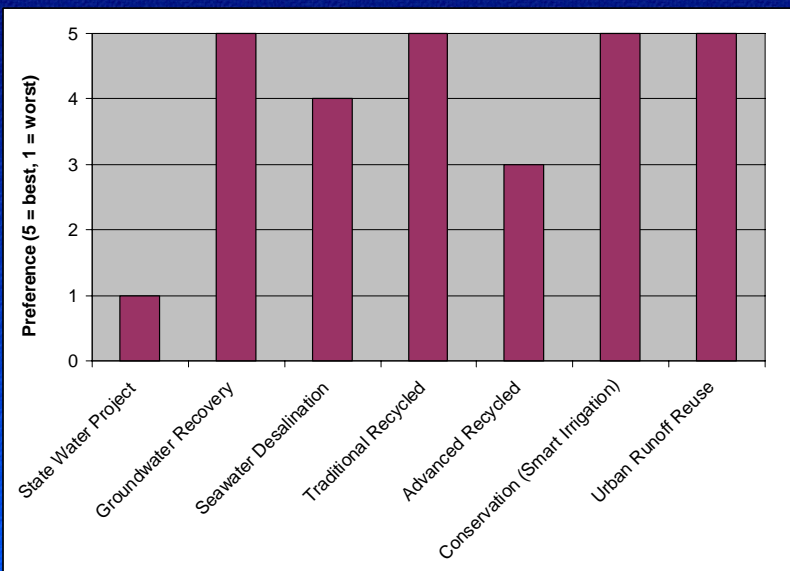
Habitat Impacts



CO₂ Emissions (lbs/AF)

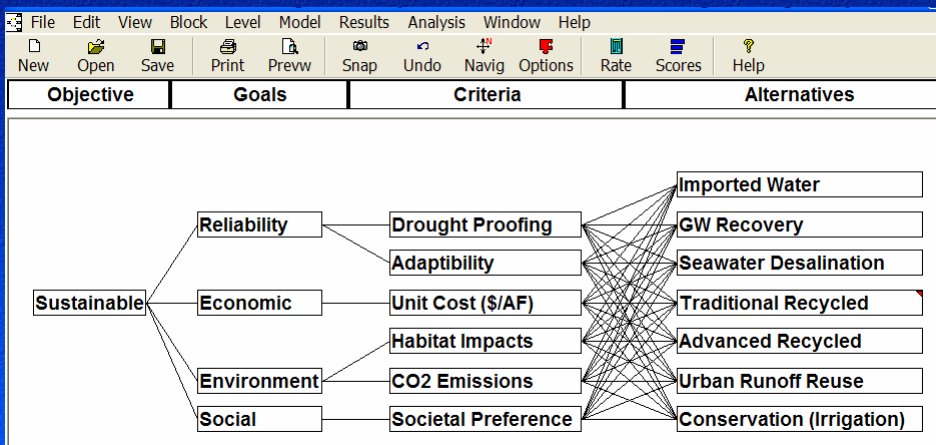


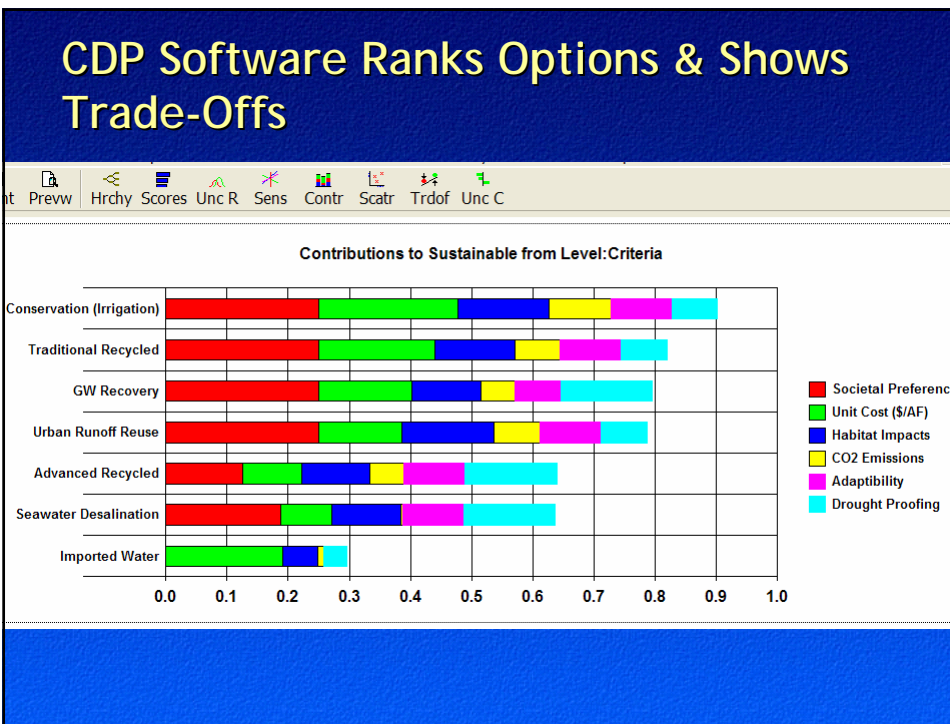
Societal Preference



Creating the Sustainability Index

- Uses technique called multi attribute rating (Criterium Decision Plus software)





Conclusions

- Expanding costs to include wastewater and disposal gives a more accurate view of the economic impacts
- But only when you add all sustainability indicators do you get the full comparison
- Do the results mean that Southern California should abandon its SWP supply?

Of course not! But other options (even though some cost a lot more than SWP supplies) have merit and should be developed.

Questions?