



City of
**Santa
Monica**

CAALAC Presentation

10/27/2021

City of Santa Monica – Water Resources Division



93,000+ residents
2,700+ commercial
customers



Drinking water and
fire protection



groundwater (local)
surface water (MWD)



Sewer collection and
recycled water

9 million gallons
of high-quality drinking
water daily

14 million gallons
of wastewater captured
and delivered for treatment
each day

77,000 gallons
per day of recycled
water

**4 water storage
reservoirs**
totaling 40 million gallons



City of
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Goals of the City's Sustainable Water Master Plan

- Long term cost benefits for rate payers
- Diverse, sustainable, & drought resilient water supply to support a sustainable community
- Reduction of energy footprint to support carbon reduction goals for the City



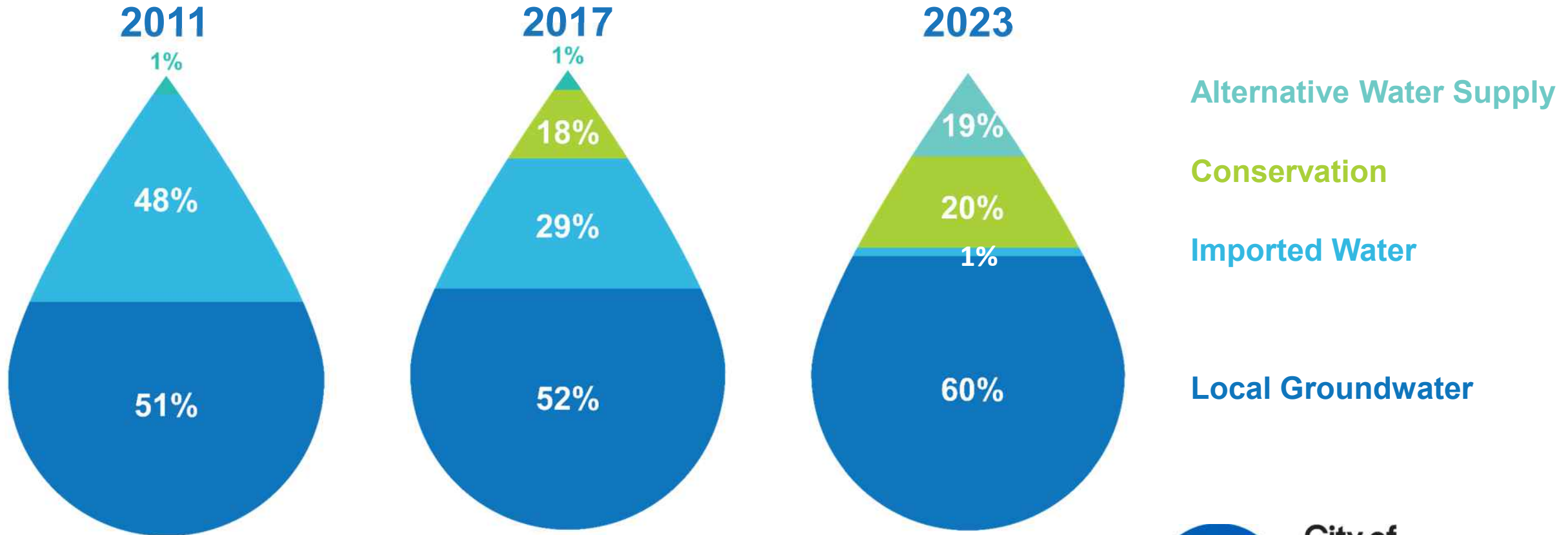
PLAN AT A GLANCE

The CAAP is a guiding document that provides overarching policy direction to achieve the interim goal of a 30% reduction in emissions by 2030 and to increase Santa Monica's resilience to climate change hazards and impacts. This plan supports and enhances many existing plans and initiatives within the City. The CAAP also suggests new plans and actions to supplement ongoing efforts and create new initiatives.

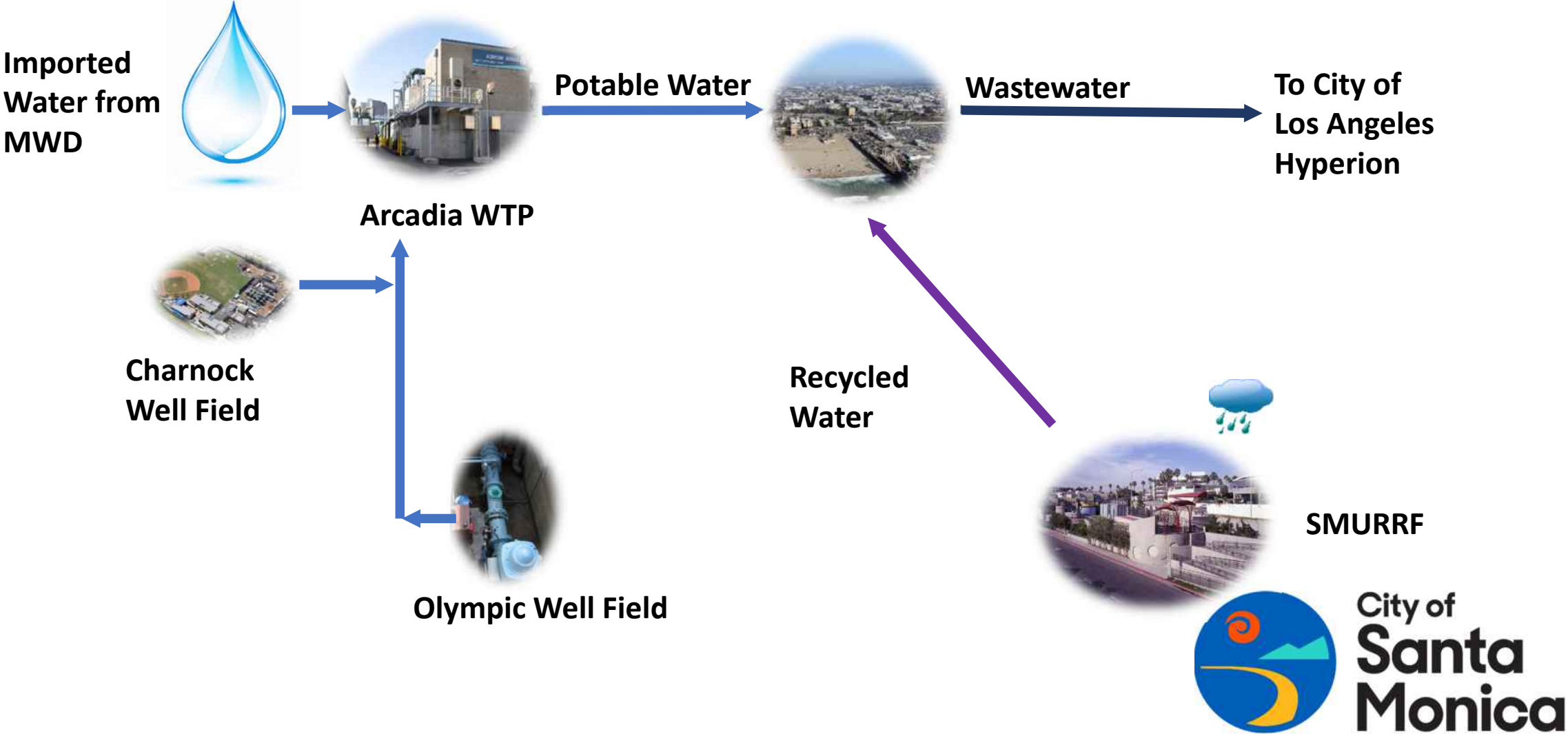
CLIMATE ACTION		
SECTOR	OBJECTIVES	SUPPORTING EFFORT
ZERO NET CARBON BUILDINGS	<ul style="list-style-type: none"> • Achieve 100% renewable grid electricity • Install 100 MW of local solar energy • Reduce fossil fuel use 20% in existing buildings • Discourage fossil fuels in new buildings 	<ul style="list-style-type: none"> • Zero net energy for new residential construction (2017) • Mandatory solar for new commercial construction (2017)
ZERO WASTE	<ul style="list-style-type: none"> • Divert 95% of materials from landfills 	<ul style="list-style-type: none"> • Plastic Bag Ban (2011) • Zero Waste Strategic Operations Plan (2014) • Disposable Food Serviceware Ordinance (2018)
SUSTAINABLE MOBILITY	<ul style="list-style-type: none"> • Convert 50% of local trips to first, bike, scooter & skateboard • Convert 25% of commuter trips to transit • Convert 50% of vehicles to electric or zero emission 	<ul style="list-style-type: none"> • Land Use & Circulation Element (2010) • Bike Action Plan (2011) • Pedestrian Action Plan (2014) • Electric Vehicle Action Plan (2017)
CLIMATE ADAPTATION		
SECTOR	OBJECTIVES	SUPPORTING EFFORT
CLIMATE READY COMMUNITY	<ul style="list-style-type: none"> • Increase community resilience to climate change • Protect vulnerable groups from impacts • Integrate climate change impacts into City planning, operations & infrastructure projects 	<ul style="list-style-type: none"> • All Hazards Mitigation Plan (2015) • Santa Monica Organizations Active in Disaster (2018)
WATER SELF-SUFFICIENCY	<ul style="list-style-type: none"> • Achieve water self-sufficiency by 2023 	<ul style="list-style-type: none"> • Water Neutrality Ordinance (2017) • Sustainable Water Master Plan (2018)
COASTAL FLOODING PREPAREDNESS	<ul style="list-style-type: none"> • Enhance natural systems to prevent damage from coastal flooding • Increase resilience of public and private assets in the coastal flood zone 	<ul style="list-style-type: none"> • Local Coastal Program Land Use Plan (2018)
LOW CARBON FOOD & ECOSYSTEMS	<ul style="list-style-type: none"> • Increase self-reliance through local food production • Reduce or sequester carbon emissions from food production, consumption, waste and landscape management and natural processes 	<ul style="list-style-type: none"> • Urban Forest Master Plan (2015)

The CAAP is not an element of the City's General Plan or a regulatory document for the purposes of streamlining the California Environmental Quality Act (CEQA) process. Any policy or ordinance described in the CAAP must be developed and adopted through a public review process.

Leveraging Alternative Water Supplies for a Sustainable Future



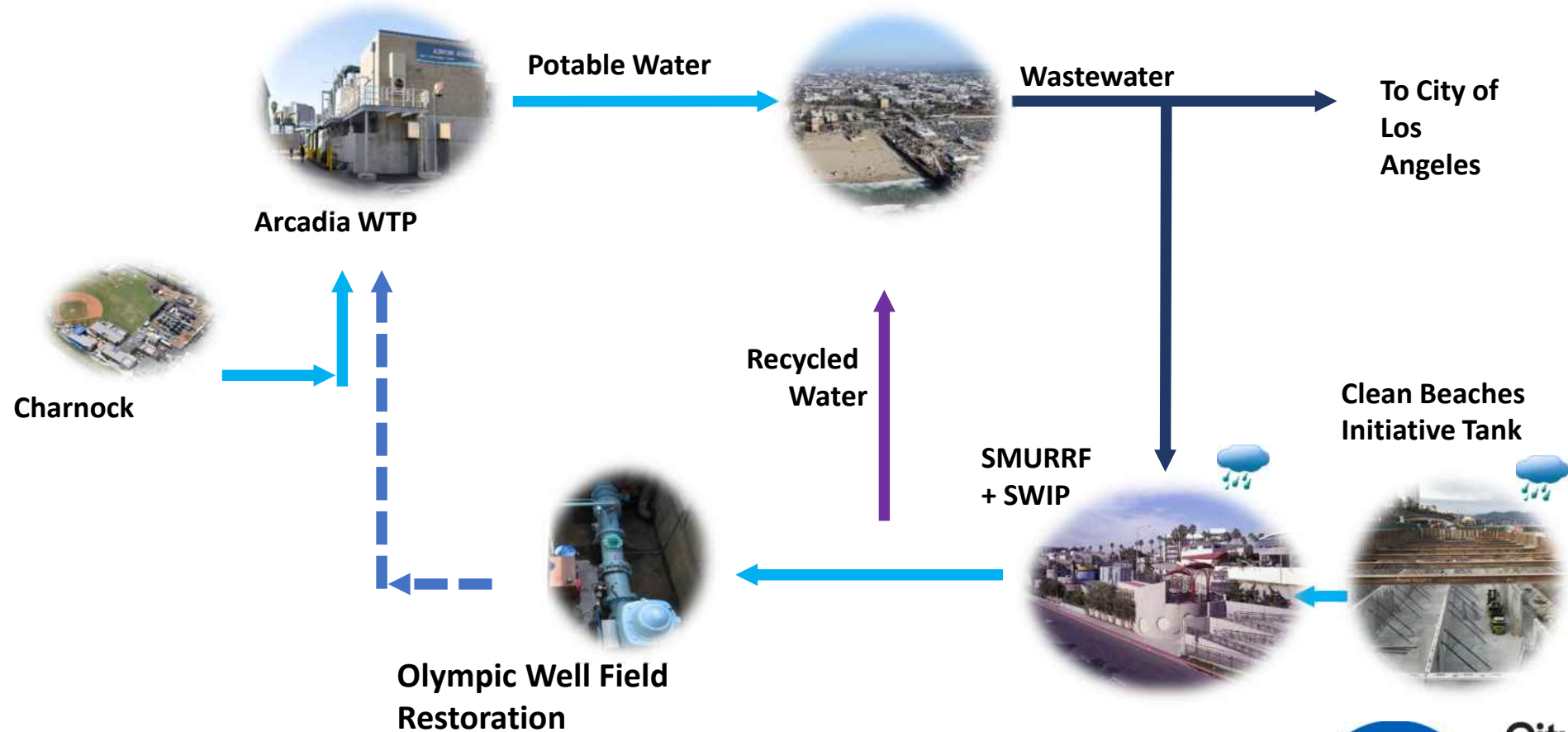
Integrated Approach to Maximize Local Water Resources



Component 1 – Conservation

Component 2 – Alternative Water Supply

Component 3 – New Local Groundwater





City of
**Santa
Monica**
**Notable
Projects**

Sustainable Water Infrastructure Project (SWIP)

Element 1: a modular reverse osmosis (RO) unit at the Santa Monica Urban Runoff Recycling Facility (SMURRF), a new shallow brackish and saline groundwater extraction well at the beach, and new solar panels for energy offset.

Element 2: a below grade stormwater and sewer treatment facility at the Civic Center Lot with 1 million gallons per day (MGD) capacity.

Element 3: two new stormwater harvesting tanks at Memorial Park and the Civic Center Lot, with 1.5 million gallon (MG) capacity.



Sustainable Water Infrastructure Project (SWIP)



- Element 1
 - 1.5 MG Clean Beaches Tank
 - SMURRF Upgrades
- Element 2
 - New 1 MGD SWIP AWTF
 - 30/70 Blend of Stormwater and Wastewater
- Element 3
 - New 1.5 MG Stormwater capture tank

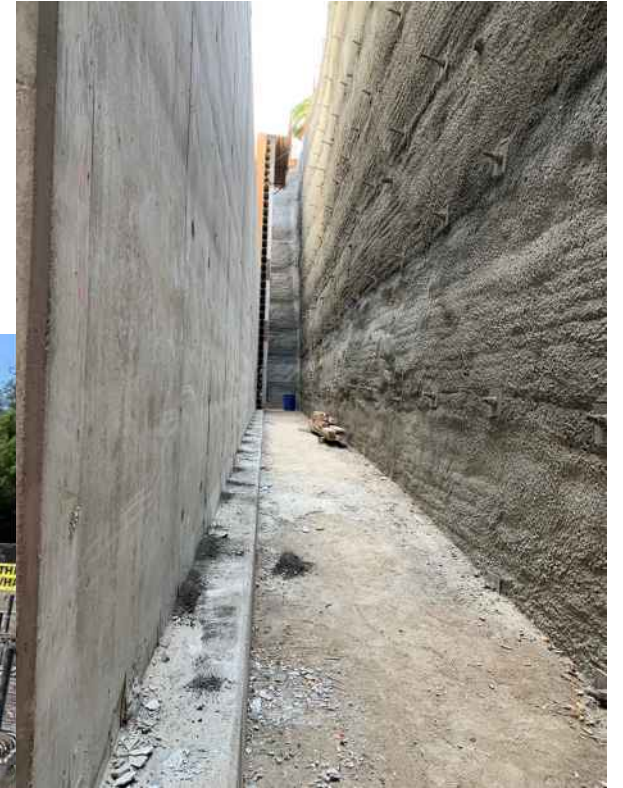
SWIP's Multiple Benefits

- Improves beach water quality
- Provides EWMP/MS4 compliance
- Drought resilient water supply
- Diversifies City's water supply portfolio
- Increases recycled water production
- Augments local groundwater supply
- Creates ~1,600 AFY of local water supply for the City

Sustainable Water Infrastructure Project



Sustainable Water Infrastructure Project

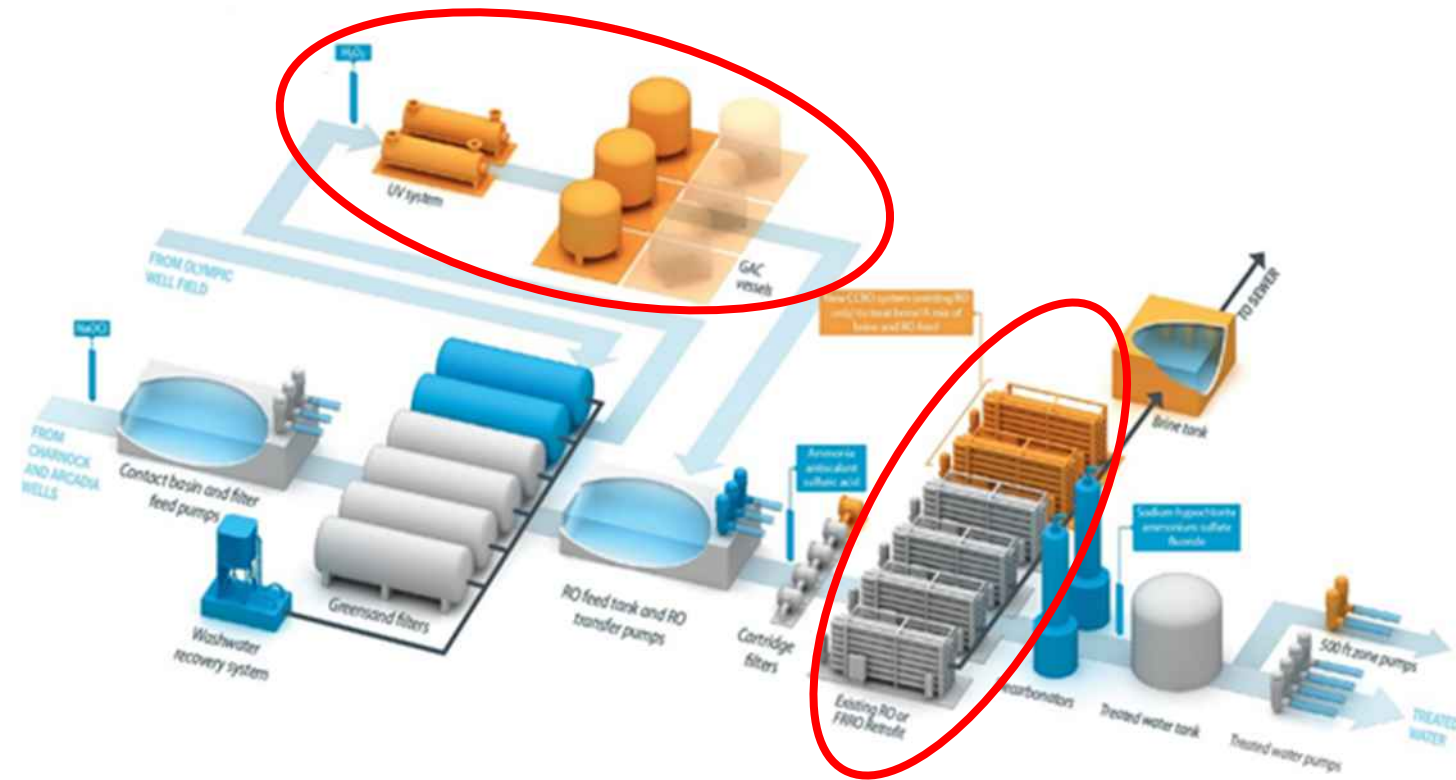


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Olympic Well Field Restoration and Arcadia WTP Expansion

Key Project Elements:



- New 3 mgd UV-AOP + GAC treatment system for Olympic Well Field
- Expand brackish desalter from 10 to 13 mgd
- Increase RO recovery to $\geq 90\%$

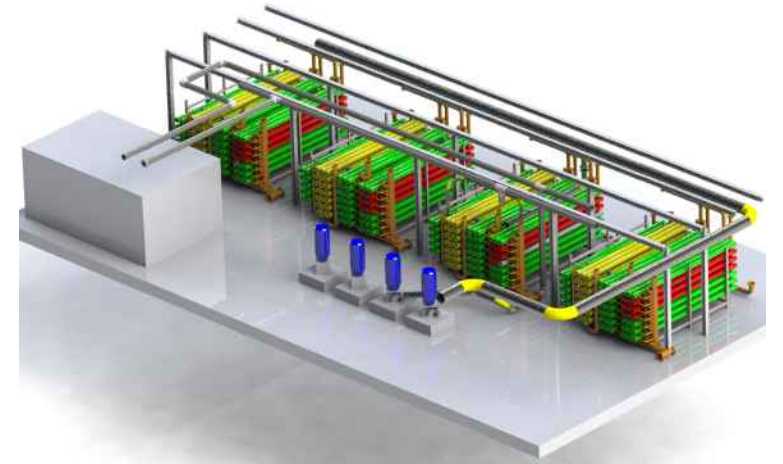
Is the Concentrate Worth the Squeeze?



Existing RO System



Closed Circuit RO (CCRO)



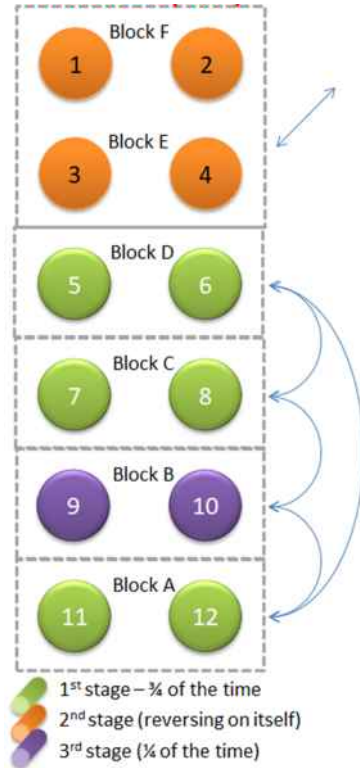
Flow Reversal RO (FRRO)

- Increase RO system recovery to $\geq 90\%$ to increase local water supply
- Side-by-side pilot testing of CCRO vs FRRO

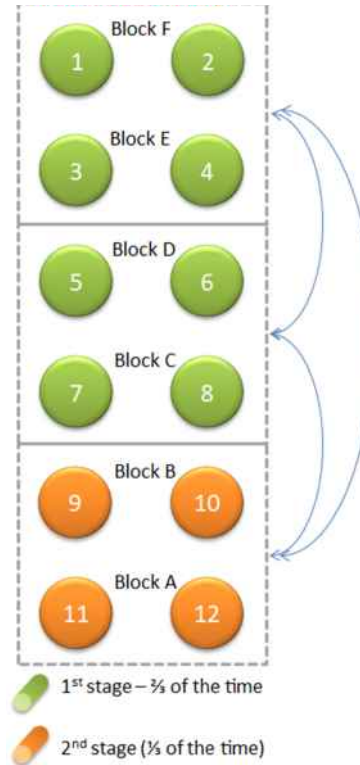
First Flow Reversal Reverse Osmosis in the U.S.



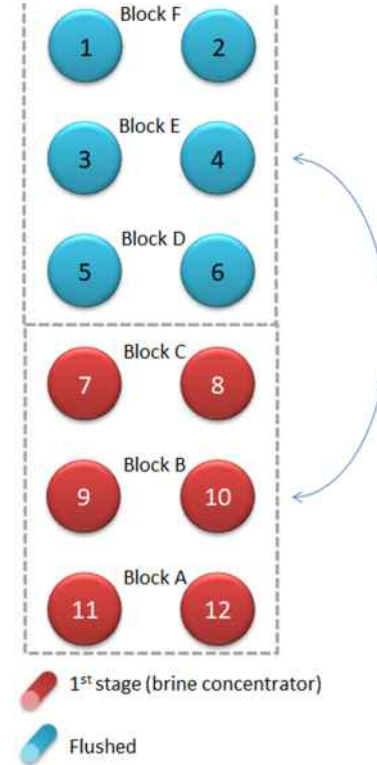
Mode 1 - 3:2:1



Mode 2 - 4:2



Mode 3 - 3:3

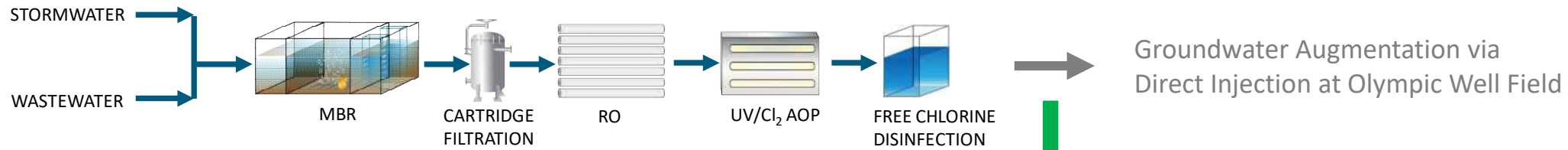


Funding Partners

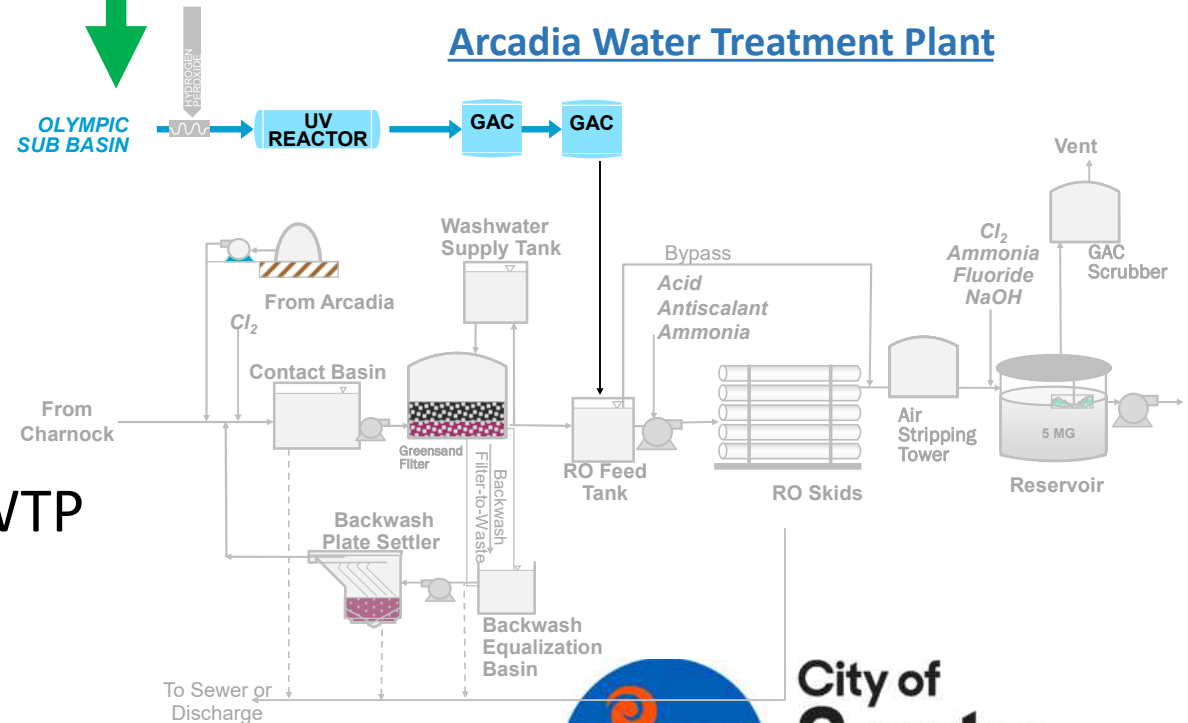
- State Water Resources Control Board: Clean Water SRF \$75 million loan for SWIP
- Department of Water Resources: Water Desalination Grant Program - \$10 million construction grant for the Production Efficiency Enhancement at Arcadia WTP
- State Water Resources Control Board: Prop 1 Stormwater Grant - \$8.77 million for SWIP stormwater tank
- Los Angeles County Measure W Safe Clean Water Program - \$7.5 million to support stormwater capture and treatment components of the SWIP.
- Metropolitan Water District of Southern California: Local Resources Program for \$19.6 million over 25 years for water produced by SWIP and the Production Efficiency Enhancement Project.
- Recently closed a \$78 million water revenue bond



Is Direct Potable Reuse in Our Future?



Sustainable Water Infrastructure Project



Future Potable Reuse – Raw Water Augmentation?

- Pending DDW guidelines in 2023
- <10% Contribution in Raw Water to Arcadia WTP
- Additional treatment through UV/H₂O₂ AOP, GAC, and RO at Arcadia WTP
- Existing Arcadia WTP is a permitted 97-005 facility



City of
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Contract Size

- SWIP: \$96 million plus
- Arcadia Treatment Plant Upgrades: \$74 million plus

PCC Section 1100.7

Provides that the Public Contract Code is the basis of contracts between most public entities and their contractors, and that **with regard to charter cities, the Public Contract Code applies in the absence of an express exemption for a city charter provision or ordinance that conflicts with the relevant provision of the Public Contract Code.** (Enacted Stats. 2001.)



Contract Methods

- Low Bid v. Best Bidder (PCC 1100.7)
 - Price
 - Quality of material or services
 - Ability, capacity, skills
 - Capacity of bidder to complete work on time
 - Bidder's financial resources
 - Character, fitness, reputation, experience
 - Ability to provide future maintenance or services
 - Other factors that further the intent of integrity of public contracting



Best Bidder

“The City shall have absolute discretion in determining the applicability and weight of the best bidder criteria. The City is not required to select the bid with the lowest price.”

SMMC 2.24.180



Selection Process ?

Traditional bidding – Request for Bids (RFB)

- Used for most public works projects
- Appropriate where the most important factor is price

Competitive Selection - Request for Qualifications/Request for Proposals (RFQ/RFP)

- Used for “high end” complex infrastructure projects where skills are more important than pricing



Design-Bid-Build

- Design Agreement with Architect/Designer (RFQ/RFP)
- Construction Contract (RFB)
- Pros
 - Quicker/cheaper
 - Works for simple or straightforward scope of work
- Cons
 - More prone to claims
 - Does not work where scope is complex and undefined



Design-Build

Lump Sum (simple projects)

- Playground where there is a specialty manufacturer

Guaranteed Maximum Price (GMP)

- Design Phase (Lump Sum/Cost Plus)
- Construction Phase (@ 60% - 100% design, subcontractor bids solicited)



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Design-Build

- Pros

- Works well where you have project performance criteria
- Attracts the high-end contractors (usually national firms)

- Cons

- It's more expensive (use someone else's \$\$)
- Procurement (18 months) and negotiation (6-9 months) is long



City of
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City's Procurement Process for the SWIP and Arcadia Projects

- RFQ - Shortlist of 3 national firms
- RFP - Progressive design/build using “open-book” basis
- Scope of solicitation – design, permitting, construction, commissioning, post construction transitional operations



Cost Proposal

- Apples-to-apples comparison for proposals
- Components of cost proposal
 - Preconstruction design up to 60% (fixed fee v. cost plus)
 - Procurement and design up to 100% (fixed fee v. cost plus)
 - Construction
 - Bonds (%)
 - Insurance (%)
 - General Conditions (%)
 - Construction Indirects (%)
 - Total Mark-Up (%)
 - Design-Build Contingency (%) – savings split 60:40



PCC § 7102

- Contract provisions in construction contracts of public agencies which limit the contractee's liability to an extension of time for delay **and which delay is unreasonable under the circumstances involved, and not within the contemplation of the parties**, shall not be construed to preclude the recovery of damages by the contractor or subcontractor.

- Any contractual waiver of this section **is void.**



Howard Contracting v. GA MacDonald Construction 71 Cal.App.4th 38 (1998)

A general contractor on a public works construction project is permitted by statute to recover damages arising out of delays attributable to a municipality's acts or omissions, **notwithstanding the municipality's status as a charter city and a clause in the contract precluding an award of damages for delay.**



“Cost overruns hit bullet train again amid new crunch” LA Times 10/10/21

- So far, the team has received approval of 383 past change orders that largely accounted for its contract growing from **\$1 billion to \$2.4 billion**.
- Included in the new filings is a claim for \$131 million for delays that the company says were caused by [the rail authority’s failure to obtain land for the construction](#) and to complete utility relocations along the right of way.

Let the Games Begin

- Negotiations happen in two stages (6-9 month process)
 - Design-Build Contract Form
 - GMP Amendment once 60% design/sub-contract bids are solicited
- Know your contractor (research claims history) before you start negotiating
- Do risk analysis before you start negotiating (where are claims most likely to occur?)
 - Unforeseen conditions (Type 1/Type 2)
 - Construction/materials cost escalation



Risks for SWIP

- Pre-existing underground utilities (Type 1/2 Conditions/Unforeseen Delay)
- Southern California Edison (Unforeseen Delay)
- Uncertain State permitting process (Unforeseen Delay)
- Unpredictability of wastewater influent characteristics (Unforeseen Delay) during commissioning
- DDW Permitting for novel recycling system

Risks for Arcadia

- Materials escalation (post COVID and shut-downs)
- DDW Permitting for novel RO system

How to Manage Risk

- Risk Register/clarifications
- Decide on whether to use a time related rate (TRO)
 - need to understand how overhead costs are loaded over duration of construction
 - SWIP – variable TRO for beginning, middle and end
 - Arcadia – single TRO
- Shared contingency pot
- Performance Guarantees

How to Manage Risk cont.

- Allowances (establishing contract amount)
- Lump sum pricing for risk allocation (Type 1 Conditions)
- Negotiate non-compensable delay periods for things like SCE



THANK YOU...