



PASADENA Water & Power

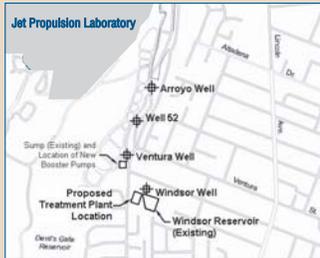
PWP is putting into place a groundwater treatment system to:

- ▶ remove chemicals that and have been present for several เปอร์ several years
- ▶ restore water quality in part of the aquifer underlying Pasadena
- ▶ reopen 4 water production wells with improved infrastructure

This would enable PWP to resume using these wells for supplying clean drinking water to customers.

MAJOR COMPONENTS

Extracting Groundwater from four production wells



Wells	Pumping Capacity gallons per minute (gpm)
Arroyo	2,200
Well 52	1,800
Ventura	1,600
Windsor	1,400
TOTAL	7,000 gpm

Operating a New Treatment Plant n on City-owned land at the Windsor Reservoir at 2696 Windsor Avenue

HOW IT WORKS

Ion Exchange (IX) To remove perchlorate

- ▶ Groundwater runs through four pairs of tanks (approximately 12 feet in diameter and 16 feet high).
- ▶ Each tank contains 300 to 400 lbs. of plastic beads, called resin, each the size of a grain of sand.
- ▶ When dissolved perchlorate touches the resin, the perchlorate is exchanged with chloride in the resin.
- ▶ Old resin is removed on a routine basis for disposal at a licensed off-site facility.

New resin is placed in the tanks.

Liquid-Phase Granular Activated Carbon (carbon filter) To remove Volatile Organic Compounds (VOCs)

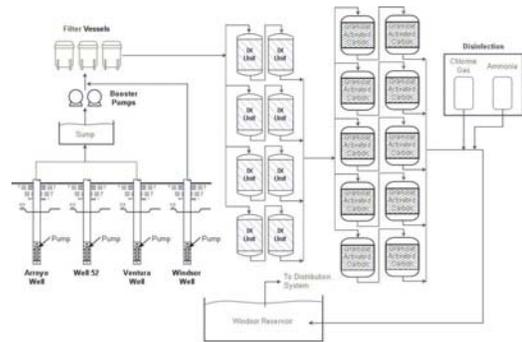
- ▶ Groundwater runs through five pairs of tanks (approximately 12 feet in diameter and 23 feet high).
- ▶ Each tank contains about 40,000 lbs. of charcoal-like carbon particles (3 to 5 times larger than a grain of sand) that attract and accumulate chemicals.
- ▶ Old carbon is removed on a routine basis for disposal at a licensed off-site facility.
- ▶ New carbon is placed in the tanks.

Disinfection Process

After the carbon filter process, the water will be disinfected with chlorine followed by liquid ammonium hydroxide. Disinfection prevents the growth of bacteria in water for distribution. The clean water will be stored in the Windsor Reservoir before being provided to PWP customers.

- ▶ The disinfection chemicals will be stored in a secured and closely monitored enclosure inside a separate disinfection building.

Process Flow Diagram (Simplified)



Ion exchange and liquid-phase granular activated carbon systems are two State-approved technologies for treating groundwater and have been proven to work effectively.



PWP has submitted preliminary design plans and is preparing for several construction activities that will begin after all permits and approvals have been received.

Work will include:

Wells^N

Reopening the four wells that have been closed in N recent years will require:

- Cleaning to remove sediment and other buildup
 - Video logging to inspect existing conditions
 - Installing new liners (if necessary) and upgrading electrical components
- Performance testing before groundwater extraction begins

Pumps and Pipelines^N

Transferring water to and from the treatment plant will require:

- Cleaning, inspecting and upgrading (where necessary) existing pipelines
- Installing new high efficiency booster pumps near Ventura Well to push water through the treatment plant and into the Windsor Reservoir.

Treatment Plant^N

Getting the treatment site ready will require:

- Building roads inside the fence and upgrading a turn lane into the south gate
- Constructing a concrete pad (to place treatment vessels on)
 - Delivering and setting up vessels and pipes
- Installing pipelines connecting the new plant to existing piping and to the reservoir
 - Constructing a disinfection building

A Request for Proposals (RFP) to vendors was issued by PWP in September 2006 and PWP staff have recommended the Caigon Carbon Corporation as the vendor of the ion exchange and LGAC technologies.

site layout to be placed

Attention to Design Details^N

The treatment plant design includes features helping it to blend with the surrounding area.

- Site grading on the north end to lower the profile of the plant by 3 feet
- Neutral paint colors on exterior surfaces
- Enhanced landscaping that will screen views of the plant from the street and from nearby residences
- A sidewalk for safer pedestrian traffic
- Upgraded south entrance to the plant

PWP also may be required to include street lighting curbing, gutters and utilities improvements.

Minimizing Disturbances During Construction

PWP recognizes that the construction necessary to get the treatment system online has the potential to temporarily generate dust, noise, and traffic. Efforts to reduce these disturbances will be an important part of all construction practices.

- Watering the work area to reduce dust
- Operating construction equipment only during normal work hours
- Having an approved traffic management plan





Conditional Use Permit (CUP)

A A CUP is ... needed to ensure that the land use and activities associated with the proposed groundwater treatment system are compatible and consistent with the zoning where the project would be located.

The CUP application process requires Pasadena Water and Power (PWP), the applicant, to submit a complete package containing project design detail and supporting materials (see below), to the Pasadena Planning and Development Department (PPD) for consideration. This process provides opportunities for public input and culminates in a decision made within 10 days of the public hearing.

Zoning for the proposed location is designated by: the Pasadena Zoning Code as **Public and Semi-Public (PS)** and by the General Plan land use as **Institutional**, which include public utilities and requires a CUP.

CUP Process at a Glance

March 20	April 17	June 10 to July 10	By June 26 14 Days Prior to Public Hearing	July 10
<p>CUP application submitted by PWP to PPD</p> <p>Application includes many elements such as:</p> <ul style="list-style-type: none"> Environmental Assessment Tree Inventory Site Plan Topographic Map Grading Plan Elevations Landscape Plan Photo Renderings Plan for Public Notification 	<p>Application deemed complete</p> <p>Planning & Development Department staff sends package for review by other departments. Receives feedback and prepares project recommendations and need for any conditions.</p>	<p>Public Comment Period</p> <p>Public has opportunity to provide comments:</p> <p>By comment card or letter to: Attn: Hearing Officer c/o Lanny Woo 175 N. Garfield Ave. Pasadena, CA 91101</p> <p>By email to: lw00@cityofpasadena.net</p> <p>In person: At CUP Public Hearing</p>	<p>Public Notice</p> <p>Announcement with place, date, time and statement about Public Hearing posted and mailed to property owners within 500-foot radius of proposed project boundaries.</p>	<p>Public Hearing 6:00 p.m.</p> <p>Hale Building, Permit Center 175 N. Garfield Ave. Pasadena, CA 91101</p> <p>Brief presentation by PPD</p> <p>Testimony of those in favor or opposed to proposed project.</p> <p>Opportunity for PWP rebuttal.</p> <p>Hearing Officer considers testimony in CUP application decision to:</p> <ul style="list-style-type: none"> approve approve with conditions disapprove

Other Permits and Required Approvals

In addition to receiving CUP approval, PWP must satisfy other requirements and seek additional permits.

Design Review

PWP must submit an application for Design Review to the Pasadena Planning & Development Department whose staff determines whether the proposed plans regarding landscaping, fencing, finish materials, colors and other aspects of appearances meet the City's design review procedures.

California Accidental Release Prevention Program (CalARP)

The proposed water disinfection process would use chlorine and liquid ammonia hydroxide. Use of these substances requires PWP to prepare a Risk Management Plan (RMP) designed to evaluate and minimize the potential for any accidental releases. Under CalARP, the Los Angeles County Fire Department reviews the RMP, makes inspections to ensure the planned engineering and administrative controls are adequate. They then notify the public when the RMP is available for a 45-day public review and comment.

Building Permit (also called a Construction Permit)

Detailed facility design and specifications must be approved by the Pasadena plans examiner to determine compliance with applicable building codes. Depending on final design specifications, the proposed project may be reviewed for a number of other elements such as traffic management, construction staging, demolition and storm water approvals.

Other local, state or regional agencies such as the Regional Water Quality Control Board also will require review of the proposed project.

Drinking Water Permit

PWP is required to obtain a drinking water permit from the State Department of Public Health (DPH) prior to serving the treated water. The DPH permit process includes a public hearing.



The Environmental Review

At the outset of the Conditional Use Permit review process, the Pasadena Planning and Development Department (PPD) considers the proposed project's effects on the environment. If the project is not exempt from the California Environmental Quality Act (CEQA), an Initial Study is prepared.

An **Initial Study** evaluates the potential for significant adverse effects, looking at 18 specific areas identified by CEQA and the City of Pasadena's Initial Study checklist.

18 Areas	Criteria Evaluated
Aesthetics	Site appearance, scenery, glare from lights
Agricultural Resources	Farmland to non-agricultural use
Air Quality	Substantial increase in air pollutants, odors, exposure to sensitive receptors
Biological Resources	Species, habitat, migration, wetlands, tree preservation
Cultural Resources	Historic structures, archeological, or unique sites
Energy	Wasteful non-renewable energy practices
Geology and Soils	Risks from earthquakes, landslides, erosion & soil stability
Hazards & Hazardous Materials	Risk from transport, use, disposal, accidental release
Hydrology & Water Quality	Groundwater quality & supplies, runoff, waste discharge, floodplain
Land Use & Planning	Divide existing communities, conflict with environmental protection plans
Mineral Resources	Loss of known mineral reserves
Noise	Excessive temporary & permanent noise & vibrations
Population & Housing	Population growth or displacement
Public Services	Additional need for fire/police, libraries, schools, parks
Recreation	Public park wear & maintenance
Transportation/Traffic	Increased traffic & related hazards, parking, alternatives modes
Utilities & Service Systems	Water supplies, waste water & drainage, landfill capacity
Mandatory Findings of Significance	Does it degrade environmental quality - fish, wildlife & plants and habitats or eliminate examples of California history?

PPD prepares one of the following environmental review documents:

Negative Declaration if it finds no "significant" impacts

Mitigated Negative Declaration if it finds "significant" impacts but revises the project to avoid or mitigate those significant impacts;

Environmental Impact Report (EIR) if it finds "significant" impacts.

A Recommended Mitigated Negative Declaration for PWP

The PPD has prepared a draft Mitigated Negative Declaration identifying four areas having the potential for significant impacts and describing measures to reduce or eliminate the significance of these impacts. If the proposed project is approved, these mitigation measures become part of the project.

Areas of Potential Impacts	Mitigation Measures
Aesthetics Keeping visual character of area	<ul style="list-style-type: none"> Landscaping improvements with rows of wide-canopied trees and high bushes. "Green fencing" and using privacy cloth on border fences. Neutral or earth-toned paint colors to blend structures into existing view. A Design Review to ensure design, colors and finish materials meet City standards.
Biological Resources Protecting environment during construction	<ul style="list-style-type: none"> Confine construction to existing footprint and design pipeline extension for no impact to vegetated area. Conduct vegetation clearing in or near the Arroyo Seco outside of bird nesting season (April 15 to August 1). All earth work near the Ventura Well done in a way to minimize dust and noise. Removal of 2 trees (possibly 2 additional) to be approved by the Urban Forestry Advisory Committee (YFAC) of the Public Works Department. All equipment staged within fence area.
Hazards & Hazardous Materials Safety of public & the environment	<ul style="list-style-type: none"> Comply with regulations for handling hazardous materials. Disinfection process designed consistent with the Chlorine Institute of American Water Works Association including adequate ventilation, state of the art leak detectors and advanced alarm and warning systems. Pre-coordination with emergency responders (Pasadena Fire & LA County HazMat Response Team, with public notification and attention to the Five Acres School.
Noise Reducing excessive noise from construction & plant operation	<ul style="list-style-type: none"> Construction limited to normal working hours. Enclosures designed by acoustical engineer used on booster pumps to prevent ambient noise level at nearest property line from increasing by more than 5 decibels. Noise levels measured prior to, during and after construction to ensure controls are adequate. Shock absorbers, proper design and alignment of booster pumps to reduce vibrations to the satisfaction of the City's Planning Manager.

Public Comment Period - June 10 to July 10, 2008

PUBLIC REVIEW AND COMMENT

The Mitigated Negative Declaration and Initial Study draft documents are available for public review at

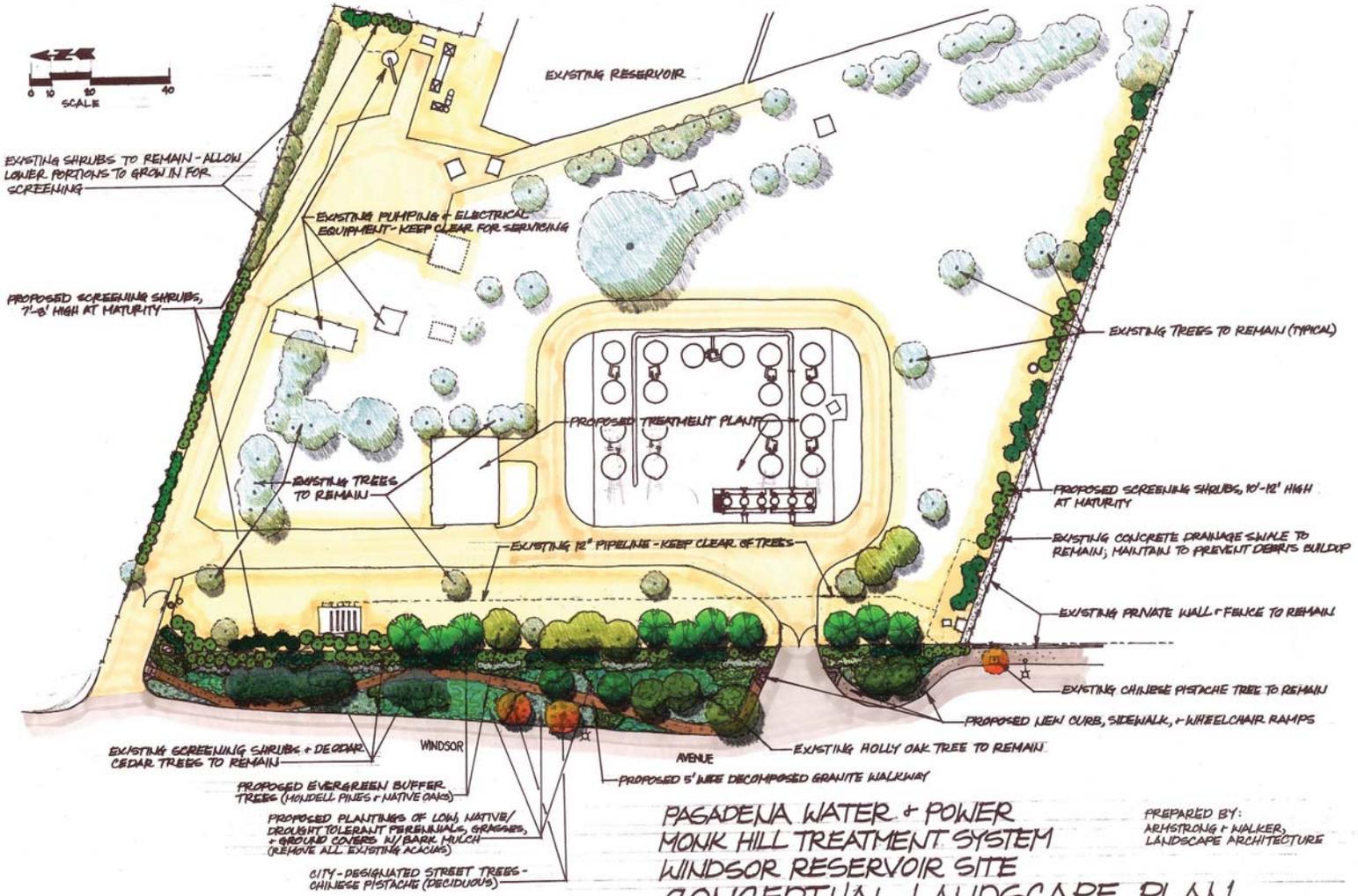
Local libraries

Web site
http://www.ci.pasadena.ca.us/planning/environmental/Environmental_Home.asp

PUBLIC HEARING

At a public hearing scheduled for **July 10**, the Hearing Officer will

- ▶ Review the Conditional Use Permit
- ▶ Review the Mitigated Negative Declaration recommended by the Pasadena Planning & Development Department
- ▶ Consider public comments received
- ▶ Make a decision to approve, disapprove or approve with conditions



EXISTING SHRUBS TO REMAIN - ALLOW LOWER PORTIONS TO GROW IN FOR SCREENING

PROPOSED SCREENING SHRUBS, 7'-8' HIGH AT MATURITY

EXISTING PUMPING + ELECTRICAL EQUIPMENT - KEEP CLEAR FOR SCREENING

EXISTING RESERVOIR

PROPOSED TREATMENT PLANT

EXISTING TREES TO REMAIN

EXISTING 12" PIPELING - KEEP CLEAR OF TREES

EXISTING TREES TO REMAIN (TYPICAL)

PROPOSED SCREENING SHRUBS, 10'-12' HIGH AT MATURITY

EXISTING CONCRETE DRAINAGE SWALE TO REMAIN; MAINTAIN TO PREVENT DEBRIS BUILDUP

EXISTING PRIVATE WALL + FENCE TO REMAIN

EXISTING CHINESE PISTACHE TREE TO REMAIN

PROPOSED NEW CURB, SIDEWALK, + WHEELCHAIR RAMPS

EXISTING SCREENING SHRUBS + DECIDUOUS CEDAR TREES TO REMAIN

WINDSOR

AVENUE

EXISTING HOLLY OAK TREE TO REMAIN

PROPOSED EVERGREEN BUFFER TREES (HOWELL PINES + NATIVE OAKS)

PROPOSED 5' WIDE DECOMPOSED GRANITE WALKWAY

PROPOSED PLANTINGS OF LOW NATIVE/DROUGHT TOLERANT PERENNIALS, GRASSES, + GRASSOID COVERERS w/ BARK MULCH (REMOVE ALL EXISTING ACACIAS)

CITY-DESIGNATED STREET TREES - CHINESE PISTACHE (DECIDUOUS)

PASADENA WATER + POWER
 MONK HILL TREATMENT SYSTEM
 WINDSOR RESERVOIR SITE
 CONCEPTUAL LANDSCAPE PLAN

PREPARED BY:
 ARMSTRONG + WALKER,
 LANDSCAPE ARCHITECTURE



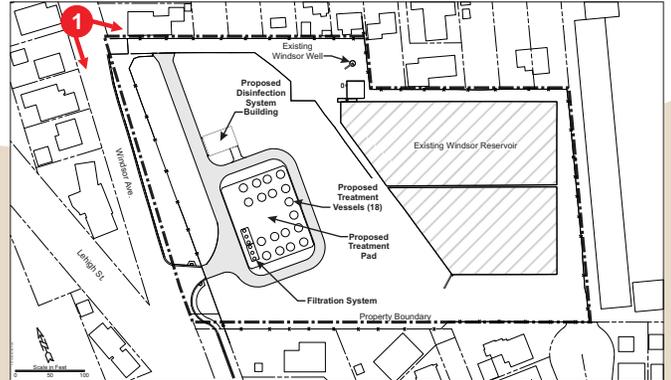
View 1

Looking Southeast from Windsor Avenue

Monk Hill Treatment System



Existing Site Photo
February 13, 2008



Proposed Initial Landscaping



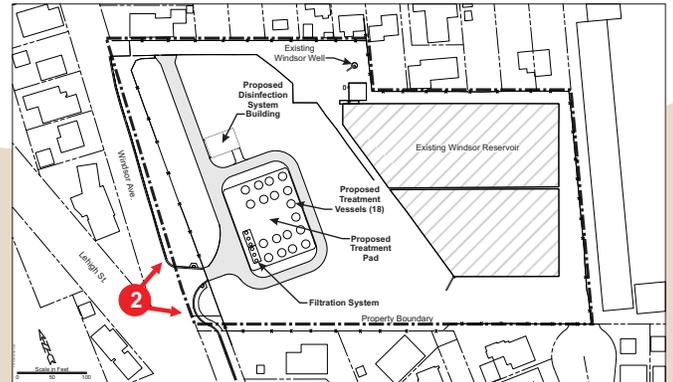
Proposed Landscaping After 5 to 8 Years of Growth



View 2 Looking East from Windsor Avenue Monk Hill Treatment System



Existing Site Photo
February 13, 2008



Proposed Initial Landscaping



Proposed Initial Landscaping With Possible Green Gate Screening



Proposed Landscaping After 5 to 8 Years of Growth



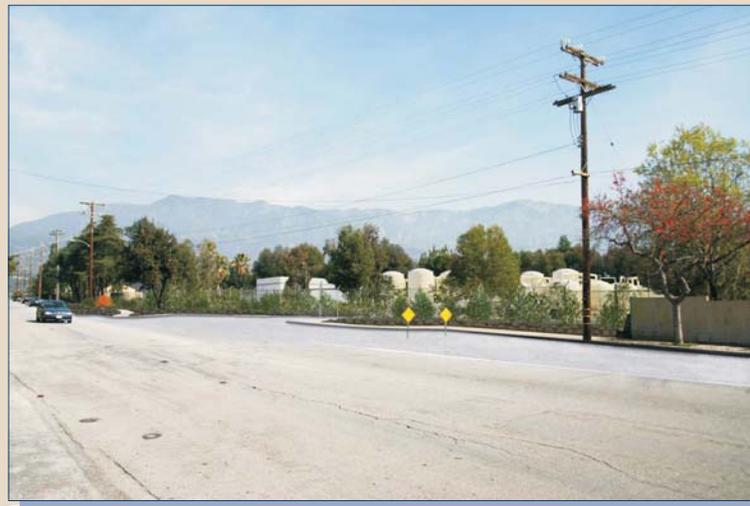
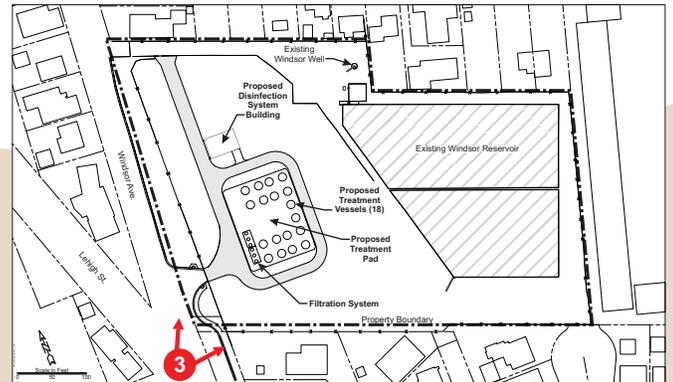
Proposed Landscaping After 5 to 8 Years of Growth
With Possible Green Gate Screening



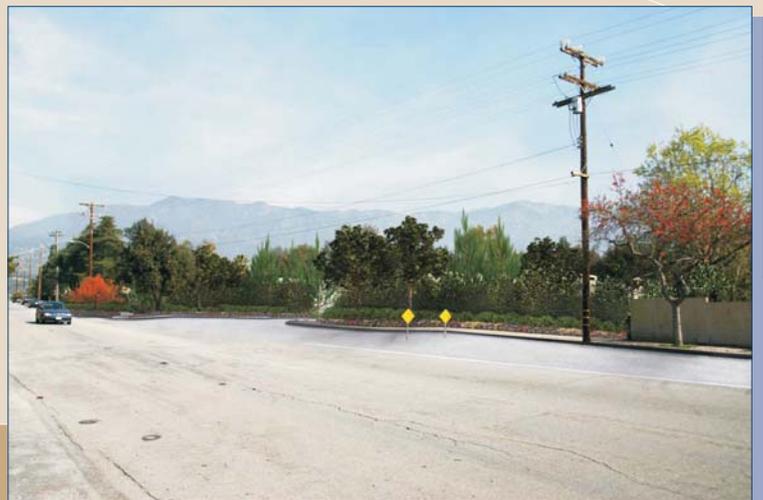
View 3 Looking Northeast from Windsor Avenue Monk Hill Treatment System



Existing Site Photo
February 13, 2008



Proposed Initial Landscaping



Proposed Landscaping After 5 to 8 Years of Growth