

# in brief



PLANT MASTER PLAN BRIEFING BOOK

How rebuilding the  
South Bay's wastewater facility  
takes us into a **sustainable future**  
and **reshapes our shoreline**

SAN JOSE/SANTA CLARA WATER POLLUTION CONTROL PLANT

SERVING THE CITIES OF SAN JOSE, SANTA CLARA, MILPITAS, CUPERTINO,  
CAMPBELL, LOS GATOS, MONTE SERENO, AND SARATOGA



**On behalf of the eight South Bay cities and four sanitation districts that rely on the Plant, thank you for helping to inform our region about the value of this important project.**

City of San José

City of Santa Clara

City of Milpitas

Cupertino Sanitary District (City of Cupertino)

West Valley Sanitation District (cities of Campbell, Los Gatos, Monte Sereno, and Saratoga)

County Sanitation Districts 2-3 (unincorporated)

Burbank Sanitary District (unincorporated)



Produced by the City of San José  
Environmental Services Department

Operator/administrator of the  
SAN JOSE/SANTA CLARA  
WATER POLLUTION CONTROL PLANT  
700 Los Esteros Road, San José, CA 95134

April 2010



## ► briefing book purpose

Rebuilding and improving our local wastewater treatment plant is an exciting project that, in 2010, stands among the largest public works efforts in the history of the South Bay—comparable in scale to expanding the San José Mineta Airport. The project is unique for its adherence to principles of sustainability as it proceeds to: 1) rebuild one of the nation’s best performing wastewater facilities as fully energy self-sufficient, and 2) invite a public vision for new land uses on the Plant’s 2,600-acre shoreline site.

This briefing book is designed to help community leaders explain how this project benefits our region well into the future. Using the five key messages, you can help foster the public’s understanding of why the project is necessary, how it will enhance the region’s sustainability, and how it provides a unique opportunity to reshape our South Bay shoreline.

These five key messages provide a framework for discussing this project.

### Rebuilding the aging Plant is . . .

1. **necessary** (PAGE 8)
2. **exciting** (PAGE 10)
3. **a land use opportunity** (PAGE 12)
4. **a great value** (PAGE 14)
5. **forging our future** (PAGE 16)

## PLANT AT A GLANCE

Our Plant is the  
**largest advanced\***  
**wastewater facility**  
in the West  
and is a leader for  
producing the most  
alternative energy  
used on site.

*\*Most U.S. wastewater facilities treat to a secondary level, making wastewater 95 percent clean before discharging. Because of the sensitive ecosystem of the southern Bay, our facility treats to a tertiary level—also called advanced level—which makes the wastewater 99 percent clean before discharging. Our Plant is the largest facility operating at the advanced level in the western states. It also ranks second in the nation—after Los Angeles County Sanitation District—for producing and using the most alternative energy on site to power its operations.*



## ► plant at a glance

**Awards** In 2000, our facility was named National Plant of the Year for operational excellence by the federal Environmental Protection Agency (EPA). In 2010, the facility won a Green California Leadership Award for its leadership in energy innovations.

**Budget** The Plant has an operating budget of roughly \$80 million annually.

**Capacity** Wastewater treatment capacity is 167 mgd and on average, the Plant treats 110 mgd.

**Contracting Cities** Either directly or through sanitation districts, the cities of Milpitas, Cupertino, Los Gatos, Campbell, Monte Sereno, and Saratoga contract for wastewater treatment.

**Energy Production** In 2009, EPA included the Plant in a top-ten listing of private and public entities that produce and use alternative energy on site. Our Plant meets two-thirds of its energy needs with biogas (methane) produced in on-site digester tanks and from the adjacent landfill. The Plant is on its way to becoming energy self-sufficient (see page 11).

**Location** The Plant is located in north San José between the Bay and Highway 237, and is flanked by the community of Alviso on the west and the City of Milpitas on the east.

**Ownership & Origins** In 1956, the City of San José built the original Plant and has since operated the facility around the clock. In 1959,

*mgd = million gallons per day*

the City of Santa Clara helped fund upgrades, thereby becoming a part owner.

**Regulated Businesses** The Plant's services include inspection of wastewater practices of all food service, automotive, metal finishing, photo processing, and manufacturing businesses in its service area.

**Sewer Rates** The cities of Santa Clara and Milpitas charge sewer fees on monthly utility bills; residents of the other cities pay sewage fees on annual property tax bills. Rates vary from city to city and reflect individual sewer system costs as well as Plant treatment costs—see page 15 for more discussion of rates.

**Wastewater vs. Stormwater** Wastewater comes from indoor plumbing and flows to the Plant via the sanitary sewer system. Stormwater is water that flows down street gutters and into storm drains that carry it to the nearest creek without treatment. Pollution prevention of both wastewater and stormwater is critical to the health of creeks and the Bay and is a regulatory directive.

**Water Recycling** The Plant supplies treated wastewater to the South Bay Water Recycling system which further cleans the water for use in irrigation, industrial processes, and toilet plumbing of large buildings. An average of 10 mgd of recycled water is currently used by approximately 600 business customers in San José, Santa Clara, and Milpitas. The goal is 20 mgd by 2020.

THE PLANT MASTER PLAN

The Plant  
Master Plan  
addresses how  
to **best rebuild the  
aging Plant** and  
**best use its  
2,600-acre  
shoreline site.**



## ► the plant master plan

### What is the Plant Master Plan?

The Plant Master Plan is a three-year process that is using principles of sustainability to address how to best rebuild our aging wastewater facility and use the Plant's 2,600-acre site at the South Bay's shoreline. Sustainability is often defined as a long-term, balanced view of the three Es: environment, economy, and equity.

### How does rebuilding the Plant enable us to reshape our shoreline?

Wastewater operations are the top priority use of the Plant's 2,600-acre shoreline site, which includes open bufferlands to shield nearby communities from odors and operational hazards. If odors are reduced and hazards are eliminated, the site can be opened to public uses. Because the site is very large, it can accommodate a balance of new economical, environmental, and social uses in addition to its operational area.

- **Rebuilding eliminates hazards.** The Plant is already switching from gaseous chlorine to safer liquid chlorine and may someday use ultraviolet radiation. This means public uses can be closer to the Plant.
- **Rebuilding reduces odors.** The Plant has successfully reduced odors over the years, and as the Plant is rebuilt, modern odor control can be incorporated in the design to further mitigate odors.

#### PLANT MASTER PLAN GOALS



- **Rebuilding may shrink the operational footprint.** The drying of biosolids currently uses an open-air process over a 750-acre area. A covered method could both reduce odors and shrink the drying process footprint, freeing up valuable land for new uses.

### How will new land uses be funded?

Public input is sought to define the land use vision and to help determine funding priorities. The final master plan will include a funding plan, as sewer fees can only be used for the sewer system. A blend of public, corporate, and philanthropic funding will be needed for new land uses.

## How the Plant Master Plan process works

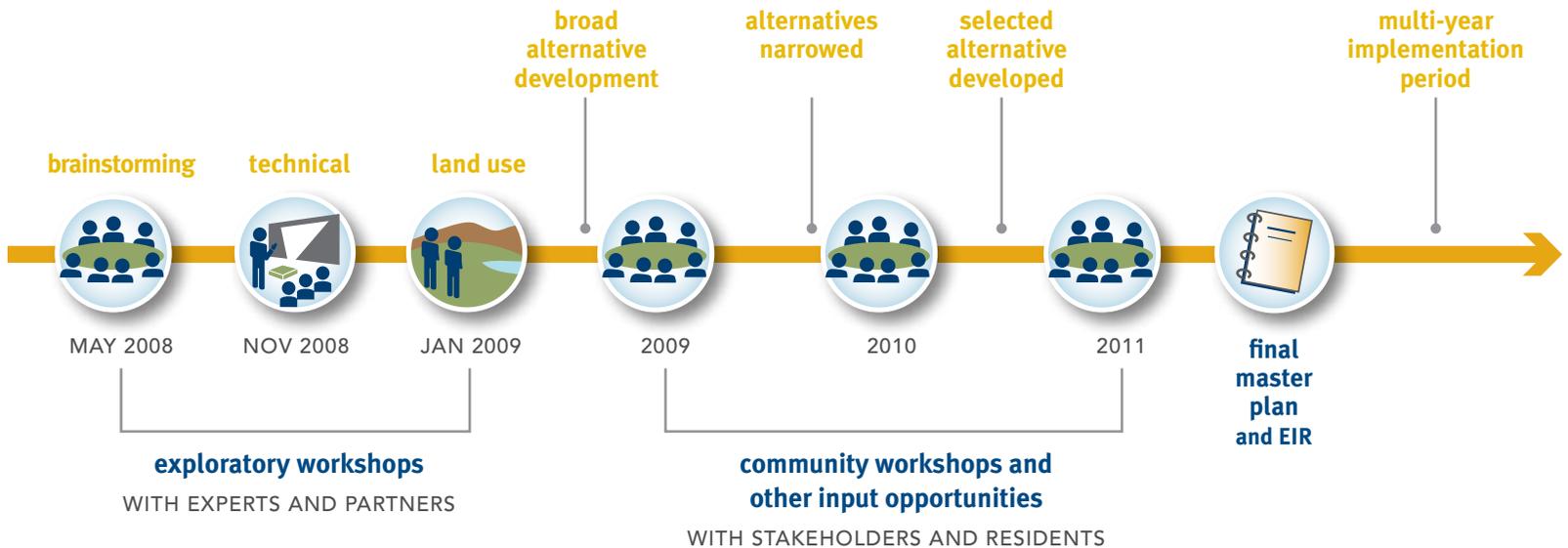
**Kick-off** The project kicked off in 2008 with a series of three exploratory workshops held with wastewater and land use planning experts. The outcome was a broad project concept that was introduced to the community at a May 2009 public workshop.

**Public Values Survey** Via the workshop, Plant tours, and the project website, project staff offered a land use values survey; planners have taken the input from almost 1,500 surveys and used it to inform the development of three land use alternatives.

**Land Use Alternatives** The public will give input on three land use alternatives in spring 2010 at a series of community meetings. Project planners will use the public input to develop a recommended final plan.

**Final Plan** Public input on the recommended final plan will be solicited in 2011. The city councils of San José and Santa Clara will then review the final plan, which will be subject to an EIR. Upon council approval, the final plan will direct capital improvements at the Plant over the next 15 years and guide decisions for the Plant's continued improvement through 2040. It will also outline the land use vision for the Plant's site.

### PROJECT TIMELINE



## ► the plant master plan

### Who decides the Plant's future?

Developing the Plant Master Plan is a public process led by the City of San José in collaboration with the tributary agencies—the cities and sanitation districts that are served by the Plant. Public members across the Plant's eight-city service area are invited to participate, and can give input at the project's community meetings, via the project website, and/or at the public meetings of groups highlighted in blue on the structure chart. Key decision-making entities and forums include:

**City Councils** As owners of the Plant, the city councils of San José and Santa Clara have final authority to approve the Plant Master Plan.

**Treatment Plant Advisory Committee** Elected or appointed officials from all the Plant's tributary agencies comprise the Treatment Plant Advisory Committee (TPAC). TPAC meets monthly to review and approve Plant expenditures.

**Technical Advisory Committee** Administrators from each city/sanitation district also gather informally each month, as the Plant's Technical Advisory Committee (TAC), to review operational and financial issues and to report back to their respective agencies on Plant matters.

**Steering Committee** This committee provides specific oversight to the master plan's development and ensures coordination with other key projects. It is comprised of TAC members and City of San José interdepartmental staff.

**Technical Advisory Group** This is a panel of wastewater and energy experts who convene to verify and give input on the future technical direction of the Plant.

**Community Advisory Group** This 20-member group convenes regularly and represents community interests in the project.

**Public Input** In addition to the public venues listed here, members of the public can attend community workshops or give feedback via the project website at: [rebuildtheplant.org](http://rebuildtheplant.org)

### PLANT MASTER PLAN DECISION STRUCTURE



KEY MESSAGE 1

**Rebuilding  
the Plant is  
necessary—  
it operates 24/7  
to protect our  
health, Bay,  
and economy.**



## ► rebuilding the plant is necessary

### Four main drivers necessitate rebuilding the Plant:

**1. Aging infrastructure** Many American wastewater facilities were built in the mid-1900s and need rebuilding. Our Plant was constructed in 1956 and has since worked non-stop, with facilities and equipment now exceeding their life expectancies. A projected \$1.0 billion to \$1.5 billion of upgrades and repairs are needed to keep the Plant working into the future, including:

- *Electrical repairs:* \$200 million—The vast electrical network that powers the Plant is worn out. Switch gears, motor control centers, and electrical cabling need replacement.
- *Power equipment:* \$150 million—Pumping and aerating wastewater happens 24/7, requiring huge generators and blowers. Some power equipment is already decommissioned, and all such equipment needs eventual replacement.
- *Liquids treatment upgrades:* \$550 million—Enormous in-ground primary tanks that have been working since 1956 need reconstruction or replacement, as do tanks in the secondary, tertiary, and filtration stages.
- *Biosolids treatment upgrades:* \$400 million—The solids that get removed from wastewater are treated in the Plant’s 16 digester tanks. Five digesters are out of service and need replacing, and all need reconstruction. The sludge dewatering facility also

needs rehabilitating. To address odors and meet future regulations, experts recommend that the Plant prepares to switch from the current open-air solids drying process to a covered method.

- *Facility upgrades:* \$200 million—Facilities at the Plant are daily exposed to a corrosive environment. Buildings and concrete need reconstruction and/or replacement.

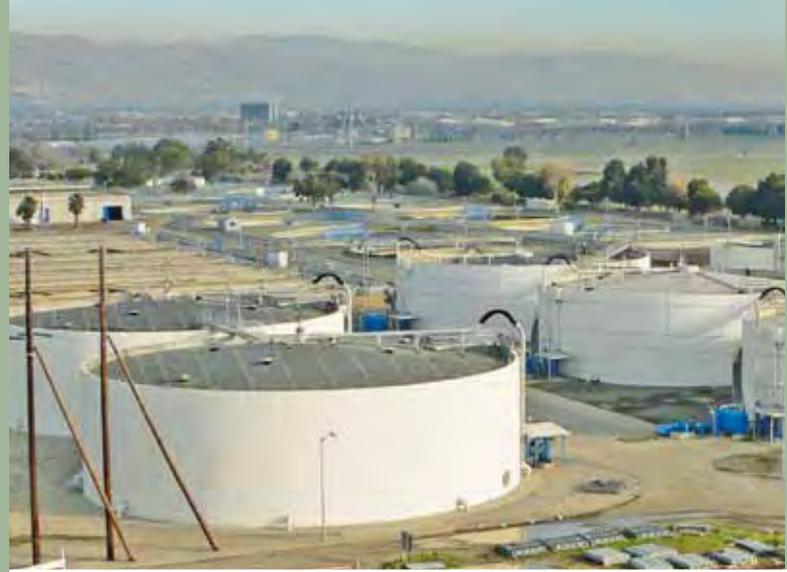
**2. Population and job growth** The Association of Bay Area Governments predicts that the South Bay will add another 500,000 people by 2040. Job growth is also predicted.

**3. Stricter regulations** To protect the sensitive southern Bay, our Plant meets some of the nation’s highest standards for discharged wastewater. New regulations are ahead to address emerging contaminants of concern. By rebuilding with new technologies, the Plant can continue to meet discharge standards and maintain its excellent record of compliance.

**4. Availability of better technologies** The Plant can become safer, more energy efficient, and more sustainable by adopting new technologies. Public investment through sewer fees will keep the Plant working in a more sustainable manner.

KEY MESSAGE 2

**Rebuilding  
the Plant is  
exciting**—the  
Plant can turn  
waste into  
usable energy,  
water, and  
byproducts.



## ► rebuilding the plant is exciting

### With rebuilding, the Plant can continue and improve its performance at turning wastewater into usable energy, water, and byproducts.

#### The Plant produces biogas (green energy) and can host other forms of alternative energy on its site.

- ▶ With an 11-megawatt energy demand, the Plant is, admittedly, a large energy consumer. But it meets two-thirds of this demand with methane gas produced in its digester tanks and from the adjacent landfill. By improving the treatment process, the Plant can become energy self-sufficient by 2022.
- ▶ The Plant is already exploring ways to capture the energy value of fats, oils, and grease and other food waste streams. Co-location of similar processing facilities can help: North America's first biogas facility that will turn dry food waste into usable methane energy is planning to locate on the Plant site--and will supply clean energy to the Plant.
- ▶ The Plant Master Plan is also exploring how the site can accommodate solar, wind, and/or fuel cell technologies, and whether the Plant could someday supply clean energy to the grid.

#### By producing safe, recycled water, the Plant has become a local, sustainable water source.

- ▶ The Plant currently produces an annual 10 mgd\* of recycled water on average and plans to double that by 2020. Customer demand drives the amount produced.

\* mgd = million gallons per day

- ▶ Between 1997 and 2009, use of the Plant's recycled water saved 27 billion gallons of drinking water for our region.
- ▶ Recycled water currently costs 30 to 50 percent less than drinking water. Roughly 600 customers use the recycled water for irrigation, industrial purposes, cooling, and, increasingly, in toilet plumbing of large buildings.

#### The Plant produces clean biosolids and other byproducts that have beneficial uses.

- ▶ Every year, the Plant produces about 40,000 tons of Class A biosolids (treated sludge), the highest standard assigned to treated solids. Our biosolids are currently used daily by the adjacent landfill to cover incoming garbage. Biosolids may also be applied as a soil amendment to non-food crops, or can be thermally processed, which produces energy as well as a usable ash for masonry and concrete.
- ▶ In the future, we may be able to profitably extract commodities, such as phosphorous, from the liquid stream. Phosphorous is a chemical element that can be used in fertilizers, water softeners, and several industrial processes.

# Rebuilding the Plant is a land use opportunity to shape 2,600 acres along the southern Bay.

Imagine what's possible: water recreation, a clean tech center, a living museum, jobs-based development, trails, habitat areas, retail, and more.



## ► rebuilding the plant is a land use opportunity

### With rebuilding, the Plant site becomes available for new land uses.

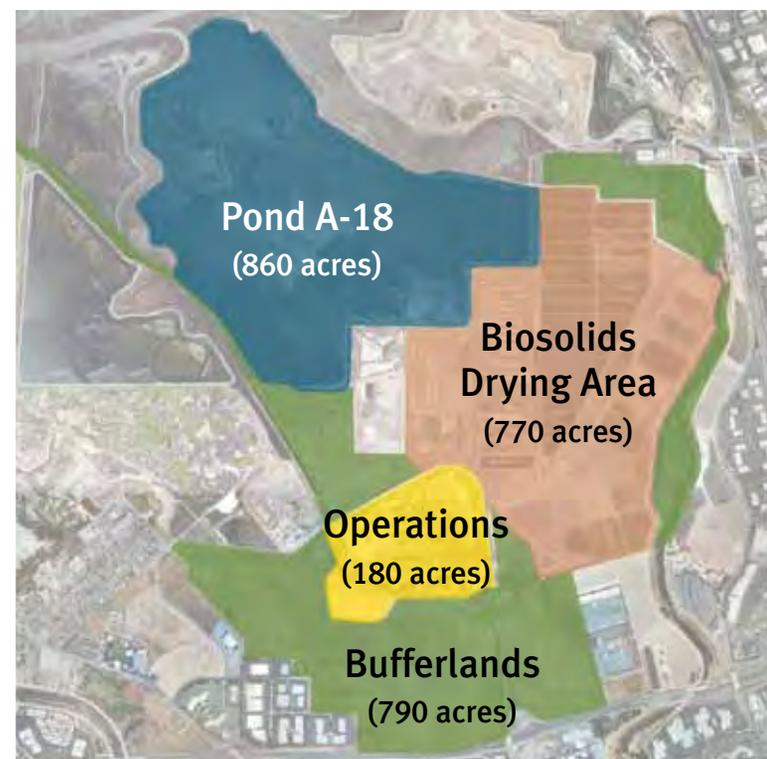
#### The 2,600-acre site can accommodate a balance of economical, environmental, and social uses.

- The site is more than twice the size of San Francisco's Golden Gate Park.
- To the north, the site shares a two-mile border with one of the nation's largest urban wildlife refuges—the 30,000-acre Don Edwards San Francisco Bay Wildlife Refuge, a vast area of salt marsh and wetlands that rings the Bay from Fremont to Redwood City.
- To the south, the site is bordered by Highway 237 and the commercial and industrial zone of northern San José. There is potential for industrial, clean tech, and/or research facilities on this part of the site.
- The site includes an 860-acre former salt production pond (A-18) with potential for algae production, water recreation, and other interesting uses. Coyote Creek, which demarks the site's eastern border, provides riparian habitat that could potentially be enhanced for wildlife benefit.
- No housing is being considered.

#### New land uses are subject to constraints.

- Constraints for future uses include predicted rising sea levels, habitat and endangered species, and regulatory requirements. As a water body of the state, uses proposed for Pond A-18 are subject to additional regulations.

#### EXISTING USES ON PLANT'S 2,600-ACRE SITE



#### Land uses will be funded separately from Plant rebuilding costs.

- Public input is sought to define the land use vision. The Plant Master Plan will include a funding plan as sewer fees can only be used for the sewer system. A collaboration between public, corporate, developer, and philanthropic entities could possibly result in funding for new land uses.

**Rebuilding  
the Plant is  
a great value  
for ratepayers,  
offering  
quality-of-life  
benefits for  
decades to  
come.**



## ▶ rebuilding the plant is a great value for ratepayers

**The estimated price for rebuilding the Plant is \$1.0 – 1.5 billion, but the Plant’s performance at protecting our health, Bay, and economy is invaluable.**

### **Rate increases are necessary to pay for current critical projects and the long-term rebuilding of the Plant.**

- ▶ Each city or sanitation district sets their own rates to pay for the costs of their respective sewer systems as well as Plant treatment costs. Rates for residents currently range up to \$32.00 per month, which is comparable to other Bay Area cities. Rate increases are underway in some cities, and rate information can be found on the websites of the respective jurisdictions.
- ▶ For businesses, each city or sanitation district has their own array of business categories, each with a rate set to account for the volume and content of wastewater typically generated by a business type (for example, restaurants, photo finishers, and health clubs are category types with differing rates).

### **The Plant Master Plan seeks to minimize rate increases.**

- ▶ The master plan is looking to identify revenue-generating land uses that could, in the future, possibly help offset rate increases.
- ▶ New wastewater technologies are being evaluated for long-term cost effectiveness.

- ▶ Energy efficiencies are being identified to bring down energy costs, and the Plant is on its way to becoming fully energy self-sufficient.
- ▶ As the Plant Master Plan progresses, the public will learn more about alternative proposals and their costs and benefits.

### **Ratepayers will receive these quality-of-life benefits:**

- ▶ Continued wastewater treatment for the best effluent quality in the nation.
- ▶ Enhanced reliability against costly sewer overflows and spills into the Bay.
- ▶ Continued compliance with discharge regulations.
- ▶ Technologies that help foster a sustainable region with production of usable energy, water, and byproducts.

**Rebuilding  
the Plant is  
our chance to  
forge a future  
of economic,  
environmental,  
and social  
benefits.**



## ▶ rebuilding the plant is forging our future

**We are deciding a plan that will affect us and future generations. As we forge our future, there are two key questions to answer:**

- ▶ What new wastewater treatment processes enhance sustainability?
- ▶ How can we best use the Plant's unique shoreline site for regional benefit?

**To help forge our future and shape our shoreline, get involved:**

- ▶ Attend a community workshop on the land use alternatives and give your input.
- ▶ Attend a Community Advisory Group meeting.
- ▶ Take a free Wonders of our Water Works tour of the Plant (held May through November).
- ▶ Invite a Plant Master Plan speaker to your group meeting.
- ▶ Visit [rebuildtheplant.org](http://rebuildtheplant.org) to learn more, give feedback, and/or sign up for updates.

**The Plant works hard to protect your health and the Bay—you can help by preventing pollution of the water that goes down drains:**

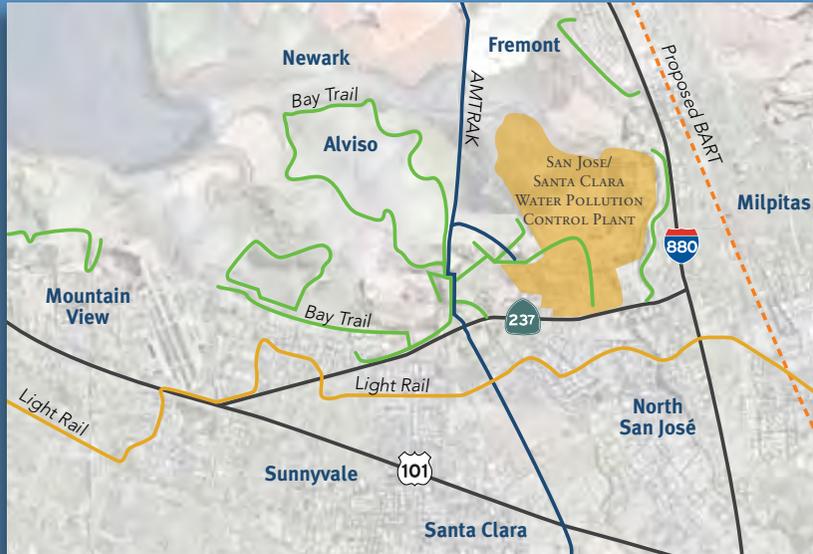
- ▶ No drugs, paint, or solvents down the drain or toilet—the Plant cannot remove or neutralize medicines or solvents.



- ▶ No baby wipes, trash, or grease (or greasy foods) down the toilet or drains—this will keep your sewer pipes and the Plant flowing freely.
- ▶ Conserve water—that preserves our drinking water supply AND generates less “wasted water” to clean and send into the Bay.

**For more information, meeting dates, and Plant tour reservations, visit: [rebuildtheplant.org](http://rebuildtheplant.org)**

## Our Plant's Transportation Network



Visit our website: [rebuildtheplant.org](http://rebuildtheplant.org)

### Project Management and Contacts

City of San José Environmental Services Department operates the Plant and is overseeing the Plant Master Plan.

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To request an accommodation under the Americans with Disabilities Act, call 408-535-3500. Spanish, Vietnamese, and Chinese-language services are available upon request. City of San José—committed to open and honest government.



San Jose/Santa Clara Water Pollution Control  
Plant Master Plan

