

FC 1025 (09-20-13)

Meeting Date: 03/12/2015
Agenda Item: 2.1
Unclassified Manager: G. Hall
Extension: 2750
Director(s): All

BOARD AGENDA MEMO

SUBJECT: Work Study Session for Expedited Recycled and Purified Water Program

RECOMMENDATION:

Receive and discuss information related to the District's Expedited Recycled and Purified Water Program.

SUMMARY:

The District's long-term water supply plans identify recycled and purified water sources as significant supply additions for the county, leading up to an additional 30,000 AF of new supplies by 2035. Plans to develop potable reuse projects have been unfolding steadily, notably with the launched operation of the Silicon Valley Advanced Water Purification Center (SVAWPC) in 2014. The current drought, now extending into its fourth year, is causing significant declines in Santa Clara County's groundwater levels which may lead to irreversible subsidence of the land (see slide in page 5, Attachment 2). Land subsidence, which can result in catastrophic impacts to the County's infrastructure and economy, has prompted a review of the timing for developing recycled and purified water projects. The initial phase of potential projects using purified water would be in the category of "indirect potable reuse" (IPR), in which purified water is used to supplement groundwater recharge from other existing sources (imported and local stored water). Future development may entail conversion of the IPR projects, in part, or additional projects to provide "direct potable reuse" (DPR), in which highly purified water could be blended with other untreated water for treatment at the District's conventional water treatment plants prior to distribution to retailers.

Expedited IPR projects could provide, by 2020, capability for up to 45,000 acre-feet per year (AFY) of IPR output at an estimated cost of \$640 million to \$1,600 million in current dollars, with additional IPR/DPR capability in later years requiring additional expenditures. Together with the additional 10,000 AFY of proposed non-potable reuse (NPR) development identified in the recently completed South Bay Water Recycling Strategic Master Plan, 1,150 AFY identified potential increases in NPR supplies from the South County Regional Wastewater Authority (SCRWA), 10,000 AFY potential increase in Sunnyvale IPR, and approximately 2,000 AFY identified potential increases in NPR supplies from the City of Palo Alto's and City of Sunnyvale's wastewater treatment plants, total NPR and IPR/DPR capability in the county could reach approximately 80,000 AFY year by 2035. While the District's 2012 Water Supply Master Plan did not indicate the need for 80,000 AFY of recycled and purified water by 2035, staff believes that expedited feasibility studies and preliminary engineering for up to 45,000 AFY of identified IPR projects is now warranted.

The Board approved six motions associated with this item, as captured in the corresponding minutes, and made the following requests of staff: Pursue placement of Board Members on the South County Regional Wastewater Authority Board (Santos); Pursue use of desalination and solar driven power at the Silicon Valley Advanced Water Purification Center (Santos); Identify if existing staff, especially unclassified, are affected by work performing work in-house vs. hiring consultants (Kremen); Identify effects of recycled water program on water rates (Kremen); Look at Page 1 of 18 alternatives such as tiered water rates through retailers, storm water capture, land fallowing, brackish water, and desalination (Kremen); and Schedule regular, bi-monthly Board engagement on reports, discussion, etc., to keep Board involved in process.

DIRECTED STAFF

MAR 10 2015

This Board Agenda memo provides an overview of the District's Recycled and Purified Water efforts, and provides information for the Board's consideration towards accelerating these efforts:

1. BACKGROUND
2. PROPOSED IPR/DPR PROJECTS FOR EXPEDITED DEVELOPMENT
3. IMPLEMENTATION PLANNING
4. FUNDING
5. REGULATION/LEGISLATION
6. OUTREACH TO SUPPORT IPR/DPR
7. NEXT STEPS

1. BACKGROUND

The following subsections provide information on:

- Board policies governing recycled water
- District water supply planning
- The current drought
- Alternative long-term supplies, and
- Existing recycled water programs.

Policy Framework

The Board's Policy direction is to ensure that "there is a reliable, clean water supply for current and future generations" (Policy No E-2) and the associated Board Objective (2.1.1) is currently at risk of not being achieved due to the ongoing drought conditions and low availability of imported and local supplies. Development of additional recycled water supply under Board Objective 2.1.4 for recycled water is an important component in alleviating the shortfall to the community. While use of available supplies has enabled the District to provide water to the retailers during the current unprecedented drought, the District did not attain its planning goal of meeting at least 90% of demand in 2014 and may not do so again in 2015.

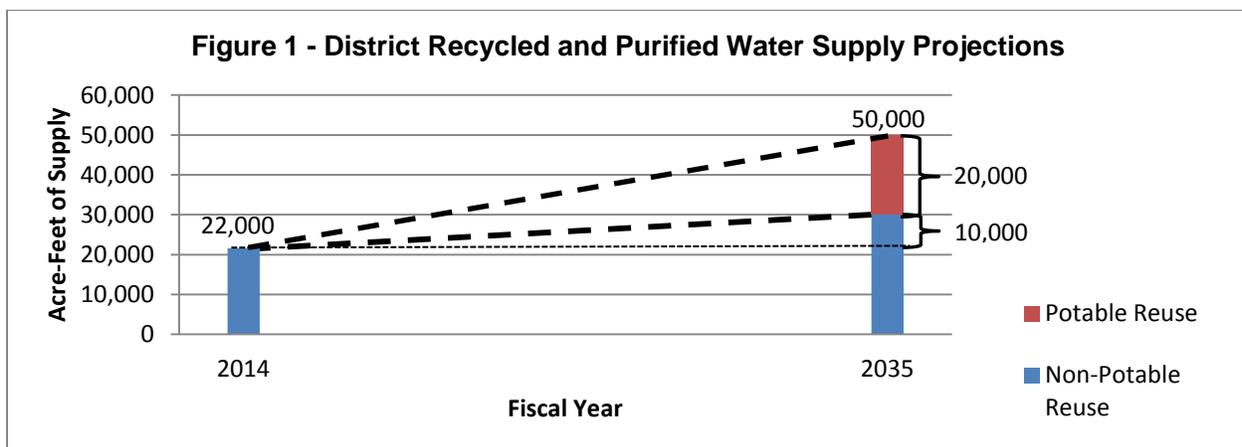
The Board's Governance Policies and CEO Interpretations guide development of the recycled water program, as shown in Table 1. CEO Outcome Measure 2.1.4.a calls for recycled water production to meet at least 10 percent of county demands by 2025. In addition, CEO Strategy 2.1.4.2 calls for the District to develop partnerships to develop the potential for IPR and DPR projects.

Table 1 - Board Governance Policy for the Recycled Water Program	
<i>Water Supply Goal</i>	
<ul style="list-style-type: none"> (E-2.1) Current and future water supply for municipalities, industries, agriculture and the environment is reliable. 	
<i>Water Supply Objective</i>	
<ul style="list-style-type: none"> (E-2.1.4): Protect, maintain and develop recycled water. (E-2.1.1) Aggressively protect groundwater from the threat of contamination and maintain and develop groundwater to optimize reliability and to minimize land subsidence and salt water intrusion. 	
<i>CEO Outcome Measure</i>	
<ul style="list-style-type: none"> (OM 2.1.4.a): At least 10% of annual recycled water production as a percentage of total County water demands by 2025. 	
<i>CEO Strategies</i>	
<ul style="list-style-type: none"> (S 2.1.4.1) Develop partnerships with recycled water producers, land use planning agencies and other to expand non-potable recycled water. (S 2.1.4.2) Develop partnerships to develop potential for Indirect Potable Reuse (IPR) and Direct Potable Reuse (DPR) (S 2.1.4.3) Manage, operate and maintain recycled water assets to maximize reliability, to minimize life cycle costs and to minimize impacts to the environment. (S 2.1.4.4) Explore and develop feasible water reuse alternatives, including graywater. 	

Recycled and Purified Water Planning and Goals

The 2012 *Water Supply and Infrastructure Master Plan* (Water Master Plan) presented the District’s water supply strategy to implement the Board’s policy. The strategy has three key elements: 1) secure existing supplies and facilities, 2) optimize the use of existing supplies and facilities, and 3) expand water use efficiency efforts. While the District is implementing all three elements, a foundational component to the strategy is to utilize potable reuse to provide most of the new water supply to meet future needs. The Water Master Plan anticipated that at least 20,000 acre-feet per year of purified water would be available for groundwater recharge by 2030.

The Water Master Plan also calls for an additional 10,000 AFY of NPR, which, together with existing NPR deliveries and the projected 20,000 AFY in purified water, reaches 50,000 AFY by the year 2035. The projection of recycled and purified water supply is shown in Figure 1.



Supplies for Multi-Year Droughts

Drought and water supply shortages over the past few years compel the District, in partnership with others, to undertake an expedited program to implement IPR/DPR projects:

- The District and State are experiencing unprecedented prolonged drought conditions with little relief in sight. The drought conditions continue to place additional strain on local and state-wide water supplies and have reduced State and Federal water allocations to the District.
- The county’s groundwater storage was depleted by 80,000 AF in 2014 despite the Board's call for 20% reduction in county water use.
- The District’s retailers have recently urged that the District implement new projects such as IPR or desalination to alleviate potential future shortages. For example, the County Water Commission, at its January, 2015 meeting recommended that the District move forward with projects to reduce future supply shortages and thereby reassure the commercial sector and residential communities that there will be a sufficient water supply in the future.

Evaluation of Alternative Supplies

Supply alternatives other than IPR that are available for the District to consider include: constructing additional in-county storage, development of a regional desalination plant, and securing additional long-term firm imported water supplies outside the State Water Project (SWP) and the Central Valley Project (CVP) contractual supplies. A cost comparison and evaluation of these opportunities relative to IPR is shown in Table 2. IPR/DPR appears to be the most sustainable and resilient water supply alternative for meeting dry year needs.

Table 2 – Alternative Water Supplies¹ to Meet Demand by 2030

Resource	Amount (AFY) by 2030	Provides Yield in Multi-Year Drought?	Estimated Cost Range \$/AF
Imported Water Dry-Year Option Agreements	12,000	Uncertain Availability	\$400-\$1,400
Add Recharge Capacity, Local Pipelines	5,000	To Be Confirmed	\$300-\$1,500
IPR/DPR	20,000	Yes	\$1,600-\$2,000
Regional Desalination ² (<i>not included in Resource Plan</i>)	2,000	Yes	\$1,600- \$1,800
Local Storage (<i>not included in Resource Plan</i>)	Up to 26,000	Limited	\$2,400-\$43,000

1. Water Supply and Infrastructure Master Plan (2012)
 2. Excludes wheeling charges through neighboring utility pipelines and water treatment costs in their systems.

Partnerships and Existing Programs

The District’s efforts to increase county potable reuse and NPR water supplies to reach a combined goal of 50,000 AFY (approximately 80,000 AFY potential) by 2035 includes expanding partnerships with regional recycled water supply agencies. This includes working with the cities of San Jose and Santa Clara, South County Regional Wastewater Authority

(SCRWA), the city of Sunnyvale, and the cities of Palo Alto and Mountain View as shown in Table 3.

Table 3 – District Partnerships and Potential Partnerships in NPR and IPR/DPR

Supply Agency	Resource	Current (FY14) (AFY)	Potential Development by FY2035 (AFY)
Cities of San Jose and Santa Clara (partnering with the District through South Bay Water Recycling – SBWR)	NPR	15,700	25,000 ¹
	IPR/DPR		35,000
South County Regional Wastewater Authority (SCRWA)	NPR	2,000	3,200
	IPR/DPR		TBD
City of Sunnyvale	NPR	700	2,100
	IPR/DPR		10,000
Cities of Palo Alto and Mountain View	NPR	3,100	4,000
	IPR/DPR		TBD
<i>Subtotal</i>	<i>NPR</i>	<i>21,500</i>	<i>34,300</i>
<i>Subtotal</i>	<i>IPR/DPR</i>	<i>----</i>	<i>45,000</i>
Total	----	21,500	79,300

¹ Future expansion of NPR requires significant investment in the SBWR system.

The recycled water programs for the agencies listed in Table 3 are described in further detail below.

Cities of San Jose and Santa Clara

The city of San Jose’s NPR program in partnership the city of Santa Clara and the District is known as South Bay Water Recycling (SBWR). In FY2014, SBWR, including output from the Silicon Valley Advanced Water Purification Center (described below), delivered 15,700 AF of water to recycled water customers.

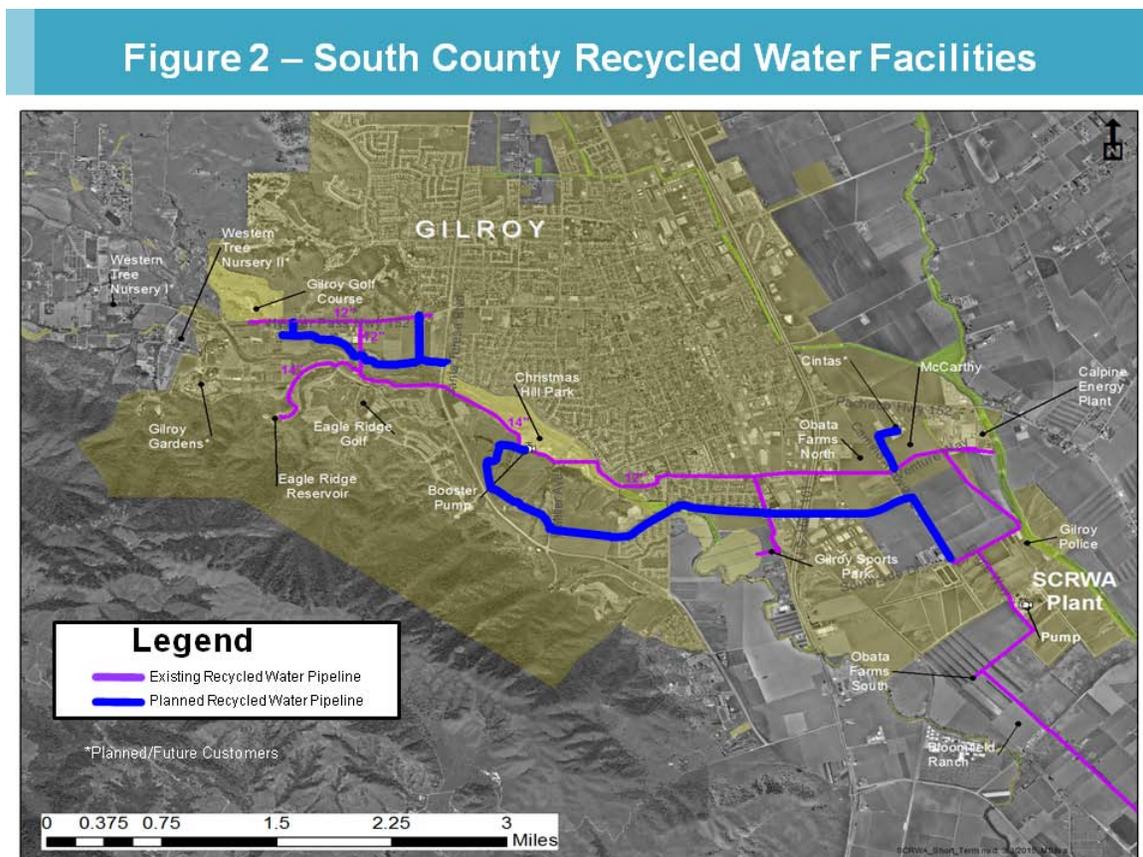
In December 2014, these two cities and the District completed a draft of the South Bay Water Recycling Master Plan (SBWR Master Plan) for supplies sourced from the San Jose’s Regional Wastewater Facility (RWF), and anticipate finalizing it in March 2015. The SBWR Master Plan was jointly funded by San Jose and the District, and by the Bureau of Reclamation through a federal grant. It is a key foundational document for the IPR projects identified in this agenda memorandum for recommended expedited development.

Silicon Valley Advanced Water Purification Center

The District partnered with the cities of San Jose and Santa Clara in developing the Silicon Valley Advanced Water Purification Center (SVAWPC). The facility went online in March 2014, and produces up to 9,000 AFY of purified water from secondary effluent sourced from San Jose’s Recycled Water Facility (RWF). The purified water is blended with SBWR NPR water and distributed to SBWR customers. The SVAWPC also provides the District’s operations staff with an opportunity to gain experience in operating and maintaining this state-of-the art facility and completing a testing program to demonstrate to the State Water Resources Control Board and the San Francisco Regional Water Quality Control Board that a consistent product quality can be produced that is suitable for IPR usage and future DPR.

South County Recycled Water Authority (SCRWA)

Serving the South County area of Gilroy and Morgan Hill, the SCRWA wastewater plant is operated by the city of Gilroy and produces approximately 2,000 AFY of NPR water. The plant is owned by SCRWA under a Joint Powers Agreement executed by Gilroy and Morgan Hill. The District is the wholesale distributor of SCRWA recycled water, and owns 10 miles of the NPR pipeline. Recent and current development of the SCRWA recycled water system is consistent with the 2004 South County Recycled Water Master Plan. The District and Gilroy are currently extending the current system by designing and constructing 10.4 miles of pipeline, with an additional 5.4 miles in the planning stage. Figure 2 provides a map of the South County facilities and planned pipelines.



SCRWA, in partnership with the District, is developing an update to the 2004 South County Recycled Water Master Plan, which is scheduled for completion in June 2015. The updated Master Plan will examine the potential for NPR and explore IPR/DPR potential.

City of Palo Alto. The city of Palo Alto operates its Regional Water Quality Control Plant that serves the cities of Palo Alto, East Palo Alto, Mountain View, and Los Altos, the town of Los Altos Hills, and Stanford University. Recycled water produced at this plant currently serves Mountain View and Palo Alto. In 2014, the recycled water system delivered approximately 3,100 AF of NPR water, and deliveries are projected to increase to 4,000 AFY by 2035.

Palo Alto has completed a Facility Plan that is intended to extend recycled water pipelines further into Palo Alto and allow the city to increase recycled water use. The Facility Plan recommended construction of approximately five miles of pipeline, retrofitting a recycled water pump station, constructing a new booster pump station, and constructing approximately five

miles of lateral pipelines to over 90 use sites. These projects would initially serve approximately 900 AFY of NPR water, mostly to the Stanford Research Park Area.

In March 2014, the District initiated discussions with Palo Alto to facilitate policy-level discussion on recycled water, and recommended the formation of a committee of elected officials to develop policies and direction for recycled and purified water expansion. Palo Alto's Mayor responded to the District's request in May 2014, and stated that he would work with his council to identify members who could serve with District Board representatives on a joint Ad Hoc Committee. Recent discussions with the City affirm the City's intent to support formation of the policy committee.

City of Sunnyvale. The City of Sunnyvale owns and operates a 20 MGD water pollution control plant (WPCP) and a recycled water facility that produces 700 AFY of NPR. In June 2013, Sunnyvale completed its *Sunnyvale Feasibility Study for Recycled Water Expansion Report* (Feasibility Report) that assessed expansion of the existing NPR system. The study further evaluated four implementation phases of improvement projects with an estimated total capital cost of \$100-114 million.

Currently, as part of implementing the results of the Feasibility Report, the District is partnering with Sunnyvale, Apple Inc., and CalWater Service Company on the Wolfe Road NPR project. The primary target for this project is delivering NPR water to the new Apple Campus by late 2016. The project is currently in the design phase.

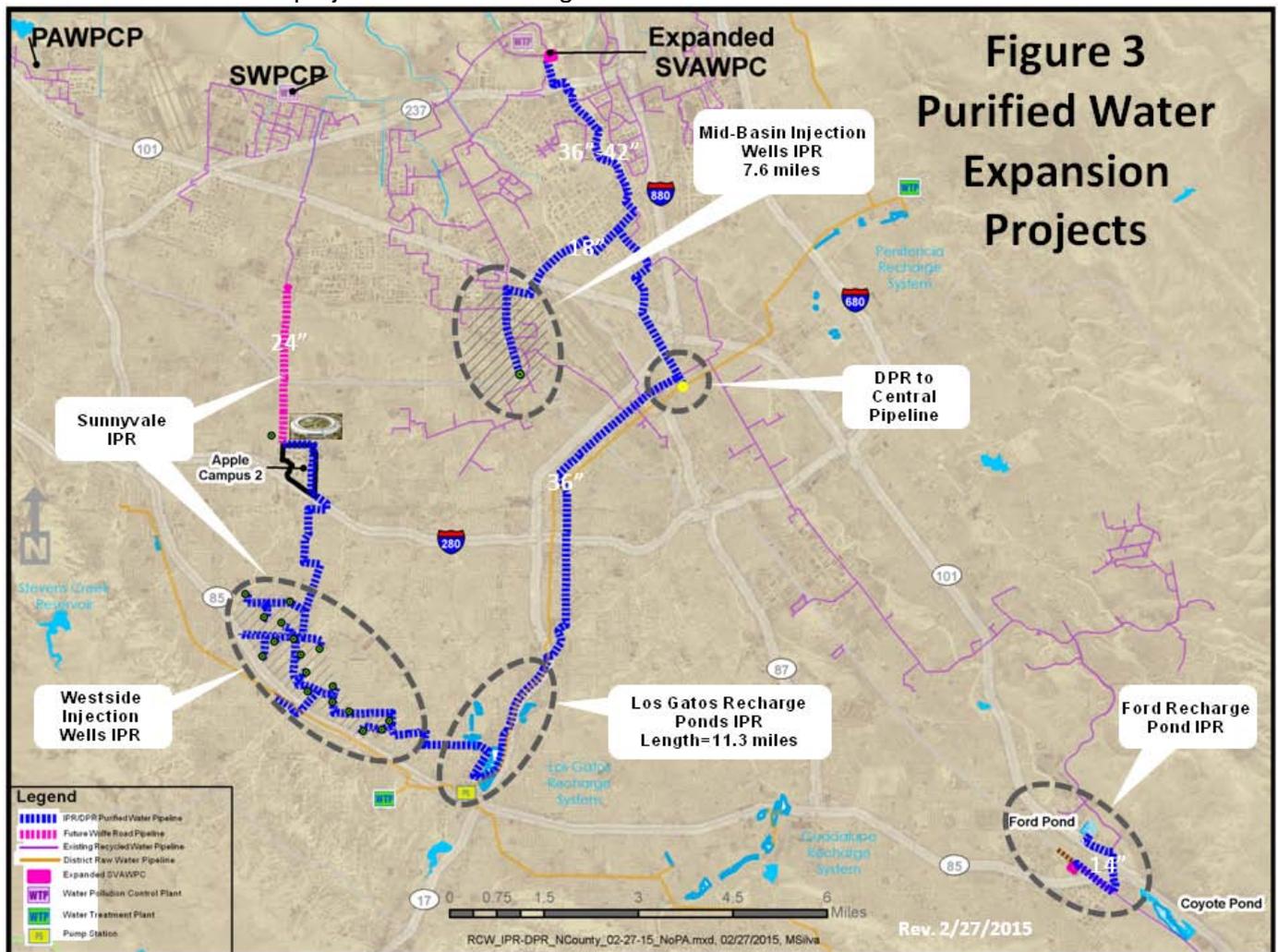
Sunnyvale is also in the planning phase for upgrading its WPCP. In December 2014, the District executed an agreement with Sunnyvale to begin the first phase of planning and design, and to perform necessary CEQA work, for construction of a membrane bioreactor (MBR) in lieu of an activated sludge system. MBR technology will most likely provide the foundation for a potable water reuse project in Sunnyvale. In addition, reverse osmosis (RO), ultraviolet disinfection (UV), and possibly an advanced oxidation process (AOP) using hydrogen peroxide, ozone, or free chlorine, could be used to produce purified water as part of a potable reuse treatment train. This combination of MBR/RO/UV/AOP facilities would serve as a water purification facility

2. PROPOSED IPR/DPR PROJECTS FOR EXPEDITED DEVELOPMENT

The SBWR Master Plan evaluated opportunities to maximize the use of recycled water produced from the RWF. A potential fifth project, the extension of the Wolfe Road recycled water pipeline in Sunnyvale, while not evaluated in the SBWR Master Plan, is also potentially viable. Five candidate IPR/DPR projects are identified for implementation, in a phased delivery approach:

- (a) Ford Recharge Ponds IPR (near-term)
- (b) Mid-Basin Injection Wells IPR (mid-term)
- (c) Los Gatos Recharge Ponds IPR (long-term)
- (d) Westside Injection Wells IPR or Central Pipeline DPR (long-term)
- (e) Sunnyvale IPR (long-term)

The location of these projects is shown in Figure 3.



Further details of these projects are provided as follows:

- (a) **Ford Ponds IPR Project:** The Ford Ponds IPR project consists of the construction and operation of a 4,200 AFY groundwater recharge project, with a proposed satellite advanced water purification facility (AWPF), utilization of the District’s existing Ford Recharge site, and future expansion to multiple additional recharge ponds. The potential locations for the AWPF are south of the existing Coyote Recharge Ponds near the Metcalf Energy Center.

The potential IPR project location and groundwater recharge areas are shown in Figure 3. Groundwater effects in the project area would be assessed with groundwater modeling to determine how purified water would be effectively transported underground.

The Ford Road Ponds IPR project would also examine potential expansion of the above-described IPR system to include a future DPR tie-in to the Cross-Valley Pipeline, expansion of the NPR system to serve Cinnabar Hills Golf Club, and potential delivery of NPR water blended with purified water to the Coyote Creek Golf Club.

Together, these project elements providing NPR and purified water in the Ford Ponds area could expand the potential to 10,000 AFY.

For the proposed projects (b) through (d) below, additional water purification treatment facilities would be constructed adjacent to the SVAWPC on Zanker Road to increase overall purified water production capacity up to 31,000 AFY.

- (b) Mid-Basin Injection Wells IPR Project: The Mid-Basin Injection Wells IPR project, located southwest from the intersection of highways 101 and 880, consists of recharging up to 5,600 AFY of purified water using injection wells constructed along a portion of the conveyance pipeline that would be required for the Los Gatos Recharge Ponds IPR project, the Westside Injection Wells IPR project, and/or the Central Pipeline DPR project (described below).

The City of Santa Clara pumps groundwater in its jurisdiction west of the proposed purified recycled water pipeline alignment. Groundwater effects in the project area would be assessed with groundwater modeling to determine how purified water would be effectively transported underground.

- (c) Los Gatos Recharge Ponds IPR Project: The Los Gatos Recharge Ponds IPR project consists of using the following recharge ponds for indirect potable reuse: McGlincey, Budd Avenue, Sunnyoaks, Camden, Oka, and Page, which have a combined recharge capacity of 20,200 AFY. In the initial stage of project sizing, operational modeling would be conducted to determine the capacity of these recharge ponds to accept purified water for recharge in wet, average and dry years. Approximately 15 miles of pipeline would be installed from the Zanker Road location to the recharge ponds. A decision to provide flexibility for inclusion of Westside Injection Well IPR/Central Pipeline DPR projects (described further in this memo) would dictate the design conveyance capacity of the different sections of the 15-mile pipeline.

- (d) Westside Injection Wells IPR or Central Pipeline DPR Project: The purpose of the Westside Injection Wells IPR project or the Central Pipeline DPR project is to expand the IPR program to the Westside injection wells (located northwest from the intersection of highways 17 and 85) and/or, in the future, to connect directly to the District's Central Pipeline for DPR. If the DPR option is selected, it would provide the District with more flexibility to determine the optimum split between the indirect and direct potable reuse projects. The proposed capacity of this phase is 5,000 AFY. Another option, if shown to be cost-effective, is for the Westside injection wells to be supplied by the Sunnyvale IPR project. This would require an extension of the Wolfe Road pipeline (or a new pipeline from Sunnyvale's WPCP as described below) to the Westside Injection Wells.

- (e) Sunnyvale IPR Project: The MBR treatment technology would be the next phase of a partnership between Sunnyvale and the District on potable reuse options both within the city limits and to the south and west outside the city limits. The project concept is to purify water at Sunnyvale's WPCP and deliver it for groundwater recharge (IPR) and possibly, ultimately for DPR. Up to 10,000 AFY of purified water could be delivered to the Westside Injection Wells via an extension of the Wolfe Road Pipeline or a new pipeline from Sunnyvale's WPCP. This supply volume could either be additive to the supply from the expanded SVAWPC, or it could be a substitute for 10,000 AFY from the expanded SVAWPC. If the District elects to proceed with investment in a Sunnyvale purification plant, the scale of the SVAWPC expansion could be reduced to approximately 21,000 AFY and 10,000 AFY of further expanded capability could be set aside for a future phase of development at the SVAWPC site. Implementation of the Sunnyvale IPR project would cost an estimated \$210 million.

Table 4 summarizes the capacity, estimated capital costs, and estimated annual operations and maintenance (O&M) costs for the above-described five proposed projects.

Table 4 - Proposed Projects for Purified Water Expansion			
Description	Capacity (AFY)	Est. Capital Costs (\$M)	Est. Total O&M Costs (\$M/year)
Ford Recharge Ponds IPR¹	4,200	\$70	\$4.0
Mid-Basin Injection Wells IPR²	5,600	\$140	\$3.5
Los Gatos Recharge Ponds IPR³	20,200	\$260	\$10.0
Westside Injection Wells IPR⁴ (or Central Pipeline DPR)	5,000 (5,000)	\$120 (\$65)	\$4.0 (\$4.5)
Sunnyvale IPR⁵	10,000	\$210	\$2.0
Total	45,000	\$800	\$23.5

^{1,2,3,4} South Bay Water Recycling Master Plan; ⁵IPR Treatment Study, Carollo Engineers

3. IMPLEMENTATION PLANNING

The proposed implementation plan would allow IPR/DPR development to be expedited at the same time that the District continues with current drought response efforts, including communicating with the retailers, implementing the conservation program, securing additional water from outside the county, advancing the outreach program, and engaging with the State Water Resources Control Board, the Department of Water Resources, the United States Bureau of Reclamation, and other agencies.

The Expedited Recycled and Purified Water program includes aggressive development of the four IPR projects identified in the SWBR Master plan, and the upgrade of the Sunnyvale plant and conveyance of purified water from that plant to the Westside Injection Wells. If all of these projects are constructed, they could produce up to 45,000 AFY of potable water -- to be used for IPR and potentially DPR.

Future reconfiguration of the Los Gatos Recharge Ponds IPR Project, the Westside Injection Wells IPR/Central Pipeline DPR Project, and/or the Sunnyvale IPR Project could allow for a shift from IPR to DPR once DPR regulations are established by the State Water Resources Control Board.

Expedited Recycled and Purified Water Program Implementation

Implementation of the Expedited Recycled and Purified Water Program would include: preliminary engineering for each of the five projects, which would consist of: groundwater studies, brine discharge studies, operations studies, development of partnerships with wastewater agencies, exploring optional public-private partnerships to fast-track design and construction, development of design-build processes for the District, securing authorities from the Board to facilitate procurement processes (e.g., single source consultant contracts, acquisition of property), public outreach, and pursuit of grants and other funding opportunities. Upon completion of the above-described work efforts, CEQA documentation and acquisition of Regional Water Quality Control Board and State Water Resources Control Board (Division of Drinking Water) permits would move forward for those projects that are deemed feasible and cost-effective. Regular updates on the progress of these efforts would be provided to the Board.

The key tasks of the Expedited Recycled and Purified Water Program delivery¹ would be:

1. Preliminary Engineering, including:
 - (a) Feasibility Studies and Facilities Planning
 - (b) Operations Studies
 - (c) Brine Solution Studies
 - (d) Groundwater Studies
2. Establishing Program Management Support
3. Securing and Using Legal Services
4. Pursuit of Grants and Other Funding
5. Evaluation and Negotiation of Partnership Agreements
6. CEQA Documentation and Permit Acquisition (after Preliminary Engineering)
7. Use of Consulting Services to Advise on Optimal Design-Build Strategies
8. Design-Build Procurement
9. Design and Construction Management
10. Operational Startup and Testing
11. Turnover of Completed Project to Operations

Task 1: Preliminary Engineering: Work would include

- (a) Feasibility Studies and Facility Planning: evaluation of alternative facilities configurations, determination of rights-of-way and land purchase/lease requirements, and development of a facilities plan for at least one alternative for each project. This work can be accomplished expeditiously through a single source contract. Under this procurement approach, staff estimates it would take two months to secure the contract (including negotiation of the consultant agreement and contract execution) and up to 16 months to complete the work.
- (b) Operational Studies: Modeling studies are required to illustrate how the additional potable reuse plants would be cost-effectively operated in conjunction with local and imported water deliveries and use of local storage for groundwater recharge and/or direct potable reuse. This work can be accomplished expeditiously through a single source contract. Under this arrangement, staff estimates it would take two months to secure the contract (including negotiation of the consultant agreement and contract execution) and up to six months to complete the work.
- (c) Brine Studies: These studies would be needed if the feasibility studies in Task 1(a) above reveal quantitative issues for brine discharge to the San Jose RWF outfall that would preclude or limit this brine solution. If needed, the brine studies would include developing alternative sizing and conceptual design for alternative outfall or disposal solutions, developing facilities plans necessary for brine conveyance/blending, and implementing a regulatory engagement plan for brine management. Staff proposes to follow the District's RFQ/RFP consultant selection process. Under this arrangement, staff estimates it would take four months to secure the contract (including negotiation of the consultant agreement and contract execution) and up to 10 months to complete the work.
- (d) Groundwater Studies: Work includes establishing test wells as needed, conducting monitoring and related studies for all IPR recharge areas, and undertaking groundwater modeling. It is estimated that this would be most efficiently accomplished through a single source contract. Under this procurement approach, staff estimates it would take

¹ Staff would also consider engaging the services of the National Water Resources Institute during at least the initial phases of the program – to guide the District's efforts in a similar way to the use of expert panels to guide design work on the District's dam seismic upgrades.

two months to two months to secure the contract (including negotiation of the consultant agreement and contract execution) and up to 16 months to conduct the work.

Task 2: Program Management Support: An experienced Program Management team would be required to drive the preliminary engineering work and implementation and delivery of the selected project(s) after preliminary engineering is completed. The Program Manager must have sufficient experience to ensure the program's success, within the limits of factors the District can control, and be 100% devoted to the program. Staff proposes to follow the District's RFQ/RFP consultant selection process to hire a Program Manager to deliver the identified projects. It is estimated that it would take five months to secure the contract (including RFQ/RFP, negotiation of the consultant agreement and contract execution), and the services may extend for two years or longer.

District staff would support program manager and also continue working on all related recycled and purified water projects such as ongoing master planning with SCRWA and Palo Alto, the testing program at the SVAWPC, expansion of recycled water in South County and Palo Alto, implementation of Integration Agreement with the Cities of San Jose and Santa Clara, development of a long-term agreement with Sunnyvale, developing new partnership agreements, pursuing and applying for grants, loans, and other funding opportunities, following up on legislative efforts for recycled and purified water, and working with the Board and its advisory committees.

Task 3: Legal services: The primary demand for legal services would be in the partnering process, described below. Outside counsel would likely be required to provide such support. In addition, development of the various consultant engineering contracts for the feasibility studies would require significant internal legal support and could delay consultant contracts or other agreements for current CIP and other projects. It is estimated that it would take five months to secure the contract (including RFQ/RFP, negotiation of the consultant agreement and contract execution) and 13 months to conduct the work.

Task 4: Securing grants: The significant amount of work needed to prepare Proposition 1 and other grant applications would require the use of a consultant who specializes in this area. It is estimated that this work would be most efficiently accomplished through a single source contract. Under this arrangement it is estimated to take two months to secure the contract (including negotiation of the consultant agreement and contract execution) and 16 months to conduct the work.

Task 5: Partnership Agreements: The District has the option of building upon existing partnerships and/or pursuing new partnership opportunities to implement potable reuse projects. Potential partners include:

- The cities of San Jose and Sunnyvale, building on agreements currently in place
- The City of Palo Alto, depending on discussions forthcoming with elected officials and executives
- The City of Mountain View may be a future potable reuse partner (no discussions yet pending with District staff)
- The cities of Gilroy and Morgan Hill (through SCRWA) may be future potable reuse partners, depending on recommendations forthcoming in the Update to the South County Recycled Water Master Plan
- The San Francisco Public Utilities Commission (SFPUC) may be a future potable reuse partner based on its interest in building future water supplies for its Hetch-Hetchy customers.

- Public-Private Partnership(s) with private entities that may be interested in constructing, owning, and operating potable reuse systems. The San Jose Water Company has expressed such interest to District staff. Potential advantages in entering into a public-private partnership are (1) operational and construction risk reduction for the District, and (2) potentially a shorter schedule for design and construction of potable reuse projects than would otherwise be feasible through a District-public entity partnership.

Depending on the Board's direction, various partnership options exist. One or more partnership agreements would clearly be necessary. The most complex option would be a public-private partnership. Preliminary legal advice indicates that the initial study of comparable benefits and costs required to support such an approach, solicitation, negotiation and contracting process could take up to a year. This process would require substantial legal and finance support. In terms of the overall schedule, it is estimated that any needed partnership agreements could be executed by August 2016.

Task 6: CEQA/Permit Acquisition: As sufficient project definition becomes available in the preliminary engineering work, CEQA initial studies and documentation would be initiated for each project that the District determines would be implemented. Permits would be required including Waste Discharge Permits and/or 401 Certification from RWQCB, construction permits from cities, and a permit from the Division of Drinking Water for IPR operations. It is estimated that the work would take 22 months -- beginning in April 2016 and ending in January 2018.

Task 7: Consulting Services for Project Design-Build Strategies: Due to recent state legislation, the District can use the Design/Build (D/B) option for capital project delivery of recycled water facilities. The use of D/B may be a cost- and time-saving approach for implementing the feasible IPR projects. Staff would choose to hire a D/B consultant to help the District prepare D/B procedures and provide ongoing consultation and guidance through this process. Alternatively, the traditional Design-Bid-Build process may be a more cost-effective approach to certain IPR projects. The anticipated timeline for hiring the D/B consultant is June 2016.

Tasks 8-11: Design-Build Procurement, Design and Construction Management, Operational Startup and Testing, and Turnover of Completed Project to Operations – the work required for these tasks would be provided for the Board's review at a later date, if the Board authorizes the recommended earlier tasks and once project planning has advanced.

Considerations for Expedited Implementation

In order to deliver the Expedited Recycled and Purified Water Program the following time saving efficiencies would be necessary:

- (1) Deploy a design-build (D/B) project development approach, as mentioned above. This approach is available to the District for recycled and purified water projects. However, the District does not have experience in this area so would need to hire a consultant to advise on the process. Use of a D/B approach could save up to eighteen months on the overall development schedule.
- (2) Use expedited procurement processes for consultant contracts. The most expedited process would involve using single-source consultant contracts for the work items on the critical path, especially those needed for preliminary engineering as described above. Staff estimates that this approach would allow preliminary engineering and grant

application work to begin in May 2015 versus August 2015 if the standard approach is used.

- (3) Use of public-private partnerships. One of the benefits a private company partner could offer, especially if it has design-build experience, is completion of the design and construction work faster than the District could. Selecting a private partner and negotiating a partnership agreement could take a full year; however, launching the partnership at the end of the preliminary engineering phase would probably be optimal, since the specific IPR projects for expedited development would at that time be fully evaluated and confirmed as viable. Factors to consider would be whether state and federal grant funding would be available for public-private partnerships. Additionally, the likelihood that tax-exempt financing would not be available for public-private partnerships would be considered.

Budget Adjustments

To initiate the Expedited Recycled and Purified Water Program, budget adjustments for capital and operations work would need to be approved by the Board for both this current fiscal year and FY2015-2016. The budget adjustment for FY 2015 could be up to \$1 million and for FY2016 up to \$10 million.

Schedule

Staff has considered the overall schedule of work to develop the Expedited Recycled and Purified Water Program. A completion date of 2020 is potentially feasible for at least one project if the District can streamline procurement of the preliminary engineering efforts and if the District elects a design-build contracting approach. Further projects would require additional time and could technically be ready for operation by 2020. Attachment 1 shows a preliminary schedule for the above-described work efforts through construction. This schedule could be significantly delayed by factors such as environmental or permitting issues, public concerns, and technical issues that could arise in design and construction. In addition, the District's normal processes would have to be significantly streamlined to enable such an expedited development program.

Expedited Recycled and Purified Water Program Cost Estimate

A cost estimate for the combination of all five projects, as described above, is provided in Table 5. Staff's estimates of the current (2015) cost estimates are taken from the bottom-line project cost numbers provided in the SBWR Master Plan and the Sunnyvale IPR Treatment Study by Carollo Engineers (refer to Table 4). Estimates by staff for each of the cost elements shown in Table 5 are approximate and, when included, sum to the aforementioned bottom-line numbers. The cost range then applies -20% and +100% to each element using an applicable range in the Association for the Advancement of Cost Engineering's guidelines on cost accuracy for project initiation (Class 5).

Table 5 – Program Cost Estimate		
Cost Element	Estimated Cost Range ⁽¹⁾	Current (2015) estimate
Public outreach	\$2 to 4M	\$2M
Internal District Charges	\$4 to 10M	\$5M
Program Manager (2 years)	\$1M to \$2M	\$1M
Preliminary Engineering, Operational Studies, Brine Disposal Solution, Groundwater Studies,	\$8 to \$20M	\$10M
Grant Application Support	<1M	<\$1M
Partnership Development (excluding Legal)	\$1 to 2M	\$1M
Land Acquisition, ROW, Permitting	\$18 to 46M	\$23M
Legal	\$2 to 4M	\$2M
CEQA	\$3 to 8M	\$4M
Financial consulting	\$1 to \$2M	\$1M
Consulting Support for Design-Build	\$1 to 2M	\$1M
Design-Build Contracts	\$591 to 1,480M	\$740M
Construction Management	\$8 to 20M	\$10M
Total	\$640 to \$1,600M	\$800M

Note (1): Association for the Advancement of Cost Engineering (AACE) expected cost accuracy for project initiation (Class 5) ranges from -20 to -50 percent on the low end and +30 to +100 in the high end. The above range uses -20% and +100% around the current (2015) estimate. (2) Program cost estimate does not include financing costs which are to be determined pending identification of funding sources.

4. FUNDING

Program planning and discussion on funding opportunities is shown below. Staff is considering, but not limited to, the following options for financing the Expedited Recycled and Purified Water Program:

- Existing short-term and long-term debt structure, combined with water charges
- State revolving low interest loans (not available for public-private partnerships)
- Federal funds authorized through the Water Infrastructure Finance and Innovation Act (WIFIA)
- Grants, State Proposition 1 and Proposition 84 Bond Funding (may not be available for public-private partnerships)
- Qualified Public Infrastructure Bonds (QPIBs)
- Public-Private Partnership Agreements
- Public-Public Partnership Agreements
- Voter approved Special Parcel Tax

5. REGULATION/LEGISLATION

Current Regulation for IPR

The use of recycled water (potable and non-potable) is regulated under the Clean Water Act, the Safe Drinking Water Act, and several State laws, regulations, and policies, with different responsibilities assigned to the State Water Resources Control Board (SWRCB), the nine Regional Water Quality Control Boards (RWQCBs), and the SWRCB's Division of Drinking Water (DDW).

The California Water Code (CWC) and Health and Safety Code (H&SC) contain California's extensive statutes that regulate the use of water and the protection of water quality, public health, water recycling, and water rights.

Effective July 1, 2014, the DDW has the authority to issue permits for operation of recycled and purified water facilities for IPR, including brine disposal. As the transition proceeds during Fiscal Year 2014/15, more information will be available on how permitting responsibilities would be handled by DDW and the RWQCBs.

Key to the proposed implementation plan for the Expedited Recycled and Purified Water Program will be early and frequent updates to DDW and the applicable RWQCBs so that any concerns can be noted, addressed and resolved.

Update on DPR Regulations

Senate Bills 322 and 918 require DDW, in consultation with the SWRCB, to investigate and report to the Legislature by the end of December 2016 on the feasibility of developing uniform criteria for DPR with the assistance of an expert panel and advisory group. The advisory group has been formed (Chief Operating Officer Jim Fiedler is a member of this group), and assisted with establishment of the expert panel. The expert panel is responsible for:

- Assessing what, if any, additional areas of research are needed to be able to establish uniform water recycling criteria for DPR;
- Advising DDW on public health issues and scientific and technical matters regarding development of uniform water recycling criteria for IPR through surface water augmentation; and
- Advising DDW on public health issues and scientific and technical matters regarding the feasibility of developing uniform water recycling criteria for DPR.

The WaterReuse Association, WaterReuse California, WaterReuse Research Foundation (WRRF), and California Urban Water Agencies are spearheading discussions and research related to DPR. WaterReuse California has an active Potable Reuse Committee that is tracking relevant research, legislation, and planning efforts related to DPR, see (<http://www.watereuse.org/sections/california/direct-potable>).

During 2012, a major focal point for WRRF, in conjunction with WaterReuse California, was the launch of the DPR Initiative (District is one of the partner agency), which is a \$6 million, four-year effort designed to commission specific research targeted at DPR feasibility and acceptance

in California and to assist DDW with implementation of the December 2016 report to the California Legislature per Senate Bill 918.

6. OUTREACH TO SUPPORT IPR/DPR

The Expedited Recycled and Purified Water Program would be significant in that it would represent the first proposed implementation of potable reuse in Northern California. County residents, who have received substantial information about the concepts of potable reuse, would undoubtedly have questions about the specific projects the District plans to implement.

Learning from national and state research: In April 2014, the WRRF commissioned a project to analyze current public perception about Indirect and Direct Potable Reuse. Santa Clara County and the city of San Diego were selected as focus communities because of our current significant efforts in the area of recycled water and purified water.

Telephone surveys and focus groups were conducted in these communities in April – June 2014. The findings showed that the majority of residents are very concerned about California's ongoing water shortages and ongoing drought. The results also showed support for DPR if sufficient education and information about the technology and safety is provided.

Products of this project—such as a communication plans and outreach tools—have been made available statewide. Locally, research conducted in our community has been used to update our existing Recycled and Purified Water Communications Strategy.

In addition, Communications Manager Teresa Alvarado is a member of the WRRF Public Education and Outreach Committee and is further coordinating with a range of global, national and statewide experts in the field on outreach strategies and research efforts.

Local research: Input from all of these sources has helped inform the development of the District's communications strategy, messaging and tactics. With the opening of the new SVAWPC and the District's commitment to development of purified water resources, communications staff has updated the strategic communications plan to match the expedited nature of the District's current plans for purified water development in Santa Clara County.

The revised 2015 Strategic Communications Plan will guide the communications work needed to promote potable reuse through activities that will reach all county residents. These activities include a general awareness campaign, stakeholder briefings, endorsement/ supporter campaign, multi-ethnic outreach, speaker's bureau, employee outreach, proactive news media, videos, website and social media.

In addition to the overarching activities that will be ongoing, the SVAWPC will continue to have a tour program that will be further expanded to offer more public tours. The value of these tours is evident. Pre- and post-surveys from tour participants have been favorable. Although tour participants represent a self-selected group, the results show the impact of the tours to further increase support for IPR. In addition, an Open House is slated for fall 2015 at the SVAWPC.

Where this plan also intersects with the communities we serve is at the local project level. Recycled and purified water projects currently being developed will have their own targeted community outreach plans that will include key stakeholder, neighborhood and customer communications and reflect the local nature of impacts from these construction projects.

The updated communications plans (both the high level Strategy and the project-specific outreach plans) will be discussed at an upcoming Board meeting in April 2015. In addition, a contract amendment for our strategic communications consultant, Katz & Associates, will be presented at that time to support their expanded scope of services to achieve our expedited plans and outreach goals.

Furthermore, plans for another local public perception survey will be conducted this spring which will provide more data on local attitudes toward potable reuse and support for funding.

7. NEXT STEPS

Based upon the input from the Recycled and Purified Water Work Study Session, staff is planning to:

- Present proposed consulting agreements for preliminary engineering and program management to the Board for approval as early as possible in 2015. If the Board's interest lies in an expedited program including single-source contracting for some consulting elements, the proposed initial contracts will be presented as early as April 28, 2015.
- Provide bi-monthly updates on the recycled and purified water program to the Board.

FINANCIAL IMPACT:

The staff recommendation to receive and discuss information related to the District's Recycled and Purified Water Program has no financial impacts.

CEQA:

The recommended action does not constitute a project under CEQA because it does not have a potential for resulting in direct or reasonably foreseeable indirect change in the physical environment.

ATTACHMENTS:

Attachment 1: Preliminary Schedule for IPR Projects

Attachment 2: PowerPoint Presentation

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Recycled and Purified Water Work Study Session

March 12, 2015



Attachment 2: PowerPoint Presentation

Presentation Outline

1. Background
2. Proposed IPR/DPR
3. Implementation Planning
4. Funding
5. Regulations/Legislation
6. Outreach
7. Next Steps

Background

Ends Policy

Board Ends Policy:

- E-2.1 (Goal): Reliable Water Supply
 - E-2.1.5 (Objective): protect, maintain, and develop recycled water
 - E-2.1.1 (Objective): protect maintain, and develop groundwater

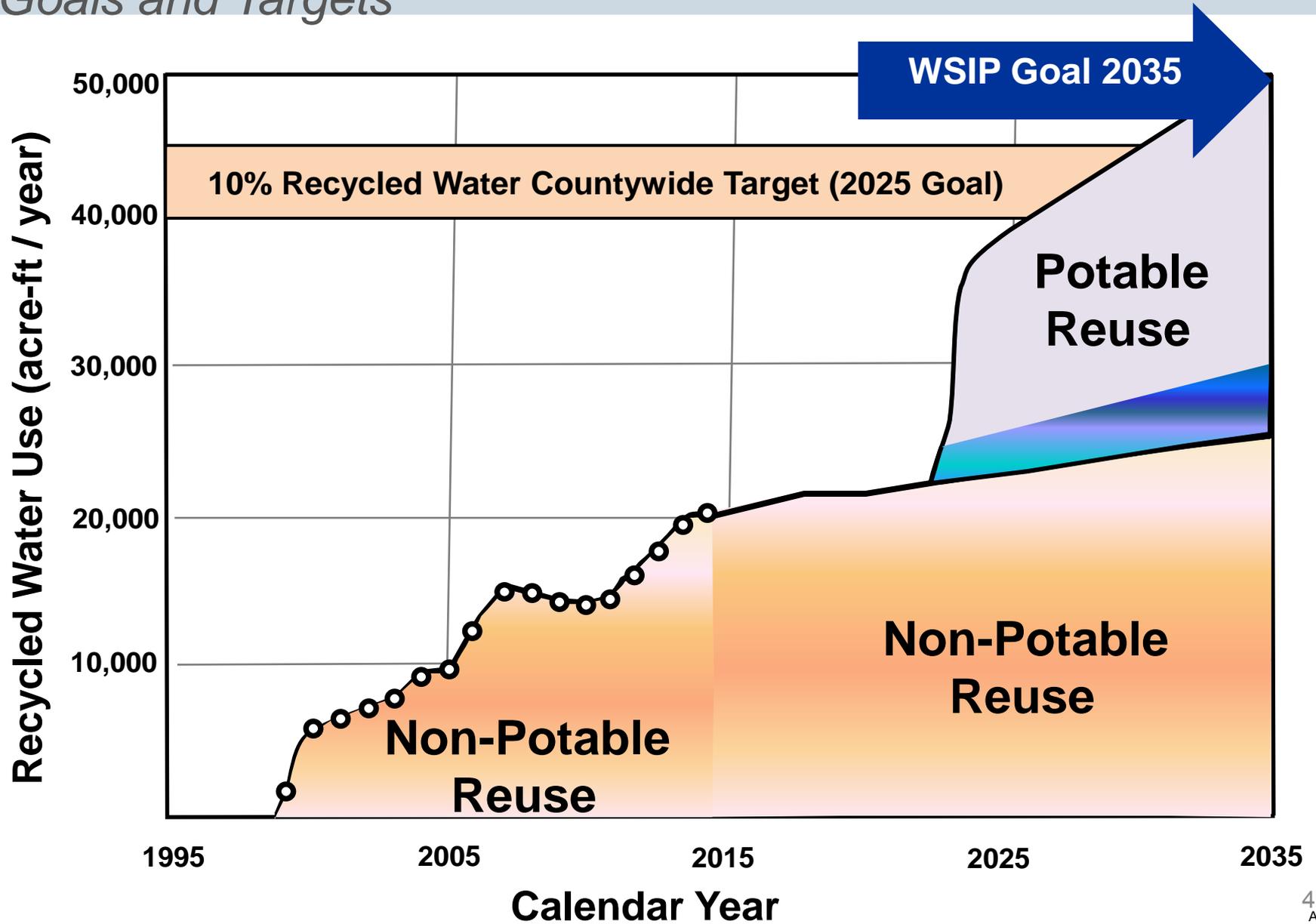
Outcome Measure: 10% by 2025

Strategies:

- Partnerships with producers
- Potable Reuse
- Maximize reliability and minimize costs and impacts

Background

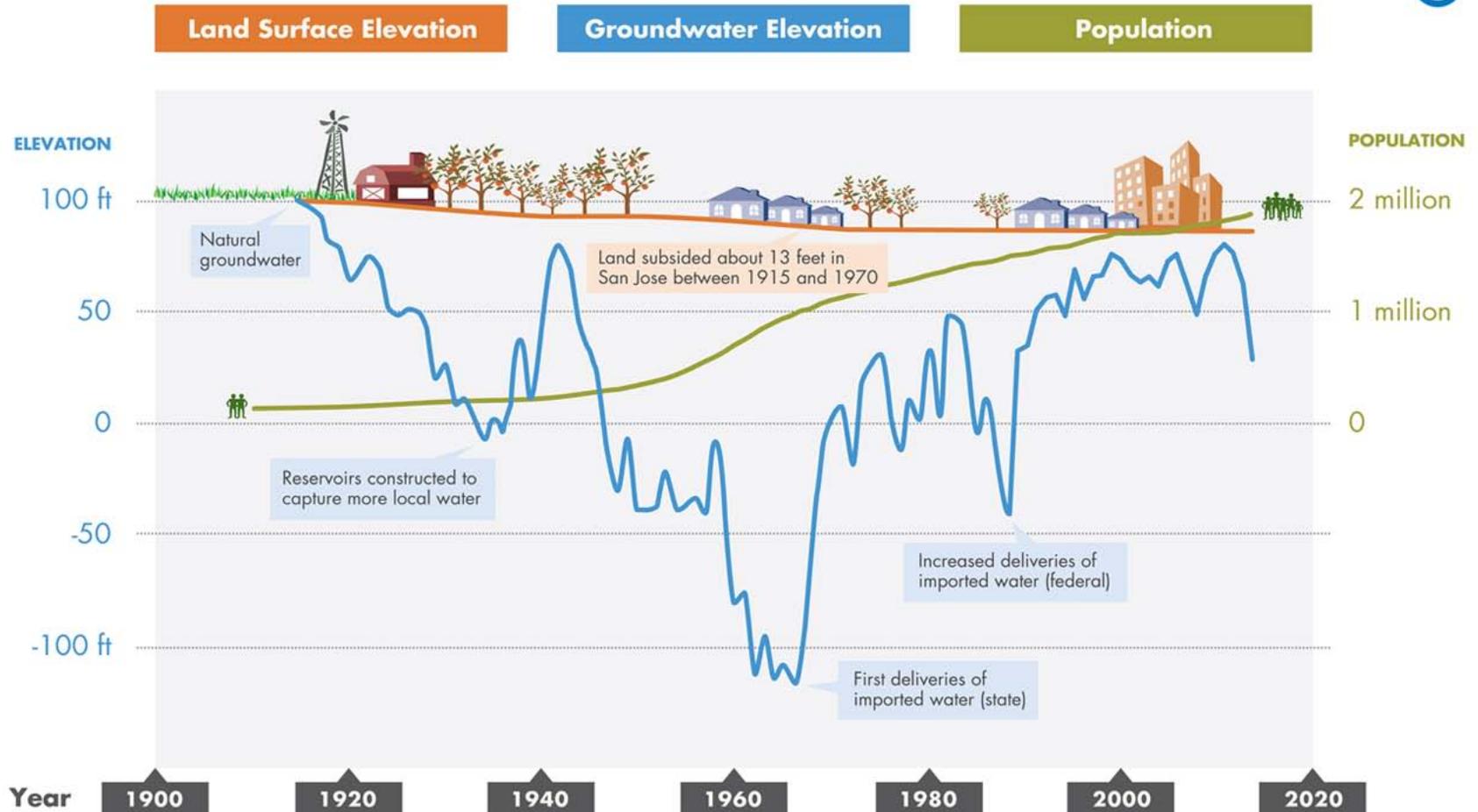
Goals and Targets



Santa Clara County Groundwater At-A-Glance

Urgent Needs for Water Supply

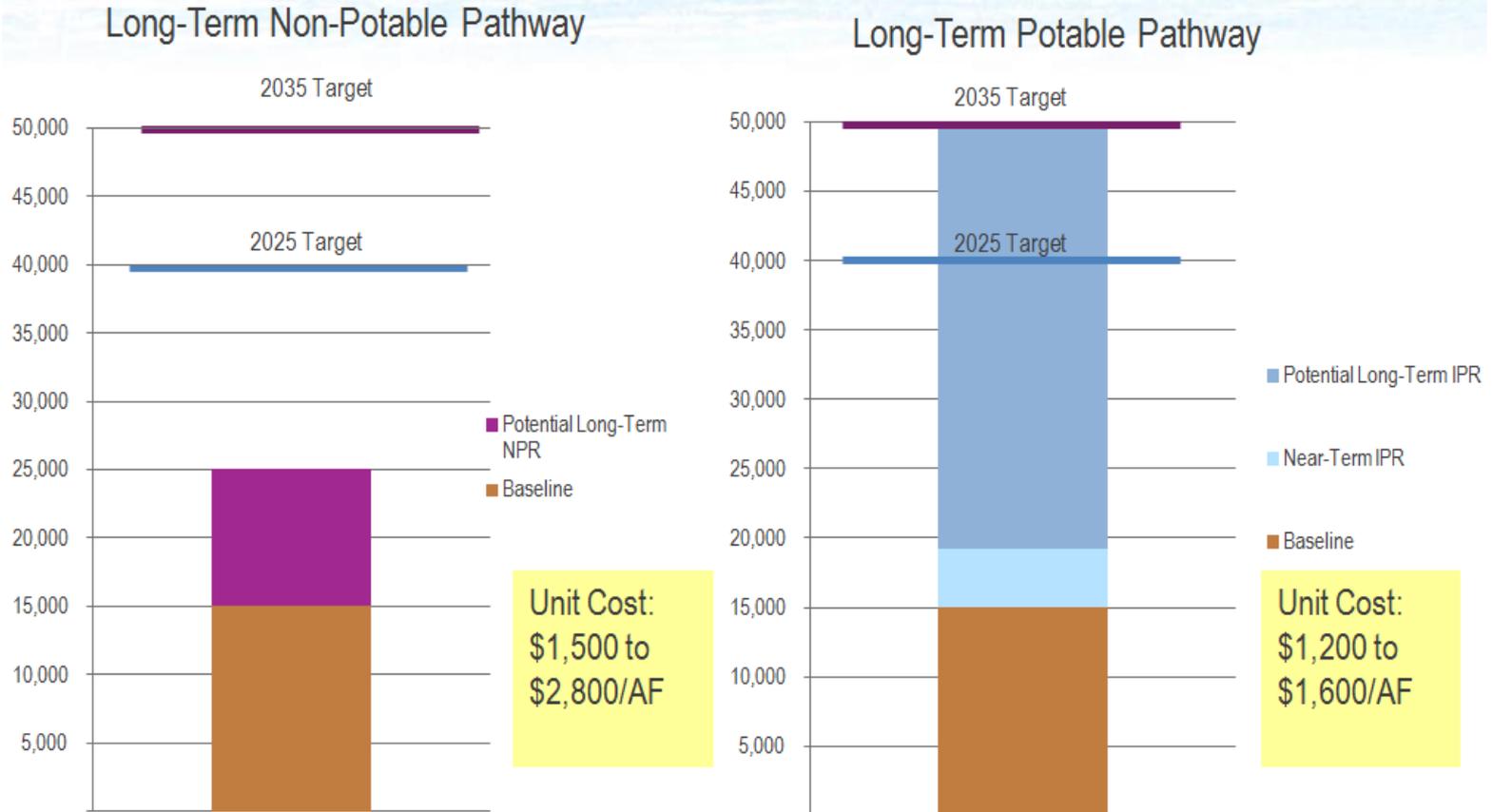
SANTA CLARA COUNTY GROUNDWATER AT-A-GLANCE *a graphic representation not intended as a technical exhibit*



Last updated January 26, 2015

Background

Comparable Long-Term Pathways



Source: South Bay Water Recycling Strategy and Master Plan

Background

*IPR/DPR is Prominent in Current Resource Plans**

Resource	Average Annual Amount (AFY) by 2030	Provides Yield in Multi-Year Drought?	Current Cost Estimated \$/AF
Imported Water Dry-Year Option Agreements	12,000	Uncertain Availability	\$400-\$1,400
Add Recharge Capacity, Local Pipelines	5,000	To Be Confirmed	\$300-\$1,500
IPR/DPR	20,000	Yes	\$1,600-\$2,000

Not included in Resource Plan:

Resource	Average Annual Amount (AFY) by 2030	Provides Yield in Multi-Year Drought?	Current Cost Estimated \$/AF
Regional Desalination	2,000	Yes	\$1,600-\$1,800
Local Storage	up to 26,000	Limited	\$2,400-\$43,000

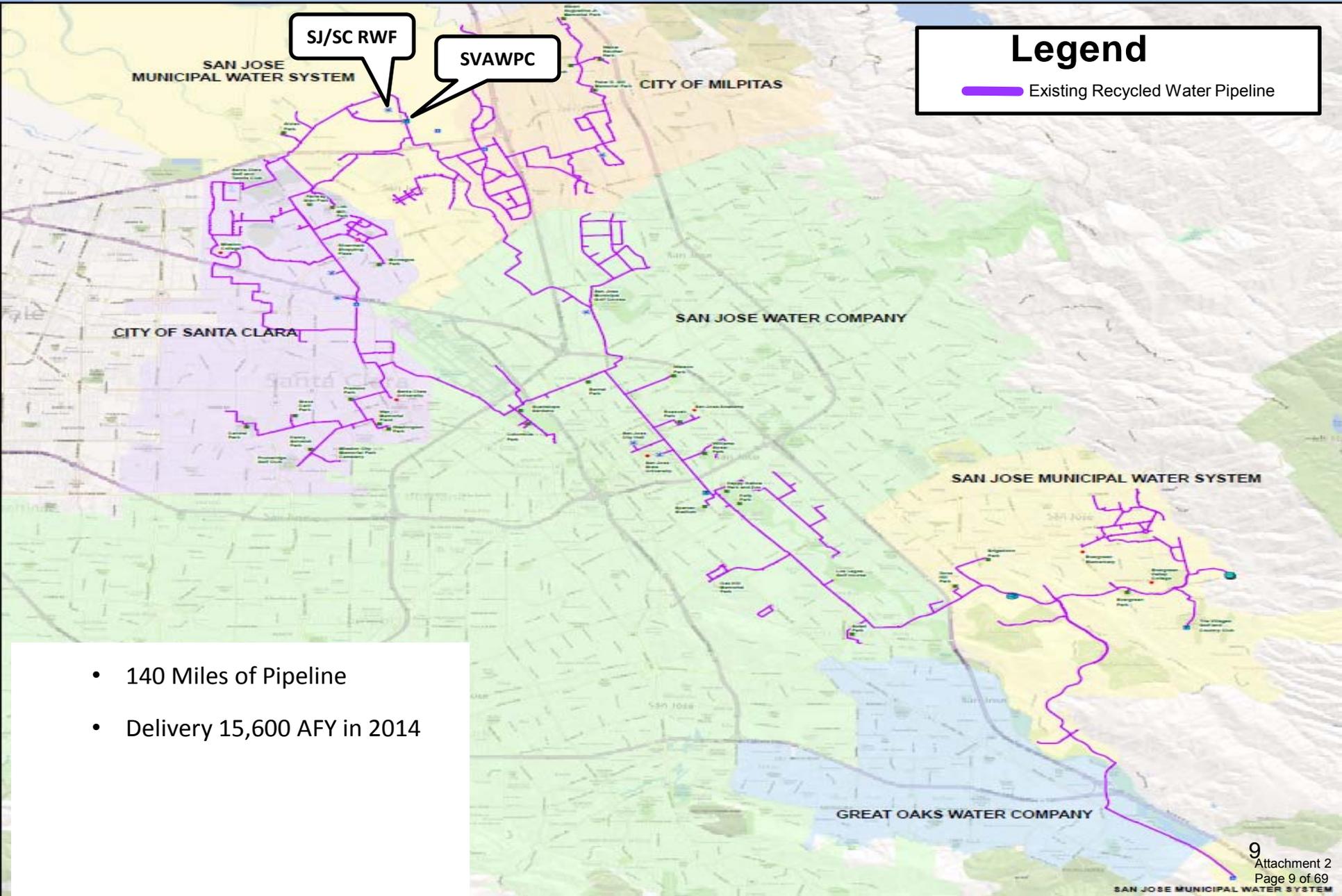
Background

Partnerships – Current and Potential Uses of Recycled Water

Supply Agency	Resource	Fiscal Year 2014 Current (AF)	Future Projection (AFY) by 2035*
South Bay Water Recycling (SBWR)	NPR	15,700	25,000*
	IPR/DPR	0	35,000
South County Regional Wastewater Authority (SCRWA)	NPR	2,000	3,200
	IPR/DPR	0	TBD
City of Sunnyvale	NPR	700	2,100
	IPR/DPR	0	10,000
City of Palo Alto/Mountain View	NPR	3,100	4,000
	IPR/DPR	0	TBD
<i>Subtotal</i>	<i>NPR</i>	<i>21,500</i>	<i>34,300</i>
<i>Subtotal</i>	<i>IPR/DPR</i>	<i>0</i>	<i>45,000</i>
Total	_____	21,500	79,300

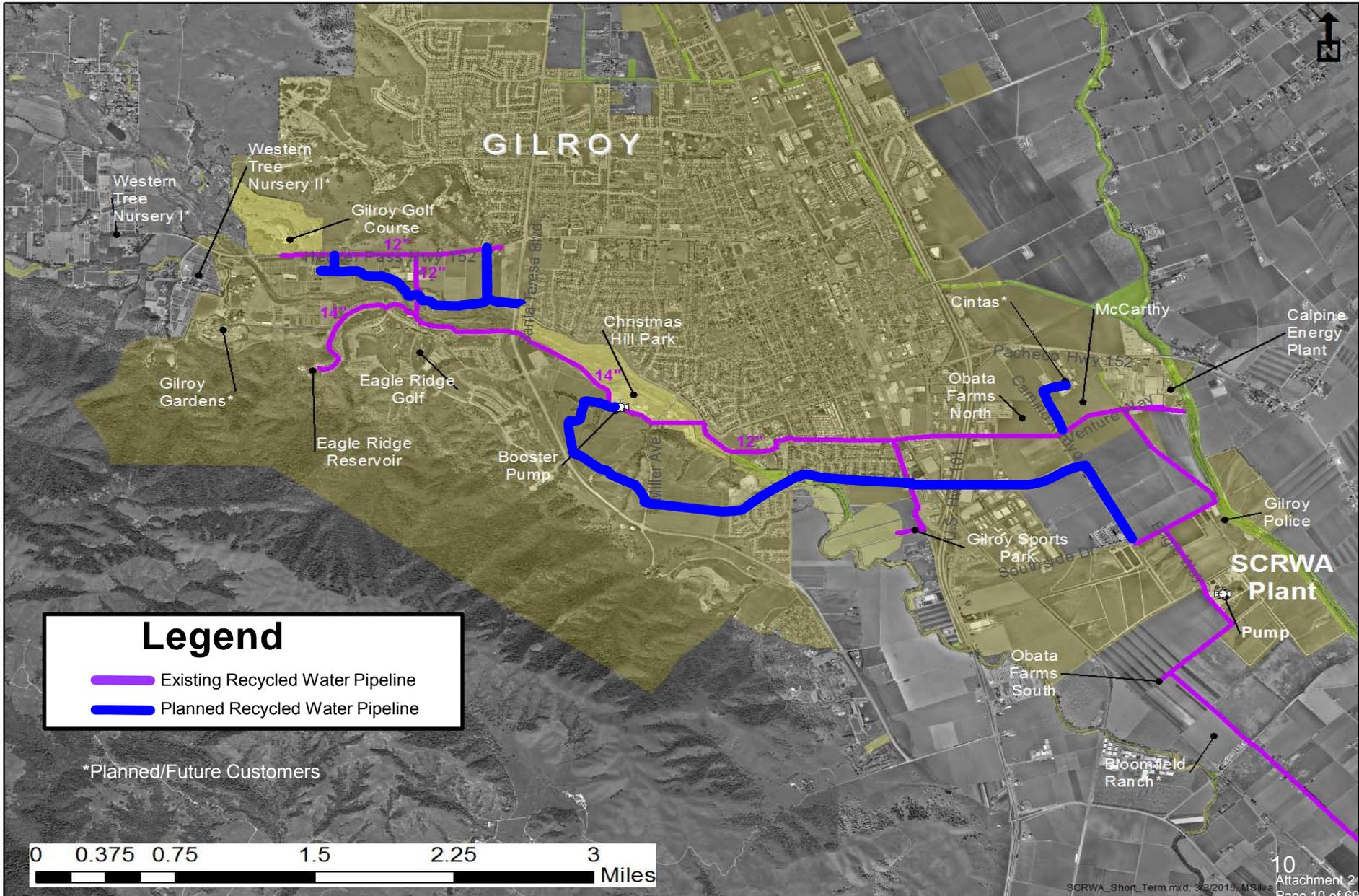
*Future expansion of NPR requires significant investment in the SBWR system.

Background - Partnerships - SBWR

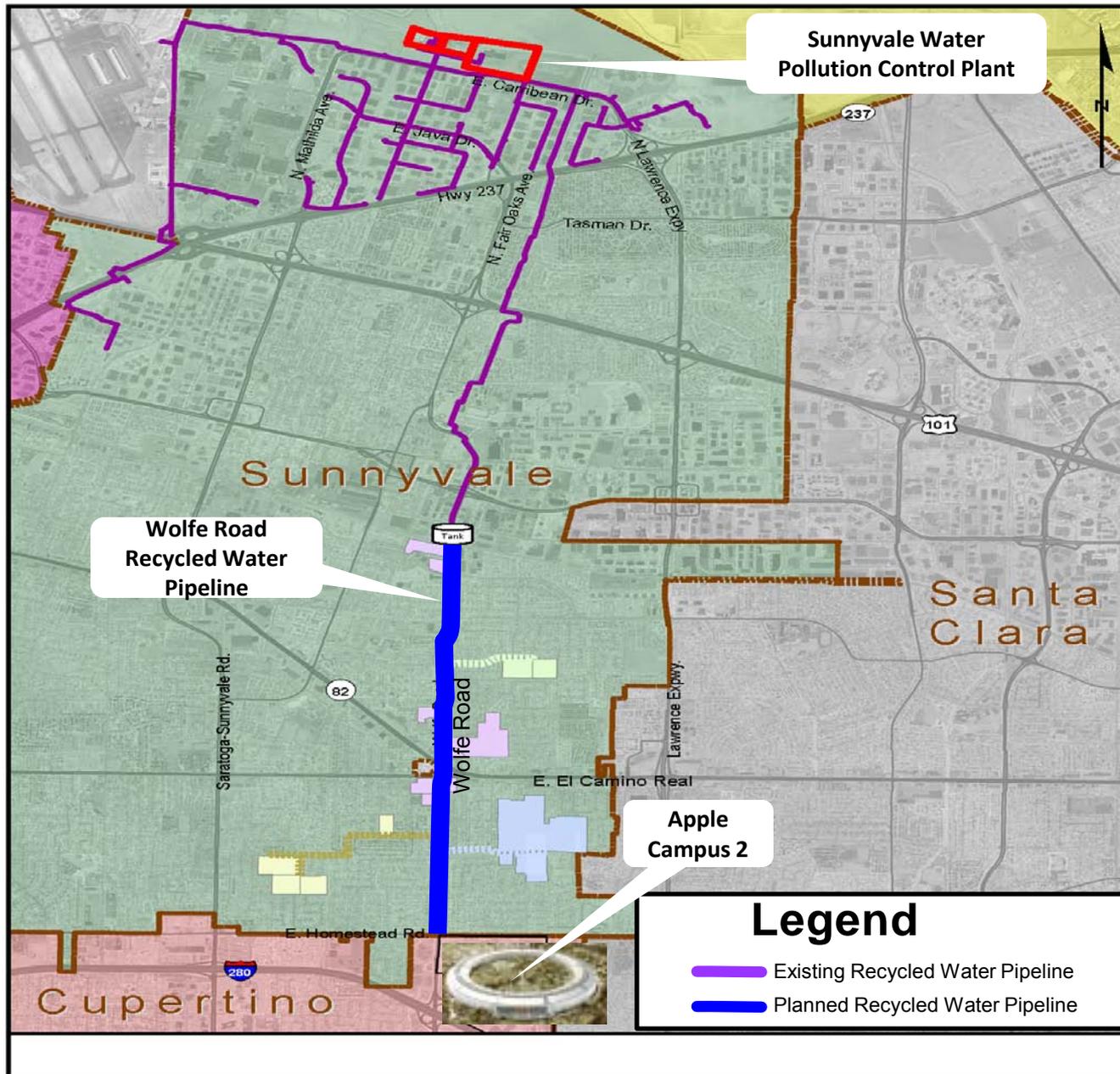


- 140 Miles of Pipeline
- Delivery 15,600 AFY in 2014

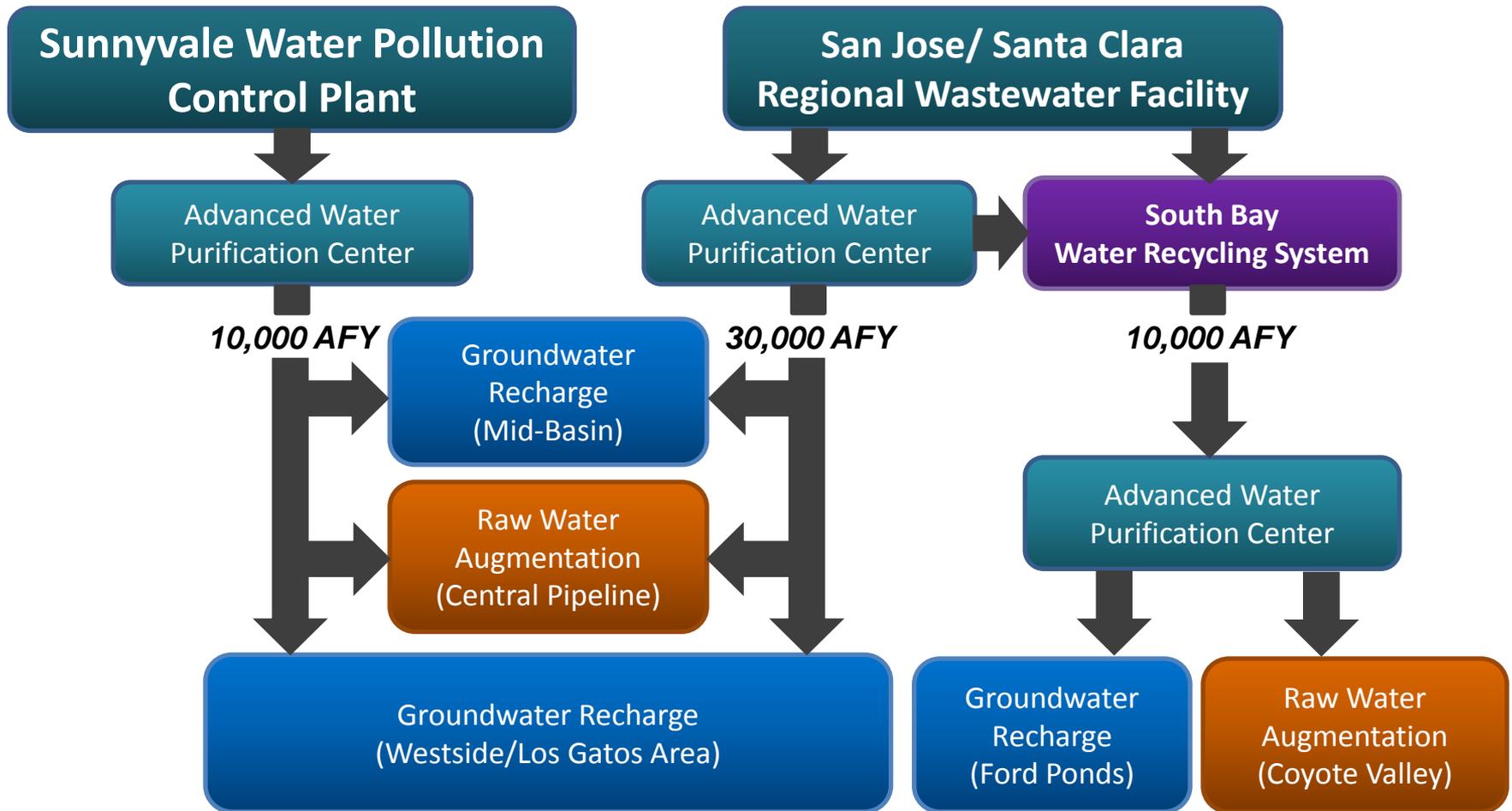
Background - Partnerships - SCRWA



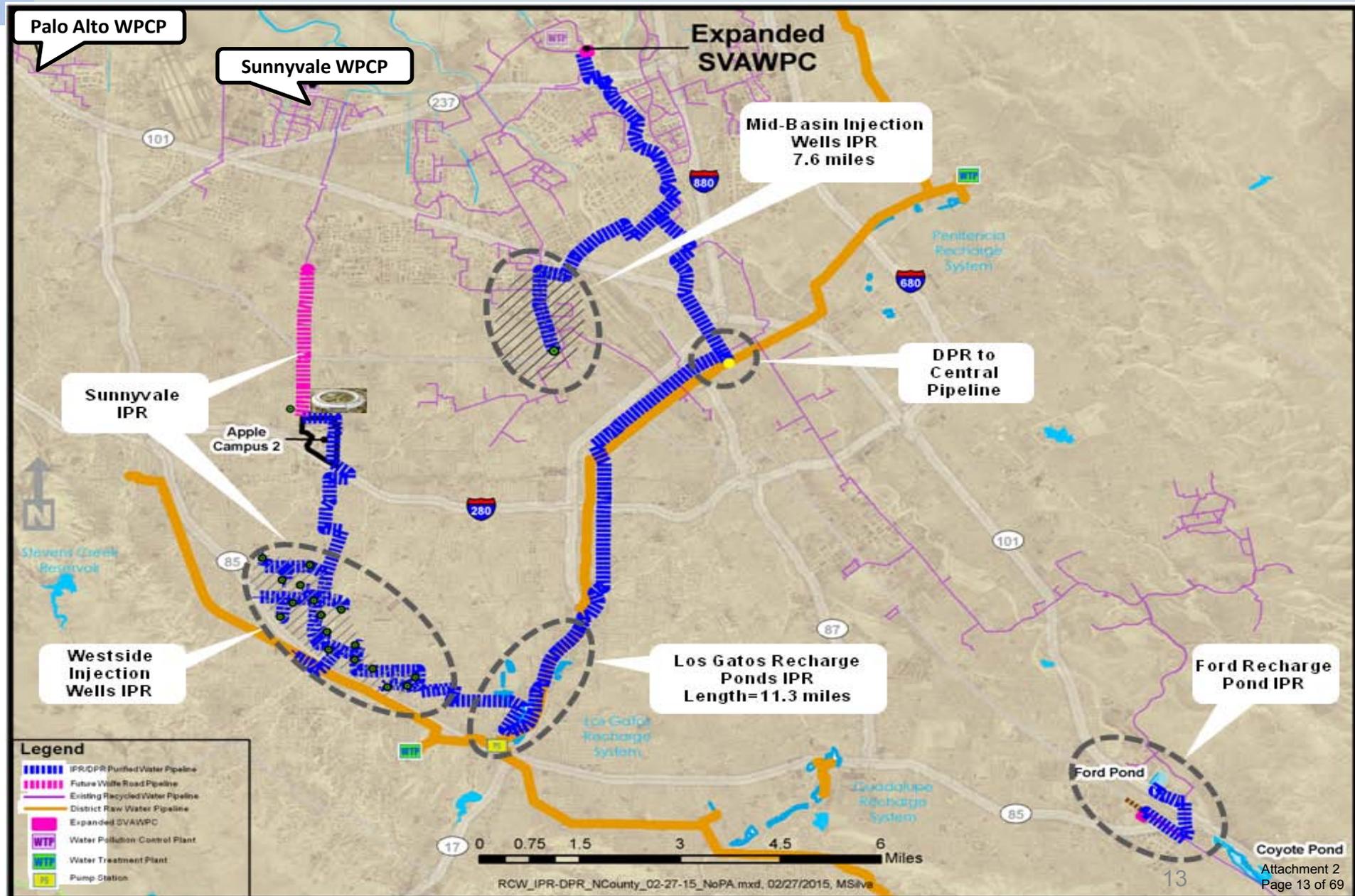
Background - Partnerships – Sunnyvale



Potable Reuse Strategy



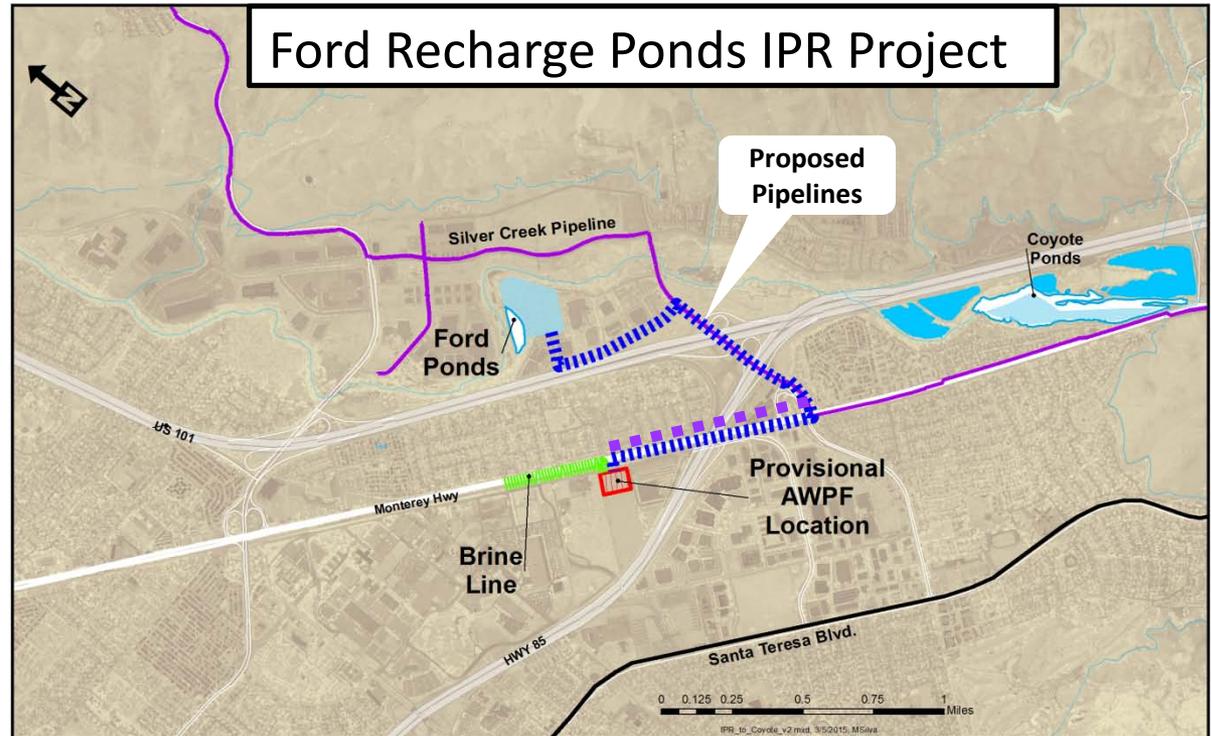
Proposed IPR/DPR Purified Water Expansion Projects



Proposed IPR Projects

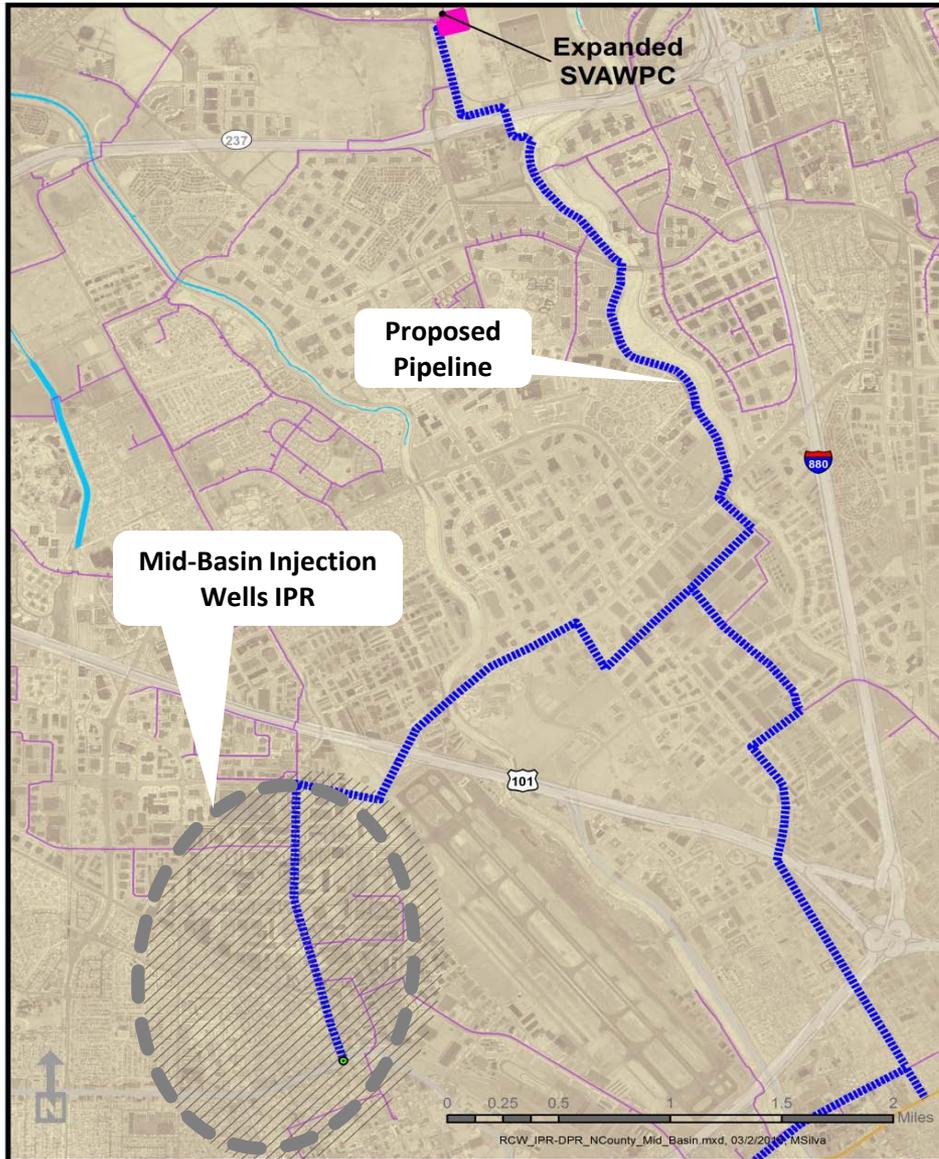
Ford Recharge Ponds IPR

- Capacity 4,200 AFY
- 3 Miles of Pipeline
- Est. Capital Cost \$65M
- Est. O&M Cost \$4M/Year



Proposed IPR Projects

Mid-Basin Injection Wells IPR

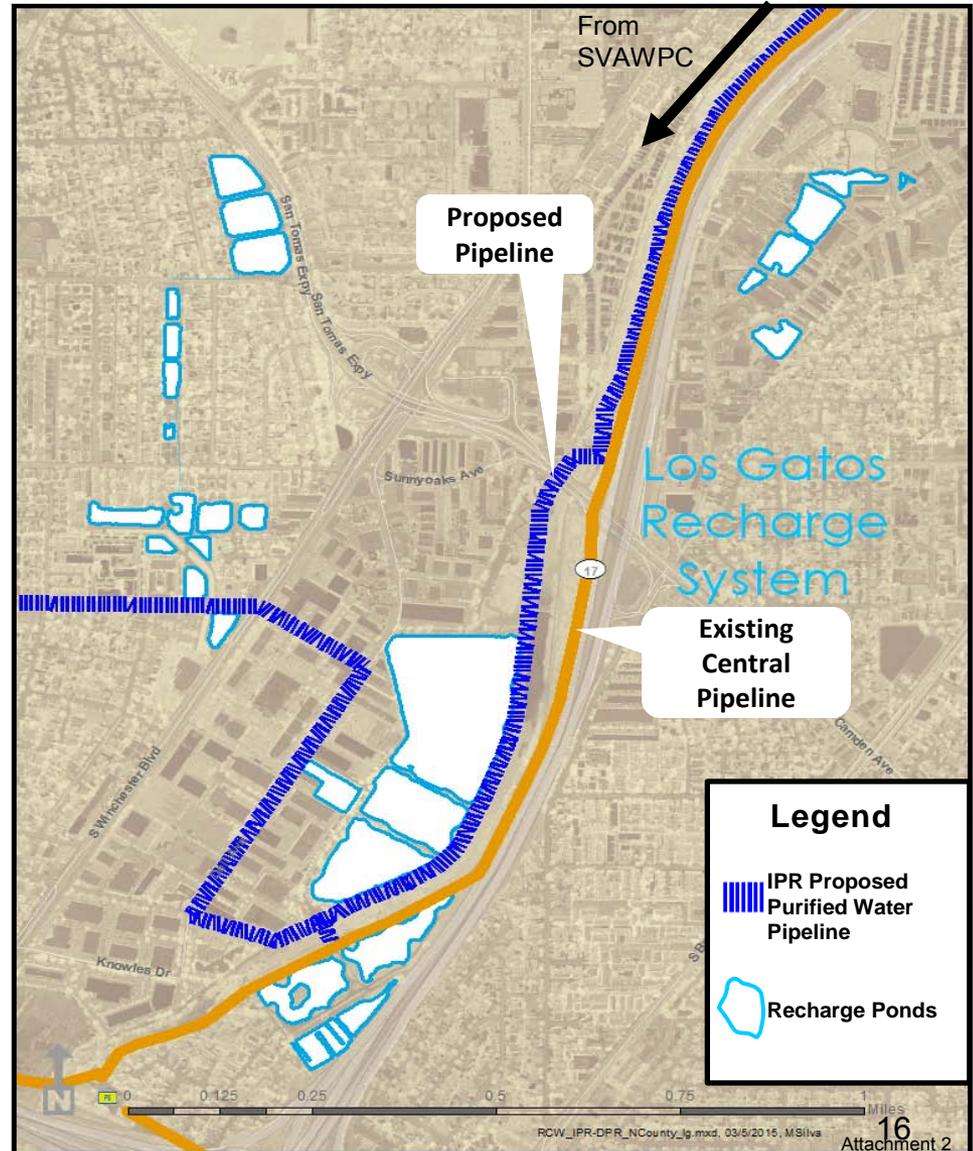


- Capacity 5,600 AFY
- 4.4 Miles of Pipeline
- Est. Capital Cost \$140M
- Est. O&M Cost \$3.5M/Year

Proposed IPR Projects

Los Gatos Recharge Ponds IPR

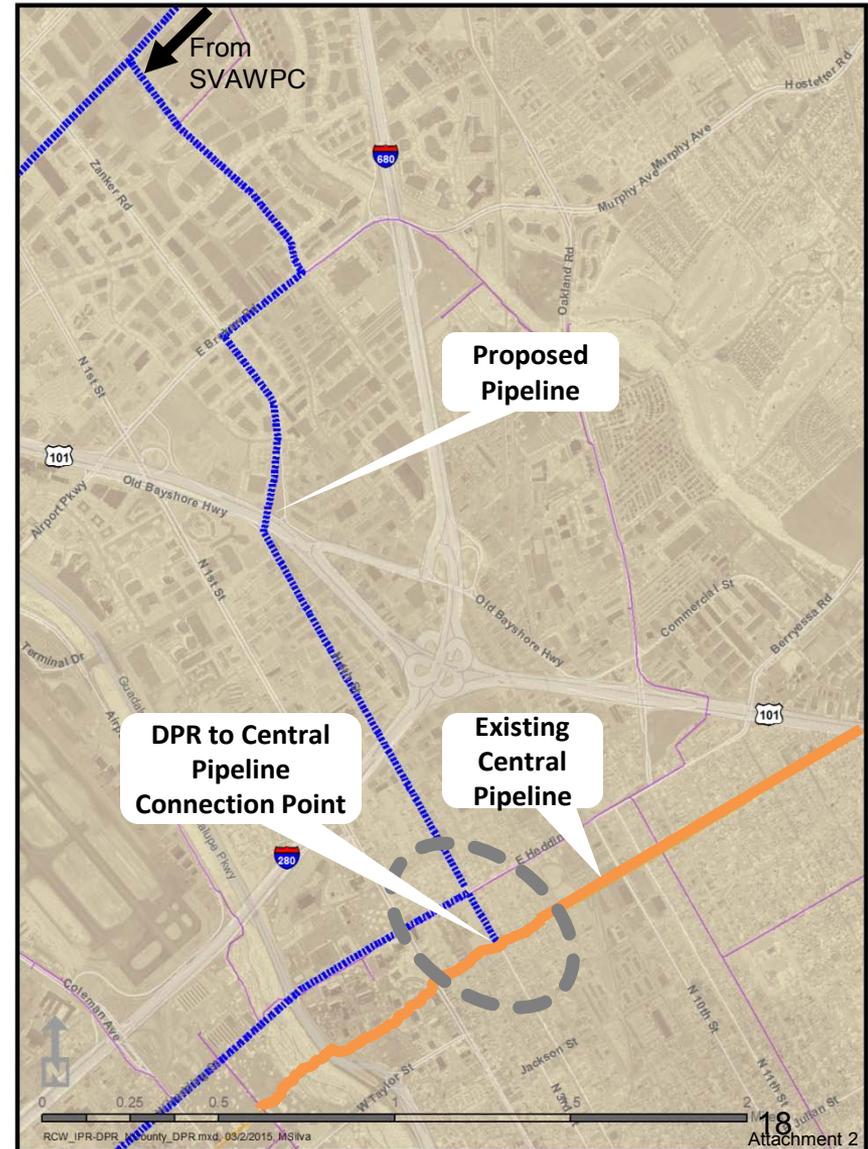
- Capacity 20,200 AFY
- 15 Miles of Pipeline
- Est. Capital Cost \$260 M
- Est. O&M Cost \$10M/Year
- Expanded SVAWPC to 24.5 MGD



Future Option for DPR

Central Pipeline - DPR

- Capacity 5,000 AFY
- Est. Capital Cost \$65M*
- Est. O&M Cost \$4.5M/Year*
- *Potential Capacity Up to 33,000 AFY (If District scales back on IPR)*



Proposed IPR Projects - *Estimated Costs*

Description	Capacity (AFY)	Est. Cost Range (\$M)*	Current (2015) Capital Costs Est. (\$M)*	Est. Total O&M Costs (\$M/year)
Ford Recharge Ponds IPR	4,200	\$60-\$140	\$70	\$4.0
Mid-Basin Injection Wells IPR	5,600	\$120-\$280	\$140	\$3.5
Los Gatos Recharge Ponds IPR	20,200	\$210-\$520	\$260	\$10.0
Westside Injection Wells IPR	5,000	\$100-\$240	\$120	\$4.0
Sunnyvale IPR	10,000	\$170-\$420	\$210	\$2.0
Total	45,000	\$640-\$1600	\$800	\$23.5

*Source: South Bay Recycling Water Recycling Master Plan. Association for the Advancement of Cost Engineering (AACE) expected cost accuracy for project initiation (Class 5) ranges from -20 to -50 percent on the low end and +30 to +100 in the high end.

Implementation Planning

Estimated Project Costs

Cost Component	Estimated Cost Range* \$ (Millions)	Current (2015) Cost Estimate* \$ (Millions)
Public Outreach	\$2-\$4	\$2
Internal District Charges	\$4-\$10	\$5
Program Manager (2 years)	\$1-\$2	\$1
Preliminary Engineering, Brine Disposal Solution, Groundwater Studies	\$8-\$20	\$10
Grant Application Support	<\$1	<\$1
Partnership Development (excluding Legal)	\$1-\$2	\$1
Land Acquisition, ROW, Permitting	\$18-\$46	\$23
Legal	\$2-\$4	\$2
CEQA	\$3-\$8	\$4
Financial consulting	\$1-\$2	\$1
Consulting Support for Design-Build	\$1-\$2	\$1
Design-Build Contracts	\$591-\$1480	\$740
Construction Management	\$8-\$20	\$10
Total	\$640-\$1600	\$800

*Note (1): Association for the Advancement of Cost Engineering (AACE) expected cost accuracy for project initiation (Class 5) ranges from -20 to -50 percent on the low end and +30 to +100 in the high end.

Strategies under consideration:

1. Expedited Procurement
2. Public–Private Partnership
3. Design/Build approach to Development
4. Regulatory/Legislative Engagement

Funding for Development

Options to be considered:

- Existing short-term and long-term debt structure, combined with water charges
- State revolving low interest loans
- Federal funds authorized through the Water Infrastructure Finance and Innovation Act (WIFIA)
- Grants, State Proposition 1 and Proposition 84 Bond Funding
- Qualified Public Infrastructure Bonds (QPIBs)
- Public-Private Partnership Agreements
- Public-Public Partnership Agreements
- Voter approved Special Parcel Tax

- Ground Water Recharge Regulations finalized in June 2014

- Direct Potable Reuse Regulatory Status:
 - Expert Panel formed to provide guidance
 - Feasibility Study due December 2016

Regulations / Legislation / Permits

Regulation of Groundwater Recharge Operations

Parameter	Discharge to groundwater
Type of Permit	State of California Waste Discharge Requirements (WDRs)
Issuing Agency	Regional Water Quality Control Board (RWQCB)
Basis of Regulation	California Porter-Cologne Act
Applicable Receiving Water Standards	San Francisco Bay Basin Plan (RWQCB)

“The Wave of the Future is Here”



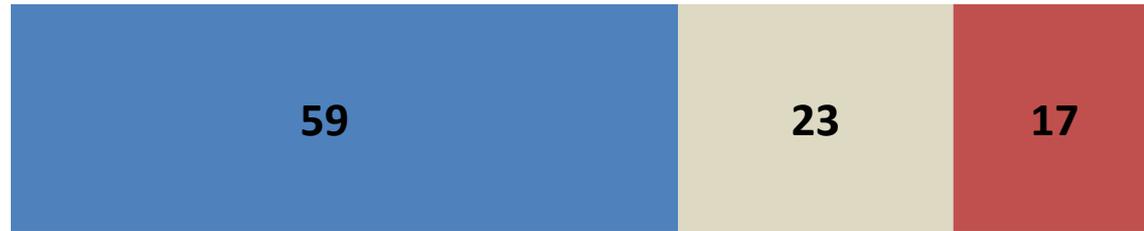
- 2010 Telephone Survey
 - EMC Research conducted telephone survey in October 2010.
 - 400 random residents in the Santa Clara Valley Water District
 - Overall sample geographically and demographically representative
 - Interviews conducted in English, Spanish, and Vietnamese.



Many recycled water uses well supported

■ Favorable ■ Don't know ■ Unfavorable/Oppose

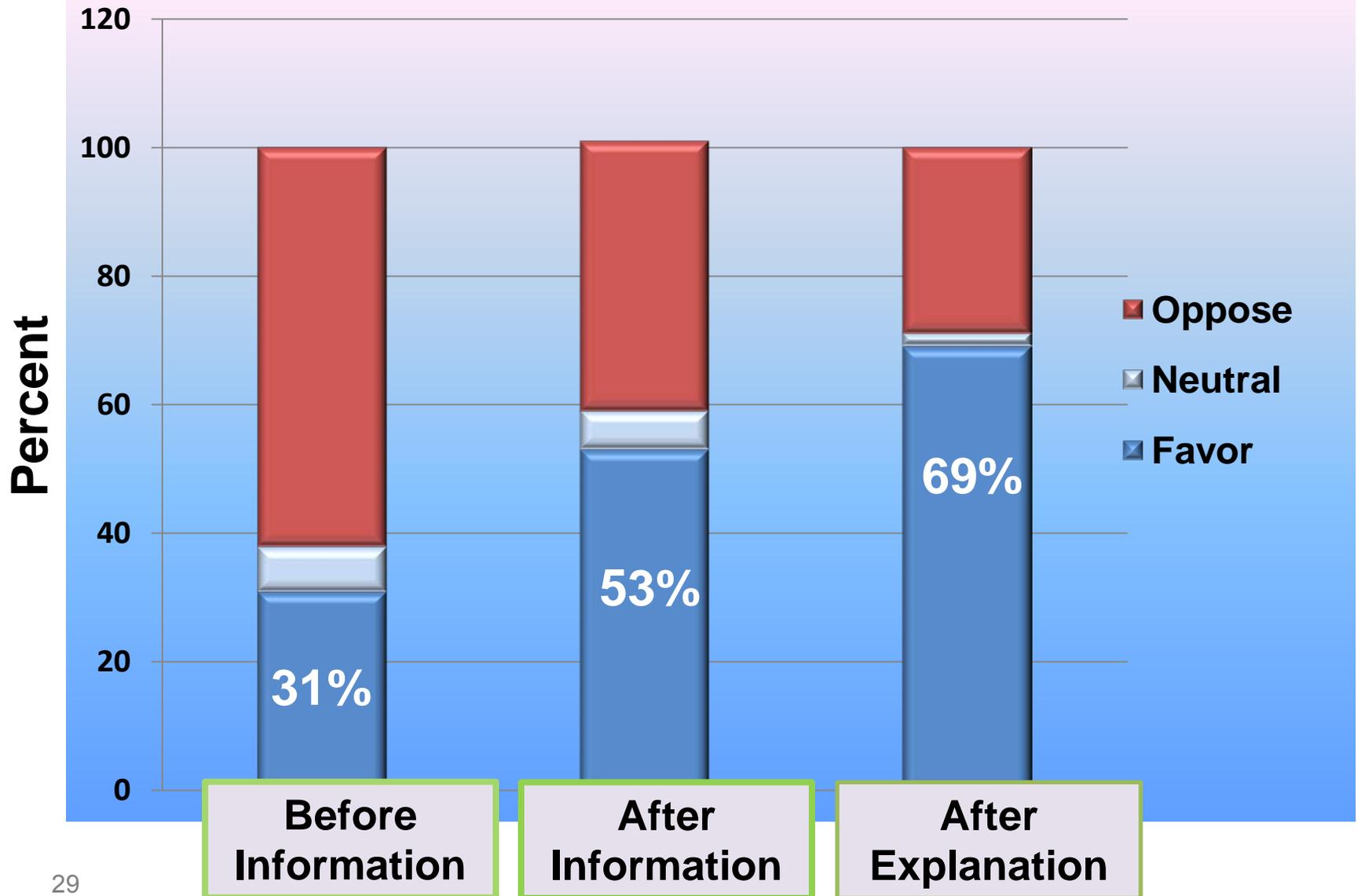
Do you have a favorable or unfavorable opinion of recycled water?



...use of appropriately treated recycled water for adding to drinking water supplies?



Education leads to public acceptance



Leveraging National & State Research

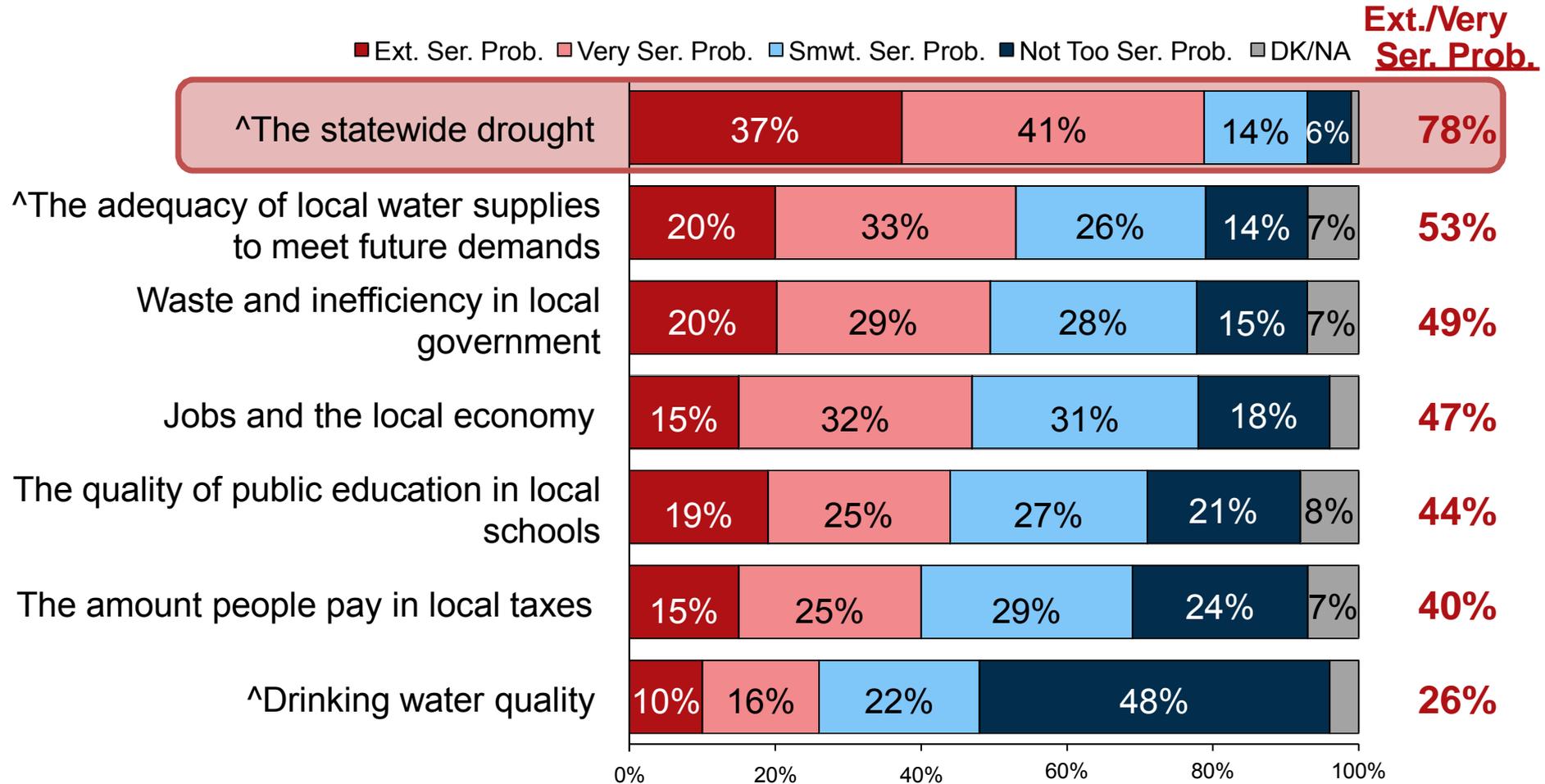
- In 2014, WaterReuse Research Foundation analyzed current public perception about Indirect and Direct Potable Reuse.
- Santa Clara County and the city of San Diego were selected as focus communities.
- Focus groups & telephone surveys conducted April – June 2014
- Communication tools now developed and made available statewide.
- Research findings used to inform our existing recycled and purified water communications.



Sustainable Solutions for a Thirsty Planet®

Concern about the drought in target communities runs very high.

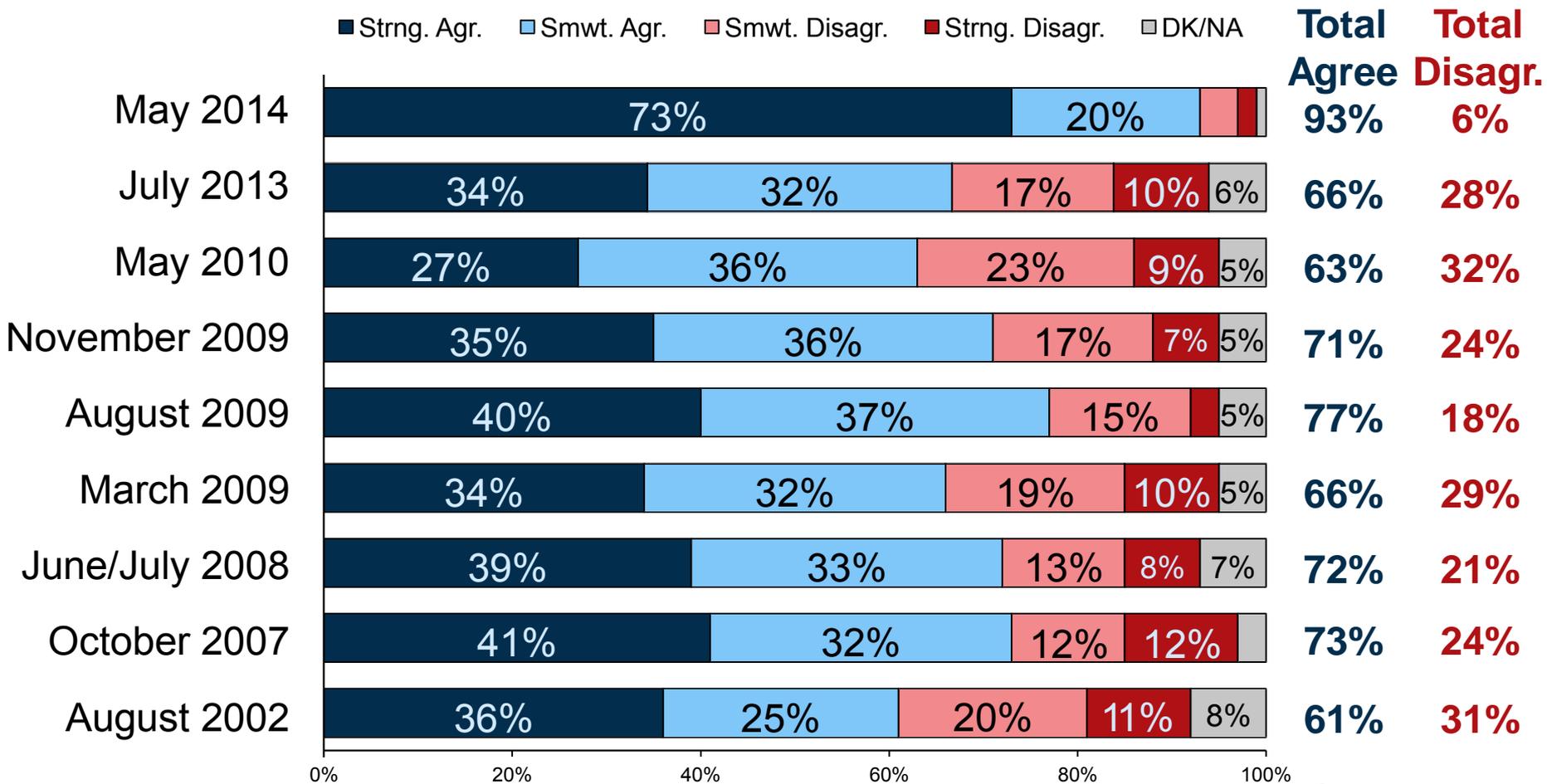
I'd like to read you some problems facing your area that other people have mentioned. Please tell me whether you think it is an extremely serious problem, a very serious problem, somewhat serious problem, or not too serious a problem in your area.



Source: FM3

The consensus that California is in a severe drought is greater than at any time in the past decade.

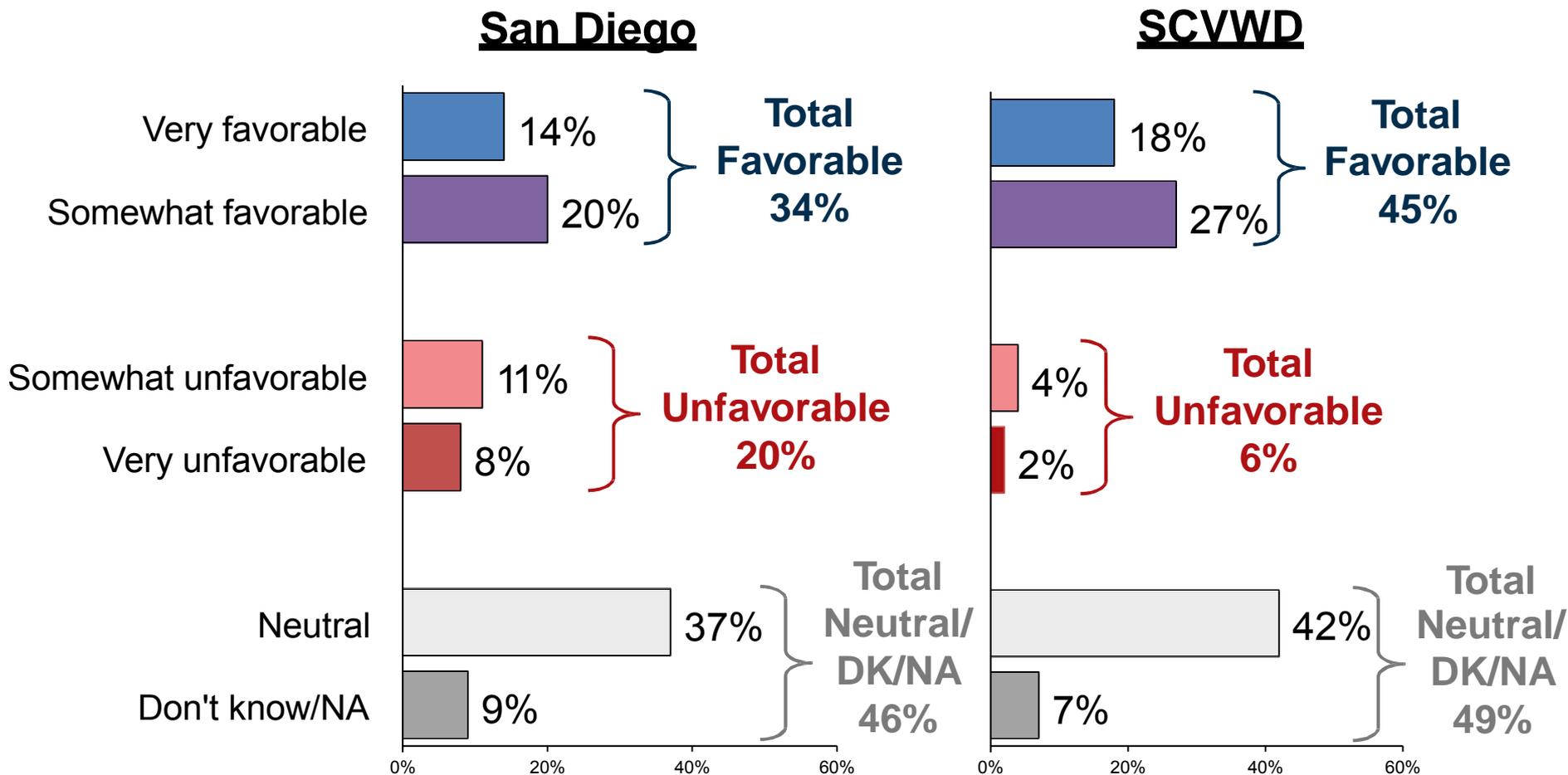
“California is currently in the middle of a severe drought.”



Source: FM3

Voters have generally positive attitudes toward their water agency...

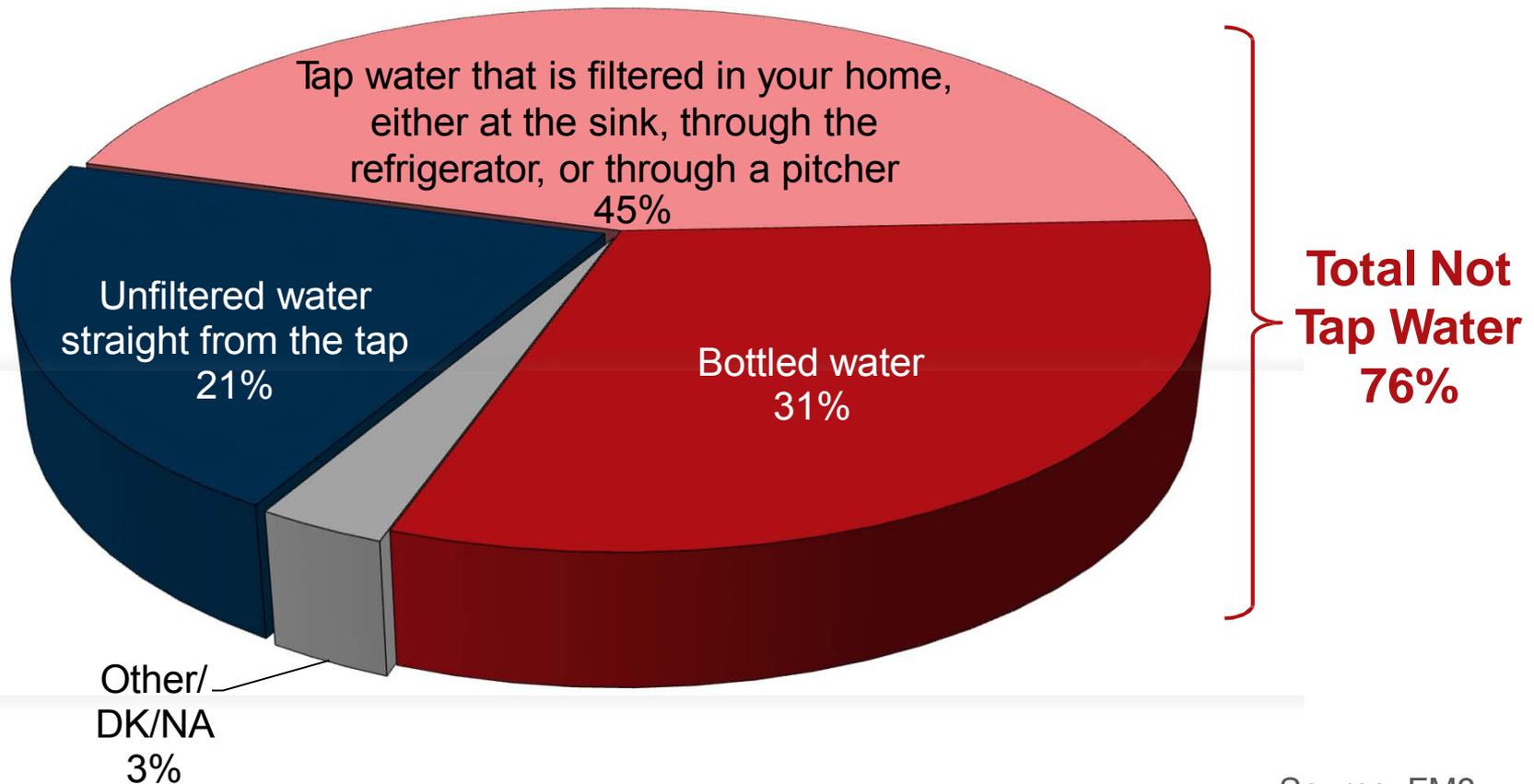
Would you say that you have a generally favorable, neutral, or unfavorable opinion of your local water agency?



Source: FM3

Most voters do not drink water straight from the tap.

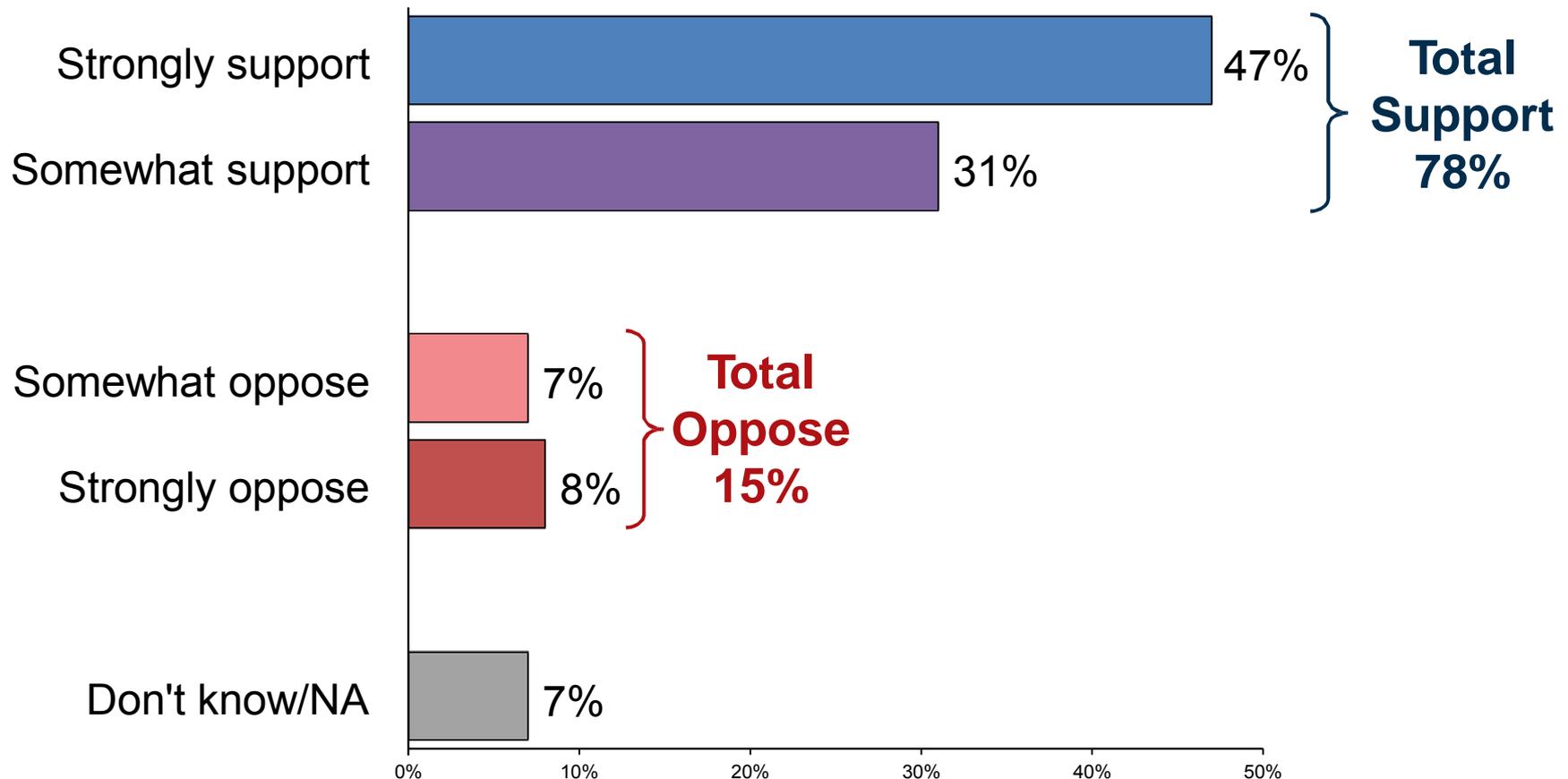
Thinking about the water that you drink at home, do you most often drink?



Source: FM3

Among those familiar with recycled water, most support its use.

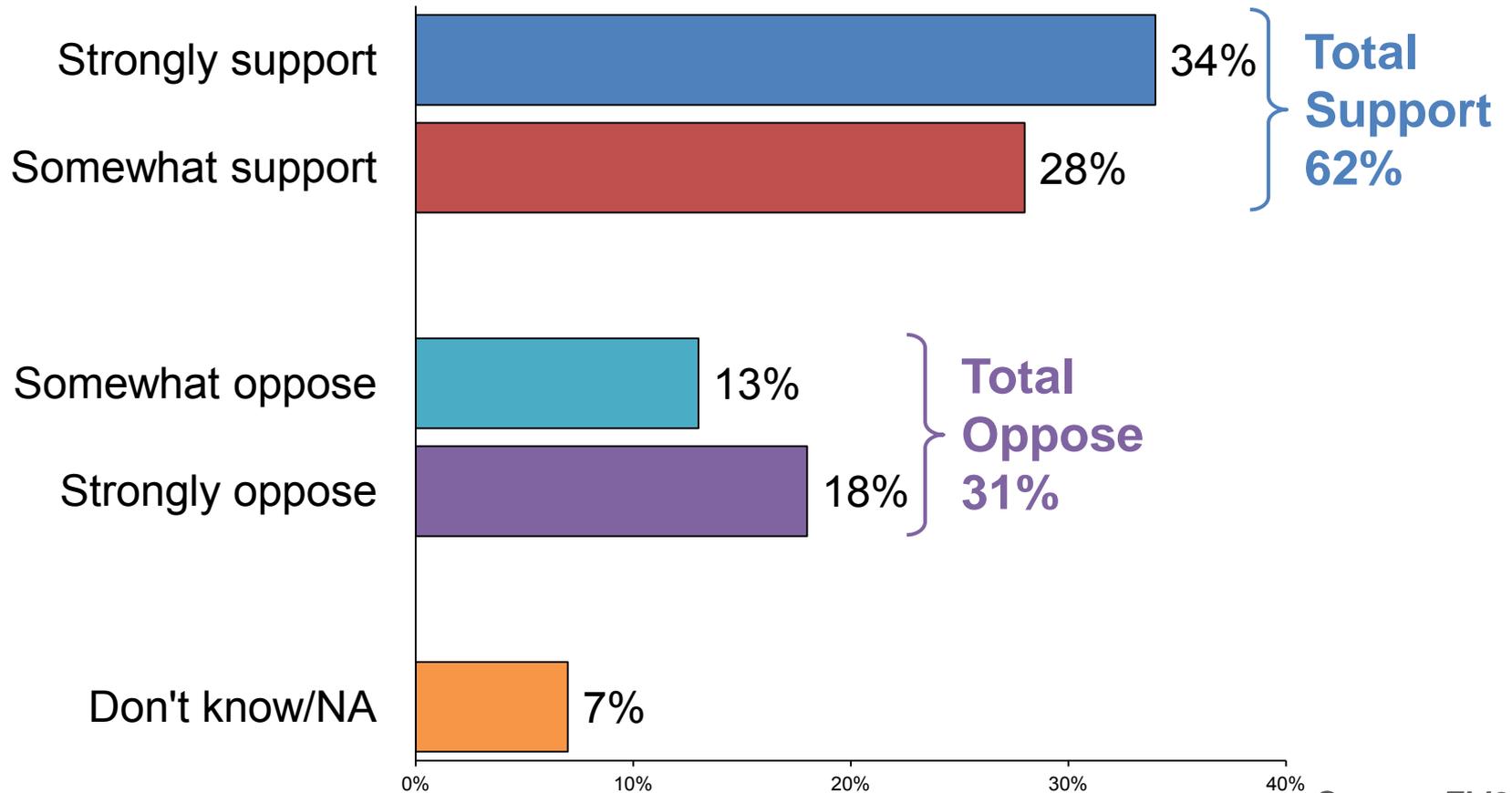
Do you support or oppose recycling water for local reuse on a community-wide scale?



Source: FM3

A majority of voters support indirect reuse of recycled water for drinking.

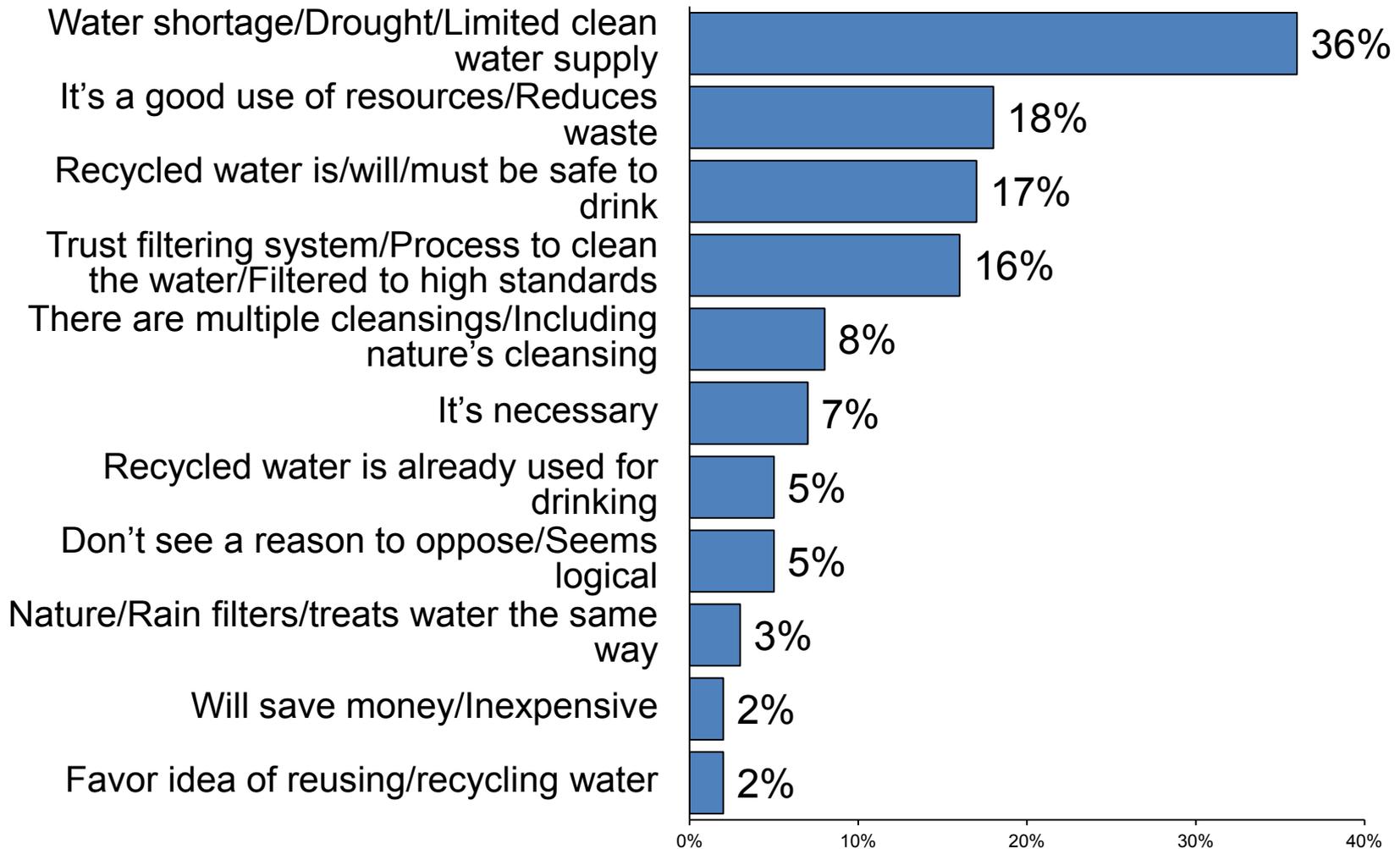
Would you support or oppose indirect reuse of recycled water in your community?



Source: FM3

This support is motivated by a general desire to conserve and not waste water.

Why would you **SUPPORT** indirect reuse of recycled water for drinking in your community?



Q12a. Open end; Responses grouped; Asked of indirect potable reuse supporters only

Verbatim Comments from Indirect Potable Reuse Supporters

Because I feel safer with it being cleaned twice than only once, because it would have less contaminants.

I would support it because the natural system of recycling water is reliable and natural.

I would support indirect use of recycled water because it seems like a good solution to the drought problems.

I think the contamination issues would be lessened with indirect reuse.

I'm pretty sure it's done in other parts of the world, so I'm confident that it's okay.

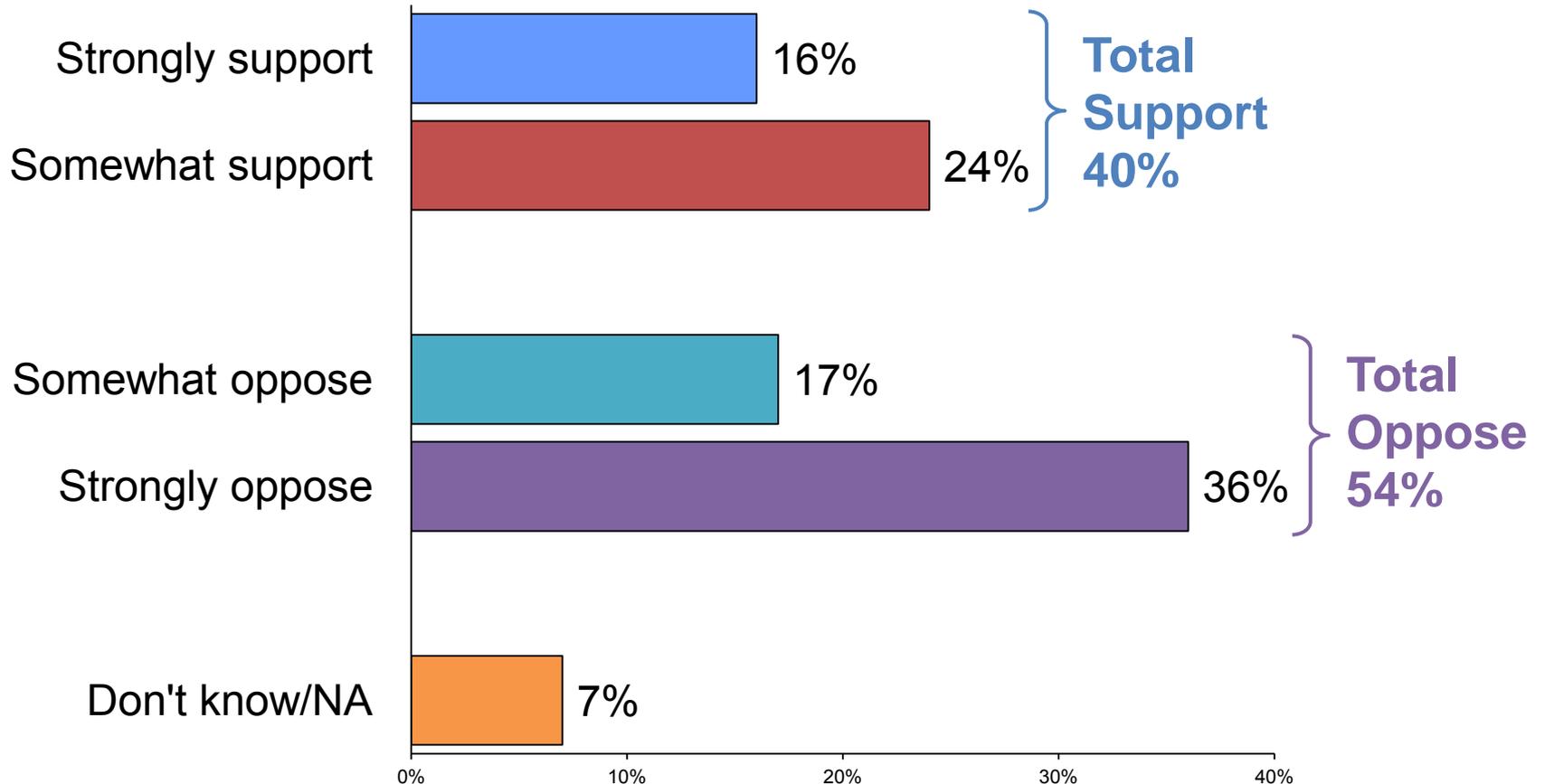
I would support it because it is filtered twice and diluted in a larger source.

I feel like it goes through nature's filter, through the groundwater.

I would support indirect use of recycled water because it would be potentially cleaner than what's going in there now.

Initially, most voters *oppose* direct potable reuse.

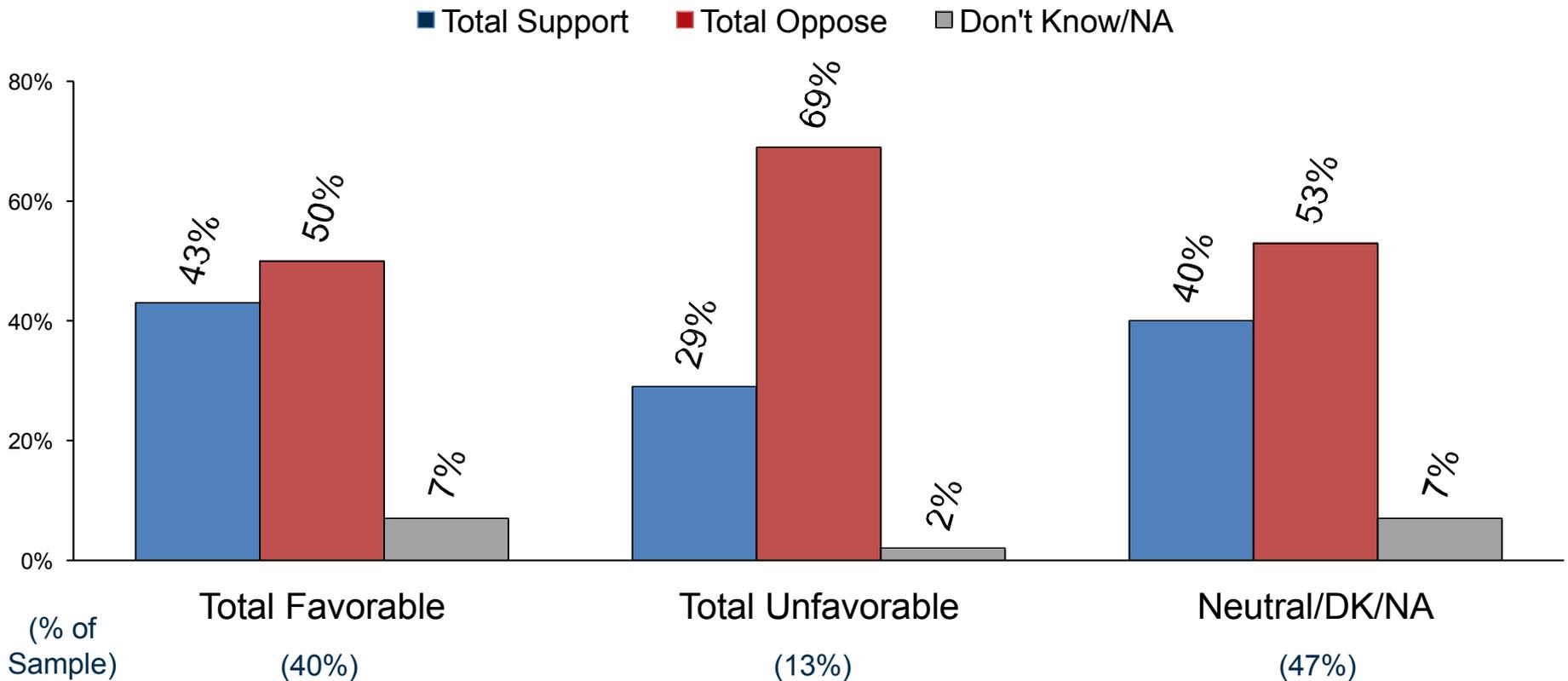
Would you support or oppose the direct reuse of recycled water in your community?



Source: FM3

Those with positive attitudes toward their water agency are more accepting of DPR.

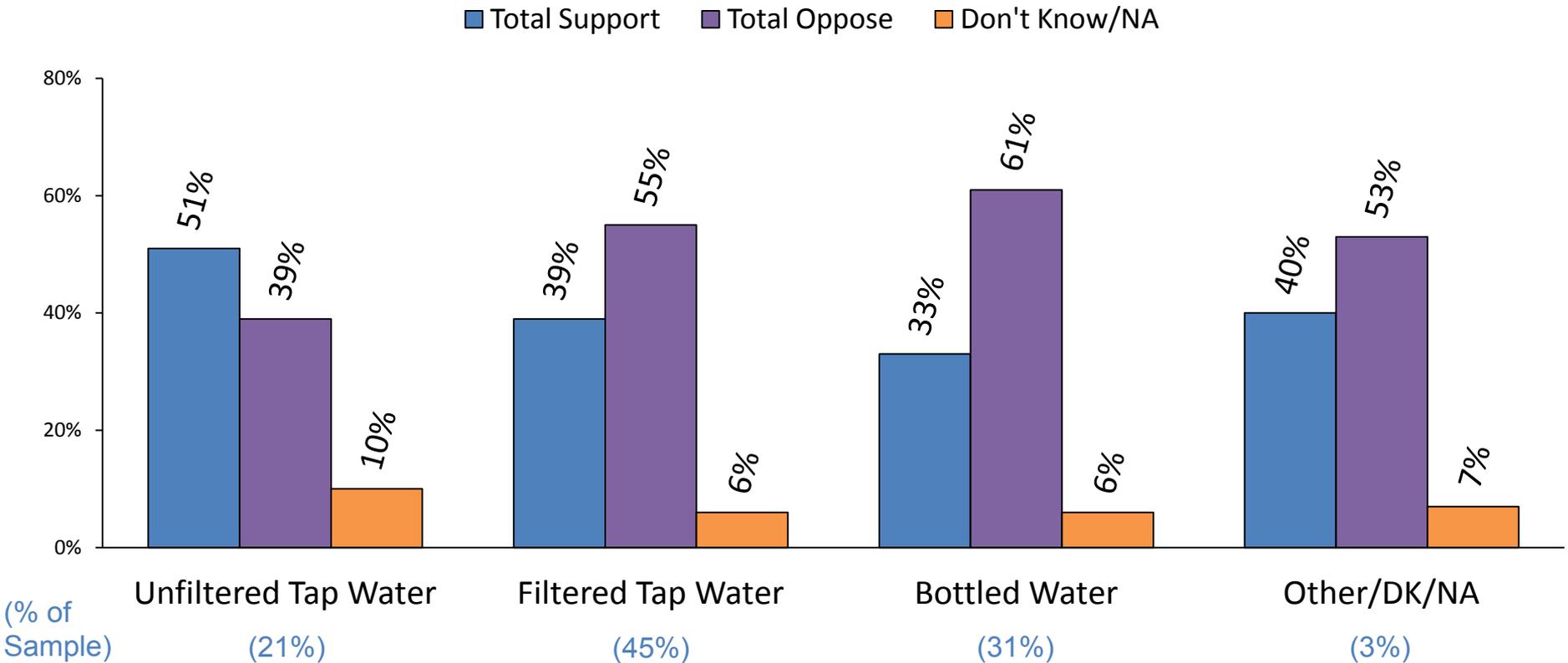
Initial DPR Support by Water Agency Favorability



Source: FM3

Interestingly, those who actually drink unfiltered tap water are *more* accepting of DPR.

Initial DPR Support by Primary Source of Water at Home

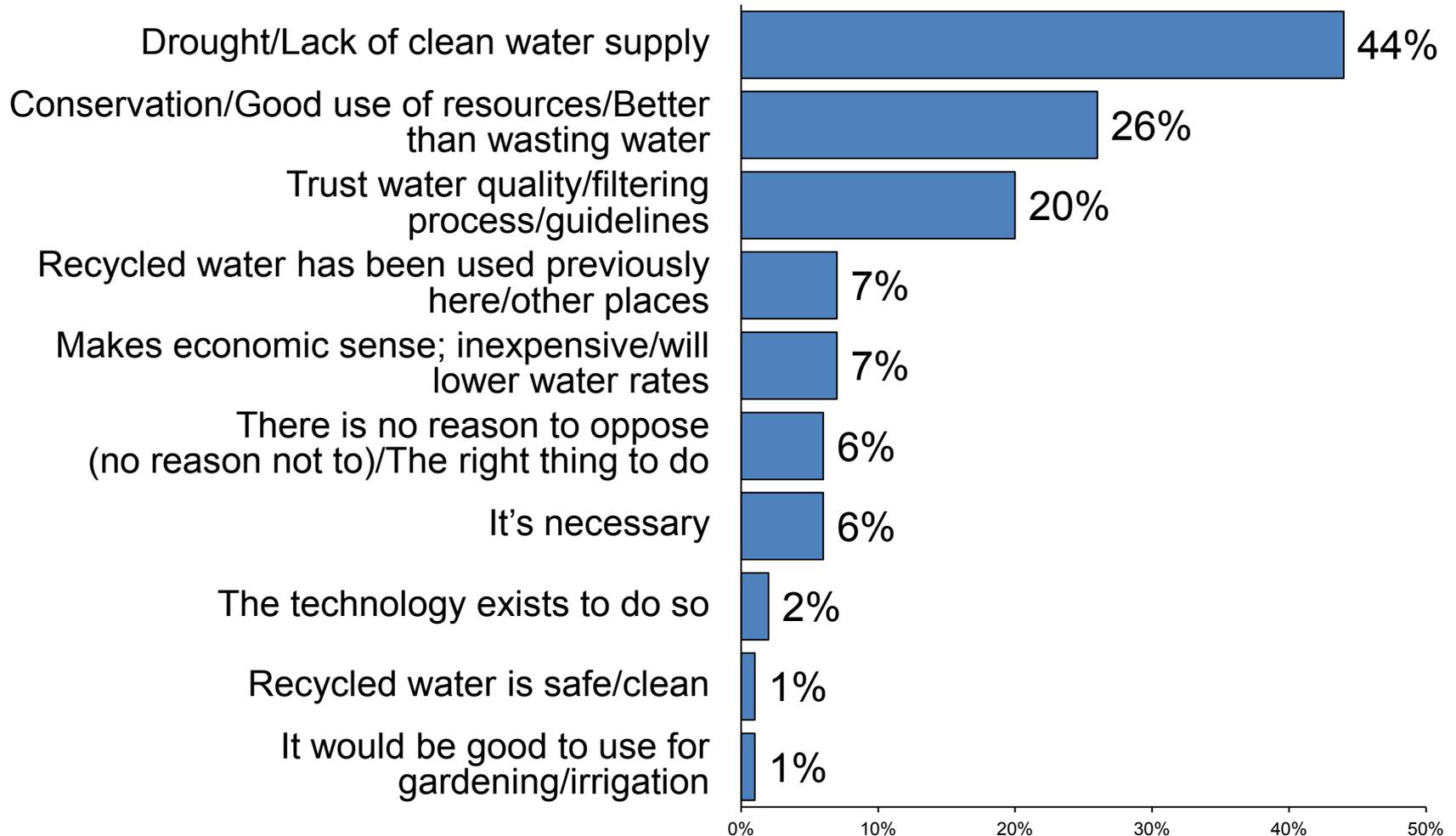


13 Total. Would you support or oppose the direct reuse of recycled water in your community?

Source: FM3

A desire for an expanded water supply is the primary motivation for DPR supporters.

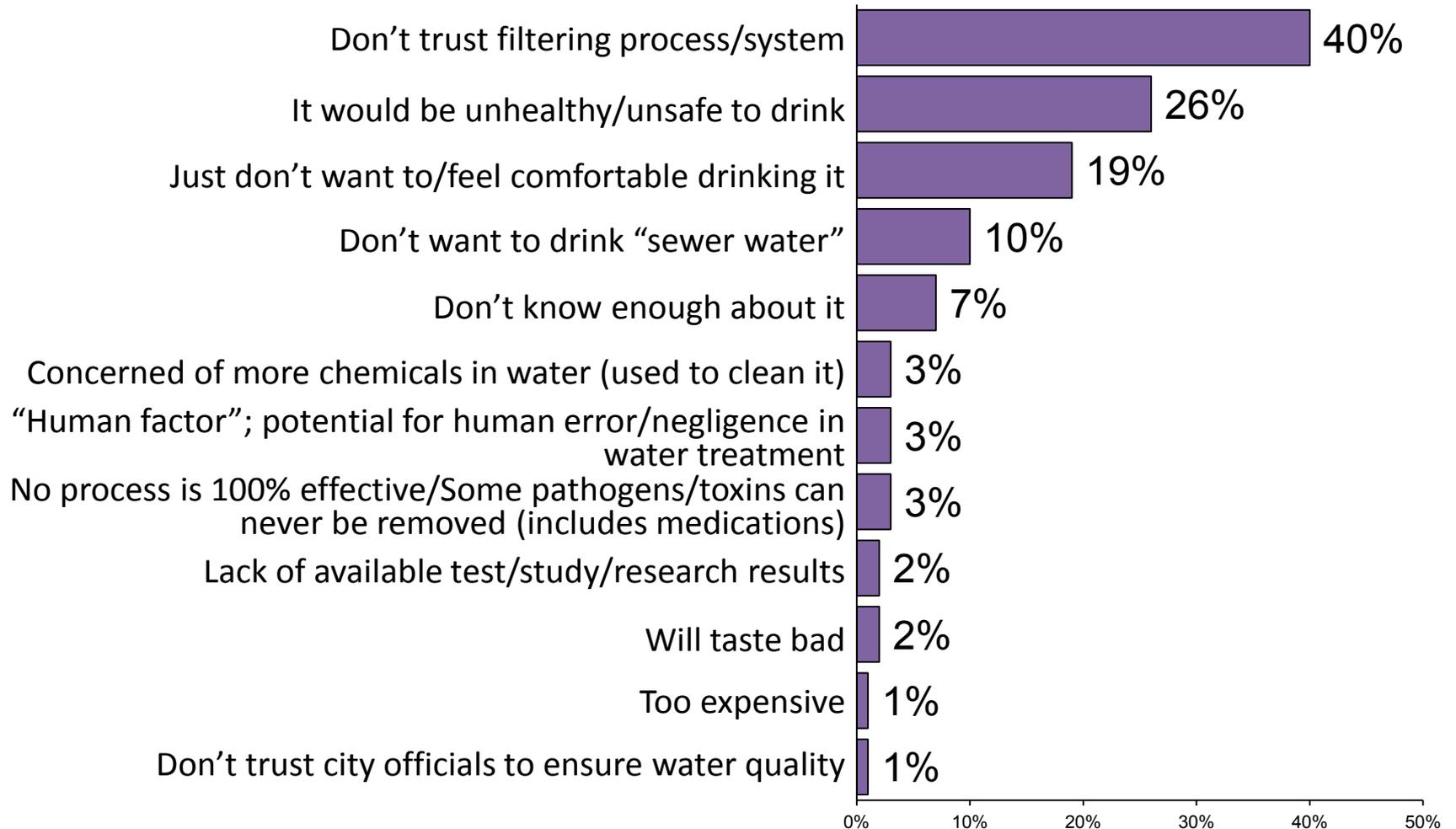
Why would you **SUPPORT** direct reuse of recycled water for drinking in your community?



Q14a. Open end; Responses grouped; Asked of direct potable reuse supporters only

Disbelief in the efficacy of the purification system is the biggest obstacle.

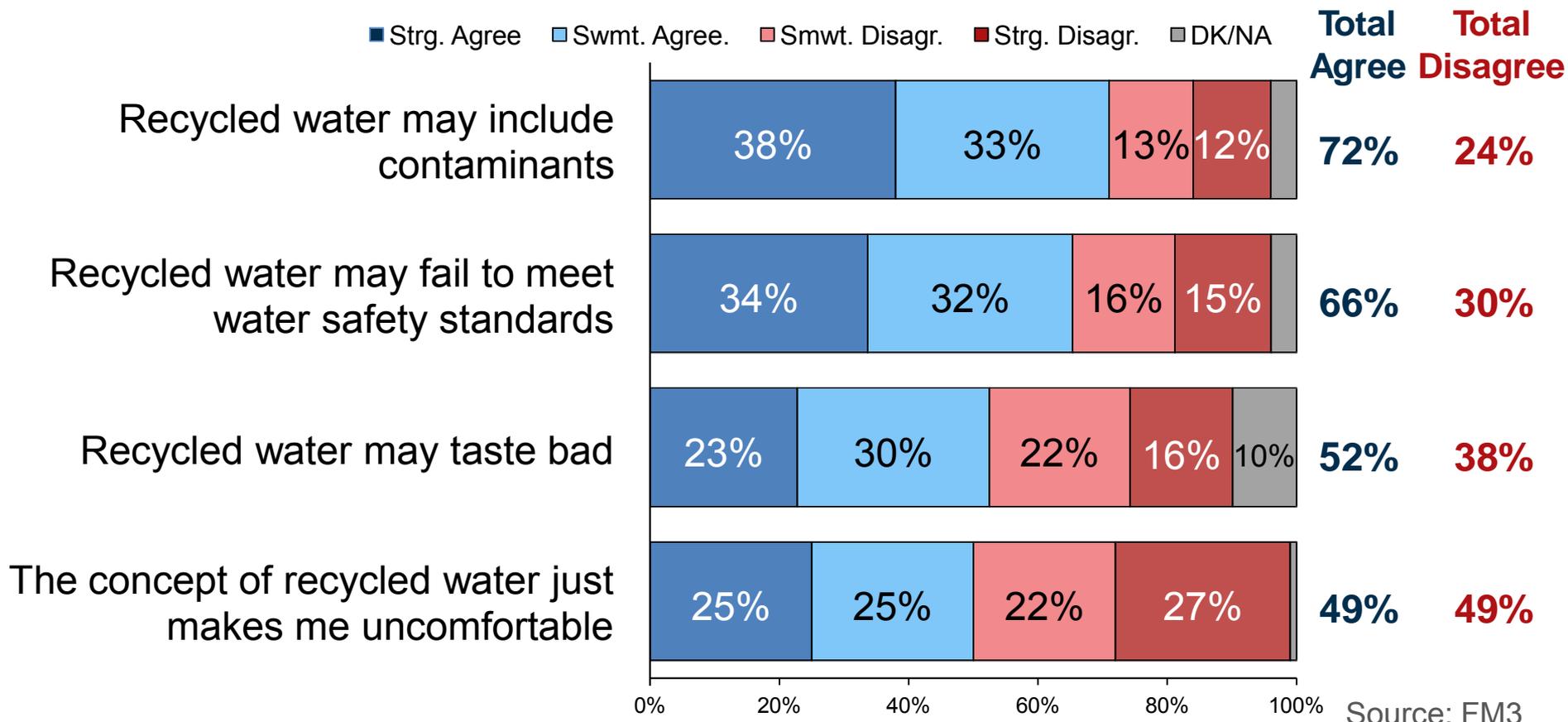
Why would you **OPPOSE** direct reuse of recycled water for drinking in your community?



Q14b. Open end; Responses grouped; Asked of direct potable reuse opponents only

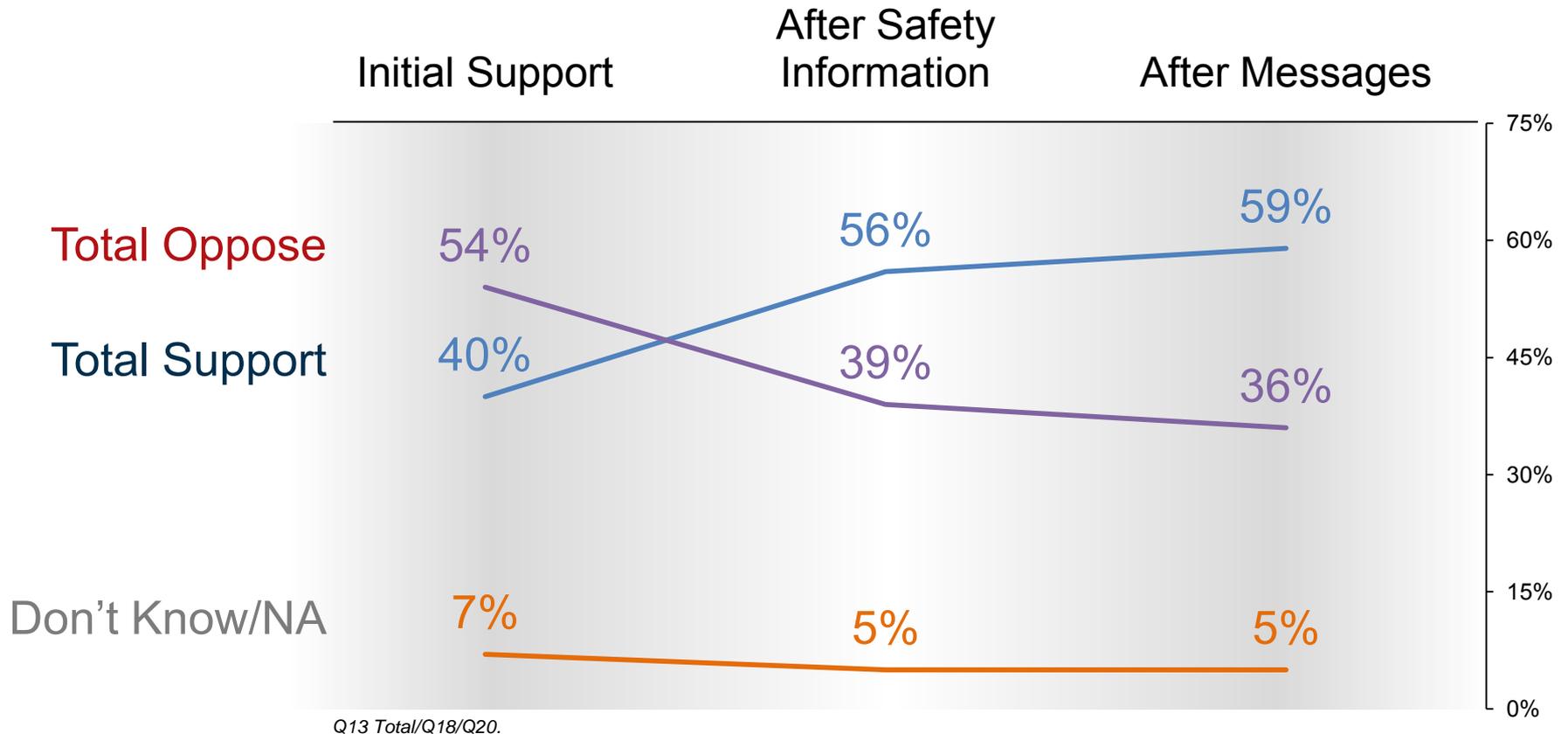
Safety concerns drive reservations about direct potable reuse.

I am going to read you a list of concerns some members of the public have expressed about direct reuse of recycled water for drinking. Please tell me whether you personally agree or disagree with that concern.



Though they are initially opposed, voters quickly become more comfortable with direct potable reuse after information about safety.

Do you support or oppose direct reuse of recycled water in your community for all household purposes, including drinking?

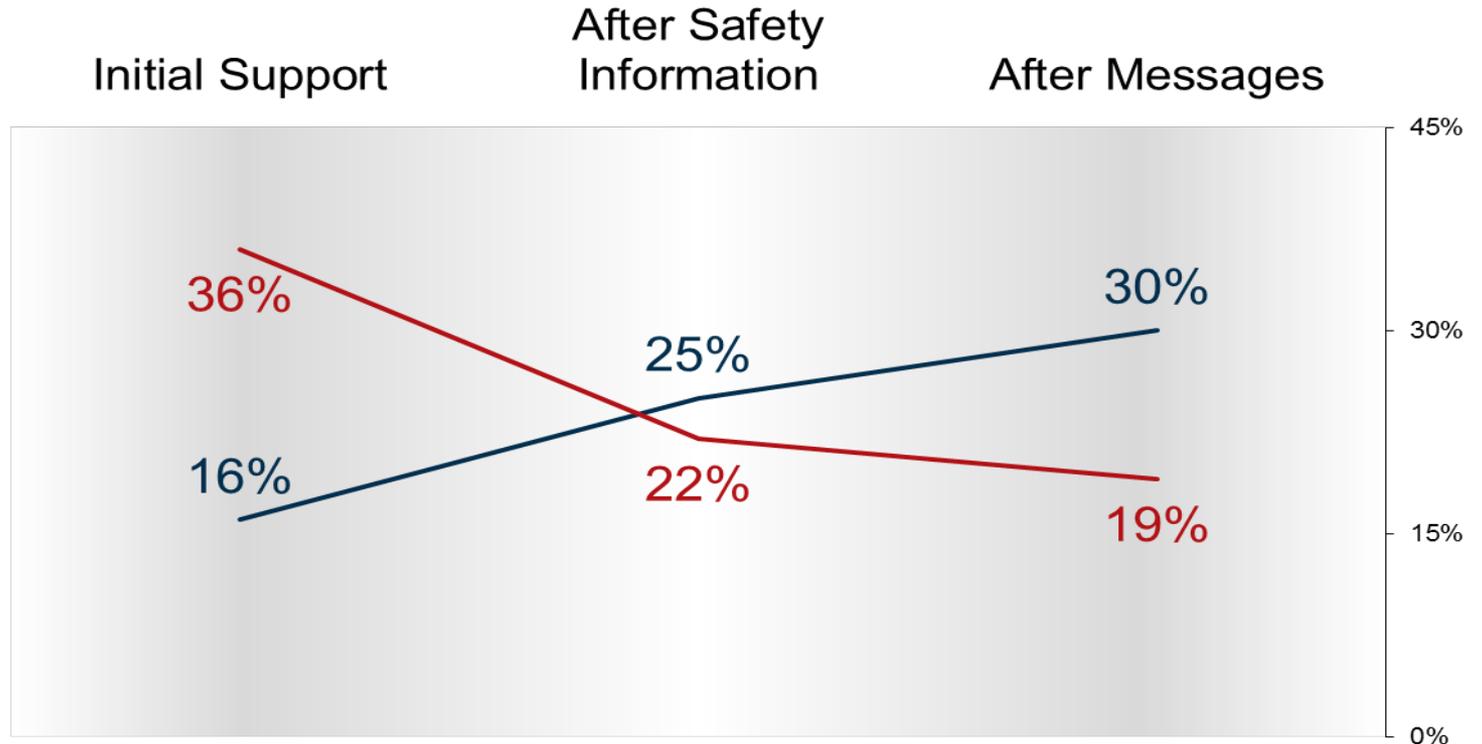


Q13 Total/Q18/Q20.

Source: FM3

Intensity of support for DPR also goes up sharply with more information.

Do you support or oppose direct reuse of recycled water in your community for all household purposes, including drinking?



Source: FM3

Among “purified water” names, “advanced purified water” was best.

(Participants Allowed to Select One From List)

“Purified Water” Names	Sunnyvale	San Diego	Total
Advanced Purified Water	8	10	18
Purified Water	7	6	13
Purified Recycled Water	0	3	3
Purified Wastewater	0	1	1

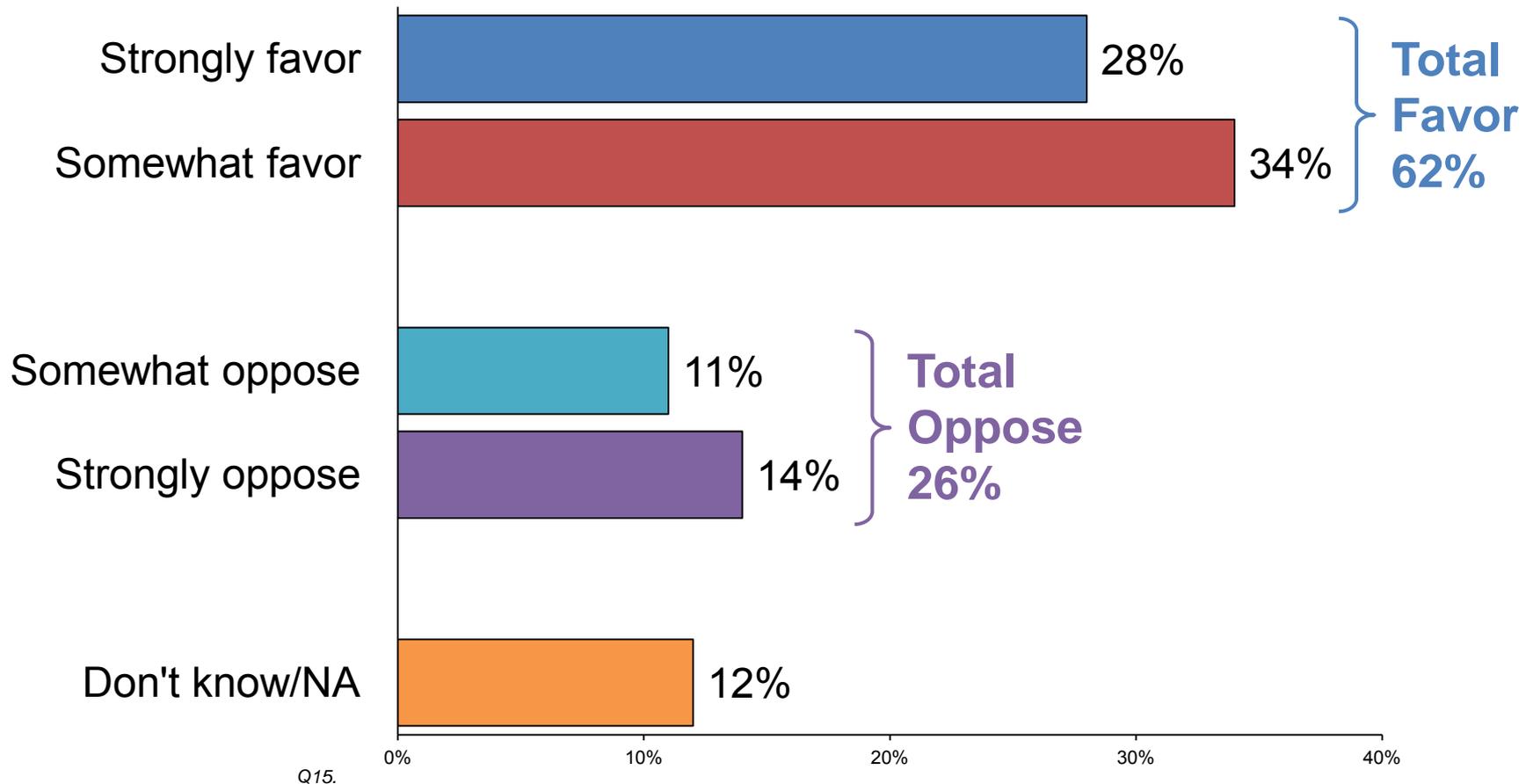
SUNNYVALE FEMALE: “Advanced” means they took that extra step. It’s not just purified water, it’s advanced which sounds better to me.

SUNNYVALE FEMALE: It’s advanced in what way? Like you put ten different chemicals in there and that’s why it’s advanced?

Source: FM3

Even a basic description of the process involved in direct potable reuse inspires more confidence.

How would you feel about using advanced treated recycled water as an addition to the supply of drinking water, that is water treated with ultra-filtration, reverse osmosis, and advanced oxidation?



Source: FM3

WaterReuse video used in focus group

Video shown in Focus Group Sessions

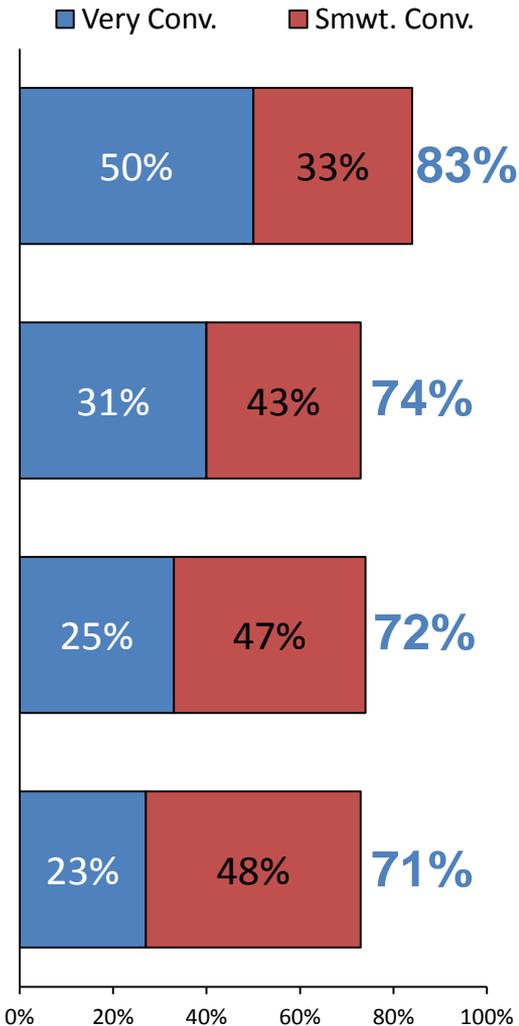


WRRF 12-06 / Linda Macpherson

Video avoids the technical jargon common in the water industry and provides an easy-to-understand presentation of the urban water cycle and water purification.

Messages about environmental impacts and the water supply resonate strongly in SCC.

(ENVIRONMENT) Using recycled water is good for our environment. The more recycled water we use, the less we have to take out of rivers and streams and our scarce groundwater supplies. That's good for rivers, streams, and the fish, plants and wildlife that rely on them.



(SUPPLY) We need to consider all options to ensure a reliable and locally-controlled supply of water for ourselves and future generations that will not be dependent on decisions made by agencies in other parts of the state.

(PURIFICATION) The water purification process uses state-of-the-art multi-stage technology and monitoring. It cleans water to a very high standard, and ensures that drinking water produced is safe and free of harmful chemicals and toxins.

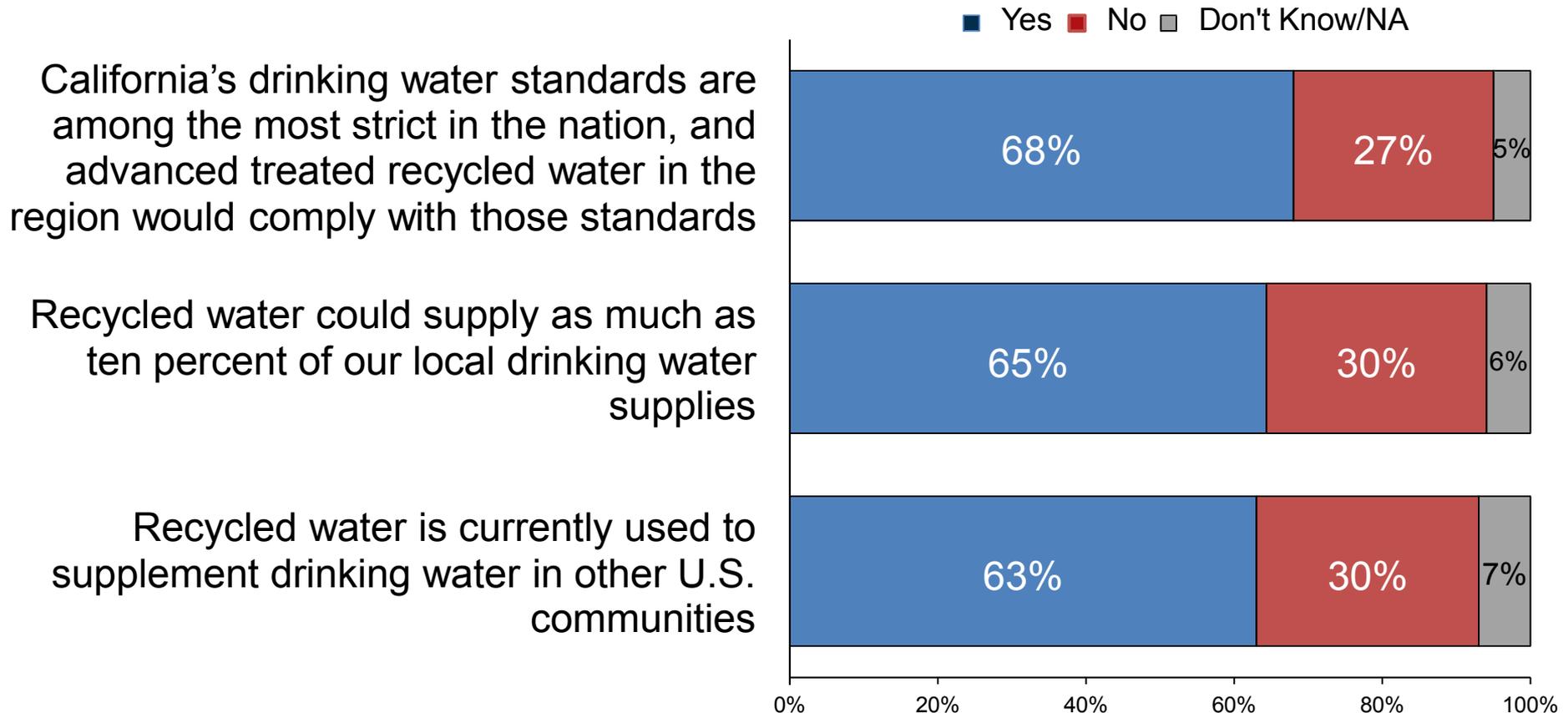
(DROUGHT-PROOF) Recycling water is a drought-proof way to help ensure a reliable supply of water to meet local needs, independent of climate change or weather in other locations.

19. I am going to read you some statements that have been made by supporters of direct reuse of recycled water in your community. Please indicate whether it is very convincing, somewhat convincing, or not convincing as a reason to support direct reuse of recycled water. ^Not Part of Split Sample

Source: FM3

Three in five voters see a variety of additional information as compelling.

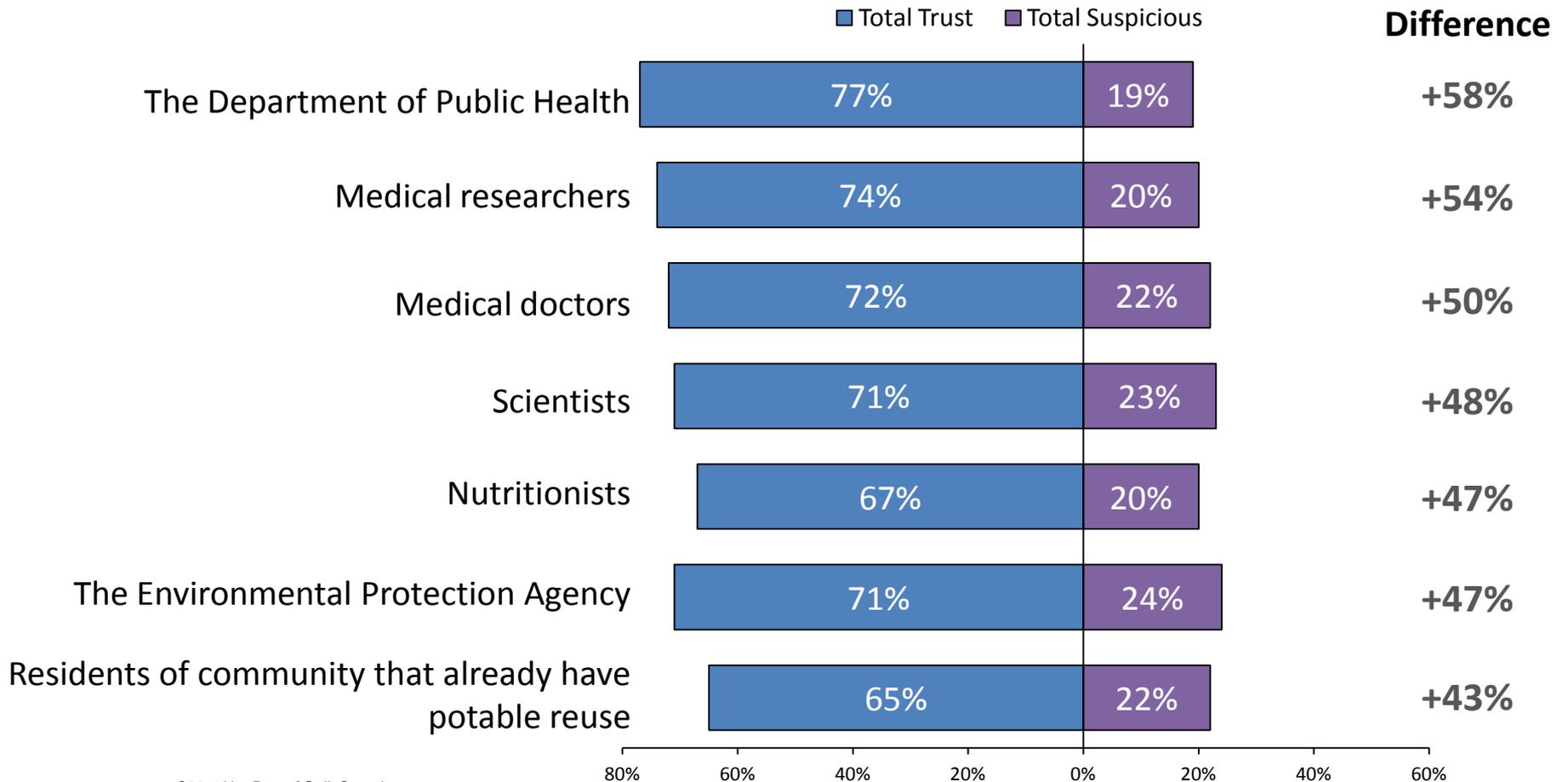
Would you be likely to accept the addition of advanced treated recycled water to supplement the sources of our drinking water if you learned that:



Source: FM3

Top messengers are generally those with scientific expertise.

I am going to read you a list of people and organizations that may provide information about recycled water. Please tell me if you would generally trust that person's or organization's opinion on this issue, or if you would be suspicious of it.



Q22. ^Not Part of Split Sample

Source: FM3

Images were also extremely helpful

- Some participants expressed interest in seeing or touring a treatment plant.
- Several said that images of the treatment equipment helped ease their concerns; although they had no idea how any of the machinery work, its apparent sophistication increased their comfort level.



Key Messaging Points

1. Using advanced purified water is good for the environment.
2. Potable reuse provides a safe, reliable and sustainable drinking water supply.
3. Potable reuse provides a locally controlled, drought-proof water supply.

Key Messaging Points *(cont.)*

- Purification process produces water that is more pure than most bottled water.
- Purified Water:
 - will comply or exceed strict state and federal drinking water standards.
 - will be tested, in real-time, with online sensors and be strictly monitored by the department of health.
 - currently used to supplement drinking water in many communities in the U.S. and around the world.
- There have been no problems from this use of purified water.

Communication recommendations

- **DO** leverage public concern about California's ongoing water shortages to consolidate support for DPR – without relying on the current drought.
- **DO** emphasize the role of water agencies, as opposed to other levels of government, in overseeing the process.
- **DO** emphasize the role of **scientists** and **public health professionals** in designing and monitoring the process.
- **DO** place a special emphasis on communications with women, communities of color, non-English speakers, seniors, and less well-educated and affluent communities.
- **DO** continue to use “advanced purified water” as a term for the product of DPR.
- **DO NOT** simply assert that technology has already made it possible to make any water safe to drink.

Source: FM3

Communication recommendations (Cont.)

- **DO** emphasize the three stages of the treatment process.
- But **DO NOT** rely on the words “microfiltration, reverse osmosis, and ultraviolet light” alone – provide some brief explanation.
- **DO** highlight the frequency and sophistication of monitoring and testing processes.
- **DO** note that public health and environmental protection agencies have reviewed and approved the DPR process.
- **DO** use images to reinforce the effectiveness and complexity of the treatment process.
- **DO** highlight the successful implementation of DPR in other communities.
- **DO** draw comparisons to the health and safety of bottled water.
- **DO** appeal to the broader principles of environmental protection and recycling as rationales for expanding use of recycled water.

Source: FM3

Communication recommendations (Cont.)

- **DO** appeal to the broader principles of environmental protection and recycling as rationales for expanding use of recycled water.
- **DO NOT** rely on arguments that DPR will end up reducing rates.
- **DO NOT** rely on elected officials, taxpayer advocates or business owners as messengers – they do not speak to the health issues at the core of public concerns.

Applying Best Practices

SCVWD Recycled and Purified Water Communications

Input for Communications Strategy

Participation in committee meetings



WaterReuse Public Education & Outreach Committee



NWRI State Potable Reuse Advisory Committee



West Basin MWD Water Reuse Workshop



Joint Board City of San Jose/SCVWD Meeting



Updated 2015 Strategic Communications Plan



Question on Purified Water Safety

Q. How safe do you think it is to drink advanced purified water produced from recycled water?

	Pre Tour		Post Tour	
	Count	Percent	Count	Percent
Safe to drink	242	79.3%	255	87.0%
Not safe to drink	29	9.5%	27	9.2%
No opinion	34	11.1%	11	3.8%

Question on Purified Water for Drinking

Q. How do you feel about having purified water as part of your drinking water supply?



Let's have a tour!

The Santa Clara Valley Water District provides public tours of the Silicon Valley Advanced Water Purification Center, the largest purified recycled water plant of its kind in northern California, allowing members of the community to witness the state-of-the-art technology in operation.

To register for a tour visit purewater4u.org. For more details email info@purewater4u.org or call (408) 265-2600.



siliconvalley
ADVANCED WATER PURIFICATION CENTER

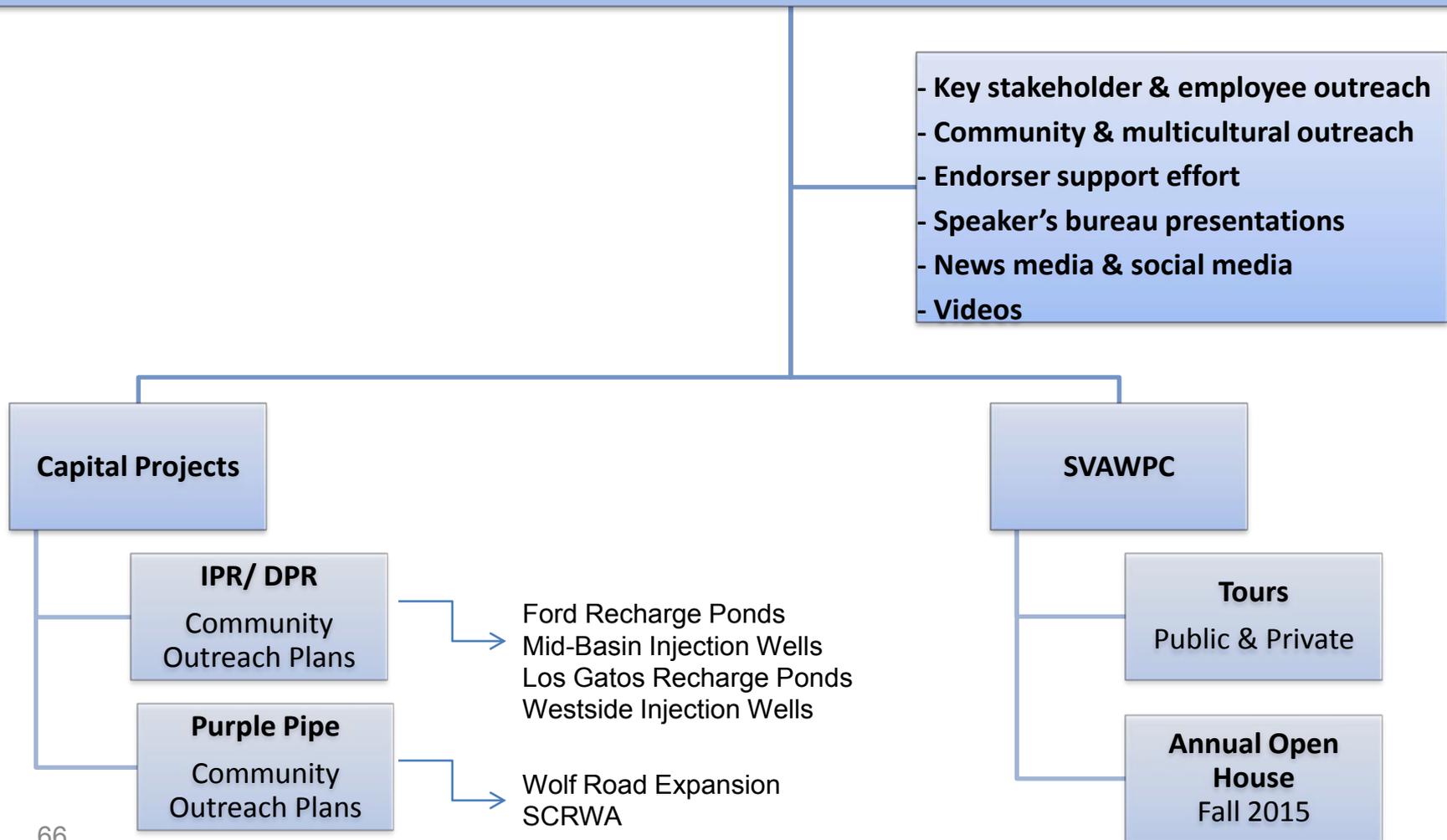
Santa Clara Valley
Water District

	Pre Tour Percent	Post Tour Percent
Strongly support	43%	57.9%
Support	39%	34%
Oppose	5.9%	2.7%
Strongly oppose	0%	0.3%
No opinion	12.1	5.1%

Communications Strategy Approach

Strategic Communications Plan

Broad communications about potable reuse for sustainable water supply



Roadmap to increase public engagement

- Brand building
- Tours
- Websites
- Media relations
- Outreach materials
- Social media
- Video
- Speakers bureau
- Newsletter articles
- 67 Employee outreach



The Wave of the Future is Here.

Recycled water makes up a majority of all water used in Levi's® Stadium.

Levi's® Stadium is the first stadium in California to use recycled water for non-drinking purposes such as irrigating a 27,000 square foot green roof and cooling tower water. Inside, the stadium is dual plumbed with recycled water used for toilet flushing, setting new standards for being green.

The stadium gets its recycled water from the South Bay Water Recycling program which takes treated wastewater cleaned at the San José-Santa Clara Regional Wastewater Facility and blends it with water purified at the newly opened Silicon Valley Advanced Water Purification Center — the newest facility built and operated by the Santa Clara Valley Water District.

The Silicon Valley Advanced Water Purification Center in San José produces up to 8 million gallons of purified water per day, making it the largest advanced water treatment technology plant in northern California. Purified recycled water is one new, locally developed and reliable water supply. Using the latest proven technologies in water purification, it is a drought-proof water supply that can help ensure the Silicon Valley has safe, sustainable water now and into the future.

For more information or to visit the facility for a tour, visit www.purewater4u.org.

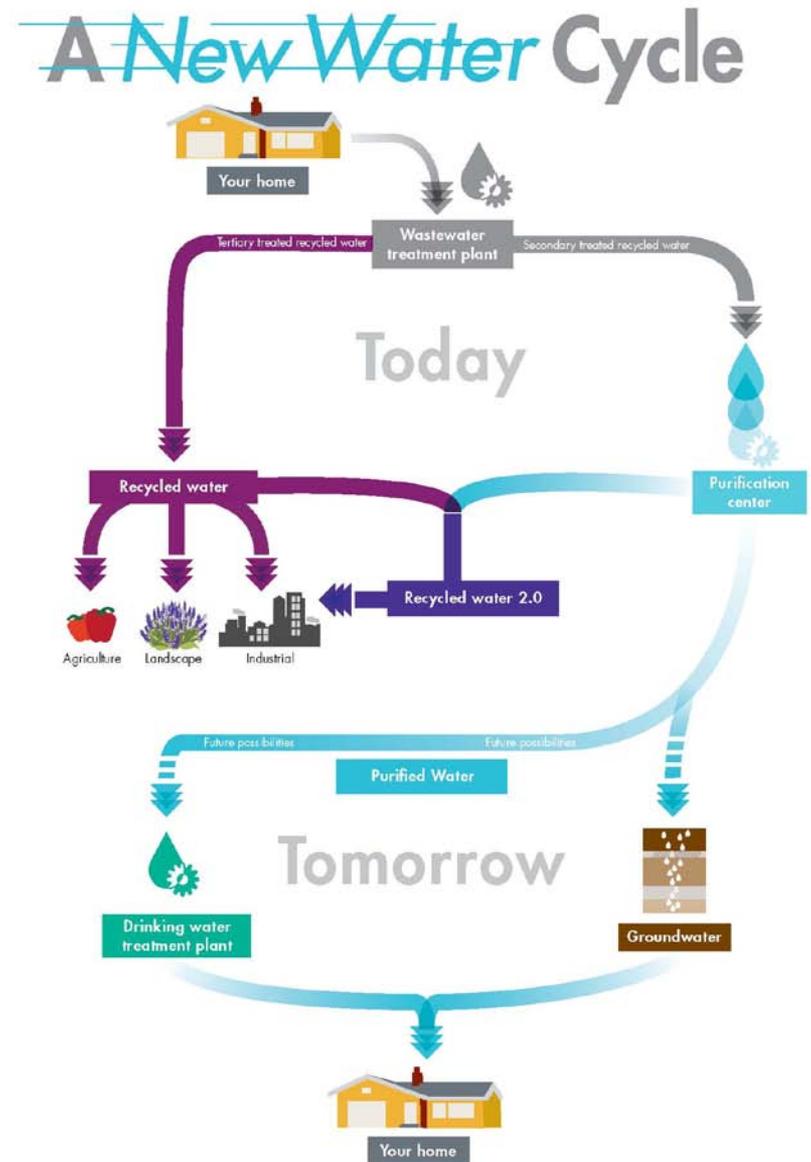


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ADVANCED WATER PURIFICATION CENTER

Santa Clara Valley
Water District

Roadmap to increase public engagement

- **Increase tour program capacity** to meet both current and future demands
- **Amend Katz & Associates contract** to support implementation of revised communications plan & provide dedicated tour guide staffing capacity
- **Expand Communications & Outreach**
 - High-level messages and build broad-based support
 - Neighborhood outreach plans for specific projects
 - Key stakeholder outreach
 - 68 Supporter/endorser effort



Questions?