TOWN OF WINDSOR
WATER RECLAMATION
MASTER PLAN
TREATMENT, STORAGE AND DISPOSAL

DECEMBER 2001

TOWN OF
WINDSOR

PREPARED BY
BRELJE & RACE
CONSULTING CIVIL ENGINEERS

TOWN OF WINDSOR

WATER RECLAMATION MASTER PLAN

TREATMENT, STORAGE AND DISPOSAL

TOWN COUNCIL

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List of Abbreviations

ADWF	Average Dry Weather Flow (lowest 30-day average in a year)
AWT	Advanced Waste Treatment (tertiary treatment, filtration of secondary effluent)
BOD_5	Biochemical Oxygen Demand
CEQA	California Environmental Quality Act
CIP	Capital Improvement Projects
DSOD	Division of Safety of Dams
eq.ac.	equivalent acre, an acre of land that uses 30 inches (2.5 acre-feet) of irrigation water per year
HP	Horsepower
MG	million gallons
MGD	million gallons per day
NA	not applicable
NPDES	National Pollutant Discharge Elimination System
RAS	return activated sludge
RWQCB	Regional Water Quality Control Board
UV	ultraviolet light
WAS	waste activated sludge

1 OVERVIEW

1.1 PURPOSE

This ***Town of Windsor Water Reclamation Master Plan*** has been prepared to provide a comprehensive description and background for phased implementation of the Town's adopted Water Reclamation Master Plan. The Master Plan was adopted by the Town Council to meet wastewater treatment, storage and reclamation needs to serve the Town through projected build-out. The Master Plan is based on the following:

- ***Town of Windsor General Plan – 2015 (General Plan)***
- ***Draft Town of Windsor Water Reclamation Master Plan: Treatment, Storage and Disposal (Draft Water Reclamation Master Plan)***
- ***Town of Windsor Draft Water Reclamation Master Plan for Treatment, Storage and Disposal Environmental Impact Report (Water Reclamation EIR)***
- **Town Council Goals.**

1.2 TOWN COUNCIL APPROVAL AND GOALS

Water Reclamation Master Plan

In 1996, the Town of Windsor prepared a ***Draft Water Reclamation Master Plan*** to serve development projected for the Town under its General Plan. The ***Draft Water Reclamation Master Plan*** was first presented to the Town Council in October 1997. At that time, the Town Council deferred selection of a preferred reclamation alternative and directed staff to investigate options that would include participation in the Santa Rosa Geysers Recharge Project and/or joint use with the Airport treatment plant. An amended ***Draft Water Reclamation Master Plan***, including these options, was presented in January 1999. The Town Council then selected three alternatives for environmental review.

A Final Environmental Impact Report was prepared, and certified by the Town Council on February 7, 2001. The Town Council adopted Resolution No. 1006-01 approving a preferred alternative, known as Alternative 4X, as the Town's Water Reclamation Master Plan for Treatment, Storage and Disposal (referred to herein as the **Master Plan**) on March 8, 2001.

The **Master Plan** provides for the following:

- An increase of treatment plant capacity to 3.0 million gallons per day (MGD) Average Dry Weather Flow (ADWF), with continued treatment to Title 22 disinfected tertiary reclaimed water standards
- Discharge of up to 0.75 MGD to Geysers Recharge
- Increase in effluent storage capacity by 182 million gallons (MG), for a total of 360 MG
- Increase in irrigation area by 495 equivalent acres[1] (eq.ac.), for a total of 820 eq.ac., with irrigation both within and outside Town limits
- Continued discharge to Mark West Creek at up to 1% of natural stream flow from October 1 through May 14
- Constructed wetlands
- Pilot silviculture project
- Water conservation program.

Priorities for Reuse

The Town adopted the following series of priorities regarding the use of the Town's reclaimed water:

Priority 1 Reuse within the Town limits or sphere of influence

Priority 2 Agricultural reuse outside of Windsor utilizing both the Town's distribution system and the Geysers Pipeline

Priority 3 Reuse at the Geysers

Priority 4 Discharge to Mark West Creek

The full text of the resolution for adoption of the Water Reclamation Master Plan may be found in the Appendix.

[1] An "equivalent acre" uses 30 inches (2.5 acre-feet) of irrigation water per growing season. The Town uses the term equivalent acre to assist in comparison of irrigation lands with varying water demand. Thirty inches per acre is typical for grass, fodder crops or turf. Vineyards typically use 5 inches (0.4 acre-feet per acre) of water per year. Approximately six acres of vineyard would therefore be equivalent to one equivalent acre.

2 MASTER PLAN COMPONENTS

2.1 GENERAL

The physical components of the **Master Plan** are shown on Figure 2.1. The ***Water Reclamation EIR*** examined components at both program and project levels. The CEQA (California Environmental Quality Act) process is complete for components analyzed at a project level. Following Town Council approval of timing and budget, the Town can proceed with construction of those components without further analysis. Components that were examined at program level in the ***Water Reclamation EIR*** would require further CEQA analysis prior to implementation.

Components examined at project level include the following:

- Treatment plant expansion up to 3.0 MGD Average Dry Weather Flow
- Effluent storage Ponds Z, S, T1 and T2 and associated pump stations
- Continued discharge to Mark West Creek at up to 1 percent of natural creek flow, from October 1 through May 14
- Expansion of reclaimed water irrigation by up to 785 equivalent acres and 65,000 lineal feet of distribution mains
- Pump station and main for connection to the Geysers Recharge pipeline

Components examined at program level include the following:

- Effluent storage Ponds C, G, J1, J2, K, L1, L2, V, W, X, and Y
- Constructed wetland
- Pilot silviculture study
- Water conservation program

Historical and projected wastewater flows, storage and irrigation requirements, and development of specific components of the **Master Plan** reclamation system are presented in the following sections. System components include the treatment plant, storage ponds, irrigation lands, Geysers Recharge, and discharge to Mark West Creek. Discussion of a pilot silviculture project is included under irrigation. Constructed wetlands are described under discharge. Items that have been evaluated at a project level in the ***Water Reclamation EIR*** are indicated. Estimated capital costs, adjusted to reflect the October 2001 Engineering News Record Construction Cost Index, are given.

In selecting the Master Plan, the Town Council chose to connect to the Geysers Recharge pipeline, thereby avoiding the environmental impact of constructing multiple effluent storage ponds. Because up to 0.75 MGD will be directed to Geysers Recharge, the storage capacity requirement will be approximately 170 MG less than if the Town had opted not to participate in the Geysers Recharge Project. Approximately two-thirds of the Town's reclaimed water will continue to be reused, but less water will be allocated to irrigation than if the Town had opted to depend entirely upon irrigation for reuse. The Town Council has, however, made irrigation the top priority of the reuse program. As a tool in implementing this priority, this document presents the expanded irrigation areas that the Town is projected to be able to provide with a reliable supply of reclaimed water, as well as the minimum irrigation areas that will be required as ADWF increases.

Wastewater Flows

Chapter 2 of the ***Draft Water Reclamation Master Plan*** includes definitions of flowrates, historical wastewater flows for 1992 through 1996, and projections of build-out flows. An up-dated table showing recent wastewater flowrates is presented here as Table 1.

Table 1: Historical Wastewater Flows, 1996-2001

Year	Average Dry Weather Flow (MGD)	Peak Weekly Flow (MGD)	Estimated Population
1996	1.32	4.2	18,738
1997	1.38	4.0	19,200
1998	1.41 [1]	4.1	19,883
1999	1.42	3.4	20,400
2000	1.45	3.7	21,050
2001	1.47	3.1	23,718

[1] ADWF flow was adjusted from the calculated minimum 30-day average flow to compensate for high infiltration conditions following late spring rains.

The Town *General Plan* sets forth land uses that provide the basis for the projection of build-out flows. Projected build-out flows are reproduced here as Table 2. In 1997, the Town enacted a growth ordinance which allows for construction of up to 170 new residential units per year, with certain exceptions. The projected increase in annual ADWF over time for this growth rate is shown in Figure 2-1.

Table 2: Projected Wastewater Flows at Build-Out

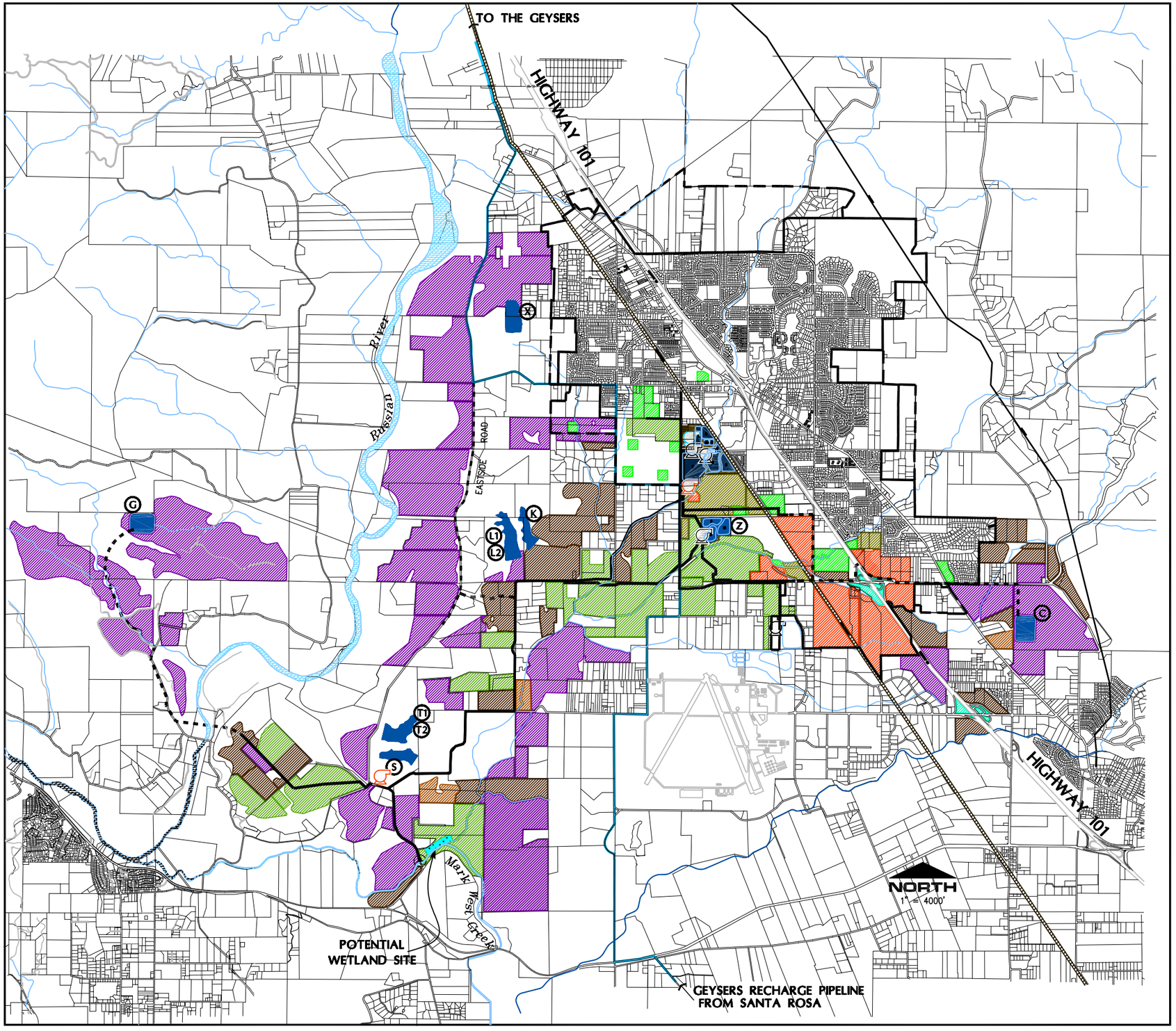
Flow Source	Projected ADWF at Build-Out	Percentage of Total
	MGD	
Residential	2.343	77
Commercial and Industrial	0.609	20
Municipal/Institutions	0.028	1
Residential Outside Town and Sphere of Influence	0.066	2
Total	3.046	

Projections adjusted to reflect changes in Sphere of Influence boundary effected November 1997.

Water Reclamation Master Plan

TOWN OF WINDSOR
Sonoma County, California

Figure 2.1
Master Plan Components
Overall Plan



LEGEND

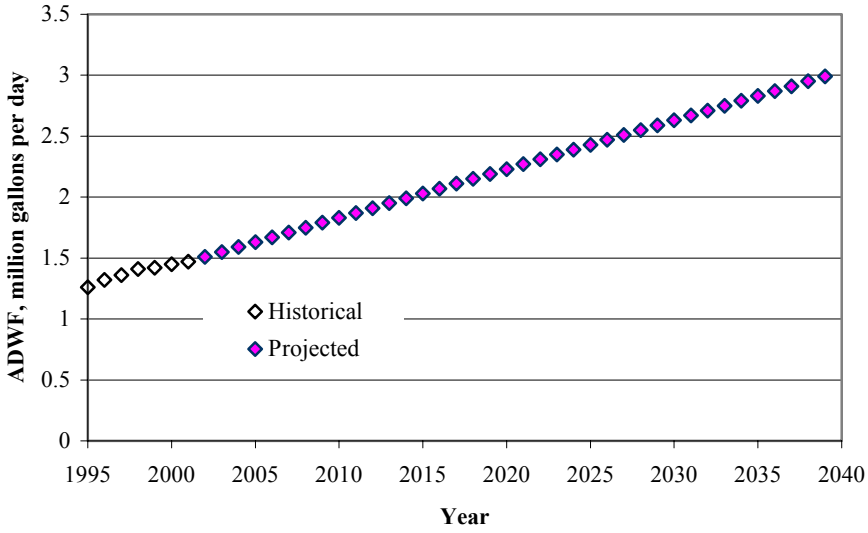
- Existing Wastewater Treatment Plant
- Existing Irrigation Sites
- Existing Reclaimed Water Main
- Existing Discharge Location
- Existing Pump Station
- Potential Storage Pond Site
- Potential Wetland Site
- Potential Reclaimed Water Main Route
- Potential Pump Station
- Potential Town Geysers Pump Station
- Geysers Recharge Project Pipeline
- Town Boundary
- Sphere of Influence Boundary

POTENTIAL RECLAMATION LANDS

- Existing Grassland/Seasonal Crop
- Existing Orchard
- Existing or Proposed Vineyard
- Existing or Proposed Public/Municipal
- Existing or Future Town Park Site
- Proposed Residential
- Proposed Commercial

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Figure 2.2
Projected Increase in Average Dry Weather Flow Over Time
Growth Rate Based on 170 Units per Year



Water Balance Model

Projected requirements for irrigation area and storage pond capacity are based upon the Town of Windsor Water Balance Model for Reclaimed Water. The Water Balance Model tracks inflows and outflows to the Town reclamation system to determine the resulting net balance, on a month-by-month basis over a twelve-month period. The Water Balance Model was developed as a tool for projecting the storage capacities and irrigation areas that would be required for reliable operation at future conditions, as described in the ***Draft Water Reclamation Master Plan***, Section 7.2.1. Water balance projections have been expanded for this document to provide projection of storage and irrigation capacities during the immediate future, preceding and following connection to the Geysers Recharge pipeline. Water Balance projections also provide the basis for establishing the potential volumes of reclaimed water that could be reallocated from Mark West Creek discharge to wintertime filling of privately-owned ponds for dry season irrigation.

2.2 TREATMENT

Current and future treatment plant expansions are planned to provide capacity to treat build-out wastewater flows. Process units and capacities are summarized in Table 3. At the time this document was prepared, the Town was completing Phase IIA expansions and improvements to the treatment plant. These projects included construction of a new influent pump station; additional secondary aeration basin, secondary clarifier, and RAS (return activated sludge) pump station; WAS (waste activated sludge) pump station; improvements to the AWT (Advanced Waste Treatment, or tertiary treatment) pump station; a third set of flocculation tanks and AWT clarifier; addition of three filters; construction of ultraviolet light disinfection channels; conversion of existing chlorine contact tanks to an effluent clearwell; and construction of two additional sludge stabilization ponds, with sludge dredge and decant tank.

At current growth rates, it is anticipated that final Phase II treatment plant improvements will need to be completed and on-line in 2020. Final Phase II improvements would include a fourth set of flocculation tanks, a fourth AWT clarifier and an eighth filter. These additions would bring the overall WRP capacity to 3.0 MGD ADWF. The estimated capital cost for these expansions is $2.2 million.

Treatment plant improvements have been evaluated on a project level in the ***Water Reclamation EIR***.

Table 3: Current and Future Treatment Plant Process Unit Capacities

Unit Process	Current Capacity		Future Capacity	
	Total ADWF, MGD	Peak Flow, MGD	Total ADWF, MGD	Peak Flow, MGD
Influent Pump Station		15		15
Influent Valve Station	3.0	15	3.0	15
Headwork's	3.0	9.6	3.0	9.6
Aeration Basin	3.0	9.6	3.0	9.6
Secondary Clarifier	3.0	9.6	3.0	9.6
RAS Pump Station	3.0	NA	3.0	NA
High Flow Return Pump Station	3.0	NA	3.0	NA
AWT Pump Station	3.0	9.6	3.0	9.6
Chemical Addition Facilities	3.0	9.6	3.0	9.6
Flocculation Chambers	2.25	7.2	3.0	9.6
AWT Clarifiers	2.25	7.2	3.0	9.6
Filters	2.84	9.1	3.0	9.6
UV Channels [1]	3.0	8.64[2]	3.0	8.64[2]
Sludge Pump Station	3.0	NA	3.0	NA
Sludge Stabilization Ponds	3.0	NA	3.0	NA

[1] Under start-up at time this document was prepared

[2] Peak Capacity of UV Channels reflects subtraction of 10% filter reject flow from upstream units. Capacity is based upon manufacturer's design for effluent with UV transmittance of 70%.

RAS – Return Activated Sludge
AWT - Advanced Waste Treatment
UV - ultraviolet light
NA – Not Applicable

2.3 EFFLUENT STORAGE PONDS

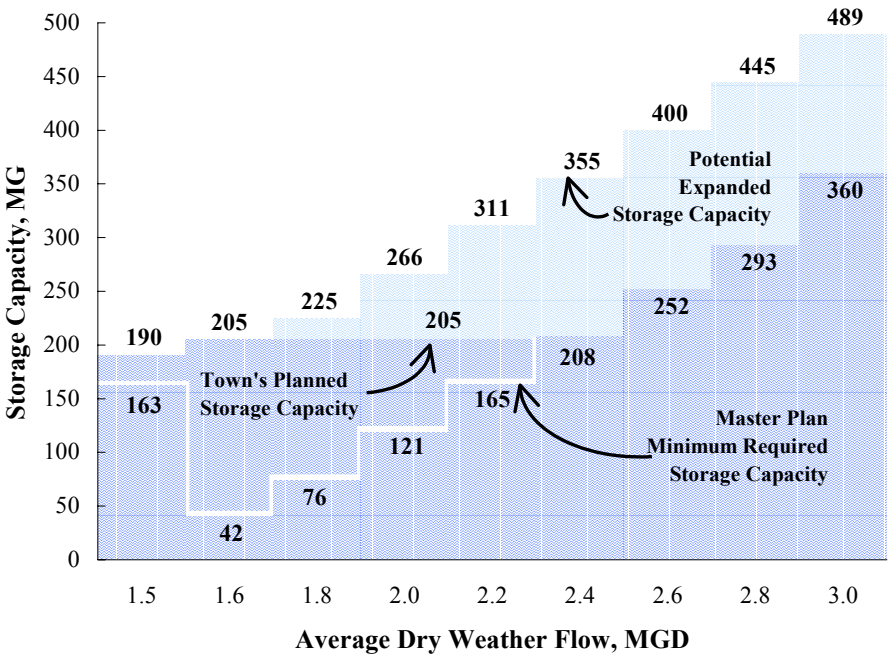
General

The **Master Plan** includes build-out storage capacity of 360 MG, 186 MG more than the Town's capacity at the time of adoption. The following sections present storage capacity requirements projected for the adopted **Master Plan**, current and near-term storage projects, and potential long-term storage projects. Discussion includes the potential for expanding the reclamation system beyond **Master Plan** requirements by providing reclaimed water, that would otherwise be discharged to Mark West Creek, for storage in privately-owned ponds.

Current storage capacity and projected future requirements for increasing ADWF, as projected in the Water Balance, are presented in Figure 2.3.

Figure 2.3
Master Plan Storage Requirements, Planned Capacity, and Potential Expansion Using Privately-Owned Ponds

Capacity projections assume constant 0.75 MGD effluent flow to Geysers Recharge, beginning at ADWF of 1.55 MGD.



Capacities shown in Figure 2.3 are described below:

Town's Planned Storage Capacity – Changes in storage pond configurations slated for completion in 2004 will bring total storage capacity to approximately 205 MG. These current storage pond projects are described below.

Master Plan Minimum Required Storage – Minimum required storage capacity requirements are based upon an assumed maximum use of the Town's permitted wintertime 1 percent discharge to Mark West Creek and upon diversion of 0.75 MGD to the Geysers Recharge Project at ADWFs greater than 1.55 MGD. With connection to Geysers Recharge, the minimum required storage will drop significantly below the Town's planned near-term capacity of 205 MG. In practice, the 205 MG storage capacity will be used to support irrigation reuse, allowing a reduced creek discharge rate. Construction of additional storage capacity will be necessary as wastewater flows approach an ADWF of 2.4 MGD. Future storage capacity increases may be accomplished through construction of single pond or of a number of smaller ponds.

Potential Expanded Storage Capacity - The potential expanded storage capacity is the maximum storage capacity which the Town is projected to be able to supply reliably with reclaimed water in the dry weather year. The potential expanded capacity would not be essential for reclamation system operation. During the winter, the Town would provide reclaimed water, which would otherwise have been discharged to Mark West Creek, to the privately-owned ponds. The land-owners would use this water for irrigation during the subsequent growing season.

Current Storage Pond Projects

At the time this document was prepared, the Town was in planning or construction phases of several projects that would modify configurations and capacities of existing storage ponds. These projects are expected to bring the total storage capacity to 205 MG in 2004. Projected timeline and changes in capacity are summarized in Table 4. The projects are described briefly below:

Pond 6. Pond 6 was converted from an effluent storage pond to Sludge Lagoons 2 and 3 as part of improvements to the WRP in 2001. Sludge Lagoons 2 and 3 have a capacity of 6.4 and 6.1 MG, respectively. Sludge Lagoon 2 will be retained for effluent storage until completion of Pond Z.

Pond Z. Existing effluent storage Ponds 8, 9 and 10 adjoining the Windsor Golf Club are scheduled to be combined into a larger storage pond, called Pond Z, in 2003. The net increase in storage capacity is expected to be approximately 36 MG, increasing the current capacity of 43.9 MG to approximately 80 MG. Pond Z was evaluated at project level in the ***Water Reclamation EIR***.

Pond 5. Existing high flow storage Pond 5 at the WRP site has a capacity of 15.8 MG. The Town plans to construct a flood water bypass adjoining Windsor Creek, which flows on the easterly side of Pond 5, resulting in a net loss in pond capacity of approximately 4 MG.

Ponds 1 and 2. The Town plans to join and expand Ponds 1 and 2, resulting in a capacity increase of approximately 15 MG.

Annual changes in the Town's current and projected near-term storage pond capacities resulting from the above-listed projects are summarized in Table 4. A total storage capacity of approximately 205 MG is projected at completion of these projects. In conjunction with **Master Plan** urban and agricultural irrigation, Geysers Recharge and discharge components, the 205 MG of storage is projected to provide adequate capacity for an ADWF up to approximately 2.4 MGD.

Table 4: Current and Projected Near Future Storage Pond Capacities

Year	Pond Projects	Net Change in Capacity, (MG)	Total Capacity, (MG)	Estimated Capital Cost, ($ million)
2000	No change to existing Ponds 1, 2, 6, 7, 8, 9 and 10		174	NA
2001	Portion of Pond 6 converted to sludge stabilization	<9>	165	completed
2002			165	NA
2003	Construction of Pond Z	36		$ 1.8 [1]
	Reduction of Pond 5 capacity by stormwater by-pass	<4>	190	NA [2]
	Remainder of Pond 6 converted to sludge stabilization	<7>		NA
2004	Enlargement of Pond 1	15	205	$ 1.4

NA – not applicable
MG - million gallons
[1] Projection as of June 2001
[2] Costs allocated to drainage mitigation

Future Pond Projects – Ponds S and T

As shown in Figure 2.3, expansion of storage capacity will be required before ADWF reaches approximately 2.4 MGD. The total storage capacity needed at the projected build-out flow of 3.0 MGD ADWF will be approximately 360 MG. In addition to the above-listed near-term storage projects, approximately 155 MG of capacity will be needed to attain the total 360 MG. The additional capacity may be created through construction of one or several storage reservoirs.

In addition to Pond Z, fourteen potential storage pond sites were identified in the ***Draft Water Reclamation Master Plan***. Two of the potential pond sites, S and T, are owned by the Town. Construction of ponds at either of these sites would not require land acquisition. Potential capacity of Pond S is 125 MG. Site T could accommodate a larger pond of 249 MG (T1) or a smaller pond of 146 MG (T2).

Ponds S and T were evaluated at project level in the ***Water Reclamation EIR***. The ***EIR*** found that construction of either Pond S or T would cause significant and unavoidable impacts due to loss of oak woodland habitat.

In adopting the preferred alternative, the Windsor Town Council also directed that construction of either Pond S, T1 or T2 be postponed as long as possible in order to avoid extensive tree loss associated with such ponds, and encouraged the use of alternative pond sites identified for the **Master Plan**.

Descriptions and costs for Ponds S and T are presented in Table 5. Cost estimates for these ponds include land costs, at the $6,100 per acre that the Town paid for the property, for the acreage indicated in the table. Construction costs include earthwork, access road, drainage control, erosion protection, piping to the ponds and irrigation pumping facilities.

Table 5: Ponds S and T

Pond	Assessor's Parcel Number	Potential Volume (MG)	Current Land Use	Area Needed (acres)	Estimated Cost of Pond Development ($ million)	Estimated Cost per MG
S	66-230-67	125	Oak woodland	14	$ 4.9	$ 39,500
T1	66-230-67	249	Oak woodland	20	$ 9.4	$ 37,800
T2	66-230-67	146	Oak woodland	14	$ 5.8	$ 39,500

MG - million gallons

Alternative Storage Pond Sites from *Draft Water Reclamation Master Plan*

Table 6 presents a list of potential pond sites selected from the ***Draft Water Reclamation Master Plan*** that could serve as alternatives to Ponds S and T. Sites presented in Table 6 were selected because they appear to be viable in terms of constructability and propinquity to potential irrigation lands. The locations of these alternative ponds are shown on Figure 2.1. Construction of any of these ponds would require purchase of lands. Estimated purchase areas are included in Table 6.

Land for pond construction was assigned a value based on current and potential use: $70,000 per acre for existing vineyards and $35,000 per acre for undeveloped mildly sloping land. These land costs may not be the actual costs, but are based upon real estate costs in the Windsor area, and serve for purposes of comparison. Site-specific professional appraisal would be required during project development to determine actual cost. Construction costs include earthwork, access road, drainage control, erosion protection, piping to the ponds and irrigation pumping facilities.

Table 6: Alternative Storage Ponds

Pond	Assessor's Parcel Number	Potential Volume (MG)	Current Land Use	Area Needed (acres)	Estimated Cost of Pond Development ($ million)	Estimated Cost per MG	Considerations
C	67-260-08	120	Vineyard	28	$ 7.9	$ 65,800	Adjoins farmlands with potential irrigation; requires approximately 10,000 lineal feet extension of reclamation main
G	110-200-02	82	Pond	15	$ 1.3	$16,000	Pond G has been constructed by Gallo Vineyards. Cost estimate is for construction of reclaimed water main.
K	66-200-09 66-200-15	103	Grass and oak woodland	14	$ 5.5	$ 53,700	Adjoins existing reclamation main; land-owner expressed opposition to pond at public hearing in 1990
L1	66-200-09	290	Grass and oak woodland	31	$ 9.0	$ 31,100	Adjoins existing reclamation main; land-owner expressed opposition to pond at public hearing in 2001. High dam would require DSOD permit.
L2	66-200-09	113	Grass and oak woodland	17	$ 4.7	$ 41,800	Adjoins existing reclamation main; land-owner expressed opposition to pond at public hearing in 2001. High dam would require DSOD permit.
X	66-300-21	129	Vineyard	17	$ 5.4	$ 42,100	Adjoins Geysers Recharge pipeline and farmlands with potential irrigation

Among the alternative ponds, estimated capital cost per million gallons of capacity is lowest for use of Pond G, because the irrigation pond has been constructed already by the land-owner, Gallo Vineyards. The capital cost estimate presented here is based solely on construction of a reclaimed water main from Shone Farm to the pond site.

Of the other potential sites, capital costs estimates are lowest for construction of a pond at site L. This site would also offer the benefit of adjoining the Town's existing 20 inch reclamation main. Table 6 presents two potential pond capacities at site L: 113 and 290 MG. These capacities represent a small capacity that would be economically viable and the largest capacity that the site could be expected to accommodate. Construction of a pond at site L would require review and permitting by the DSOD, due to the height of the dam. The owner of the property has stated that his family is not interested in having a storage pond on the property.

Pond X would be located at a site that is already developed as vineyard, so that construction would not result in loss of natural habitat. Costs for Pond X given in Table 6 reflect construction of a pipe to provide reclaimed water via the Geysers Recharge pipeline. Alternately, the Town could construct an extension to Pond X from the existing 12 inch main at Keiser Park. Construction of a reclamation main from Keiser Park would add an estimated $0.7 million to overall Pond X capital costs.

The high per gallon cost of Pond C reflects the cost of construction of approximately 10,000 lineal feet of reclaimed water main to the pond site. Development of Pond C would be more viable if it were supported by extension of reclaimed water supply to sites en route and to farmlands easterly of the Town. Pond C shares with Pond X the benefit of being located at a site that is already developed as vineyard, so that there would be no loss of natural habitat due to construction of the pond.

Alternative Storage Pond Sites Not Identified in *Draft Water Reclamation Master Plan*

The Town may find that there are other potential sites for reclaimed water storage ponds to serve **Master Plan** capacity requirements. Sites may be identified due to increased interest in use of reclaimed water by farmers or to proximity to the Geysers Recharge pipeline. Such sites would be evaluated based on factors such as costs to the Town, proximity to irrigation lands, regulatory requirements and environmental considerations.

Potential Supply of Reclaimed Water to Privately-Owned Storage Ponds

A number of vineyard owners have expressed interest in using reclaimed water from the Town for irrigation of vineyards. Land-owners could potentially construct storage ponds on private lands, providing additional capacity beyond **Master Plan** requirements. During the winter months, the Town could fill these privately-owned ponds with reclaimed water that it would otherwise discharge to Mark West Creek. Land-owners could use the stored water for irrigation during the growing season. The amount of water available to fill privately-owned ponds would be limited by the Town's existing reclaimed water commitments and by annual weather conditions. Because the supply of reclaimed water is most limited in a dry weather year, dry weather year projections define the ability of the Town to provide a reliable reclaimed water supply to privately-owned ponds. Figure 2.3 shows the potential for filling privately-owned ponds, along with minimum storage capacity requirements for the **Master Plan**.

Potential agreements for supplying privately-owned ponds with reclaimed water would be evaluated on a case-by-case basis.

2.4 IRRIGATION

General

A total of 820 equivalent acres of irrigation lands would be served with reclaimed water under build-out of the adopted **Master Plan**. Existing and potential irrigation lands are shown in Figure 2.1. The Town has the potential to expand irrigation both within its boundaries and on surrounding agricultural lands. The **Master Plan** includes development of a pilot silviculture project, which would use reclaimed water for irrigation of a tree farm.

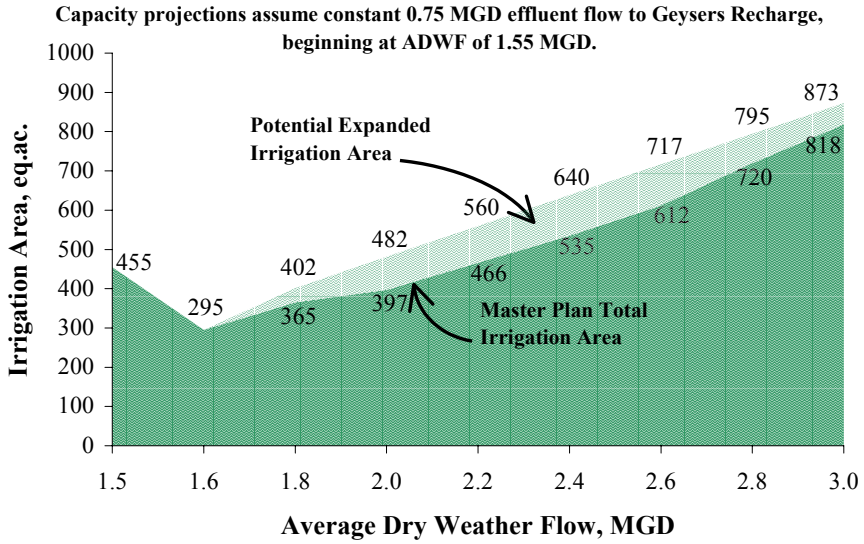
The Town Council has made irrigation reuse the top priority in the Town's **Master Plan**. Irrigation area may be expanded beyond minimum **Master Plan** requirements with the support of adequate storage capacity.

The ***Water Reclamation EIR*** evaluated at project level the potential expansion of the reclamation irrigation area by up to 785 new equivalent acres and 65,000 lineal feet of new distribution mains. No further environmental evaluation is anticipated for construction of irrigation projects described in the ***EIR***.

The following sections present irrigation area requirements projected for the adopted **Master Plan**, current and near-term irrigation projects, and potential long-term irrigation projects. Discussion includes the potential for expanding irrigation lands beyond **Master Plan** requirements by providing reclaimed water to farmers for storage in privately-owned ponds.

Projected future irrigation area requirements and potential expanded areas that could be irrigated from privately-owned ponds, for increasing ADWF, are presented in Figure 2.4.

Figure 2.4
Master Plan Irrigation Areas
and Potential Expansion Using Privately-Owned Ponds



The basis for determining capacities shown in Figure 2.4 is as follows:

Master Plan Total Irrigation Area - The Master Plan total irrigation area is the number of equivalent acres of reclaimed water use lands that the Town would need in order to meet the annual water balance. Values shown for the years immediately following connection to the Geysers Recharge Project reflect the reduction in irrigation commitments that would be needed in order to provide 0.75 MGD for Geysers Recharge flows. If the Town's agreement for use of the Geysers Recharge pipeline includes Geysers Recharge flows of less than 0.75 MGD in the early years, the Town would be able to maintain existing irrigation commitments. As flows reached approximately 2.2 MGD ADWF, the Town would be able to provide 0.75 MGD to Geysers Recharge while maintaining current irrigation levels.

Potential Expanded Irrigation Area - Potential irrigation area is the area that could be served if the potential privately-owned storage pond capacities shown in Figure 2.3 were filled with reclaimed water during the winter months. Potential total expanded irrigation areas shown on Figure 2.4 reflect the maximum projected reliable dry-weather-year irrigation capacity from privately-owned ponds; it is projected that an additional 40 equivalent acres could be irrigated during an average weather year. Forty equivalent acres would correspond to approximately 240 acres of vineyards. An agreement for use of the Geysers Recharge pipeline that allowed for flexibility in Geysers Recharge allocations would allow the Town to provide more water to privately-owned ponds, in line with stated reclamation priorities.

Reclaimed Water Irrigation Within and Outside Town Limits

Specific irrigation lands that are discussed in the following sections include lands located both within and outside Town limits. Irrigation in these two areas offer different challenges and benefits, as outlined below:

Quality	Inside Town Limits	Outside Town Limits
Current Acreage	136 equivalent acres, approximately 31% of total reclaimed water use	301 equivalent acres, approximately 69% of total reclaimed water use
Cost	High development and operating costs per equivalent acre	Potential high cost for construction of distribution mains
Usage patterns	Peak usage in early morning hours	Peak usage between sunrise and sunset
Town provides	Pressurized water	Pressurized water
Regulatory environment	Subject to Title 22 requirements for disinfected tertiary effluent. Uses with high potential for public contact typically are subject to greater scrutiny by regulatory agencies.	Subject to Title 22 requirements for disinfected tertiary effluent.
Operations	Users conduct routine irrigation, with oversight by Town personnel Dual-plumbed systems require annual inspections	May be operated by users or by Town personnel
Potable water savings	Direct reduction in peak water demand for Town potable water; estimated savings of $0.6 million in potable infrastructure	Reduction in draw from rural aquifers
Annual water use per acre of land	Varies from approximately 5 inches (0.4 acre-feet per acre) for landscaping to 30 inches (2.5 acre-feet per acre) or more for turf in parks	Varies from approximately 5 inches (0.4 acre-feet per acre) for vineyards to 30 inches (2.5 acre-feet per acre) for grasslands

Existing Reclamation Lands

Existing and potential irrigation lands are shown on Figure 2.1. As of October 2001, the Town was providing reclaimed water to 421 equivalent acres of reclamation lands. Location, operation, acreage and equivalent acreage of existing reclamation lands are summarized in Table 7.

Table 7: Existing Reclaimed Water Use Areas - 2001

Reclaimed Water Use Area	Assessor's Parcel Number	Operator	Overall Acres	Equivalent Acres
Windsor Golf Course	164-140-026	Golf Course	112	112
Windsor High School [1]	164-003-052	School	11	11
Vintana Subdivision landscaping	164-130-F	Town	1	1
Treatment Plant	164-130-002	Town	8	8
Shiloh Cemetery	164-140-003	Cemetery	1	1
NIECO	164-130-006	NIECO	6	1
Santa Rosa Junior College Criminal Justice Facility	164-150-020, 035, 036, 037	SRJC	8	3
Dondero	066-230-061	Farmer	18	18
Dry Creek Vineyard	066-210-088	Farmer	30	5
Garrison	066-220-35	Farmer	15	2
Hall	164-150-21	Farmer	4	4
Kunde Vineyards	066-210-090	Farmer	18	2
Locatelli	066-220-37	Farmer	54	54
Martinelli [2]	164-130-003	Farmer	36	6
Moon Valley Ranch	066-220-02, 19	Farmer	30	30
Pozzi	164-150-08	Farmer	16	16
Murell	164-150-001	Farmer	6	6
Christensen [3]	066-230-40, 42	Farmer	9	9
Martin [4]	066-230-074	Farmer	30	5
Oddfellows	164-160-02	Town	30	30
Hudson (Town owned)	066-220-38	Town	55	55
District owned parcel adjacent to Dry Creek Vineyards	066-210-091	Town	2	2
Laguens (Town owned)	066-280-041, 045	Town	40	40
TOTAL				**421**

Equivalent acre = an acre of land that uses 30 inches (2.5 acre-feet) of irrigation water per year.

[1] At present, playing fields at the High School are irrigated with reclaimed water. The High School plans to extend use of reclaimed water to a dual system for campus landscaping and toilets at the school.

[2] The Martinelli parcel is being converted to the Vintage Greens Subdivision. Planned reclaimed water use is reflected in Table 8.

[3] Did not use Town reclaimed water in 2001

[4] Connected to Town reclamation water system but has not utilized reclaimed water

Current Reuse Expansion Projects

At the time this document was prepared, a number of parcels were scheduled for connection to the Town reclaimed water system in the near future. These lands, which are listed in Table 8, include 44 equivalent acres of irrigation within the Town and Town Sphere of Influence. Together with existing active irrigation lands, these projects would bring the total reclamation area to approximately 524 equivalent acres.

Table 8: Irrigation Reuse Sites Under Development - 2001

Parcel	Assessor's Parcel Number	Operator	Overall Acres	Equiv. Acres	Irrigation Use	Expected Year to Begin Reclaimed Water Use	Estimated Capital Cost ($ million)
Keiser Park [1]	066-180-040 066-170-017	Town	8	8	Town park	2002-03	$ 0.04
Town Green	066-100-065	Town	1	1	Town park	2002	connection pending
Windsor High School [2]	164-003-052	High School	20	3	Campus landscaping and toilet flushing	2002	connection pending
Vintage Greens subdivision [3]	164-130-003	Homeowners; Town	108	21	Residential landscaping; park	2001-07	$ 1.50
Soccer Park	164-130-006	Town	10	10	Playing fields	2002	NA
Shone Farm [4]	083-010-041	SRJC	56/54	65	Pasture/ Vineyard	2002	$ 0.58
Town Corp Yard	164-030-015, etc.	Town	8	1	Landscaping	2003	NA
TOTAL				**109**			**$ 2.12**

NA – not applicable

[1] A Town reclaimed water main is in place to provide water to Keiser Park. The Town plans to use reclaimed water for irrigating the park after completion of park development project.

[2] At present, playing fields at the High School are irrigated with reclaimed water. The High School plans to extend use of reclaimed water to a dual system for campus landscaping and toilets at the school.

[3] The Vintage Greens Subdivision is being developed on the Martinelli parcel listed in Table 7. Projected irrigation areas will be phased in as the subdivision is constructed. The developer began irrigation of landscaping at model homes in November 2001.

[4] Portions of Shone Farm were irrigated in 2001. Full irrigation will be possible upon completion of a pump station, the estimated capital cost of which is shown in the right-hand column.

Potential Reuse Expansion Projects

Potential future irrigation lands in addition to those described in Table 8 have been identified in the ***Draft Water Reclamation Master Plan*** and evaluated in the ***Water Reclamation EIR***. These lands, which are shown on Figure 2.1, include in-Town sites in the vicinity of Shiloh Road and out-lying agricultural lands. Most of the agricultural lands are currently developed as vineyards. Estimated potential acreages and irrigation development costs are presented in Table 9. The Town may also develop reclamation contracts with sites that have not been identified in the ***Water Reclamation EIR***, potentially along the Geysers pipeline.

Connection of all potential sites would not be necessary for fulfillment of **Master Plan** irrigation requirements. Potential sites would be evaluated by the Town on a case-by-case basis.

Table 9: Potential Irrigation Reuse Areas for Long-Term Expansion

Potential Irrigation Lands	Approximate Number of Acres	Estimated Equivalent Acres	Estimated Cost for Irrigation Development ($ million)	Estimated Cost of Reclaimed Water Main Construction ($ million)
Agricultural along existing Line 1	300-800	109	$ 0.49	NA
Vineyards along Eastside Road	600	120	$ 0.66	$1.55
Lands along Shiloh Road & easterly of Town	900	210	$ 4.47	$0.58 [1]
Twin Valley Ranch (Gallo Vineyards)	400	120	NA[2]	NA[2]

[1] Reclaimed water main cost assumes distribution main to potential Pond C has been constructed.
[2] Cost estimate assumes that irrigation infrastructure currently in place would be used. Cost of reclaimed water main is reflected in Table 6.

Silviculture Pilot Project

The adopted **Master Plan** includes a reclamation pilot study of silviculture, the cultivation of forest and shade trees. The Town may allocate a section of Town-owned irrigation land for the silviculture project, or other lands could be used under agreement with the property owner. The pilot study would provide an opportunity to develop information regarding water use by of different varieties of trees, using varying application rates and methods. Trees with commercial value, e.g., as timber, could be planted, as a potential means for revenue to the Town. Stands of trees of various species could be compared for survival, growth and seasonal water uptake patterns.

Estimated capital cost for development of a silviculture pilot project is $39,000 per acre. Potential additional costs would include property acquisition, reclaimed water supply main and monitoring equipment.

2.5 GEYSERS RECHARGE

The adopted Master Plan includes supply of up to 0.75 MGD of reclaimed water to the City of Santa Rosa Geysers Recharge Project. The Geysers Recharge Project, described in the ***Draft Water Reclamation Master Plan***, Section 8.5.4, will supply disinfected tertiary effluent from the Laguna Regional Wastewater Treatment Plant to the Geysers steamfield northeasterly of Healdsburg for injection by Calpine Corporation to increase electrical power production. The Geysers Recharge pipeline alignment is shown on Figure 2.1. The route goes through agricultural lands, affording the opportunity to supply reclaimed water for irrigation to farmers en route, as well as to convey water for Geysers Recharge.

The October 2001 City of Santa Rosa estimate of capital costs for the Geysers Recharge Project was $160 million. Annual operations and maintenance costs were estimated at $900,000. Projected start-up date was the end of 2002.

At the time this document was prepared, discussions were underway between Town staff and the City of Santa Rosa, Calpine and the Coalition for Sustainable Agriculture regarding use of the Geysers pipeline for transport of the Town's reclaimed water for irrigation of agricultural lands and/or Geysers Recharge. Costs, terms and conditions had not been established.

Projected minimum storage capacity requirements and irrigation abilities presented in this document are based upon contributions by Windsor to the Geysers Recharge Project of 0.75 MGD, beginning in 2003. For purposes of establishing component sizing, discharge through the Geysers pipeline for irrigation is viewed in the same way as irrigation from the Town's reclamation lines. The Town may be able to utilize the Geysers Recharge pipeline for filling of privately-owned ponds (Section 2.3). Completion of a Town Geysers Recharge Pump Station and connecting piping will be required before the Town can discharge to the Geysers pipeline, for either irrigation or Recharge. The Town is projected to connect to the Geysers Recharge pipeline in the year 2003, at which time the ADWF is projected to be 1.55 MGD.

In the event that the schedule for connection to the Geysers Recharge Project is not met, the planned near-term storage capacity of 205 MG and irrigation area of 524 equivalent acres are projected to be adequate for maintaining the reclamation system water balance for flows associated with an ADWF of up to 1.7 MGD, with no Geysers Recharge.

Town Geysers Recharge Pump Station

The Town would construct a pump station and main to connect to the Geysers Recharge pipeline. These facilities could also be used to convey Town reclaimed water to privately-owned ponds and reclamation lands along the Geysers Recharge pipeline route.

Pump capacities will be determined based upon the desired ability to supply reclaimed water to the Geysers pipeline. For purposes of cost estimation, it was assumed that three vertical turbine pumps would be installed, each capable of pumping approximately 0.375 MGD into the pipeline. Estimated capital cost for the pump station and connecting main is $500,000. Annual operations cost for the pump station and connecting main is estimated to be $100,000. Estimated operating costs include power for pumping 0.75 MGD into the pipeline, 365 days per year. These costs do not include costs for use of the City of Santa Rosa's Geysers Recharge pipeline.

2.6 DISCHARGE TO MARK WEST CREEK

The Town's National Pollutant Discharge Elimination System (NPDES) permit allows for discharge to Mark West Creek at a rate of up to one percent of the natural flow in the creek as measured at the point of discharge (***Draft Water Reclamation Master Plan***, Section 4.3.3), during the period from October 1 and May 14. Discharge is managed with the objective of matching supply of reclaimed water to the needs of irrigation users.

Projected storage capacity requirements and irrigation abilities presented in this document are based upon continued creek discharge at permitted rates. In the years following connection to the Geysers Recharge Project, total annual discharge to the creek may be reduced. Discharge to Mark West Creek is the lowest reclamation priority.

No construction project would be required for continued one percent discharge to Mark West Creek at the existing discharge outlet.

Constructed Wetlands

The adopted **Master Plan** includes creation of a constructed wetlands on an area of approximately 10 acres along Mark West Creek on the Town-owned Laguens parcel, as shown in Figure 2.1. During the winter, the Town's tertiary effluent would flow through the wetlands before discharge to Mark West Creek. During the dry season, sufficient effluent to maintain the wetlands would be routed through the wetlands before application on adjoining irrigation lands. The wetlands would provide dual enhancement – creation of wildlife habitat and improvement of effluent quality.

Capital and annual operations costs for the wetlands are estimated to be $0.72 million and $0.01 million, respectively.

Constructed wetlands were evaluated at a program level in the ***Water Reclamation EIR***.

2.7 BIOSOLIDS

Treatment and disposal/reuse of wastewater biosolids are integral elements of the Town reclamation system. Biosolids are separated from the wastewater during secondary and tertiary treatment and pumped to sludge ponds. The Town removes the stabilized biosolids from the ponds and disposes of the biosolids in a permitted manner, usually as soil amendment applied to agricultural lands.

System improvements completed in 2001 included construction of two additional sludge stabilization lagoons, purchase of a sludge dredge, installation of a sludge decant tank, and improvements to the bridge from the treatment plant to the sludge ponds and decant tank staging area.

2.8 COST ESTIMATES

The estimated capital costs for **Master Plan** project components have been presented in preceding sections that address the specific components. Overall Master Plan capital and operations and maintenance costs are summarized in Table 10. Estimates have been up-dated for October 2001 costs, with the cost basis as described in the ***Draft Water Reclamation Master Plan***. Costs for projects that have been completed are not included.

Table 10: Estimated Long-Term Capital Costs and Increase in Operating Costs

Component	Capital Cost ($ million)	O&M Cost ($ million per year)
Treatment Plant Expansion [1]	$ 2.2	$ 2.33
Geysers Recharge Pump Station and Main [2]	$ 0.5	$ 0.10
Storage Pond Expansions	$ 11.1	$ 0.30
Irrigation	$ 8.1	$ 0.36
Silviculture Pilot Project (2 acres)	$ 0.1	$ 0.03
Constructed Wetlands (10 acres)	$ 0.7	$ 0.04
Biosolids handling and removal [3]	-	$ 0.35
TOTAL	**$ 22.7**	**$ 3.51**

[1] Treatment plant expansion capital costs do not include recent and current Phase IIA projects.
[2] Estimated Geysers Recharge Costs do not include contractual costs for connection to and use of the Geysers pipeline. These costs were under negotiation at the time this document was prepared.
[3] Assumes no capital improvement projects, and continued employment of outside contractor to dewater and dispose of sludge.

Costs to the Town for connection to and use of the Geysers pipeline were under negotiation at time this document was prepared. The process of determining the value of using the pipeline, potentially for both irrigation and Geysers Recharge, had not been completed. The actual costs will be determined by agreements between the Town, the City of Santa Rosa, Calpine Corporation and other potential users.

Long term pond construction costs were based on construction of Pond C, plus a 20 MG pond at another site. Pond C was utilized for cost estimates because of its proximity to potential irrigation lands, and because it presents a conservative cost scenario. Actual costs could be lower if the Town is able to secure sufficient irrigation along the Geysers Recharge pipeline along with storage, so that irrigation of lands easterly of Town is not necessary.

Costs for irrigation development were based upon completion of current irrigation projects and long-term development of agreements for irrigation along the existing reclamation main, Eastside Road, and easterly of Town. Actual costs could be lower if the Town is able to secure sufficient irrigation along the Geysers pipeline or at other locations. Irrigation development costs are based upon addition of approximately 480 equivalent acres of new lands, based upon an assumption that 340 equivalent acres of existing irrigation lands would be retained through the planning period.

Capital costs were based on construction costs with allowances of 20 percent for engineering and contract administration costs, 1 percent for legal fees, permits and appraisals, and 10 percent for contingencies, plus land costs where applicable. Electrical costs assumed to be $0.15 per kWh, based upon information provided by Town staff. Capital costs may be subject to change.

Costs presented herein do not include the estimated savings of approximately $0.6 million in potable water infrastructure costs resulting from use of reclaimed water for in-Town reuse.

APPENDIX

RESOLUTION NO. 1006-01

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF WINDSOR

ADOPTING A WATER RECLAMATION MASTER PLAN

FOR TREATMENT, STORAGE AND DISPOSAL

CONSISTING OF THE ALTERNATIVE 4X IMPLEMENTATION PROGRAM,

AND ADOPTING PRIORITIES FOR USE OF RECLAIMED WATER,

AND ADOPTING RELATED MITIGATION FINDINGS,

A STATEMENT OF OVERRIDING CONSIDERATIONS

AND A MITIGATION MONITORING PROGRAM

RESOLUTION NO. 1006-01

A RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF WINDSOR

ADOPTING A WATER RECLAMATION MASTER PLAN FOR TREATMENT, STORAGE AND DISPOSAL CONSISTING OF THE ALTERNATIVE 4X IMPLEMENTATION PROGRAM, ADOPTING PRIORITIES FOR USE OF RECLAIMED WATER, AND ADOPTING RELATED MITIGATION FINDINGS, A STATEMENT OF OVERRIDING CONSIDERATIONS AND A MITIGATION MONITORING PROGRAM

WHEREAS, consistent with Windsor General Plan Water and Wastewater policies E.4.6 and E.4.8, and related Implementation Program E.2, the Town of Windsor prepared a draft Water Reclamation Master Plan for Treatment, Storage and Disposal, dated January, 1999 (hereafter, AMaster Plan@) and incorporated herein by reference as a background document; and

WHEREAS, the draft Master Plan identified eleven alternatives and subalternatives to meet projected wastewater average dry weather flows of 3.0 million gallons per day, which alternatives generally consisted of different combinations of pond storage, disposal by irrigation and/or participation in the City of Santa Rosa Geysers Recharge Project (hereafter, AGeysers Pipeline@); and

WHEREAS, the purpose of the draft Master Plan was to identify infrastructure improvements for wastewater treatment, storage and disposal needs of development under the Town=s General Plan at buildout; and

WHEREAS, based on the draft Master Plan analyses and on public comment received during Town Council meetings on January 20, 1999 and March 3, 1999, the Town Council identified three alternatives for further technical and environmental study under the California Environmental Quality Act (hereafter, ACEQA@) generally as follows:

> Alternative 1C would continue discharges of 1% of the natural stream flow to Mark West Creek, increase treatment plant capacity to 3.0 million gallons per day average dry weather flow, increase pond storage by up to 351 million gallons, and increase irrigation acreage by 785 equivalent acres.
>
> Alternative 4I would continue discharges of 1% of the natural stream flow to Mark West Creek, increase treatment plant capacity to 3.0 million gallons per day average dry weather flow, discharge up to 1.25 million gallons per day into the Geysers Pipeline, increase pond storage by up to 72 million gallons, and increase irrigation acreage by 300 equivalent acres.
> Alternative 4X would continue discharges of 1% of the natural stream flow to Mark West Creek, increase treatment plant capacity to 3.0 million gallons per day

average dry weather flow, discharge up to 0 .75 million gallons per day to the Geysers Pipeline, increase pond storage by up to 182 million gallons, and increase irrigation acreage by 495 equivalent acres.

The Council directed that all three of the alternatives be examined at an equal level of detail in the Environmental Impact Report (hereafter, AEIR@); and

WHEREAS, the Town prepared a draft EIR on Alternatives 1C, 4X and 4I, circulated it for public review and comment, and responded to all oral and written comments. On February 7, 2001, the Town Council adopted Resolution No. 995-01 certifying the EIR as complete under CEQA; and

WHEREAS, on February 7, 2001, the Town Council considered the three Master Plan implementation alternatives reviewed in the certified EIR as well as staff=s proposal to establish priorities for use of reclaimed waters, at which time all interested personas were given an opportunity to be heard; and

WHEREAS, based on the certified EIR, and on comments from the public and from Town staff, the Council by straw vote indicated support for Alternative 4X as the Master Plan implementation alternative and support for establishing priorities for use of reclaimed waters; and

WHEREAS, the Town Council continued the matter to its regular meeting of March 7, 2001 for preparation of findings related to approval of Alternative 4X as the Water Reclamation Master Plan implementation project (hereafter AProject@); and

WHEREAS, the certified EIR identified certain significant and potentially significant environmental impacts which could be mitigated to a level of insignificance, therefore mitigation findings are required pursuant to CEQA ' 21081 and CEQA Guidelines ' 15091 upon project approval; and

WHEREAS, the certified EIR identified certain impacts of the Project which are not environmentally significant and which require no findings or mitigation upon Project approval; and

WHEREAS, the certified EIR identified significant and potentially significant environmental impacts of the Project which could not be mitigated to a level of insignificance, therefore the alternative implementation projects analyzed in the certified EIR were examined to determine if they would avoid any of the unmitigated significant impacts; and

WHEREAS, the certified EIR identified significant and potentially significant environmental impacts which could not be reduced to a level of insignificance, therefore a Statement of Overriding Considerations is required upon Project approval; and

WHEREAS, CEQA ' 21081.6 and CEQA Guidelines ' 15097 require that where

mitigation findings are made for significant and potentially significant environmental impacts, a mitigation monitoring program shall be adopted upon Project approval to ensure compliance with the mitigations during Project implementation; and

WHEREAS, the location and custodian of the documents which constitute the record of proceedings upon which the Town=s decisions on the Project were based is the Town of Windsor, 9291 Old Redwood Highway, Building 400, Windsor, California 94592, Attention: Matt Mullan.

NOW, THEREFORE, BE IT RESOLVED THAT

A. The foregoing recitals are true and correct and made a part of this resolution.

B. The Town Council hereby approves a Water Reclamation Master Plan for Treatment, Storage and Disposal, identified and analyzed in the certified EIR as Alternative 4X.

C. The Town Council hereby directs that notwithstanding the above approval of Alternative 4X as the Town=s Water Reclamation Master Plan, construction of either Pond S, T1 or T2 be postponed as long as possible in order to avoid extensive tree loss associated with such ponds, and encourages the use of alternative pond sites identified for the Project.

D. The Town Council hereby adopts the following series of priorities regarding the use of the Town=s reclaimed water.

Priority 1 - Reuse within the Town limits or sphere of influence. Examples: irrigation of front and backyard landscaping in single family homes, Town parks, commercial and industrial landscaping, cooling system water and other non-potable uses.

Priority 2 - Agricultural reuse outside of Windsor utilizing both Windsor=s distribution system and the Geysers pipeline. Examples: vineyards, pasture lands, recreational lands and other non-potable uses along Eastside, Westside, Trenton Healdsburg Roads and any other agricultural lands along the Geysers pipeline route.

Priority 3 - Reuse at the Geysers. Examples: when weather conditions preclude either irrigation or discharge to Mark West Creek water could be pumped up to the Geysers for reuse in the steam fields. This may require the Town to contribute a steady minimum amount to the Geysers in order to make it cost effective for Calpine Corporation, with an opportunity to send more water to the Geysers under certain operating conditions when reuse is limited or constrained.

Priority 4 - Discharge to Mark West Creek. Examples: every effort would be made to dispose of the Town=s reclaimed water either through irrigation or

pumping up to the Geysers. The Town=s lowest priority would be discharge to Mark West Creek. Under any conditions, it is expected that the Town would continue to discharge a steady minimum amount to Mark West Creek each year.

E. Findings. The Town Council hereby adopts the Mitigation Findings set forth in attached Exhibit B, the Alternatives Findings set forth in attached Exhibit C, and the Statement of Overriding Considerations set forth in attached Exhibit E.

F. Mitigation Monitoring and Reporting Program. The Town Council hereby adopts the Mitigation Monitoring and Reporting Program set forth in attached Exhibit D.

G. Exhibits. The following exhibits are attached to this resolution and incorporated herein by reference.

Exhibit A: Introduction and Project Description
Exhibit B: Mitigation Findings
Exhibit C: Alternatives Findings
Exhibit D: Mitigation Monitoring and Reporting Program
Exhibit E: Statement of Overriding Considerations

PASSED, APPROVED AND ADOPTED this 7th day of March, 2001 by the following vote:

AYES:
NOES:
ABSENT:
ABSTAIN:

_____
MAYOR

ATTEST:

_____
TOWN CLERK

EXHIBIT A –
INTRODUCTION AND PROJECT DESCRIPTION – ALTERNATIVE 4X

TOWN OF WINDSOR WATER RECLAMATION MASTER PLAN FOR TREATMENT, STORAGE, AND DISPOSAL

A.1. INTRODUCTION

BACKGROUND

The Certified Environmental Impact Report (EIR) prepared for the Project addresses the potential environmental effects of the implementation of the Water Reclamation Master Plan for Treatment, Storage, and Disposal. The Master Plan identifies improvements to the Town's treatment, storage and disposal systems necessary to meet wastewater flows associated with buildout under the Town's General Plan – 2015. One of the alternatives examined, Alternative 4X, was identified by the Town Council for implementation as the Town's Water Reclamation Master Plan for Treatment Storage and Disposal, hereafter referred to as the Project. The Project components are located in the Town of Windsor and unincorporated Sonoma County. These findings are made in accordance with CEQA, including without limitation, CEQA Guidelines §15091 and §15092. **Exhibit A** includes an introduction and background for CEQA Findings regarding the Project. **Exhibit B** contains Mitigation Findings regarding the Project's identified significant impacts. **Exhibit C** contains findings regarding project alternatives. **Exhibit D** contains the Mitigation Monitoring and Reporting Program (MMRP). **Exhibit E** contains a Statement of Overriding Considerations regarding significant unavoidable impacts identified for the Project.

The Town Council certified an EIR for the Project on February 7, 2001, through Resolution 995-01. The Certified EIR consists of a Draft EIR and Responses to Comments document, as further set forth in Resolution 995-01. No new significant environmental issues, beyond those already covered in the Draft EIR, were raised during the comment period, and the Town directed that a Final EIR (FEIR) be prepared. Response to comments received during the comment period and staff-initiated revisions to Draft EIR text did not involve any new significant impacts or provide significant new information that would require re-circulation of the Draft EIR pursuant to CEQA Guidelines §15088.5.

MITIGATION FINDINGS

Section 15091 of the CEQA Guidelines requires that, for each significant environmental effect identified in the EIR for a proposed Project, the approving agency must issue a written finding reaching one or more of three conclusions:

1. Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effect as identified in the certified EIR.

2. Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the findings. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

3. Specific economic, legal, social, technological, or other considerations, make infeasible the mitigation measure or project alternative identified in the EIR.

These findings accomplish the following: a) they identify the significant environmental effects identified in the Certified EIR for the Project; b) they incorporate all identified mitigations measures, and; c) they indicate whether a significant effect is avoided or reduced by the adopted mitigation measures to a less-than-significant level, or remain significant and unavoidable, either because there are no feasible mitigation measures or because, even with implementation of mitigation measures, a significant impact will occur. For any effects which remain significant and unavoidable, a statement of overriding consideration must be adopted upon approval of the Project (See Exhibit E). The Findings in Exhibits B, C, D and E are based upon the Certified EIR and other evidence in the record of preceedings.

LEGAL EFFECT OF FINDINGS

To the extent that these Findings conclude that various proposed mitigation measures outlined in the EIR are feasible and have not been modified, superseded, or withdrawn, upon approval of the Project, the Town hereby binds itself to implement these measures. (CEQA §21081.6 subd. (b).).

ADMINISTRATIVE RECORD

The Town is the custodian of the administrative record, including all CEQA documents and the other background documents and materials, which constitute the record of the proceedings upon which the Town Council decision on the EIR and the Project is based. The administrative record is located at the Town Administrative Offices located at 9291 Old Redwood Highway, Windsor, CA 95492-0100.

A.2 PROJECT DESCRIPTION

Like all three of the alternatives examined in the Certified EIR, the Project provides reuse options for tertiary treated effluent not discharged to Mark West Creek under the Town's existing NPDES permit. The Town's permit provides for seasonal discharge of up to 1% of the natural stream flow in Mark West Creek between October 1 and May 14. Flows above this discharge limit are currently stored and used for seasonal irrigation of various land uses, including pasture, vineyard, parks, play fields, and golf course. To meet future wastewater flows, project components are listed below. A discussion of each component is also provided. The level of analysis provided for each component by the Certified EIR is provided in Table A-1.

- Up to a maximum of 0.75 MGD for Geysers recharge
- New pump station to connect Town system to Geysers pipeline
- 182 MG of additional reclaimed water storage
- 3-4 additional reclaimed water pumping stations
- 495 equivalent acres of new irrigation lands
- Up to 10,000 feet of irrigation infrastructure
- Wastewater treatment plant expansion up to 3.0 MGD/ADWF
- Mark West Creek discharge up to 1% of the natural stream flow
- Constructed wetland near the Mark West Creek discharge location
- Silviculture pilot study
- Water conservation program

Overview. Under Alternative 4X the Town would continue its current practices of winter discharge to Mark West Creek and dry season irrigation. In addition, the Town could deliver 0.75 (MGD) to the proposed Santa Rosa Geysers Recharge Project. The Town would also utilize the Geysers Recharge pipeline to deliver reclaimed water to irrigation sites and/or storage ponds along the pipeline route. Reclaimed water would be held in effluent storage ponds during periods of limited discharge and/or irrigation. A summary of facilities to be implemented under Alternative 4X and the level of CEQA analysis provided by the Certified EIR is provided in Table A-1. Facilities and irrigation acreage associated with Alternative 4X are shown in Figure 2-2 of the Certified EIR.

Geysers Recharge. Under Alternative 4X, the Town would participate in the City of Santa Rosa Geysers Recharge Project. The Town would contribute 0.75 MGD to Geysers Recharge, from startup through the life of the Geysers Recharge Project. The Town would construct a pump station at the treatment plant and a connecting main to the Geysers Recharge pipeline, allowing conveyance of the Town's flow to the Geysers for injection. These facilities could also be used to convey Town reclaimed water to irrigation users along the Geysers Recharge pipeline route.

TABLE A-1
ALTERNATIVE 4X SUMMARY AND CEQA ANALYSIS LEVEL

	Alternative 1C	Alternative 4X	Alternative 4I	CEQA Analysis Level	
Variable Elements				Project Level	Program Level
Geysers Recharge	**None**	**0.75 MGD**	**1.25 MGD**	**X**	
WRTP Pump Station	**None**	**X**	**X**		
Additional Storage	**351 MG**	**182 MG**	**72 MG**		
Ponds Z, S, T1, T2				**X**	
Ponds C, G, J1, J2, X					**X**
Ponds K, L1, L2, V, W, Y					**X**
Pump Stations	**5-6**	**3-4**	**2**		**X**
Additional Irrigation	**785 eq acre2,500–3000 ac**	**495 eq acres1,500-2000 ac**	**300 eq acres900-1,500 ac**	**X**	
Irrigation Infrastructure				**X**	
Eastside Road System	**33,000 feet**	**10,000 feet**	**0 feet**	**X**	
Westside Road System	**14,000 feet**	**0 feet**	**0 feet**	**X**	
Southeast System	**18,000 feet**	**0 feet**	**0 feet**	**X**	
Common Elements					
~~Treatment – 3.0 MGD~~	X	X	X	X	
Mark West Discharge- 1% Natural Stream Flow	X	X	X	X	
Constructed Wetland	X	X	X		X
Silviculture Pilot Study	X	X	X		X
Water Conservation	X	X	X		X

MGD – million gallons per day
MG – million gallons
eq acre – equivalent acre. As defined in the *Water Reclamation Master Plan*, an equivalent acre requires 30-inches of irrigation water per year.

Storage Ponds. The *Water Reclamation Master Plan* identifies 15 potential storage pond sites, and storage pond locations. Under Alternative 4X, the Town would implement storage at Pond Z (38 MG), Pond S (180 MG) or Pond T. Two configurations for Pond T were examined in the Certified EIR; T1 (249 MG) and T2 (146 MG). Table A-2 summarizes the volumes, Assessor Parcel Numbers (APNs), surface area, and water surface elevations for pond sites identified for implementation. Alternative 4X storage requirement is projected to be 182 MG at buildout. The storage configuration between Pond Z, Pond S and Pond T (T1, T2) will be implemented in the

most cost effective manner given site conditions and storage requirements at the time of construction. Based upon policy direction from the Town Council, the Town will continue to maximize reuse options in order to delay the construction of Pond S or Pond T (T1, T2) until necessary.

TABLE A-2
APPROVED POND SITES – POND Z, POND S OR POND T (T1, T2)

Pond	Maximum Capacity (MG)	APN	Area Needed (acres)	Maximum Depth (ft)	Maximum Water Surface El. (ft)
S	125	66-230-67	14	65	180
T1	249	66-230-67	20	102	200
T2	146	66-230-67	14	82	180
Z	38[a]	164-140-04	--	20	105

[a] Volume increase above present 42MG in existing Ponds 8, 9 and 10.
[b] Ponds with numeric identifiers represents a second pond configuration and capacity at the same site.

Irrigation Lands. Approximately 495 equivalent acres of new irrigation lands would be provided with reclaimed water under Alternative 4X. The total new irrigation area under Alternative 4X would be in the range of 1,500 to 2,000 acres. Areas identified for reclaimed water utilization under Alternative 4X are shown in Figure 2-2 of the Certified EIR, and include in-Town parks, school yards and residential yards, and agricultural lands westerly and southerly of the Town.

Irrigation Infrastructure. In order to distribute reclaimed water from storage ponds to the irrigation lands identified in Figure 2-2 of the Certified EIR, Alternative 4X would include construction of distribution pipelines. For Alternative 4X, the following irrigation infrastructure would be required:

- Eastside Road System. Approximately 10,000 feet of 16-inch or smaller diameter reclaimed water main would be installed along Eastside Road. Irrigation lands along Eastside Road could be supplied with reclaimed water via the Geysers Recharge pipeline.

- Laterals would connect reclaimed water mains to storage ponds and to irrigation sites.

Water Reclamation Treatment Plant. Facilities at the existing Water Reclamation Treatment Plant (WRTP) would be expanded and improved to provide continued tertiary disinfected treatment of projected full buildout flows of 3.0 MGD Average Dry Weather Flow (ADWF). Improvements to upgrade treatment plant capacity to 2.25 MGD have been considered under

separate environmental review, and are currently being implemented by the Town. Improvements necessary to increase capacity from 2.25 to 3.0 MGD would be generally limited to expansion of existing onsite unit processes, and would include construction of two flocculation tanks, a clarifier, and one additional filter unit. Proposed facilities would be located within the existing fenceline of the (WRTP), and could be installed without interruption of treatment processes. Based upon current flow projections, these improvements are anticipated to be necessary by the year 2006. Site specific information regarding WRTP improvements is provided in Certified EIR Section 2.8, Facility Siting and Construction.

Discharge to Mark West Creek. Reclaimed water would continue to be discharged to Mark West Creek at the existing discharge point at a maximum daily rate of 1% of the natural stream flowrate. Discharge would occur only between October 1 and May 14, in compliance with the Town's existing NPDES permit.

Constructed Wetland. A constructed wetland would be created on an area of approximately 10 acres adjoining the Town's discharge point. During the winter, the Town's tertiary effluent would flow through the wetlands before discharge to Mark West Creek. During the dry season, sufficient effluent to maintain the wetlands would be routed through the wetlands before application on adjoining irrigation lands.

Silviculture Pilot Project. Based upon comments from the public during the *Water Reclamation Master Plan* process, the Town proposes to implement a pilot scale project using subsurface systems for application of treated reclaimed water in the root zone of various tree species to assess potential uptake rates. The Town has not yet identified a potential pilot study site.

Water Conservation. The Town of Windsor is a signatory to *Final Exhibit 1 Attachment to the Memorandum of Understanding* (DWR, September, 1997), which establishes efficient urban water use guidelines by outlining a set of Best Management Practices (BMPs) that all signatories agreed to implement. As such, water conservation continues to be a part of the Town's water management practices, and has been factored into effluent flow projections.

EXHIBIT B

MITIGATION FINDINGS

Pursuant to CEQA §21081 and CEQA Guidelines §15091, the following findings address the project's significant and potentially significant impacts and means for mitigating those impacts. Findings pursuant to §21081 (c) concerning project alternatives are made in Exhibit C.

B.1 GENERAL CONSIDERATIONS

1. *Reliance on Record.* The findings and determinations contained herein are based on the competent and substantial evidence, both oral and written, contained in the entire record relating to the Project and the EIR. The findings and determinations constitute the independent findings and determinations of the Town Council in all respects and are fully and completely supported by substantial evidence in the record as a whole.

2. *Nature of Findings.* Any finding made herein by the Town Council shall be deemed made, regardless of where it appears in this document. All of the language included in this document constitutes findings by the Town Council, whether or not any particular sentence or clause includes a statement to that effect. The Town Council intends that if these findings fail to cross-reference or incorporate by reference any other part of these findings, that any finding required or permitted to be made by the Town Council with respect to any particular subject matter of the Project, shall be deemed made if it appears in any portion of these findings.

3. *Limitations.* The Town Council's analysis and evaluation of the Project is based on the best information currently available. It is inevitable that in evaluating a project of the scope and size of the Project that absolute and perfect knowledge of all possible aspects of the Project will not exist. This practical limitation is acknowledged in CEQA Guidelines Section 15151 which states the "The sufficiency of an EIR is to be reviewed in light of what is reasonably feasible." One of the major limitations on analysis of the Project is the Town Council's lack of knowledge of future events, particularly those occurring outside the Town. In some instances, the Town Council's analysis has had to rely on assumptions about areas outside of the political boundaries of the Town. In all instances, best efforts have been made to form accurate assumptions. Somewhat related to this are the limitations on the Town's ability to solve what are in effect regional, state, and national problems and

issues. The Town must work within the political framework in which it exists and with the limitations inherent in that framework.

4. *Summaries of Facts, Impacts, Mitigation Measures, Alternatives, and other Matters.* All summaries of information in the findings to follow are based on the EIR, the Project and/or other evidence in the record. Such summaries are not intended to be exhaustive recitations of all of the facts in the record upon which they are based. Moreover, the summaries of impacts, mitigation measures and alternatives are only summaries. This document includes only as much detail as may be necessary to show the basis for the findings set forth below. Cross references to the EIR and other evidence have been made where helpful, and reference should be made directly to the EIR and other evidence in the record for more precise information regarding the facts on which any summary is based. Conflicting interpretations of the language of the EIR and the language of mitigation conditions adopted by the Town Council shall be resolved in favor of the latter as the most appropriate way to mitigate the impact in question.

5. *Adoption of Mitigation Measures.* These findings address the numerous mitigation measures recommended in the EIR for impacts identified as significant or potentially significant. Some of the mitigation measures are implemented by changes incorporated into the project. In its actions approving the project, the Town Council adopts those mitigation measures recommended in the EIR, as revised by the Town Council, that have not already been incorporated into the project except with respect to those that are rejected by the Town Council in the specific findings as being feasible or unnecessary. Where multiple mitigation measures are adopted for a single impact, all of the identified measures are required to support the related mitigation finding, unless otherwise specified. The Town Council finds that all the Mitigation Measures now or previously incorporated in to the Project are desirable and feasible and shall be implemented in connection with the implementation of the Project in accordance with the adopted Mitigation Monitoring and Reporting Program (MMRP) (Exhibit D).

B.2 SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

BIOLOGICAL RESOURCES

IMPACT 4.4.1 TREE REMOVAL

Construction at Storage Ponds would result in the removal of protected native trees, including mature valley oaks, comprising mixed oak riparian and mixed evergreen habitat communities. Herbaceous plants would also be removed by construction and grading activities at Storage Ponds. Additionally, installation of Irrigation Infrastructure could impact protected trees, including mature valley oaks, along proposed pipeline routes. Significant and Unavoidable for Pond S or Pond T (T1,T2).

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to the degree feasible; however, impacts would remain significant and unavoidable for implementation of Pond S or Pond T (T1,T2).

Measure 4.4.1a

Tree Avoidance. To the extent feasible, the Town will avoid removal or damage to all protected trees regulated under the Town of Windsor Zoning Ordinance Plan (Article XXIX) and Sonoma County Ordinance Plan (No. 4014). Placement of the pipeline trench for Irrigation Infrastructure construction shall be outside the dripline and away from tree roots to reduce or avoid damage to protected trees.

Measure 4.4.1b

Tree Removal. With the exception of Pond Sites, proposed facilities are located in previously disturbed areas, and are not anticipated to require removal or damage to protected trees. For areas where proposed facilities require tree removal, the Town shall adhere to measures consistent with the Town of Windsor Zoning Ordinance (Article XXIX) and Sonoma County Ordinance Plan (No. 4014 and No. 4991). Measures necessary for compliance with these ordinances are identified in Measures 4.4.1c through 4.4.1i below.

Measure 4.4.1c

Tree Survey. All Pond Sites and Irrigation Lands shall be reviewed for compliance with the Town of Windsor Zoning Ordinance (Article XXIX) and Sonoma County Ordinance Plan (No. 4014 and No. 4991). If trees will be removed at a pond site, a site-specific tree survey shall be conducted by a certified arborist to quantify the number of trees and note the species, size, and condition of trees with dbh greater than 9 inches, thereby qualifying as protected trees under the Town and Sonoma County Tree Ordinances. Additionally, the survey shall identify the number and dbh of valley oaks onsite in order to determine mitigation requirements under the Sonoma County Ordinance Plan No. 4991.

Measure 4.4.1d

Protected Trees. All trees removed over 9 inches dbh would qualify as protected trees. Removal of these trees would require review for mitigation based upon the loss of arboreal value at a specific pond site. Arboreal value is based upon the dbh of individual trees, and would be calculated using the results of the site specific tree survey identified in Measure 4.4.1c. The number and size of replacement plantings would be determined using the identical arboreal value charts established in Town of Windsor Zoning Ordinance (Article XXIX) and Sonoma County Ordinance Plan (No. 4014 and No. 4991). If mitigation is determined necessary under these ordinances, mitigation shall occur either onsite or offsite, as appropriate. The replacement seedlings would be of the same species, except in the case

of non-native species, and the source material for tree replacement would be obtained from a native plant nursery.

Measure 4.4.1e

Valley Oaks. For valley oaks removed within unincorporated Sonoma County, the Town shall provide mitigation as required under the Sonoma County Ordinance Plan (No. 4991). As defined by Table 26-67-030 of the ordinance, mitigation may be in the form of (1) tree replacement by planting valley oak seedlings on the subject property or on another site in the county having the geographic, soil, and other conditions necessary to sustain a viable population of valley oaks, (2) retaining other valley oak trees on the subject property, (3) a combination of measures (1) and (2), or (4) paying an in-lieu fee, which shall be used exclusively for valley oak planting programs in the county. Under the Guidelines, the entity cutting down or removing the valley oak(s) has the sole discretion which mitigation measure to use to mitigate the valley oak loss. The selected mitigation measure must be undertaken and completed within one year after the valley oak(s) are removed. Table 26-67-030 is provided in Appendix 4.4, Biological Resources of the EIR.

Measure 4.4.1f

Tree Protection. For construction of both Pond Sites and Irrigation Infrastructure, trees to be removed for construction shall be appropriately marked. Trees to be preserved shall be marked as trees to avoid. If additional trees are removed, additional mitigation for those trees would be required.

Measure 4.4.1g

Revegetation Plan. For Pond Sites and Irrigation Infrastructure located in undisturbed areas, a revegetation plan to replace native herbaceous plants removed due to grading shall be developed by a qualified biologist. The revegetation plan shall be coordinated with erosion control measures required by Measure 2.2.1a. Seedlings within each disturbed community type due to project construction would be obtained from native plant nurseries. Monitoring of the seeded herbaceous areas shall occur prior to the first wet season following revegetation to ensure that sufficient ground coverage has developed to protect slopes from erosion. Additional erosion measures, such as straw mulch, may be necessary if vegetation has not been established prior to the wet season.

Measure 4.4.1h

Tree Replacement Plan. For Pond Sites where tree replacement is implemented as mitigation, specific replanting details shall be developed by a qualified tree specialist. Details should include the tree species to be used, the number of trees to be planted, a planting plan and site map. Trees would be spaced as deemed appropriate for each species and would be planted within temporarily disturbed portions of the project area. The replanting process should begin as soon as construction-related activities are completed.

Measure 4.4.1i

Replanting Plan Monitoring. For Pond Sites where plant replacement is implemented as mitigation, a 3-year monitoring program shall be implemented. The monitoring program shall be monitored annually using standard ecological methods to estimate plant cover and document survival rates and growth characteristics. Monitoring shall be conducted by a qualified biologist. Performance standards for tree replacement and other revegetation plans may include (1) no less than 80 percent survival rate of vegetation; (2) no excessive rills, gullies or other erosion features; (3) no noxious or invasive species; and (4) installation of a properly functioning irrigation system for a maximum of two years.

Measure 4.4.1j

In coordination with Measure 4.4.2a and 4.4.2b, removed native riparian vegetation along intermittent drainages within Pond Sites shall be replaced in accordance with the conditions of the California Department of Fish and Game 1601 Streambed Alteration Agreement and the USACOE 404 permit for construction.

Measure 4.4.1k

In coordination with the above measures, vegetated areas disturbed during construction of Storage Ponds and Irrigation Infrastructure shall be restored to their pre-existing condition using native plant species, to the degree feasible.

FINDINGS

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds: a) measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR, and; b) however, notwithstanding implementation of the above-referenced mitigation measures, it is not possible to avoid removing oak woodland habitat at Pond S or Pond T (T1,T2), and this impact will remain significant at these locations.

CUMULATIVE IMPACTS

IMPACT 5.2 CUMULATIVE LONG-TERM IMPACTS TO BIOLOGICAL RESOURCES

Construction of several infrastructure projects and development within the Windsor area would result in cumulative long-term impacts to biological resources. For the majority of Project facilities, this cumulative contribution is not considerable. However, for Pond S or Pond T (T1,T2), the loss of oak woodland habitat was identified as significant, and would be cumulatively considerable. Construction of these ponds individually, or in combination, would contribute to the cumulative loss of riparian oak woodland habitat within the Windsor area.

MITIGATION

No Mitigation Measures Available for cumulative impacts related to Pond S and Pond T. See related findings below regarding facilities other than Pond S and Pond T, and related mitigation measures.

FINDINGS

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds: a) measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR, and; b) however, notwithstanding implementation of the above-referenced mitigation measures, it is not possible to avoid removing oak woodland habitat at Pond S or Pond T (T1,T2); c) this loss represents a cumulatively considerable contribution to loss of oak woodland within the region.

B.3 SIGNIFICANT AND POTENTIALLY SIGNIFICANT ADVERSE IMPACTS REDUCED TO LESS-THAN-SIGNIFICANT LEVEL BY MITIGATION MEASURES INCORPORATED INTO THE PROJECT

The Certified EIR identifies significant impacts which are reduced to a "less-than-significant" level by the inclusion in the Project approval of the mitigation measures identified in the Certified EIR. It is hereby determined that the significant environmental impacts that these mitigations address will be avoided or substantially lessened by their inclusion in the Project.

GEOLOGY, SOILS AND SEISMICITY

IMPACT 4.1-1 SEISMIC GROUNDSHAKING AND ITS SECONDARY EFFECTS TO PROJECT FACILITIES

Seismic groundshaking and its secondary effects including localized liquefaction and related ground failure, from a major earthquake in the in Sonoma County or the San Francisco Bay region, could cause structural damage or structural collapse of water retention structures, pipelines, and facility buildings proposed under the project. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impacts to a less than significant level.

Measure 4.1-1a

Where DSOD jurisdictional criteria apply, proposed reclaimed water impoundment and retention structures will be under the jurisdiction of the DSOD and comply to their standards for design, construction, and inspection. The DSOD would require that the dam be designed to withstand a seismic event with an earthquake magnitude considerably higher than the maximum magnitude of the active regional fault closest to the dam site. The DSOD will require necessary site evaluation methods, review plans and specifications, make recommendations on design, require fault investigations when deemed necessary, and will monitor dam construction.

Measure 4.1-1b

All non-DSOD jurisdictional facilities will comply with applicable policies and appropriate engineering investigation practices necessary to reduce the potential detrimental effects of groundshaking and liquefaction. Construction shall be in accordance with applicable City and County ordinances and policies regarding mitigation of seismic and geologic hazards, including applicable safety goals and policies presented in the Safety Element of the Sonoma County Plan. Appropriate geotechnical studies will be conducted using generally accepted and appropriate engineering techniques for determining the susceptibility of the sites to liquefiable soils and related ground failures. A licensed geotechnical engineer should prepare recommendations applicable to foundation design, earthwork, and site preparation prior to or during the project design phase. Recommendations should address mitigation of site-specific, adverse soil and bedrock conditions that could hinder development. Geotechnical design and design criteria will comply with applicable codes and requirements of the 1994 or 1997 UBC with California additions (Title 24), applicable City construction and grading ordinances.

FINDINGS

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

The mitigation measures identified above include compliance with applicable design guidelines regarding dam design and construction, including design review by the regulatory agency responsible for dam safety within the State of California, thereby reducing potential impacts to less than significant.

IMPACT 4.1.2 UNDERLYING SOIL PROPERTIES

The topography and geology within the project area varies from hilly to flatland areas. Associated with this varied setting are certain geologic hazards specific to the particular region. The hilly areas within the project area may be exposed to slope failures including landslides, earthflows and rapid erosion. The flatland areas are susceptible to expansive soils and that may lead to settlement or damage to facilities. Less than Significant with EIR Identified Mitigation.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impacts to a less than significant level.

Measure 4.1-2a

Where DSOD jurisdictional criteria apply, all proposed reclaimed water impoundment and retention structures will be under the jurisdiction of the DSOD and comply to their standards for design, construction, and inspection. No reclaimed water retention structure will be constructed unless approved by the DSOD. The DSOD would require that the dam be designed to withstand a seismic event with an earthquake magnitude considerably higher than the maximum magnitude of the active regional fault closest to the dam site. The DSOD will require necessary site evaluation methods, review plans and specifications, make recommendations on design, evaluate slope gradient and material, and will monitor dam construction.

Measure 4.1-2b

All non-DSOD jurisdictional facilities will comply with applicable policies and appropriate engineering investigation practices necessary to reduce the potential detrimental effects of groundshaking and liquefaction. Construction shall be in accordance with applicable City and County ordinances and policies regarding mitigation of seismic and geologic hazards, including applicable safety goals and policies presented in the Safety Element of the Sonoma County Plan. Appropriate geotechnical studies will be conducted using generally accepted and appropriate engineering techniques for determining the susceptibility of the sites to unstable soils and excessive erosion. A licensed geotechnical engineer should prepare recommendations applicable to foundation design, earthwork, and site preparation prior to or during the project design phase. Recommendations should address mitigation of site-specific, adverse soil and bedrock conditions that could hinder development. Geotechnical design and design criteria will comply with applicable codes and requirements of the 1994 or 1997 UBC with California additions (Title 24), applicable City construction and grading ordinances.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR

RATIONALE

The mitigation measures identified above include compliance with applicable design guidelines regarding dam design and construction for both DSOD and non-DSOD facilities, including design review by the regulatory agency responsible for dam safety within the State of California, thereby reducing potential effects to less than significant.

IMPACT 4.1-4 RECLAIMED WATER

Reclaimed water retained within proposed storage ponds could infiltrate downward through the base of the pond and enter the water table aquifer. Reclaimed water could disperse into the water table aquifer underlying the pond and could, over time, flow to within capture zones of downgradient municipal, domestic, or private groundwater wells. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impacts to a less than significant level.

Measure 4.1-4a

All Storage Ponds shall be constructed with reservoir bottom materials meeting permeability standards of $1x10^{-6}$ cm/sec. Demonstration of the ability to comply with this regulation shall include site-specific field percolation tests and laboratory permeability tests during design to determine hydrogeologic characteristics at each Pond Site. In the event this standard cannot be met due to onsite conditions, the Town would conduct additional onsite testing and modeling to demonstrate to the RWQCB an adequate permeability such that groundwater is not adversely affected.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

The criteria identified in Measure 4.1-4a have been established in order to ensure protection of potable water supplies. In the event that this standard cannot be met due to site conditions, site-specific modeling and review by the RWQCB would ensure that groundwater quality would not be adversely affected, thereby reducing potential effects to less than significant.

WATER QUALITY

IMPACT 4.2-1 EROSION/SEDIMENTATION

Construction of proposed facilities could result in increased erosion and subsequent sedimentation, with impacts to water quality and/or storm drain capacity. Additionally, release of fuels or other hazardous materials associated with construction activities could degrade water quality. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impacts to a less than significant level.

Measure 4.2-1a

Storm Water Pollution Prevention Plan. For all project components disturbing an area of greater than 5 acres, the Town shall require contractors to develop a Storm Water Pollution Prevention Plan (SWPPP) for construction of proposed facilities, as required by the RWQCB. The objectives of the SWPPP are to identify pollutant sources that may affect the quality of storm water discharge, and to implement Best Management Practices (BMPs) to reduce pollutants in storm water discharges. The SWPPP for this proposed action would include the implementation, at a minimum, of the following elements:

- Source identification;
- Preparation of a site map;
- Description of construction materials, practices, and equipment storage and maintenance;
- List of pollutants likely to contact storm water;
- Estimate of the construction site area and percent impervious area;
- Erosion and sedimentation control practices, including soils stabilization, revegetation, and runoff control to limit increases in sediment in storm water runoff, such as detention basins, straw bales, silt fences, check dams, geofabrics, drainage swales, and sand bag dikes;
- List of provisions to eliminate or reduce discharge of materials to storm water;
- Description of waste management practices; and
- Maintenance and training practices.

Measure 4.2-1b

Storage Pond BMPs. The following BMPs shall be included in the SWPPP developed for implementation of all Storage Ponds:

- Minimize vegetation clearing and disturbance outside the immediate construction envelope;

- Reseed and plant disturbed areas within the construction envelope with fast-growing plant species compatible with present vegetation types;
- Reclaim and restore all non-inundated borrow pit locations to a condition resembling the predisturbed environment. The California State Mining and Reclamation Act (SMARA) would provide a guideline for this work;
- Small temporary siltation capture embankments, or equivalent measures identified in the SWPPP, shall be constructed across any stream draining a dam embankment below the spillway entry point. The accumulation of silt in this retention structure shall be removed as necessary and placed in a non-erodible location distant from the stream course. Once silt contributions have become minimal, (estimated to be one to two rainy seasons following construction) the basin can be completely cleaned of all remaining sediment and the embankment removed;
- A registered plant ecologist or other qualified professional should be retained to reevaluate the revegetation/erosion control effort during the spring following each year during the period of construction. A report shall be submitted to Windsor describing the success of the vegetation/erosion control measures and what additional measures may be necessary to improve project performance;
- Site preparation and earthworks construction shall be limited to dry periods based upon site conditions, typically April 10th through October 10th. Depending upon the nature of the work, some variation in these dates, may be permissible (weather-permitting); and
- Earthworks construction not completed during a given construction year shall be carefully and fully winterized before the construction cut-off date. This work shall be done to the satisfaction of Windsor. The intent is to minimize erosion on slopes that have been bared by construction activity and to reduce on-site and off-site siltation effects.

Measure 4.2.1c

Stream Crossing Permits. For installation of all pipeline facilities across stream channels, The Town shall obtain the following permits as applicable:

- Section 404 permit(s) from USACOE (Nationwide 12 – Utility Line Discharges) for dredge and fill work;
- CDFG 1601/03 Stream Alteration Agreement(s) for possible impacts to fish habitat; and
- 401 RWQCB Water Quality Certification. Permit conditions would reinforce implementation of the SWPPP to reduce potential impacts.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

The mitigation measures identified above include compliance with regulatory requirements regarding erosion control. These include NPDES permit requirements for state of the art

measures to effectively control erosion during construction. Additionally, for construction within stream channels, additional provisions for erosion control are required under regulatory permits issued by USACOE and CDFG, thereby reducing potential effects to less than significant.

IMPACT 4.2.4 GROUND WATER QUALITY

Above or below-ground irrigation with reclaimed water could result in an alteration of ground water levels or degradation of ground water quality; similarly, over-application of reclaimed water could result in direct runoff to surface water bodies. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measure is hereby adopted and will be implemented as set forth in the MMRP. This measure will mitigate the above impacts to a less than significant level.

Measure 4.2.4a

Above-ground irrigation systems will be operated in accordance with the requirements of Title 22 of the California Code of Regulations and any reclamation permits issued by the California Regional Water Quality Control Board, North Coast Region. Reclamation permits typically require that irrigation rates match the evapotranspiration rates of the plants or crops being irrigated. Regulatory approval for the design, monitoring, and operation of Silviculture Pilot Project would be obtained from the RWQCB, North Coast Region, and the California Department of Health Services prior to operating a below-ground reclamation system.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Use of above ground irrigation systems by the Town is currently regulated by the RWQCB through reclamation permit issuance, and the Town is required to operate these systems in accordance with Title 22 of the California Code of Regulations. Below grade irrigation systems are permitted by the RWQCB on a case-by-case basis. This mitigation measure will ensure that the Silviculture Pilot Project is properly permitted prior to implementation, thereby reducing potential effects to less than significant.

IMPACT 4.2.5 GROUND WATER QUALITY AT WELLS

Operation of reclaimed water storage ponds could result in a degradation of ground water quality at existing wells. Less Than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impacts to a less than significant level.

Measure 4.2.5a

Compliance with appropriate impermeability criteria, as required by Mitigation Measure 4.1-4a would reduce potential impacts to a less than significant level. In the event that compliance with permeability criteria is not feasible due to site specific hydrogeologic conditions, implement Measure 4.2.5b

Measure 4.2.5b

If compliance with permeability criteria is not feasible, a detailed, site-specific hydrogeologic investigation shall be conducted at any pond or reservoir site that is selected for construction. This investigation should include aquifer testing, and ground water modeling, or other appropriate methods to demonstrate to the RWQCB an adequate permeability such that groundwater is not adversely affected.

Measure 4.2.5c

A comprehensive well survey shall be conducted prior to reservoir construction, which would include a field check of the location and use of all wells in the vicinity of the reservoir site. All improperly abandoned wells located in the vicinity shall be properly destroyed according to the requirements of DWR 74-81 and 74-90, *Water Well Standards, State of California*, to prevent abandoned wells from acting as conduits for pollutants to enter deep groundwater. Additionally, a well and septic system survey along pipeline alignments should be implemented to ensure that a setback of 25 feet is maintained consistent with applicable County standards.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

The mitigation measures identified above include several measures to ensure that potable water quality is protected, including impermeability criteria for storage ponds and site specific well surveys to identify potable wells within the vicinity of proposed facilities. In the event that impermeability standards cannot be met due to site conditions, site-specific modeling and review by the RWQCB would ensure that groundwater quality would not be adversely affected, thereby reducing potential effects to less than significant.

BIOLOGICAL RESOURCES

IMPACT 4.4.1 TREE REMOVAL

Construction at Storage Ponds would result in the removal of protected native trees, including mature valley oaks, comprising mixed oak riparian and mixed evergreen habitat communities. Herbaceous plants would also be removed by construction and grading activities at Storage Ponds. Additionally, installation of Irrigation Infrastructure could impact protected trees, including mature valley oaks, along proposed pipeline routes. Less than Significant with Mitigation Measures for all proposed facilities except for Ponds S or Pond T (T1,T2).

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. This measure will mitigate the above impact to a less than significant level except for Pond S and Pond T (T1,T2) which are further addressed in related findings in Section B.2 above, Significant Unavoidable adverse impacts.

Measure 4.4.1a

Tree Avoidance. To the extent feasible, the Town will avoid removal or damage to all protected trees regulated under the Town of Windsor Zoning Ordinance Plan (Article XXIX) and Sonoma County Ordinance Plan (No. 4014). Placement of the pipeline trench for Irrigation Infrastructure construction shall be outside the dripline and away from tree roots to reduce or avoid damage to protected trees.

Measure 4.4.1b

Tree Removal. With the exception of Pond Sites, proposed facilities are located in previously disturbed areas, and are not anticipated to require removal or damage to protected trees. For areas where proposed facilities require tree removal, the Town shall adhere to measures consistent with the Town of Windsor Zoning Ordinance (Article XXIX) and Sonoma County Ordinance Plan (No. 4014 and No. 4991). Measures necessary for compliance with these ordinances are identified in Measures 4.4.1c through 4.4.1i below.

Measure 4.4.1c

Tree Survey. All Pond Sites and Irrigation Lands shall be reviewed for compliance with the Town of Windsor Zoning Ordinance (Article XXIX) and Sonoma County Ordinance Plan (No. 4014 and No. 4991). If trees will be removed at a pond site, a site-specific tree survey shall be conducted by a certified arborist to quantify the number of trees and note the species, size, and condition of trees with dbh greater than 9 inches, thereby qualifying as protected trees under the Town and Sonoma County Tree Ordinances. Additionally, the survey shall identify the number and dbh of valley oaks onsite in order to determine mitigation requirements under the Sonoma County Ordinance Plan No. 4991.

Measure 4.4.1d

Protected Trees. All trees removed over 9 inches dbh would qualify as protected trees. Removal of these trees would require review for mitigation based upon the loss of arboreal value at a specific pond site. Arboreal value is based upon the dbh of individual trees, and would be calculated using the results of the site specific tree survey identified in Measure 4.4.1c. The number and size of replacement plantings would be determined using the identical arboreal value charts established in Town of Windsor Zoning Ordinance (Article XXIX) and Sonoma County Ordinance Plan (No. 4014 and No. 4991). If mitigation is determined necessary under these ordinances, mitigation shall occur either onsite or offsite, as appropriate. The replacement seedlings would be of the same species, except in the case of non-native species, and the source material for tree replacement would be obtained from a native plant nursery.

Measure 4.4.1e

Valley Oaks. For valley oaks removed within unincorporated Sonoma County, the Town shall provide mitigation as required under the Sonoma County Ordinance Plan (No. 4991). As defined by Table 26-67-030 of the ordinance, mitigation may be in the form of (1) tree replacement by planting valley oak seedlings on the subject property or on another site in the county having the geographic, soil, and other conditions necessary to sustain a viable population of valley oaks, (2) retaining other valley oak trees on the subject property, (3) a combination of measures (1) and (2), or (4) paying an in-lieu fee, which shall be used exclusively for valley oak planting programs in the county. Under the Guidelines, the entity cutting down or removing the valley oak(s) has the sole discretion which mitigation measure to use to mitigate the valley oak loss. The selected mitigation measure must be undertaken and completed within one year after the valley oak(s) are removed. Table 26-67-030 is provided in Appendix 4.4, Biological Resources.

Measure 4.4.1f

Tree Protection. For construction of both Pond Sites and Irrigation Infrastructure, trees to be removed for construction shall be appropriately marked. Trees to be preserved shall be marked as trees to avoid. If additional trees are removed, additional mitigation for those trees would be required.

Measure 4.4.1g

Revegetation Plan. For Pond Sites and Irrigation Infrastructure located in undisturbed areas, a revegetation plan to replace native herbaceous plants removed due to grading shall be developed by a qualified biologist. The revegetation plan shall be coordinated with erosion control measures required by Measure 2.2.1a. Seedlings within each disturbed community type due to project construction would be obtained from native plant nurseries. Monitoring of the seeded herbaceous areas shall occur prior to the first wet season following revegetation to ensure that sufficient ground coverage has developed to protect

slopes from erosion. Additional erosion measures, such as straw mulch, may be necessary if vegetation has not been established prior to the wet season.

Measure 4.4.1h

Tree Replacement Plan. For Pond Sites where tree replacement is implemented as mitigation, specific replanting details shall be developed by a qualified tree specialist. Details should include the tree species to be used, the number of trees to be planted, a planting plan and site map. Trees would be spaced as deemed appropriate for each species and would be planted within temporarily disturbed portions of the project area. The replanting process should begin as soon as construction-related activities are completed.

Measure 4.4.1i

Replanting Plan Monitoring. For Pond Sites where plant replacement is implemented as mitigation, a 3-year monitoring program shall be implemented. The monitoring program shall be monitored annually using standard ecological methods to estimate plant cover and document survival rates and growth characteristics. Monitoring shall be conducted by a qualified biologist. Performance standards for tree replacement and other revegetation plans may include (1) no less than 80 percent survival rate of vegetation; (2) no excessive rills, gullies or other erosion features; (3) no noxious or invasive species; and (4) installation of a properly functioning irrigation system for a maximum of two years.

Measure 4.4.1j

In coordination with Measure 4.4.2a and 4.4.2b, removed native riparian vegetation along intermittent drainages within Pond Sites shall be replaced in accordance with the conditions of the California Department of Fish and Game 1601 Streambed Alteration Agreement and the USACOE 404 permit for construction.

Measure 4.4.1k

In coordination with the above measures, vegetated areas disturbed during construction of Storage Ponds and Irrigation Infrastructure shall be restored to their pre-existing condition using native plant species, to the degree feasible.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR except as otherwise noted for Pond S and Pond T (T1,T2).

RATIONALE

Compliance with Town of Windsor Tree Ordinance and Sonoma County Tree Ordinance requirements will reduce potential impacts regarding individual trees at storage pond locations. However, impacts at Pond S or Pond T (T1,T2) would remain significant and

unavoidable, and a Statement of Overriding Considerations is required upon Project approval. (Exhibit E)

IMPACT 4.4.2 IMPACTS TO JURISDICTIONAL WATERS OF THE UNITED STATES

Construction of Storage Ponds, Irrigation Infrastructure and the Constructed Wetland, could result in permanent and/or temporary impacts to potentially jurisdictional Waters of the United States, such as creeks and seasonal wetlands (including vernal pools), and associated special status plant and animal species. Additionally, proposed Irrigation Lands could contain jurisdictional Waters of the U.S., such as vernal pools, which could be adversely affected by irrigation practices. Substantial changes in seasonal wetland hydrology could affect special status species. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Mitigation 4.4.2a

For all Storage Ponds (except existing Ponds Z and G), and the Constructed Wetland Site, the Town will conduct a jurisdictional wetland delineation to determine the exact boundary of wetlands and water-associated features that would be disturbed by construction. The USACOE and CDFG will verify the delineation.

Mitigation 4.4.2b

To the extent practicable, the Town will avoid all effects to jurisdictional features associated with construction of Storage Ponds and Irrigation Infrastructure. For the Southeast System, crossing of Pool and Pruitt Creeks will be via attachment to the existing roadway bridge, or other trenchless methods. Where avoidance of jurisdictional areas is infeasible, the Town will obtain all applicable permits and employ measures to reduce and compensate for adverse impacts. Construction in waterways will require permits from the USACOE, RWQCB, and CDFG. Permits likely applicable to the proposed project are identified below.

- For fill in wetlands and other waters of the United States, the project would most likely proceed under Nationwide Permit Nos. 12 (Utilities), 14 (Temporary access roads [if applicable]), and 33 (Temporary construction access and dewatering) pursuant to Section 404 of the Clean Water Act.

- A request for water quality certification (or waiver of certification) from the RWQCB will also be required, pursuant to Section 401 of the Act.

_ CDFG has jurisdiction pursuant to Sections 1601-1603 of the California Department of CDFG Code (Streambed Alteration Agreement).

Mitigation 4.4.2c

The Town will ensure full compliance with all permit conditions and employ the following measures to reduce the impacts to aquatic species and riparian habitat, due to open-trench installation at creek crossings. Permit measures may include, but are not limited to, the following:

_ A qualified fisheries biologist will be selected by the Town, with credentials acceptable to the NMFS and CDFG. The project biologist shall ensure that construction-related mortality to California freshwater shrimp, steelhead trout, coho salmon, and chinook salmon, is minimized by the following construction restrictions.

_ Work in or near active waterways shall occur only during the summer low-flow period (June 1 through October 15).

_ A sediment filter shall be installed below the construction zone and cleaned on a regular basis to preserve integrity.

_ Refueling of heavy equipment and vehicles shall only occur within designated, bermed area where potential spills can be readily contained.

_ Equipment operating in or near the creek shall be checked and maintained to prevent leaks of fuel, lubricants or other fluids into creek channel.

_ Litter and construction debris shall be removed from creek channel and flood plain and disposed of at an appropriate site.

Mitigation 4.4.2d

For the Westside System, if attachment of the pipeline to Wohler Bride is identified as infeasible, crossing of the Russian River shall utilize trenchless technologies to minimize potential impacts to the riverbed and adjacent riparian areas. These may include jack-and-bore, directional drill, microtunneling, or other trenchless technologies as deemed appropriate from an engineering and constructibility standpoint. Implementation of trenchless technology shall include the following provisions at a minimum to avoid impacts to riparian areas:

_ Implement proper erosion control measures;

_ Locate pits in upland areas only;

_ Stockpile excavated materials outside the dripline of all protected trees as well as outside water-associated features, the areas of intact native plant communities and special status species habitat;

_ Install protective devices around intact native vegetation and special status species habitats;

_ Segregate subsoils and topsoils;

_ Place spoils in suitable locations in accordance with state and local requirements and install protective barriers to prevent movement of materials;

_ Prepare and implement a revegetation plan for bore pit locations.

Mitigation 4.4.2e

As part of the Town *Reclaimed Water User Agreement*, a qualified biologist shall conduct a site-specific botanical survey for irrigation parcels in accordance with USFWS guidelines.

The survey shall include a jurisdictional wetland delineation, including vernal pools, identification of oak trees, and appropriate setbacks (buffer zones) from these sensitive resources in coordination with the appropriate agencies (e.g. USACOE, County of Sonoma, and Town of Windsor). At minimum, irrigated areas shall be setback 30 feet from vernal pools and other jurisdictional wetlands. Irrigated areas shall be a minimum of 3 feet from the dripline of oak trees.

Mitigation 4.4.2f

In the event that impacts to wetlands (including vernal pools) cannot be avoided at a specific parcel, the Town shall not enter into an irrigation agreement with that property owner. Alternatively, the Town could consider the provision of preservation and restoration/construction mitigation at a ratio as determined by the USACOE and USFWS Programmatic Biological Opinion. This would require the following:

- Protocol level survey for special status species plants (or assumed presence) to determine the level of mitigation in accordance with the USFWS guidelines.
- Identification of appropriate mitigation, including restoration, enhancement and/or preservation of seasonal wetlands in accordance with the Training Manual to Evaluate Habitat Quality of Vernal Pool Ecosystem Sites in the Santa Rosa Plain.
- Preparation and implementation of a preservation and restoration plan along with a monitoring program, in coordination with CDFG and the California Native Plant Society. Restored areas shall be self-sustaining and ecologically functioning, and monitoring over a period determined by the resource agencies.
- Any off-site locations designated for the restoration, enhancement or preservation of waters of the United States shall be protected in perpetuity (e.g., through such means as conservation easements or mitigation banks).

Mitigation 4.4.2g

For the Constructed Wetland Site, a qualified biologist shall conduct a site-specific botanical survey and wetland delineation to identify potential jurisdictional wetlands, including vernal pools onsite, and complete documentation of the habitat quality in accordance with the Training Manual to Evaluate Habitat Quality of Vernal Pool Ecosystem Sites in the Santa Rosa Plain. In the event that high quality seasonal wetlands are identified onsite, the proposed Constructed Wetland site shall be designed to avoid identified high quality seasonal wetland habitat. If this is infeasible, the Town will implement measures described in Measure 4.4.2f, above or examine other potential implementation sites.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

The identified mitigation measures establish mechanisms to ensure avoidance or appropriate mitigation regarding potential impacts to various wetland types that may be affected by individual project facilities. Measures 4.4.2a through 4.4.2d addresss potential impacts to wetlands associated with facility construction. Measures 4.4.2e and 4.4.2f address potential effects of irrigation practices on wetland features, and require that a qualified biologist survey irrigation sites to ensure that appropriate setbacks from jurisdictional features are established. Measure 4.4.2g requires a jurisdictional wetland delineation at the Constructed Wetland site to determine the extent of wetland and vernal pool features, and provides for avoidance of onsite resources, application for appropriate

permits, or examination of other site alternatives. Implementation of these measures will ensure that impacts to jurisdictional features are avoided to the degree feasible, and that the Town will comply with appropriate permit requirements in the event that disruption is required, thereby reducing potential impacts to a less than significant level.

IMPACT 4.4.3 SPECIAL STATUS RAPTOR SPECIES

Construction of Storage Ponds and Irrigation Infrastructure could significantly affect special status bat and raptor species (e.g., cooper's hawk, white-tailed kite and northern harrier) and migratory bird species through breeding disturbance due to construction activities, such as excessive noise and night lighting, and tree removal. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.4.3

For all Storage Ponds and Irrigation Infrastructure, the following measures shall be implemented to reduce potential impacts to breeding bats and nesting raptors and passerine birds within the construction vicinity.

- To the extent feasible, construction activities, including tree removal should be scheduled to occur outside of the breeding season (March 1 through September 30). If construction is to occur during the breeding season, a general pre-construction survey for identified special status bats, and protected raptors, passerines and their nests within the proposed construction area should be conducted by a qualified biologist prior to construction to verify species absence. If the survey indicates the potential presence of nesting raptors or passerines, or breeding bats, the results should be coordinated with the Region 3 office of the CDFG. Construction activities should observe the recommended CDFG avoidance guidelines, which include at the minimum, a 500-foot buffer zone surrounding active raptor nests and at least a 250-foot buffer zone surrounding nests of other birds. Construction activities would observe buffer zones of at least 100-feet from active bat roosts during the breeding season. If construction activities occur only during the non-breeding season between August 1 and February 28, no pre-construction surveys would be required.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

The identified measures require pre-construction survey and avoidance of breeding season for special status bat, raptor, and passerine bird species. In the event that breeding activities are identified as present onsite, establishment of appropriate buffers in accordance with CDFG requirements would reduce potential impacts to a less than significant level.

IMPACT 4.4.4 CALIFORNIA TIGER SALAMANDER AND RED TREE VOLE

Construction of specific facilities could result in permanent impacts to California tiger salamander associated with vernal pool habitats, and red tree vole associated with Douglas-fir forest habitats. Less Than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.4.4a

Implementation of the following measure would reduce or eliminate potential "taking" of California tiger salamander as a direct result of project construction at Pond J and the Constructed Wetland.

- Pre-construction surveys immediately prior to ground-disturbing activity shall be conducted within Pond J and the Constructed Wetland site by a qualified biologist. Presence/absence surveys shall be completed for adult California tiger salamander and potential aestivation burrows that may occur within the project area. If no burrows are detected during these surveys, then construction-related activities may proceed.

- If adult California tiger salamander burrows are found within the construction disturbance zone, they will be allowed to passively leave the construction zone, or will be captured and moved, to suitable sites by a qualified biologist. Capture and moving of listed species may only proceed after applicable permits from USFWS and CDFG are secured. If necessary to prevent animals returning to the site, fencing should be constructed from 4' X 8' plywood panels, joined lengthwise.

- Implement a construction awareness and monitoring program to ensure minimization of construction-related effects. All construction adjacent to wetland vegetation, or the habitat of special status species (as determined after completion of protocol-level surveys) will be regularly monitored to ensure that impacts do not exceed those

included in the project description. Work within 100 feet of wetlands during ponding will be monitored by qualified staff who will document pre-project and post-project conditions to ensure adequate restoration of disturbed aquatic habitat.

- Habitat for California tiger salamander shall be preserved or enhanced at a 1:1 ratio (i.e., one acre preserved for one acre developed) within the County of Sonoma.

Measure 4.4.4b

Implementation of the following measure would reduce or eliminate potential "taking" of red tree vole as a direct result of project construction at Ponds V, W, and Y, and along the Westside Road system pipeline installation.

- Douglas-fir, and redwood tree removal shall be avoided during pipe line installation.
- Pre-construction surveys prior to tree removal activity at the proposed pond sites shall be conducted within the Douglas-fir habitats of the site and a 200 foot buffer by a qualified biologist. Presence/absence surveys shall be completed for adult red tree voles that may occur within the project area. If no individuals are detected during these surveys, then construction-related activities may proceed. If present, within the construction disturbance zone, they will be captured and moved, to suitable sites by a qualified biologist. Capture and moving of listed species may only proceed after applicable permits from USFWS and CDFG are secured.
- Biological monitors shall monitor tree removal activities. Vagrant red tree voles shall be captured and relocated to suitable sites as designated by a qualified biologist.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

The identified measures require pre-construction surveys for special status species. In the event that special status species are identified as present onsite, avoidance or relocation by a permitted biologist in coordination with appropriate regulatory agencies would reduce potential impacts to a less than significant level.

IMPACT 4.4.5 INVASIVE PLANT SPECIES

Implementation of the constructed wetlands and silviculture pilot project could lead to the spread of invasive plant species. Less Than Significant with Mitigation Measures.

MITIGATION

The following mitigation measure is hereby adopted and will be implemented as set forth in the MMRP. This measure will mitigate the above impact to a less than significant level.

Measure 4.4.5

Design of the constructed wetland and silviculture pilot programs shall incorporate the use of native species to the degree feasible, and shall specifically avoid the use or introduction of invasive species.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

The identified measure requires use of non-invasive plant species in project design, thereby reducing the potential for introduction of invasive plant species into the Windsor area. Implementation of this measure would reduce potential impacts to a less than significant level.

IMPACT 4.4.6 COMMON WILDLIFE SPECIES

Project implementation will result in disturbance to, or direct mortality of, common wildlife species. Less Than Significant with Mitigation Measures.

MITIGATION

The following mitigation measure is hereby adopted and will be implemented as set forth in the MMRP. This measure will mitigate the above impact to a less than significant level.

Measure 4.4.6

Contractors shall use BMPs to avoid disturbance or direct mortality to common wildlife species. These may include: covering all open trench areas at the end of work days; providing escape ramps; checking trenches daily for trapped wildlife.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

The identified measures require use of BMPs to avoid or reduce the mortality of common wildlife, thereby reducing potential impacts to a less than significant level.

CULTURAL RESOURCES

IMPACT 4.5.1 PREHISTORIC / HISTORIC CULTURAL RESOURCES

Implementation of the proposed project could affect known or unknown prehistoric / historic cultural resources. Less Than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.5.1a

For the Eastside Road and Westside Road Systems, the Town shall consult with a qualified archaeologist regarding the final pipeline alignment in the vicinity of known cultural resource sites CA-SON-967 and CA-SON 1405H. These sites shall be avoided to the degree feasible. In the event that avoidance is not feasible, the site shall be assessed with respect to data recovery requirements such that potential impacts as defined by CEQA are reduced to a less than significant level. The program shall include, at a minimum: archival research regarding previous landowners; surface collection of artifacts; subsurface testing define the depth and aerial extent of the deposit; excavation of a series of manually excavated test units established to ensure adequate characterize the site, artifact curation at an appropriate facility, preparation of summary report, and submittal of the summary report to appropriate agencies, including the Northwest Information Center.

Measure 4.5.1b

If the Town decides to support the Westside Road System pipeline from the historic Wohler Road Bridge, it will be necessary to prepare both a Primary and Building-Structure-Object Record (DPR 523) to document and assess the significance of the bridge and the potential effect of the pipeline on the structure. The State Office of Historic Preservation (OHP) shall be consulted and given opportunity to comment regarding potential impacts and mitigation measures associated with sites eligible for listing on either the National Register or California Register of Historic Resources.

Measure 4.5.1c

The Town shall incorporate the following measures into all contract specifications:

- If cultural resources are encountered during construction of the project, the contractor will avoid altering the materials and their context until a qualified archaeologist has evaluated the situation. The qualified archaeologist will conduct data recovery and implement other procedures that would render impacts to a less-than-significant level. Project personnel will not collect cultural resources. Procedures for stopping

construction in the event that cultural resources are exposed will be part of the project plans and specifications. In anticipation of discovering cultural deposits, procedures will be in place so that the contractor can move on to another project segment, thus allowing sufficient time to evaluate the nature and significance of the find and implement appropriate management procedures.

- Any identified archaeological resources will be recorded by the archaeologist on form DPR 422 (archaeological sites) and/or DPR 523 (historic properties) or similar forms. In the event that prehistoric human remains are encountered, there shall be no further excavation or disturbance of the site or any nearby areas reasonably suspected to overlie adjacent human remains until the County coroner makes a determination. If the coroner determines that the remains are Native American, then the Native American Heritage Commission in Sacramento shall be contacted within 24 hours, along with the Most Likely Descendant(s) of the deceased Native American. The dignified treatment or disposition of Native American burial remains and artifacts will be agreed upon by the Town and the appropriate Native Americans in advance of construction (as provided by Public Resources Code Section 5097.98) and will be written into construction specifications.

Measure 4.5.1d

With the exception of Ponds Z, S, T (T1,T2), and G, which have been previously surveyed or constructed, all pond sites shall be surveyed by a qualified archaeologist prior to consideration for implementation by the Town. In the event cultural resources are identified during this survey, a program for avoidance or data recovery shall be developed and implemented. The State Office of Historic Preservation (OHP) shall be consulted and given opportunity to comment regarding potential impacts and mitigation measures associated with sites eligible for listing on either the National Register or California Register of Historic Resources. Recommendations for data recovery or construction monitoring will be incorporated as conditions of approval for individual ponds.

Measure 4.5.1e

The Native American Heritage Commission should be contacted in writing to request information on known Native American traditions or cultural properties within the project area, and to request a listing of individuals or groups with cultural affiliation to the project area.

Measure 4.5.1f

A qualified archaeologist shall conduct construction employee briefing sessions prior to commencement of construction to aid in reducing inadvertent or intentional damage to archaeological sites, features and objects.

FINDINGS

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

The identified measures provide for systematic assessment, avoidance, and recordation of known and unknown cultural and historical resources. Measures 4.5.1a and Measure 4.5.1b require avoidance or proper recordation of known cultural resources. Measure 4.5.1c provides for suspension of construction activities and assessment of resources in the event of resource discovery during construction, and Measure 4.5.1f requires worker education prior to construction. Measures 4.5.1d and 4.5.1e require that a Phase I Cultural Resources Survey be performed on facilities that have not previously been surveyed in undisturbed areas. Implementation of these measures would reduce potential impacts to cultural resources to a less than significant level.

LAND USE AND RECREATION

IMPACT 4.6.1 TEMPORARY DISRUPTION TO ADJACENT LAND USES

Construction of proposed facilities under all three alternatives would result in short-term, temporary disruption to adjacent land uses. Additionally, pipeline construction could temporarily disrupt recreational uses along proposed pipeline routes. Construction requirements would vary among the three alternatives based upon facility requirements. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.6.1a

All construction activities shall be limited to the hours of 7 am to 7 pm, Monday through Friday, and 8 am to 7 pm on Saturday, or other hourly restrictions as established by appropriate road encroachment permits issued by Sonoma County Permit Resource Management Department. Additional measures related to traffic control, air quality and noise are included under those findings sections.

Measure 4.6.1b

The Town shall ensure, through preparation of bid documents, that project contractors restore areas disturbed by pipeline installation to the pre-project condition, in accordance with agreements negotiated with Sonoma County PRMD. Proposed restoration plans shall be subject to review and approval by the public works or engineering department of the individual jurisdiction. This mitigation measure does not require the Town to upgrade or improve areas beyond pre-project condition following pipeline installation.

Measure 4.6.1c

The Town shall acquire appropriate encroachment permits for pipeline installation within County roadways. Additionally, the Town shall acquire encroachment permits or agreements for installation beneath highway, railway and water supply infrastructure from appropriate agencies. These include Caltrans, Northwestern Pacific Railroad Authority, Sonoma County Water Agency and the State Lands Commission for the following facilities.

- Southeast System (Northwestern Pacific Railroad Authority, Caltrans)
- Westside Road System (State Lands Commission, Sonoma County Water Agency)

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

The identified measures ensure that contractors will be limited to specific work hours and will be return disturbed areas to their preconstruction condition. The Town will acquire appropriate encroachment permits, thereby reducing potential land use impacts to a less than significant level.

IMPACT 4.6.2 OPERATIONAL IMPACT ON ADJACENT LAND USES

Long-term operations of proposed facilities could conflict with existing or proposed adjacent land uses. Less Than Significant with Mitigation Measures.

MITIGATION

Mitigation measures identified in Section 4.7, Traffic, Section 4.8, Air Quality, Section 4.9 Noise, and Section 4.10 Visual Resources would reduce potential long-term land use impacts to a less than significant level. Therefore, no additional mitigation measures are required.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of mitigation measures contained in the referenced sections include noise control, traffic control, and dust control measures that would reduce potential effects to surrounding land uses. Mitigation includes restoration of disturbed areas to pre-project conditions, and appropriate revegetation to reduce visual effects. These measures would reduce potential impacts to a less than significant level.

IMPACT 4.6.3 HABITAT FOR IMMATURE MOSQUITOES

Implementation of the Constructed Wetlands under all three alternatives would provide increased habitat for immature mosquitoes. This increased breeding habitat would increase the requirements for mosquito abatement. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.6.3

In coordination with the Marin-Sonoma Mosquito and Vector Control District, the Town shall develop a maintenance program, for long-term mosquito control activities at the proposed wetland sites. The program should include identification of funding mechanisms agreeable to both agencies. Specific operational elements of the program may include:

- monitoring of algae blooms and periodic removal of floating filamentous algae;
- monthly monitoring of dissolved oxygen levels;
- annual harvesting of dead cattails or other large masses of dead plants which enhance mosquito habitat and reduce the effectiveness of mosquitofish;
- possible introduction of crayfish into the ponds to reduce cattail growth.
- Provide Vector Control District with one key which will provide access to all storage ponds on Town property.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Coordination with the Marin Sonoma Vector Control District would provide for appropriate mosquito control measures listed in Measure 4.6.3 to be implemented at storage facilities and the Constructed Wetland, as appropriate. These measures would ensure that mosquitos are effectively controlled at individual facilities, thereby reducing potential impacts to a less than significant level.

IMPACT 4.6.4 BREEDING HABITAT FOR INSECT VECTORS

Implementation of the Constructed Wetlands under all three alternatives could provide increased breeding habitat for insect vectors capable of transmitting Pierce's Disease, a bacterium that is harmful to grape vines. Breeding habitat for insect vectors capable of transmitting Pierce's Disease is already prevalent within the Mark West Creek riparian corridor adjacent to the proposed wetland site. Given this existing habitat, the addition of 10 acres of wetland habitat is not considered significant. Inclusion of design measures to reduce insect vector breeding potential will be incorporated into final project design. Less Than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.6.4a

Plant species utilized in the design of the constructed wetland shall be restricted to those species that meet the water quality goals of the wetland and do not provide breeding habitat for sharpshooter leaf-hopping insects. Species that meet this criteria include, but are not limited to, those listed in Table 4.6-3 of the Certified EIR.

Measure 4.6.4b

Final design of the constructed wetland, including plant species list, shall be reviewed by the Sonoma County Agricultural Commissioner's Office and the Sonoma County Viticulture Advisor's Office, with respect to inclusion of species that minimize the potential for sharpshooter habitat.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Project design will include use of plant types that will not provide for sharpshooter habitat, and will include coordination with Sonoma County Agricultural Commissioner's Office and Sonoma County Viticulture Advisors Office. As noted in the Certified EIR Page 4.6-25, sharpshooter habitat is naturally present along the Mark West Creek corridor, and is ubiquitous within the Windsor area. Within inclusion of these mitigation measures in project design, impacts would be reduced to a less than significant level.

TRAFFIC AND CIRCULATION

IMPACT 4.7.1 INCREASE IN VEHICLE TRIPS

Construction of proposed facilities would result in short-term increases in vehicle trips by construction vehicular activities and construction workers. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.7.1

The Town shall arrange for a detailed Traffic Control Plan, to be prepared by a licensed traffic engineer, for project-affected roadways. The Traffic Control Plan shall comply with requirements of the jurisdictional agency (Sonoma County or Windsor) directly affected by the project construction. The Traffic Control Plan would include, but would not be limited to, the following elements:

Haul routes minimizing truck traffic on local roadways will be used to the extent possible.

To the extent possible, the contractor(s) will schedule truck trips outside of the peak commute hours of 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of the identified mitigation measure requires preparation of a Traffic Control Plan for construction activities, including establishment of appropriate traffic control measures, construction hours and haul routes to avoid or minimize Project traffic on local traffic. These measures would reduce potential impacts to a less than significant level.

IMPACT 4.7.2 DISRUPTION OF TRAFFIC FLOWS

Pipeline installation within and across streets would reduce the number of, or the available width of, travel lanes on roads. This could result in temporary disruption of traffic flows and increases in traffic congestion, as well as affecting access to adjacent land uses for both general and emergency access. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.7.2a

The Traffic Control Plan will contain the following requirements:

- The traffic control plan will show specific methods for maintaining traffic flows. This will include identifying roadway locations where special trenching techniques would be used to minimize impacts to traffic flow and operations.
- Alternate one-way traffic flow past the construction zone will be maintained on all affected roadways.
- To minimize disruption of access to driveways to adjacent land uses, contractor(s) will be required to maintain steel trench plates at the construction sites to restore access across open trenches. Construction trenches in streets will not be left open after work hours.
- Construction hours will be limited to off-peak traffic periods.

Measure 4.7.2b

For highly sensitive land uses such as police, fire, hospitals, schools, and emergency services, the Town will require the construction contractor to develop and implement access plans. The access plans will be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions will be requested to identify detours, which will then be posted by the contractor. The contractor will notify the facility owner or operator in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of the identified mitigation measure requires preparation of a Traffic Control Plan for construction activities, including establishment of appropriate traffic control measures, construction hours, haul routes, maintenance of access, and provision of emergency access to avoid or minimize disruption to travel lanes and traffic flows. These measures would reduce potential impacts to a less than significant level.

IMPACT 4.7.3 SAFETY HAZARDS

Project construction would increase potential traffic safety hazards for vehicles, bicyclists and pedestrians on public roadways. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.7.3a

The traffic control plan prepared by the contractor shall include detours for bicyclists.

Measure 4.7.3b

The contractor shall provide advance public notification of construction activity and roadway/access closures.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of the identified mitigation measure requires preparation of a Traffic Control Plan for construction activities, and extends such controls to include maintenance of pedestrian and bicycle access routes so as to minimize conflicts between Project traffic and pedestrian, bicycle traffic. These measures would reduce the above impacts to a less than significant level.

IMPACT 4.7.4 SAFETY HAZARDS/ROAD CONDITIONS

Project construction would increase potential traffic safety hazards for vehicles, bicyclists and pedestrians on public roadways. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.7.4: The Town shall require contractors to conduct a pre-construction survey of road conditions on pipeline installation and access routes to facility sites. The pavement conditions of local streets and designate roads judged to be in good condition for use by heavy truck traffic should be monitored. It is recommended that construction areas and haul routes be videotaped prior to construction to document pre-construction conditions. Roads damaged by construction should be repaired to a condition equal to, or better than, that which existed prior to construction activity. This measure does not require the Town to upgrade or improve areas beyond pre-project conditions following pipeline installation.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of the identified mitigation measure would ensure that roadways do not present a safety hazard following construction, and that individual roadways are restored to their pre-project condition. These measures would reduce potential impacts to a less than significant level.

AIR QUALITY

IMPACT 4.8.1 CONSTRUCTION DUST

Construction of proposed facilities would generate substantial amounts of dust, which would result in potential health and visibility impacts in the immediate vicinity of construction sites. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.8.1

The construction contractor shall implement a dust abatement program. For individual construction projects affecting less than four acres in area such as pipeline installation and WRTP improvements, the dust abatement program should include following elements:

Water all active construction areas at least twice daily;

Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer);

Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites;

Sweep daily (preferably with water sweepers) all paved access roads, parking areas and staging areas at construction sites; and

Sweep streets daily (preferably with water sweepers) if visible soil material is carried onto adjacent public streets.

Designate a person or persons to oversee the implementation of a comprehensive dust control program and to increase watering, as necessary.

For individual construction projects affecting **four** acres or more such as the proposed storage ponds, the dust abatement program should include the above measures plus the following measures:

Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more);

Enclose, cover, water twice daily or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.);

Limit traffic speeds on unpaved roads to 15 miles per hour;

Install sandbags or other erosion control measures to prevent silt runoff to public roadways; and

Replant vegetation in disturbed areas as quickly as possible.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of the identified mitigation measure would ensure that dust control measures are implemented as required by the Bay Area Air Quality Management District, the regulatory agency responsible for dust control and air quality. These measures would reduce potential impacts to a less than significant level.

NOISE

IMPACT 4.9.1 CONSTRUCTION NOISE

Construction of project facilities would result in temporary and localized noise impacts. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.9.1a

To reduce daytime noise impacts due to construction, the Town should require that construction contractors muffle or otherwise control noise from construction equipment through implementation of the following measures:

- Equipment and trucks used for construction should utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically- attenuating shields or shrouds, wherever feasible and necessary);
- Impact tools (*e.g.*, jack hammers, pavement breakers, and rock drills) used for construction should be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust should be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves should be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures should be used such as drilling rather than impact equipment whenever feasible; and
- Stationary noise sources should be located as far from sensitive receptors as possible. If they must be located near sensitive receptors, they should be muffled to the extent feasible and enclosed within temporary sheds.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of the identified mitigation measures would establish construction limitations and noise control measures to reduce noise generation during construction. These measures would reduce potential impacts to a less than significant level.

IMPACT 4.9.2 OPERATIONAL NOISE

Operation of WRTP facilities and pump stations at the Storage Ponds could result in noise increases in the vicinity of project facilities. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.9.2

For proposed pumping facilities, the use of below grade, enclosed pumps shall be the preferred design method. In the event that above ground facilities are necessary due to site conditions, facilities shall be enclosed such that any change in ambient noise conditions is less than 3 dBA at the property line. This criteria will ensure that above ground pumping facilities, if required, will not result in a discernable change in ambient conditions at residences that may be in the vicinity of proposed facilities.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of the identified mitigation measure identifies below grade pump stations as the preferred design to maintain ambient noise levels. In the event that below grade pump stations are not feasible due to site specific constraints, conformance with the above noise limitation at the property line would ensure that ambient conditions are not changed by project implementation, thereby reducing potential impacts to less than significant.

VISUAL RESOURCES

IMPACT 4.10.1 VISUAL EFFECT

Development of the proposed facilities would alter the visual character of the project area. Except for Pond J, this impact can be reduced to less than significant through incorporation of revegetation or screening measures. Less Than Significant with Mitigation Measures except for Pond J.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.10.1a

The Town should ensure that its contractors restore disturbed areas associated with pipeline installation to their pre-project condition so that short-term construction disturbance does not result in long-term visual impacts.

Measure 4.10.1b

Ancillary facilities associated with pipeline installation, should be appropriately designed to fit the general character of the area and to minimize visual impacts. For facilities not installed in roadways, disturbed areas should be revegetated with native plant species.

Measure 4.10.1c

All constructed berms or dam faces shall be seeded with annual grasses, to the extent allowable by Department of Safety of Dams (DSOD) requirements, in order to provide visual continuity with surrounding areas.

Measure 4.10.1d

For Pond Z, the Town shall provide visual screening along the western and southern fencelines of the pond site. Appropriate landscaping trees shall be used to shield and break up views of constructed berms.

Measure 4.10.1e

For all ponds, existing vegetation shall be retained to the degree feasible to provide screening and maintain natural vegetation at the pond sites. For Pond T (T1,T2), a vegetation buffer of 25 feet in width shall be retained along the eastern side of Eastside Road to screen the dam from this designated scenic roadway.

Measure 4.10.1f

Pump station building materials shall use appropriate earthtones in order to blend with surrounding areas and provide visual continuity. Use of reflective or unfinished metallic surfaces, such as corrugated metal, shall be avoided.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of the identified mitigation measure would reduce potential visual effects by requiring revegetation of disturbed areas, use of grasses to vegetate dam faces, use and maintenance of appropriate vegetative screening, and appropriate design measures for above ground facilities. Implementation of these measures would ensure that impacts are reduced to less than significant.

HAZARDOUS MATERIALS

IMPACT 4.11.1 DISTURB EXISTING CONTAMINATION

The project could disturb existing contamination along proposed pipeline alignments. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.11.1a

Health and Safety Plan. Prepare a project-specific Health and Safety Plan that includes a project-specific contingency plan for hazardous materials and waste operations and submit the plan to the agency with jurisdiction before site activities could proceed. The Health and Safety Plan, applicable to all excavation activities, shall establish policies and procedures to protect workers and the public from potential hazards posed by hazardous wastes. The plan shall be prepared according to federal and California OSHA regulations for hazardous waste site Health and Safety Plans.

Measure 4.11.1b

Dust Abatement Program. Implement Mitigation Measure 4.8.1, which requires the adoption of a Dust Abatement Program. The construction contract shall include the Dust Abatement Program to minimize potential public health impacts associated with exposure to contaminated soil dust.

Measure 4.11.1c

Reduction of Excavation Impacts. Within areas of suspected contamination, the contractor shall monitor for odors and analyze excavated material with a photoionization detector to determine the potential for soil contamination and the need for specialized soil-handling procedures to reduce excavation impacts.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of the identified mitigation measures establishes procedures for appropriate identification and handling of disturbed hazardous materials during construction. Implementation of these measures would ensure that impacts are reduced to less than significant.

IMPACT 4.11.2 DISPOSAL OF CONTAMINATED SOILS

The project could require disposal of potentially contaminated soils. Less Than Significant With Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.11.2a

Disposal Characterization. As part of Irrigation Infrastructure final design, a database and records search of known contaminated sites shall be completed. In high risk areas, excavations shall be observed by a trained health and safety professional equipped with an organic vapor analyzer to screen excavated materials and ensure worker safety. If contamination is encountered, excavated soils shall be segregated and sampled relative to the profiling requirements of the accepting landfill.

Measure 4.11.2b

Health and Safety Plan. The Health and Safety Plan shall also provide for proper storage and/or disposal of any contaminated soils that meet the definition of a hazardous waste. Such a protocol could include off-site treatment of contaminated materials or disposal at an appropriate landfill.

Measure 4.11.2c

Groundwater Testing. In the event Irrigation Infrastructure installation requires dewatering, conduct groundwater testing for petroleum hydrocarbons in high risk areas before dewatering is performed. Treatment would be applied, in consultation with the Regional Water Quality Control Board and/or wastewater treatment plant operators, to ensure that all discharges meet applicable water quality requirements.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of the identified mitigation measures establishes procedures for appropriate assessment, handling, and disposal of contaminated soil or ground water during construction. Implementation of these measures would ensure that impacts are reduced to less than significant.

IMPACT 4.11.3 ACCIDENTAL SPILL

Project construction activities could result in an accidental spill of diesel fuel or other hazardous materials used for equipment or otherwise needed for construction operations. Less Than Significant with Mitigation Measures.

MITIGATION

The following mitigation measures are hereby adopted and will be implemented as set forth in the MMRP. These measures will mitigate the above impact to a less than significant level.

Measure 4.11.3

Hazardous Materials Management/Spill Prevention Plan. A Hazardous Materials Management/Spill Prevention Plan shall be developed and given to all contractors working on the project. At least one copy shall be on-site with the construction manager at all times. The purpose of the plan is to provide on-site construction managers, environmental compliance monitors, and regulatory agencies with a detailed description of hazardous materials management, spill prevention, and spill response/cleanup measures associated with the construction of project elements. The primary objective of the plan is to prevent the spill of hazardous materials. Elements of the plan shall include, but not be limited to, the following:

- A discussion of hazardous materials management, including delineation of hazardous material and hazardous waste storage areas, access and egress routes, waterways, emergency assemble areas, temporary hazardous waste storage areas;
- Spill control and countermeasures, including employee spill prevention/response training; and
- Notification and documentation procedures.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of the identified mitigation measure establishes procedures for appropriate handling, use, and spill response for hazardous materials commonly used during construction. Implementation of these measures would ensure that impacts are reduced to less than significant.

IMPACT 4.11.4 USE OF HAZARDOUS MATERIALS

Improvements at the WRTP to provide 3.0 MGD of capacity would involve incremental increases in the quantities of hazardous materials currently used. Additionally, small amounts of hazardous materials, such a hydraulic fluids, would be used at proposed pump stations. Less than Significant with Mitigation Measures.

MITIGATION

The following mitigation measure is hereby adopted and will be implemented as set forth in the MMRP. This measure will mitigate the above impact to a less than significant level.

Measure 4.11.4a

The WRTP would, by law, conform to appropriate regulations and statutes from the federal, state and local agencies. Any new or additional chemical storage facilities would be constructed or retrofitted to conform to all appropriate regulations including providing secondary containment and testing of pressurized containers. All new or retrofitted facilities will be added to their Hazardous Materials Business Plan. Compliance with these requirements would mitigate potential impacts to worker health and safety and hazardous materials to a less-than-significant level.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of the identified mitigation measure requires the Town to comply with Federal, State, and Local regulations for appropriate handling, storage, use, and spill response for hazardous materials commonly used in wastewater treatment. Implementation of these measures would ensure that impacts are reduced to less than significant.

CUMULATIVE IMPACTS

IMPACT 5.1 SHORT-TERM CUMULATIVE CONSTRUCTION IMPACTS

Concurrent construction of several infrastructure projects within the Windsor area would result in cumulative short-term impacts associated with construction activities. These

include short-term impacts associated with erosion, cultural resource disturbance, disturbance of adjacent land uses, traffic disruption, dust generation, construction noise, and visual resources disturbance. Less than Significant with Mitigation Measures.

MITIGATION

Implement the following Mitigation Measures identified in Chapter 4.0:

- Erosion Control: 4.2.1a, 4.2.1b, 4.2.1c;
- Cultural Resources: 4.5.1a, 4.5.1b, 4.5.1c, 4.5.1d, 4.5.1e, 4.5.1f;
- Land Use Disturbance: 4.6-1a, 4.6.1b;
- Traffic Control: 4.7.1, 4.7.2a, 4.7.2b, 4.7.3a, 4.7-3b, 4.7.4;
- Dust Control: 4.8.1;
- Short-term Noise Control 4.9.1a;
- Short-term Visual Resources: 4.10.1a.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

See Rationale Statements for above mentioned mitigation measures.

IMPACT 5.2 LONG-TERM CUMULATIVE BIOLOGICAL RESOURCES IMPACT

Construction of several infrastructure projects within the Windsor area would result in cumulative long-term impacts to biological resources. For the majority of *Water Reclamation Master Plan* facilities, this cumulative contribution is not considerable. However, for Pond S and Pond T, the loss of oak woodland habitat is identified as significant, and would cumulatively considerable. Less than Significant with Mitigation Measures except for Pond S and Pond T (T1,T2), which are addressed above in Section B.2 Significant Unavoidable Adverse Impacts.

MITIGATION

No Mitigation Measures Available for Pond S and Pond T. See related findings for Impacts 4.4.1 through 4.4.6 for mitigation measures regarding other facilities.

FINDING

With implementation of identified mitigation measures for Impacts 4.4.1 through 4.4.6, implementation of the Project would not result in a considerable cumulative contribution to biological resource impacts associated with other infrastructure projects within the area.

Therefore, impacts are less than significant, except for Pond S and Pond T (T1,T2) which are addressed in Section B.2 above.

RATIONALE

Implementation of identified mitigation measures for biological resource issues would reduce the Town's contribution to a less than significant level, except for Pond S and Pond T (T1,T2), which are addressed in Section B.2 above.

IMPACT 5.3 DAMAGE FROM SEISMIC HAZARDS

Both Pond S and SCWA's Pond D could be exposed to damage from earthquakes and geologic hazards. In the event of a catastrophic failure, the location of Pond S upstream of SCWA's Pond D could increase the severity of downstream flooding. Less than Significant with Mitigation Measures.

MITIGATION

Implement Mitigation Measures 4.1-1a and 4.1-1b of Section 4.1, Geology and Soils.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of identified mitigation measures, including review of design and construction by DSOD, would reduce the Project's contribution potential impacts related to seismic hazard to a less than significant level.

IMPACT 5.4 RECYLCED WATER ON GROUND WATER QUALITY

Storage at Pond S could result in the infiltration of recycled water into the underlying groundwater table. Over time, reclaimed water could disperse into capture zones of downgradient municipal, domestic, or private groundwater wells, resulting in secondary impacts to potable water supplies . Due to its location in proximity to SCWA's Pond D, infiltration from both facilities could be cumulatively considerable on a local basis. However, implementation of appropriate design measures would reduce the potential for infiltration, thereby avoiding cumulative impacts. Less than Significant with Mitigation Measures.

MITIGATION

Implement Mitigation Measure 4.1.4a of Section 4.1, Geology and Soils.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of identified mitigation measures, including appropriate impermeability criteria, would reduce the Project's contribution to potential water quality impacts to a less than significant level.

IMPACT 5.7 CUMULATIVE SECONDARY IMPACTS TO BIOLOGICAL RESOURCES

Expansion of irrigation lands would increase the amount of acreage irrigated with reclaimed water. When considered with other projects within the region, continued use of reclaimed water could result in cumulative secondary impacts to biological resources, including oak trees, wetlands or vernal pool resources. Less than Significant with Mitigation Measures.

MITIGATION

Implement Mitigation Measures 4.4.2e through 4.4.2g of Section 4.4, Biological Resources.

FINDING

Based on the Certified EIR and the entire record before the Town Council, the Town Council finds that measures have been incorporated into the project, which will substantially lessen the significant environmental effects as identified in the Certified EIR.

RATIONALE

Implementation of identified mitigation measures, including appropriate screening of irrigation site for biological resources, would reduce the Project's contribution to potential biological resource impacts to a less than significant level.

EXHIBIT C

ALTERNATIVES FINDINGS

C.1. INTRODUCTION

CEQA requires that an EIR "describe a range of reasonable alternatives to the project or to the location of the project, which would feasibly attain most of the basic objectives of the project…" CEQA Guidelines §15126.6(a). If a project alternative will substantially lessen the significant environmental effects of a proposed project, the decisionmaker should not approve the proposed project unless it determines that specific economic, legal, social, technological, or other considerations,… make the project alternative infeasible." CEQA §21002, CEQA Guidelines §15091(a)(3). The Certified EIR evaluated alternative approaches to accomplishing the objectives of the Project. The findings with respect to the alternatives identified in the Certified EIR are identified below.

C.2. PROJECT OBJECTIVES

The primary objective of the *Water Reclamation Master Plan* is to identify and implement infrastructure requirements for wastewater treatment, storage and disposal to best serve the various land uses defined in the Town's *General Plan* at buildout, through approximately the year 2015. Within this context, specific objectives for the proposed project are identified below. Additional objectives for the Town's wastewater system, as defined in the Town's *General Plan*, are also identified.

- Continue to provide wastewater treatment, storage and disposal in an environmentally sound manner in compliance with all applicable federal, state and local regulations.
- Develop adequate treatment, storage and disposal facilities to meet projected effluent generation associated with buildout under the adopted General Plan.
- Maximize the use of existing or available infrastructure to provide an economically efficient program for effluent treatment, storage, and disposal.

General Plan Policies

- The Town should emphasize the reclamation and reuse of treated effluent, rather than its discharge to receiving waters, in accordance with the standards and policies of the Regional Water Quality Control Board (RWQCB).

- The Town should target two-thirds of its treated effluent for reclamation and reuse, unless otherwise directed by the RWQCB, or the economics of such disposal is no longer cost effective.

- Treated effluent should comply with prevailing standards of the California Code of Regulations (Title 22) regarding reclamation and landscape irrigation as a condition for its land application.

- Irrigation with reclaimed water should not occur on lands known to or possibly containing vernal pools or rare or endangered plants, until appropriate studies have been performed and measures adopted that indicate that such practices can occur without compromising the quality and integrity of the habitat.

C.3. ALTERNATIVES EVALUATED IN THE EIR

Based upon analysis provided in the January 1999 Water Reclamation Master Plan, as well as input from the public and the Town Council, three alternatives were examined at an equal level of detail within the EIR. These alternatives are summarized below.

The three alternatives identified for consideration can be characterized as reuse options for tertiary treated effluent not discharged to Mark West Creek under the Town's existing NPDES permit. The Town's permit provides for seasonal discharge of up to 1% of the natural stream flow in Mark West Creek between October 1 and May 14. Flows above this discharge limit are currently stored and used for seasonal irrigation of various land uses, including pasture, vineyard, parks, play fields, and golf course. To meet future wastewater flows, the three alternatives present a continuum between the maximum use of storage facilities and dry-season irrigation for disposal (**Alternative 1C**), and maximum use of capacity in the City of Santa Rosa's Geysers Recharge Project available to the Town (**Alternative 4I**). The third, **Alternative 4X** was created in response to input received during the *Water Reclamation Master Plan* workshops, wherein a need was identified for an alternative with a reduced Geysers contribution that falls between Alternative 1C and 4I. A brief summary of each alternative is provided below.

- Alternative 1C. This alternative would include construction of storage and distribution facilities with adequate capacity to provide for irrigation reuse to meet the Town's reuse and disposal needs. Components would include storage ponds to provide up to 351 million gallons (MG) of new storage, irrigation of approximately 785 additional equivalent acres[1],

[1] As defined in the *Water Reclamation Master Plan*, an equivalent acre requires 30-inches of irrigation water per year. This measurement of irrigation acreage was used to compare water usage by different crops and land uses.

and approximately 12 miles of distribution pipeline. Under this alternative, all flows not discharged to Mark West Creek would be stored and used for dry season irrigation.

- Alternative 4I. This alternative would include full use of available Geysers Recharge capacity (1.25 MGD), which would reduce the amount of storage and irrigation distribution facilities necessary. This alternative would require the least amount of new storage capacity (72 MG) and additional irrigation acreage (300 equivalent acres). No new distribution pipeline would be required under this alternative.

- Alternative 4X. This alternative provides a middle ground between the two other alternatives, using 0.75 MGD of the available Geysers Recharge capacity. This alternative would require new storage capacity (182 MG), additional irrigation acreage (495 equivalent acres) and distribution pipeline (1.8 miles) midway between Alternatives 1C and 4I.

In addition, the No Project Alternative, and Other Master Plan Alternatives were examined. A brief description of the No Project Alternative and Other Master Plan Alternatives is provided below.

- No Project Alternative. Under the No Project Alternative, the Town would not implement any of the Alternatives considered in this EIR. No additional storage, distribution, and irrigation lands would be developed, and the Town would not participate in the Geysers Recharge Project. As such, no additional disposal capacity would be developed by the Town.

- Zero Discharge Alternative. The Zero Discharge Alternative would propose complete cessation of discharge to Mark West Creek. During winter months, all treated effluent would be stored in ponds, with stored water and treated effluent used for summer irrigation. The ponds would have to be emptied by the end of the irrigation season, to be available for storage of the next winter's treated effluent. The Zero Discharge Alternative would require approximately 2,079 *equivalent acres* of land and 1,679 MG of storage pond capacity. This would require construction of ponds at all 15 of the potential pond sites identified in the *Water Reclamation Master Plan.*

- 5 Percent Discharge to Mark West Creek. This alternative would involve continued reclamation of effluent with tertiary treatment, irrigation of reclaimed water in the dry season, and discharge in the winter to Mark West Creek at a maximum rate of 5 percent of the natural stream flow. Implementation of this alternative would require an exception to the RWQCB Basin Plan to allow for an increase in the maximum discharge percentage to Mark West Creek.

- 1% Discharge to the Russian River. This alternative would involve continued reclamation of effluent with tertiary treatment, irrigation of reclaimed water in the dry season, and discharge in the winter directly to the Russian River at a rate of 1% of the river's natural flow.

- Joint Use with SCWA Airport Treatment Plant. The *Water Reclamation Master Plan* included examination of several options for joint use with the Sonoma County Water Agency's Airport Treatment Plant. These options were included to examine cost reductions and operational benefits associated with operating these two systems jointly.

ALTERNATIVE 1C – MAXIMUM IRRIGATION

Overview. Under Alternative 1C, the Town would continue its current practices of winter discharge to Mark West Creek and dry season irrigation. Reclaimed water would be held in effluent storage ponds during periods of limited discharge and/or irrigation. While the Town would not contribute reclaimed water to the Geysers Recharge Project under this alternative, reclaimed water could be supplied to irrigators via the Geysers Recharge pipeline. Facilities and irrigation lands associated with Alternative 1C are shown in Figure 2-1 of the Certified EIR.

Storage Ponds. Alternative 1C would require construction of approximately 351 MG of new storage pond volume. The *Water Reclamation Master Plan* identifies 15 potential pond sites that could be implemented by the Town. These include: Ponds C, J1, J2, K, L1, L2, S, T1, T2, V1, V2, W, X and Y, and expansion of existing ponds at the Windsor Golf Course (Pond Z). The capacity of each pond is dependent upon individual site configurations, with a general range of between 68 MG and 290 MG. Pond Z would consist of expansion of an existing pond, and would provide the smallest increment of storage at 38 MG. Each storage pond would include a pump station onsite. Storage ponds selected for implementation by the Town will be dependent upon the location of irrigation demands, negotiations with individual property owners, and implementation costs. The Town intends to proceed with site acquisition on a willing seller basis, to the extent feasible. Potential pond sites identified by the Master Plan are shown in Figure 2-1 of the Certified EIR. The Town of Windsor currently owns property for Ponds S, T (T1,T2) and Z. These ponds sites were examined at a project level of detail, and additional site specific information regarding these pond sites is provided in Certified EIR Section 2.8, Facility Construction and Siting.

Irrigation Lands. Approximately 785 *equivalent acres*[2] of new irrigation lands would be provided with reclaimed water under Alternative 1C. The total new irrigation area under Alternative 1C would be in the range of 2,500 to 3,000 acres. Areas identified for reclaimed water utilization are shown in Figure 2-1 of the Certified EIR, and would include in-Town parks, school yards, and residential yards, and agricultural lands westerly and southerly of the Town. Reclaimed water would also be provided to agricultural lands easterly of the Town. The Town would also allocate a section of irrigation land to a pilot study of silviculture. Alternatively, other lands could be used under agreement with the property owner. The pilot area would be monitored for seasonal water uptake, growth rate of trees and effect on groundwater. Stands of trees of various species could be planted for comparison of growth and water uptake patterns.

Irrigation Infrastructure. In order to distribute reclaimed water from storage ponds to the irrigation lands identified in Figure 2-1 of the Certified EIR, Alternative 1C would include

[2] As defined in the *Water Reclamation Master Plan*, an equivalent acre requires 30-inches of irrigation water per year. This measurement of irrigation acreage was used to compare of water usage by different crops and land uses.

construction of distribution pipelines. For Alternative 1C, the following irrigation infrastructure would be required:

- Eastside Road System. Approximately 33,000 feet of 20-inch or smaller diameter reclaimed water main along Eastside Road. In the event that it becomes feasible to supply irrigation lands along Eastside Road via the Santa Rosa Geysers Recharge pipeline, Town reclaimed water main construction could be reduced.

- Westside Road System. Approximately 14,000 feet of 16-inch or smaller diameter reclaimed water main would be constructed from the Santa Rosa Junior College Shone Farm, across the Russian River at Wohler Bridge, along Westside Road and through Gallo Sonoma's Twin Valley Ranch to Pond G, which has been constructed by Gallo. Extension of 5,000 feet of pipeline and irrigation at Shone Farm has been analyzed and approved by the Town, and facilities are currently in design.

- Southeast System. Approximately 18,000 feet of 16-inch or smaller main would convey reclaimed water to irrigation sites southeasterly of the treatment plant and agricultural lands easterly of the Town.

- Laterals would connect reclaimed water mains to storage ponds and to irrigation sites.

Water Reclamation Treatment Plant. Facilities at the existing Water Reclamation Treatment Plant (WRTP) would be expanded and improved to provide continued tertiary disinfected treatment of projected full buildout flows of 3.0 MGD Average Dry Weather Flow (ADWF). Improvements to upgrade treatment plant capacity to 2.25 MGD have been considered under separate environmental review, and are currently being implemented by the Town. Improvements necessary to increase capacity from 2.25 to 3.0 MGD would be generally limited to expansion of existing onsite unit processes, and would include construction of two flocculation tanks, a clarifier, and one additional filter unit. Proposed facilities would be located within the existing fenceline of the (WRTP), and could be installed without interruption of treatment processes. Based upon current flow projections, these improvements are anticipated to be necessary by the year 2006. Site specific information regarding WRTP improvements is provided in Section 2.8, Facility Siting and Construction.

Discharge to Mark West Creek. Reclaimed water would continue to be discharged to Mark West Creek at the existing discharge point at a maximum daily rate of 1% of the natural stream flowrate. Discharge would occur only between October 1 and May 14, in compliance with the Town's existing NPDES permit.

Geysers Recharge. There would be no diversion of reclaimed water from the Town for Geysers Recharge under Alternative 1C.

Constructed Wetland. A constructed wetland would be created on an area of approximately 10 acres adjoining the Town's discharge point. During the winter, the Town's tertiary effluent would flow through the wetlands before discharge to Mark West Creek. During the dry season,

sufficient effluent to maintain the wetlands would be routed through the wetlands before application on adjoining irrigation lands.

Silviculture Pilot Project. Based upon comments from the public during the *Water Reclamation Master Plan* process, the Town proposes to implement a pilot scale project using subsurface systems for application of treated reclaimed water in the root zone of various tree species to assess potential uptake rates. The Town has not yet identified a potential pilot study site.

Water Conservation. The Town of Windsor is a signatory to *Final Exhibit 1 Attachment to the Memorandum of Understanding* (DWR, September, 1997), which establishes efficient urban water use guidelines by outlining a set of Best Management Practices (BMPs) that all signatories agreed to implement. As such, water conservation continues to be a part of the Town's water management practices, and has been factored into effluent flow projections. BMPs identified under the MOU applicable to urban water retailers is provided in Appendix 2.0, Project Description. Although water conservation will continue to be a component of any Master Plan alternative selected by the Town, no specific analysis of these measures is necessary, as their continued implementation would not represent a change in existing environmental conditions.

FINDING

The Town Council finds that although Alternative 1C would provide the greatest local water management benefit, Alternative 1C would not resolve the significant unavoidable environmental impacts identified in the Certified EIR. Additionally, Alternative 1C would not feasibly meet most of the basic objectives of the project as discussed below, and is therefore considered infeasible for implementation. Additionally, Alternative 1C:

- Involves the greatest risk factor with respect to the availability of future reclamation lands.
- Would reduce the reliability of the Town's system with respect to discharge if the Town is not able to secure irrigation agreements for enough acreage to meet disposal requirements associated with *General Plan* buildout.
- Would result in the greatest environmental impact compared to the other two alternatives, due to the need for storage, including construction of Pond S and Pond (T1,T2) and irrigation infrastructure, which would be required in the near-term.
- Has the greatest capital costs and operations/maintenance costs, and therefore would not provide the most economically efficient program for effluent treatment storage and disposal.

ALTERNATIVE 4I – 1.25 MGD GEYSERS RECHARGE

Overview. Under Alternative 4I the Town would continue its current practices of winter discharge to Mark West Creek and dry season irrigation. In addition, the Town would deliver from 0.75 to 1.25 (MGD) to the proposed Santa Rosa Geysers Recharge Project. The Town would also utilize the Geysers Recharge pipeline to deliver reclaimed water to irrigation sites and/or storage ponds along the pipeline route. Reclaimed water would be held in effluent storage ponds during periods of limited discharge and/or irrigation. Facilities and irrigation acreage associated with Alternative 4I are shown in Figure 2-3 of the Certified EIR.

Geysers Recharge. Under Alternative 4I, the Town would participate in the City of Santa Rosa Geysers Recharge Project. At the beginning of the Geysers Recharge Project, the Town would deliver 0.75 MGD to Geysers Recharge. Over the first 15 years of the Geysers Project, the Town's contribution would increase to 1.25 MGD and would remain at 1.25 MGD for the duration of the Geysers Project. The Town would construct a pump station at the treatment plant and a connecting main to the Geysers Recharge pipeline, allowing conveyance of the Town's flow to the Geysers for injection. These facilities could also be used to convey Town reclaimed water to irrigation users along the Geysers Recharge pipeline route.

Storage Ponds. Alternative 4I requires construction of approximately 72 MG of new storage pond volume. The capacity of each pond is dependent upon individual site configurations, with a general range of between 68 MG and 290 MG. Pond Z would consist of expansion of an existing pond, and would provide the smallest increment of storage at 38 MG. Potential pond sites include Ponds J1, J2, K, L1, L2, S, T1 and T2, and potential expansion of ponds at the Windsor Golf Course (Pond Z). Storage pond locations are shown in Figure 2-3 of the Certified EIR. Storage ponds selected for implementation by the Town will be dependent upon the location of irrigation demands, and negotiations with individual property owners. The Town intends to proceed with site acquisition on a willing seller basis, to the extent feasible. Please refer to Section 2.8 of the Certified EIR for further description of storage pond implementation and site-specific discussions for Ponds S, T (T1,T2), and Z, which are currently owned by the Town.

Irrigation Lands. Approximately 300 equivalent acres of new irrigation lands would be provided with reclaimed water under Alternative 4I. The total new irrigation area under Alternative 4I would be in the range of 900 to 1,500 acres. Areas identified for reclaimed water utilization under Alternative 4I are identified in Figure 2-3 of the Certified EIR, and include in-Town parks, school yards and residential yards, and agricultural lands westerly and southerly of the Town.

Irrigation Infrastructure. In order to distribute reclaimed water from storage ponds to the irrigation lands identified in Figure 2-3 of the Certified EIR, Alternative 4I would include

construction of distribution pipelines and pump stations. For Alternative 4I, the following irrigation infrastructure would be required:

- Eastside Road System. Irrigation lands along Eastside Road would be supplied with reclaimed water via the Geysers Recharge pipeline. However, Alternative 4I could entail construction of an additional reclaimed water main along Eastside Road, depending upon demands.

- Laterals would connect reclaimed water mains to storage ponds and to irrigation sites.

Water Reclamation Treatment Plant. Facilities at the existing Water Reclamation Treatment Plant (WRTP) would be expanded and improved to provide continued tertiary disinfected treatment of projected full buildout flows of 3.0 MGD Average Dry Weather Flow (ADWF). Improvements to upgrade treatment plant capacity to 2.25 MGD have been considered under separate environmental review, and are currently being implemented by the Town. Improvements necessary to increase capacity from 2.25 to 3.0 MGD would be generally limited to expansion of existing onsite unit processes, and would include construction of two flocculation tanks, a clarifier, and one additional filter unit. Proposed facilities would be located within the existing fenceline of the (WRTP), and could be installed without interruption of treatment processes. Based upon current flow projections, these improvements are anticipated to be necessary by the year 2006. Site specific information regarding WRTP improvements is provided in Section 2.8, Facility Siting and Construction.

Discharge to Mark West Creek. Reclaimed water would continue to be discharged to Mark West Creek at the existing discharge point at a maximum daily rate of 1% of the natural stream flowrate. Discharge would occur only between October 1 and May 14, in compliance with the Town's existing NPDES permit.

Constructed Wetland. A constructed wetland would be created on an area of approximately 10 acres adjoining the Town's discharge point. During the winter, the Town's tertiary effluent would flow through the wetlands before discharge to Mark West Creek. During the dry season, sufficient effluent to maintain the wetlands would be routed through the wetlands before application on adjoining irrigation lands.

Silviculture Pilot Project. Based upon comments from the public during the *Water Reclamation Master Plan* process, the Town proposes to implement a pilot scale project using subsurface systems for application of treated reclaimed water in the root zone of various tree species to assess potential uptake rates. The Town has not yet identified a potential pilot study site.

Water Conservation. The Town of Windsor is a signatory to *Final Exhibit 1 Attachment to the Memorandum of Understanding* (DWR, September, 1997), which establishes efficient urban water use guidelines by outlining a set of Best Management Practices (BMPs) that all signatories agreed to implement. As such, water conservation continues to be a part of the Town's water management practices, and has been factored into effluent flow projections.

FINDING

The Town Council finds that Alternative 4I would not feasibly meet most of the basic objectives of the project as discussed below. Although Alternative 4I would require the least amount of infrastructure construction, and impacts associated with construction of Pond S or T (T1,T2) could likely be avoided, Alternative 4I is determined to be infeasible for the following reasons:

- Alternative 4I would include participation in the Geysers Recharge at the maximum capacity available to the Town (1.25 mgd). Compared to the Project, this alternative would reduce the amount of reclaimed water available for local use at *General Plan* buildout thereby reducing the amount of lands that could be irrigated with reclaimed water by approximately 500 acres.

- With the level of supply dedication to the Geysers, Alternative 4I provides less flexibility than the Project with respect to long term wastewater management for local reuse.

- One of primary project objectives is to maximize the local beneficial reuse of reclaimed water. Alternative 4I would result in the dedication of a greater amount of supply to the Geysers (compared to the Project) and would not provide as much local beneficial reuse of reclaimed water.

OTHER POND SITES

The Water Reclamation Master Plan includes examination of 16 potential storage ponds. Pond sites that would: a) avoid impacts to oak woodland; b) not result in other significant unavoidable impacts, and; c) have not been specifically identified as unavailable for purchase by their owners, are limited to Pond C and Pond X. Pond S or Pond T (T1,T2) are considered superior for implementation to Pond C or Pond X, as identified below. Therefore, Pond C and Pond X are considered infeasible for implementation by the Town at this time.

1. Pond S and Pond T (T1,T2) are centrally located with respect to both existing Town infrastructure and identified future irrigation lands. Construction of connecting pipelines would be necessary in order to implement Pond C and Pond X compared to Pond S and Pond T(T1,T2).

2. Pond S and Pond T (T1,T2) land is currently owned by the Town of Windsor. The site was purchased by the Town of Windsor specifically for provision of storage.

3. Implementation of Pond X or Pond C is estimated to cost an additional $2.0 million per pond due to property acquisition and pipeline construction costs. This estimate assumes a willing seller, and that condemnation by the Town is not required. Therefore, implementation of these ponds by the Town at this time would not meet the project objective to maximize the

use of existing or available infrastructure to provide an economically efficient program for effluent treatment storage and disposal.

C.4. EVALUATION OF OTHER MASTER PLAN ALTERNATIVES

Chapter 7 of the DEIR also evaluated alternatives *to* the project, which are other projects entirely or other approaches to achieving the project objectives rather than the project or modified project. These include the No Project Alternative, the Zero Discharge Alternative, 5% Discharge to Mark West Creek, 1% Discharge to the Russian River, and Joint Use with SCWA Airport Treatment Plant. Pursuant to CEQA Guidelines 15126.6 (c), findings describing the reasons these alternatives were not evaluated in the DEIR are summarized below.

ZERO DISCHARGE ALTERNATIVE

DESCRIPTION

The Zero Discharge Alternative would propose complete cessation of discharge to Mark West Creek. During winter months, all treated effluent would be stored in ponds, with stored water and treated effluent flows used for summer irrigation. The ponds would have to be emptied by the end of the irrigation season, to be available for storage of the next winter's treated effluent. The Zero Discharge Alternative would require approximately 2,079 *equivalent acres* of land and 1,679 MG of storage pond capacity. This would require construction of ponds at all 15 of the potential pond sites identified in the *Water Reclamation Master Plan.*

FINDING

Implementation of this alternative would not feasibly meet most of the basic objectives of the project, for the following reasons:

- This alternative would maximize the local reuse of reclaimed water through irrigation, but would also have the greatest facility requirements, and therefore, greatest environmental impacts.

- Infeasible operational practice due to land acquisition costs. During dry years, when irrigation is the most critical, only about 56 percent of the irrigation area could be fully supported. The Town would likely have to purchase half of the required irrigation area, and leave it unwatered in dry years.

- Economically infeasible due to high facility requirements and related cost.

5% MARK WEST CREEK DISCHARGE

DESCRIPTION

This alternative would involve continued reclamation of effluent with tertiary treatment, irrigation of reclaimed water in the dry season, and discharge in the winter to Mark West Creek at a maximum rate of 5%of Mark West Creek natural flow. Implementation of this alternative would require an exception to the RWQCB Basin Plan to allow for an increase in the maximum discharge rate to Mark West Creek. With this increased discharge rate, additional storage capacity would not be required.

FINDING

Implementation of this alternative would not feasibly meet most of the basic objectives of the project, for the following reasons:

- Would not emphasize reclamation practice as a disposal mechanism and would therefore conflict with both the Town's objectives and the RWQCB's policies regarding discharges within the Russian River Basin.

- Potential for direct, secondary, or cumulative impacts to surface water quality within the Russian River Basin, as well as sensitive species habitat; increased constituent loading to Mark West Creek could affect beneficial uses

- Regulatory issues surrounding discharge rate increases; implementation of this alternative would require an exception to the RWQCB Basin Plan to allow for an increase in the maximum discharge rate to Mark West Creek. Regulatory restrictions established by the RWQCB would likely affect the feasibility of implementing this alternative.

1% RUSSIAN RIVER DISCHARGE

DESCRIPTION

This alternative would involve continued reclamation of effluent with tertiary treatment, irrigation of reclaimed water in the dry season, and discharge in the winter directly to the Russian River at a rate of 1% of the river's natural flow. Implementation of this alternative would include construction of a discharge pipeline and outfall structure to the Russian River. Implementation of this alternative would not require an exception to the RWQCB Basin Plan for discharge. No storage would be required under this alternative.

FINDING

Implementation of this alternative would not feasibly meet most of the basic objectives of the project, for the following reasons:

- Would not be consistent with the Town's General Plan objective of targeting two-thirds of its treated effluent for reclamation, and would conflict with the RWQCB's policies regarding discharges within the Russian River Basin. Regulatory restrictions established by the RWQCB would likely affect the implementibility of this alternative.

- Potential for direct, secondary, or cumulative impacts to surface water quality within the Russian River Basin, as well as sensitive species habitat; increased constituent loading could affect beneficial uses

- Regulatory issues surrounding discharge rate increases

- Physical impacts associated with construction of a new outfall structure.

SONOMA COUNTY WATER AGENCY JOINT USE

DESCRIPTION

The *Water Reclamation Master Plan* included examination of joint use options with the Sonoma County Water Agency's Airport Treatment Plant for each of the Project Alternatives examined. These are briefly described below.

- Alternative 1C, Joint Use Option. This consists of Project Alternative 1C plus joint use reclamation with the Airport facility, with upgrade of that facility to tertiary level treatment. The Town's increase in build-out storage capacity requirements would be reduced. The Town's estimated share of capital costs would also be reduced.

- Alternative 4X, Joint Use Option. This consists of Project Alternative 4X plus upgrade of the Airport facility to tertiary treatment, and a fixed rate of export for Geysers Recharge. This would reduce the Town's new storage requirement. The Town's estimated share of capital costs would also be reduced.

- Alternative 4I, Joint Use Option. This consists of Project Alternative 4I plus upgrade of the Airport facility to tertiary treatment, with a fixed rate of contribution from both facilities. The Town's contribution would be the same as Alternative 41. This would reduce the Town's new storage requirement. The Town's estimated share of capital costs for this alternative would also be reduced.

FINDING

Implementation of this alternative would not feasibly meet most of the basic objectives of the project, for the following reasons:

- Institutional issues render implementation of this alternative infeasible at this time. The Town does not have the authority to independently implement any joint use alternatives, which would require a Memorandum of Understanding (MOU) with SCWA. To date, neither the Town nor SCWA has identified joint use as an alternative for implementation. As such both the Town and SCWA have appropriately continued forward with their independent projects in order to provide for long-term, reliable wastewater management within their respective service areas. This does not preclude joint use options in the future, if institutional issues can be resolved to the satisfaction of both agencies.

C.5 NO PROJECT ALTERNATIVE

DESCRIPTION

Under the No Project Alternative, the Town would not implement any of the Alternatives considered in this EIR. No additional storage, distribution, and irrigation lands would be developed, and the Town would not participate in the Geysers Recharge Project. As such, no additional disposal capacity would be developed by the Town.

FINDING

Implementation of this alternative would not feasibly meet most of the basic objectives of the project, for the following reasons:

- Some incremental continuation of effluent disposal capacity beyond existing conditions could occur, and could directly reduce the reliability of the Town's system to comply with NPDES discharge limitations to Mark West Creek.

- Implementation of the No Project Alternative would not provide adequate treatment, storage and disposal capacity to support development under the *General Plan – 2015.* Specific land use proposals would be required to pursue these services on an individual basis, potentially resulting in a piecemeal approach to infrastructure planning and potentially increased development within the county unincorporated area, with subsequent increases in the use of septic systems. This approach to wastewater management would not likely be permitted by the RWQCB.

- In the event that one of the proposed alternatives is not implemented, it is reasonably foreseeable that the Town would continue to pursue and eventually implement one or more of

the alternative wastewater management strategies described in the following sections, thereby resulting in the environmental impacts described below under those alternatives.

EXHIBIT D
MITIGATION MONITORING AND REPORTING PROGRAM – TOWN OF WINDSOR WATER RECLAMATION MASTER PLAN FOR TREATMENT, STORAGE, AND DISPOSAL

GEOLOGY, SOILS, AND SEISMICITY

Impact 4.1-1: Seismic groundshaking and its secondary effects including localized liquefaction and related ground failure, from a major earthquake in the in Sonoma County or the San Francisco Bay region, could cause structural damage or structural collapse of water retention structures, pipelines, and facility buildings proposed under the project.

Alternatives 1C, 4X, 4I:

Measure 4.1.1a: Where DSOD jurisdictional criteria apply, proposed reclaimed water impoundment and retention structures will be under the jurisdiction of the DSOD and comply to their standards for design, construction, and inspection. The DSOD would require that the dam be designed to withstand a seismic event with an earthquake magnitude considerably higher than the maximum magnitude of the active regional fault closest to the dam site. The DSOD will require necessary site evaluation methods, review plans and specifications, make recommendations on design, require fault investigations when deemed necessary, and will monitor dam construction.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate DSOD standards in design of reclaimed water impoundments and retention structures	DSOD review and approvals.	Town Public Works and DSOD	During Design	
DSOD construction inspections.	DSOD review and approvals.	Town Public Works and DSOD	During construction	

Measure 4.1.1b: All non-DSOD jurisdictional facilities will comply with applicable policies and appropriate engineering investigation practices necessary to reduce the potential detrimental effects of groundshaking and liquefaction. Construction shall be in accordance with applicable City and County ordinances and policies regarding mitigation of seismic and geologic hazards, including applicable safety goals and policies presented in the Safety Element of the Sonoma County Plan. Appropriate geotechnical studies will be conducted using generally accepted and appropriate engineering techniques for determining the susceptibility of the sites to liquefiable soils and related ground failures. A licensed geotechnical engineer should prepare recommendations applicable to foundation design, earthwork, and site preparation prior to or during the project design phase. Recommendations should address mitigation of site-specific, adverse soil and bedrock conditions that could hinder development. Geotechnical design and design criteria will comply with applicable codes and requirements of the 1994 or 1997 UBC with California additions (Title 24), applicable City construction and grading ordinances.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS

EXHIBIT D
MITIGATION MONITORING AND REPORTING PROGRAM – TOWN OF WINDSOR WATER RECLAMATION MASTER PLAN FOR TREATMENT, STORAGE, AND DISPOSAL

Design facilities to comply with applicable seismic and geologic policies and engineering practices.	Final review and approval of design plans and specifications.	Town Public Works	During design	
A licensed geotechnical engineer shall conduct appropriate geotechnical studies and prepare recommendations for design of facilities.	Final review and approval of design plans and specifications.	Town Public Works	During design	

Impact 4.1.2: The topography and geology within the project area varies from hilly to flatland areas. Associated with this varied setting are certain geologic hazards specific to the particular region. The hilly areas within the project area may be exposed to slope failures including landslides, earthflows and rapid erosion. The flatland areas are susceptible to expansive soils and that may lead to settlement or damage to facilities.

Alternatives 1C, 4X, 4I:

Measure 4.1.2a: Where DSOD jurisdictional criteria apply, all proposed reclaimed water impoundment and retention structures will be under the jurisdiction of the DSOD and comply to their standards for design, construction, and inspection. No reclaimed water retention structure will be constructed unless approved by the DSOD. The DSOD would require that the dam be designed to withstand a seismic event with an earthquake magnitude considerably higher than the maximum magnitude of the active regional fault closest to the dam site. The DSOD will require necessary site evaluation methods, review plans and specifications, make recommendations on design, evaluate slope gradient and material, and will monitor dam construction.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate DSOD standards in design of reclaimed water impoundments and retention structures	DSOD review and approvals.	Town Public Works and DSOD	During design	
DSOD construction inspections.	DSOD review and approvals.	Town Public Works and DSOD	During construction	

Measure 4.1-2b: All non-DSOD jurisdictional facilities will comply with applicable policies and appropriate engineering investigation practices necessary to reduce the potential detrimental effects of groundshaking and liquefaction. Construction shall be in accordance with applicable City and County ordinances and policies regarding mitigation of seismic and geologic hazards, including applicable safety goals and policies presented in the Safety Element of the Sonoma County Plan. Appropriate geotechnical studies will be conducted using generally accepted and appropriate engineering techniques for determining the susceptibility of the sites to unstable soils and excessive erosion. A licensed geotechnical engineer should prepare recommendations applicable to foundation design, earthwork, and site preparation prior to or during the project design phase. Recommendations should address mitigation of site-specific, adverse soil and bedrock conditions that could hinder development. Geotechnical design and design criteria will comply with applicable codes and requirements of the 1994 or 1997 UBC with California additions (Title 24), applicable City construction and grading ordinances.

EXHIBIT D
MITIGATION MONITORING AND REPORTING PROGRAM – TOWN OF WINDSOR WATER RECLAMATION MASTER PLAN FOR TREATMENT, STORAGE, AND DISPOSAL

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Design facilities to comply with applicable seismic and geologic policies and engineering practices.	Final review and approval of design plans and specifications.	Town Public Works	During design	
A licensed geotechnical engineer shall conduct appropriate geotechnical studies and prepare recommendations for design of facilities.	Final review and approval of design plans and specifications.	Town Public Works	During design	

Impact 4.1.3: Project facilities could be damaged in the event of surface fault rupture.

No Mitigation Required

Impact 4.1.4: Reclaimed water retained within proposed storage ponds could infiltrate downward through the base of the pond and enter the water table aquifer. Reclaimed water could disperse into the water table aquifer underlying the pond and could, over time, flow to within capture zones of downgradient municipal, domestic, or private groundwater wells.

EXHIBIT D
MITIGATION MONITORING AND REPORTING PROGRAM – TOWN OF WINDSOR WATER RECLAMATION MASTER PLAN FOR TREATMENT, STORAGE, AND DISPOSAL

Alternatives 1C, 4X, 4I:

Measure 4.1.4a: All Storage Ponds shall be constructed with reservoir bottom materials meeting permeability standards of $1x10^{-6}$ cm/sec. Demonstration of the ability to comply with this regulation shall include site-specific field percolation tests and laboratory permeability tests during design to determine hydrogeologic characteristics at each Pond Site. In the event this standard cannot be met due to onsite conditions, the Town would conduct additional onsite testing and modeling to demonstrate to the RWQCB an adequate permeability such that groundwater is not adversely affected.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Design reservoirs to comply with permeability standard of $1x10^{-6}$ cm/sec.	Final review and approval of design plans and specifications.	Town Public Works	During design	
Conduct percolation and permeability tests at each site to determine hydrologic characteristics	Conduct appropriate testing and provide to RWQCB.	Town Public Works	During design	
If permeability goal is not met, conduct onsite testing to demonstrate that groundwater is not adversely affected.	RWQCB approval	Town Public Works and RWQCB	During design	

WATER QUALITY

Impact 4.2.1: Construction of proposed facilities could result in increased erosion and subsequent sedimentation, with impacts to water quality and/or storm drain capacity. Additionally, release of fuels or other hazardous materials associated with construction activities could degrade water quality.

Alternatives 1C, 4X, 4I:

Measure 4.2.1a: Storm Water Pollution Prevention Plan. For all project components disturbing an area of greater than 5 acres, the Town shall require contractors to develop a Storm Water Pollution Prevention Plan (SWPPP) for construction of proposed facilities, as required by the RWQCB. The objectives of the SWPPP are to identify pollutant sources that may affect the quality of storm water discharge, and to implement Best Management Practices (BMPs) to reduce pollutants in storm water discharges. The SWPPP for this proposed action would include the implementation, at a minimum, of the following elements:

_ Source identification;

_ Preparation of a site map;

_ Description of construction materials, practices, and equipment storage and maintenance;

EXHIBIT D
MITIGATION MONITORING AND REPORTING PROGRAM – TOWN OF WINDSOR WATER RECLAMATION MASTER PLAN FOR TREATMENT, STORAGE, AND DISPOSAL

_ List of pollutants likely to contact storm water;

_ Estimate of the construction site area and percent impervious area;

_ Erosion and sedimentation control practices, including soils stabilization, revegetation, and runoff control to limit increases in sediment in storm water runoff, such as detention basins, straw bales, silt fences, check dams, geofabrics, drainage swales, and sand bag dikes;

_ List of provisions to eliminate or reduce discharge of materials to storm water;

_ Description of waste management practices; and

_ Maintenance and training practices.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Develop SWPPP based on requirements of RWQCB	Final approval of SWPPP.	Town Public Works	During development of specifications.	
Incorporate SWPPP in specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications.	
Construction inspections	Sign-off on inspection report and/or MMRP.	Town Public Works	During construction.	

Measure 4.2.1b: Storage Pond BMPs. The following BMPs shall be included in the SWPPP developed for implementation of all Storage Ponds:

_ Minimize vegetation clearing and disturbance outside the immediate construction envelope;

_ Reseed and plant disturbed areas within the construction envelope with fast-growing plant species compatible with present vegetation types;

_ Reclaim and restore all non-inundated borrow pit locations to a condition resembling the predisturbed environment. The California State Mining and Reclamation Act (SMARA) would provide a guideline for this work;

_ Small temporary siltation capture embankments, or equivalent measures identified in the SWPPP, shall be constructed across any stream draining a dam embankment below the spillway entry point. The accumulation of silt in this retention structure shall be removed as necessary and placed in a non-erodible location distant from the stream course. Once silt contributions have become minimal, (estimated to be one to two rainy seasons following construction) the basin can be completely cleaned of all remaining sediment and the embankment removed;

_ A registered plant ecologist or other qualified professional should be retained to reevaluate the revegetation/erosion control effort during the spring following each year during the period of construction. A report shall be submitted to Windsor describing the success of the vegetation/erosion control measures and what additional measures may be necessary to improve project performance;

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_ Site preparation and earthworks construction shall be limited to dry periods based upon site conditions, typically April 10th through October 10th. Depending upon the nature of the work, some variation in these dates, may be permissible (weather-permitting); and

_ Earthworks construction not completed during a given construction year shall be carefully and fully winterized before the construction cut-off date. This work shall be done to the satisfaction of Windsor. The intent is to minimize erosion on slopes that have been bared by construction activity and to reduce on-site and off-site siltation effects.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Include BMPs in SWPPP for implementation of all storage ponds.. ease see also 4.2.1a, above.	Approval of SWPPP	Town Public Works	During design	

4.2.1c: Stream Crossing Permits. For installation of all pipeline facilities across stream channels, The Town shall obtain the following permits as applicable:

_ Section 404 permit(s) from USACOE (Nationwide 12 – Utility Line Discharges) for dredge and fill work;
_ CDFG 1601/03 Stream Alteration Agreement(s) for possible impacts to fish habitat; and
_ 401 RWQCB Water Quality Certification. Permit conditions would reinforce implementation of the SWPPP to reduce potential impacts.

Impact 4.2.2: Buildout under the Town's General Plan would include commercial and industrial uses that could alter the makeup and quality of inflow to the Town's WRTP.

No Mitigation Required.

Impact 4.2.3: With implementation of the Water Reclamation Master Plan, the Town would continue to fully comply with its NPDES permit discharge limits, which restrict the Towns' maximum daily discharge to 1% of Mark West Creek natural flow. Therefore, the maximum constituent concentrations in Mark West Creek would not be altered from those currently experienced, although over time, the number of days that the Town discharges at the maximum daily discharge rate of 1% of Mark West Creek natural flow would be increased. Because constituent concentrations would not exceed their evaluation criteria as established by the RWQCB Basin Plan, the National Toxics Rule, and the California Toxics Rule, potential impacts are considered less than significant.
No Mitigation Required.

Impact 4.2.4: Above or below-ground irrigation with reclaimed water could result in an alteration of ground water levels or degradation of ground water quality; similarly, over-application of reclaimed water could result in direct runoff to surface water bodies.

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Measure 4.2.4a. Above-ground irrigation systems will be operated in accordance with the requirements of Title 22 of the California Code of Regulations and any reclamation permits issued by the California Regional Water Quality Control Board, North Coast Region. Reclamation permits typically require that irrigation rates match the evapotranspiration rates of the plants or crops being irrigated. Regulatory approval for the design, monitoring, and operation of Silviculture Pilot Project would be obtained from the RWQCB, North Coast Region, and the California Department of Health Services prior to operating a below-ground reclamation system.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Obtain reclamation permits from RWQCB and California DHS	Permit granted to Town by RWQCB and DHS.	Town Public Works RWQCB, and DHS		
Incorporate conditions of the permit into design of above-ground irrigation systems.	Final review and approval of design plans and specifications.	Town Public Works, RWQCB, and DHS		
RWQCB and DHS inspections	Sign-off from RWQCB and DHS that reclamation irrigation is performing to standard	Town Public Works, RWQCB, and DHS		

Impact 4.2.5: Operation of reclaimed water storage ponds could result in a degradation of ground water quality at existing wells.

Alternatives 1C, 4X, 4I:

Measure 4.2.5a: Compliance with appropriate impermeability criteria, as required by Mitigation Measure 4.1-4a would reduce potential impacts to a less than significant level. In the event that compliance with permeability criteria is not feasible due to site specific hydrogeologic conditions, implement Measure 4.2.5b

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
If criteria in Measure 4.1-4a is not met, then implement Measure 4.2.5b, below.	Signoff on MMRP for either 4.1-4a or 4.1-5b.	Town Public Works	During design	

Measure 4.2.5b: If compliance with permeability criteria is not feasible, a detailed, site-specific hydrogeologic investigation shall be conducted at any pond or reservoir site that is selected for construction. This investigation should include aquifer testing, and ground water modeling, or other appropriate methods to demonstrate to the RWQCB an adequate permeability such that groundwater is not adversely affected.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Conduct a site-specific hydrogeologic investigation.	RWQCB approval	Town Public Works and RWQCB	During design	

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Measure 4.2.5c: A comprehensive well survey shall be conducted prior to reservoir construction, which would include a field check of the location and use of all wells in the vicinity of the reservoir site. All improperly abandoned wells located in the vicinity shall be properly destroyed according to the requirements of DWR 74-81 and 74-90, *Water Well Standards, State of California*, to prevent abandoned wells from acting as conduits for pollutants to enter deep groundwater. Additionally, a well and septic system survey along pipeline alignments should be implemented to ensure that a setback of 25 feet is maintained consistent with applicable County standards.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate the requirement to conduct a survey of wells in specifications.	Final review and approval of plans and specifications.	Town Public Works	Prior to construction	
Conduct a survey of wells, and destroy improperly abandoned wells, if needed.	Complete well survey and destroy abandoned wells, if needed. Provide to appropriate documentation to regulatory agency.	Town Public Works, RWQCB, County PRMD	Prior to construction	

Impact 4.2.6: Current irrigation practices by the Town of Windsor may be altered by the revised Title 22 Reclamation Criteria, currently under public review. Specifically, the Town will revise existing signage required to be posted at all irrigation sites. Such alterations to provide consistency with Title 22 would not affect public health or environmental quality.

No Mitigation Required.

Impact 4.2.7: Injection of Windsor's reclaimed water in the Geysers steamfield could adversely affect local ground water quality.

No Mitigation Required.

FLOODING AND DRAINAGE

4.3.1: Installation of the proposed wastewater treatment, storage, and disposal facilities would have the potential to alter drainage patterns, runoff rates, and flow volumes.

No Mitigation Required.

4.3.2: The proposed discharge of reclaimed water at a maximum rate of 1% of Mark West Creek natural stream flow could exacerbate downstream flood impacts.

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No Mitigation Required.

4.3.3: Catastrophic failure of the proposed storage ponds as a result of improper design, construction, or operation, could result in a flooding hazard.

No Mitigation Required.

BIOLOGICAL RESOURCES

Impact 4.4.1: Construction at Storage Ponds would result in the removal of protected native trees, including mature valley oaks, comprising mixed oak riparian and mixed evergreen habitat communities. Herbaceous plants would also be removed by construction and grading activities at Storage Ponds. Additionally, installation of Irrigation Infrastructure could impact protected trees, including mature valley oaks, along proposed pipeline routes.

Alternative 1C, 4X, 4I:

Measure 4.4.1a: Tree Avoidance. To the extent feasible, the Town will avoid removal or damage to all protected trees regulated under the Town of Windsor Zoning Ordinance Plan (Article XXIX) and Sonoma County Ordinance Plan (No. 4014). Placement of the pipeline trench for Irrigation Infrastructure construction shall be outside the dripline and away from tree roots to reduce or avoid damage to protected trees.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Comply with conditions of Town Zoning Ordinance and Sonoma County Ordinance Plan as it relates to tree avoidance by incorporating relevant criteria into specifications.	Final review and approval of plans and specifications.	Town Public Works	During development of specifications	
Construction inspections	Sign-off that criteria relating to the removal of trees in the Town and County Ordinances were complied with.	Town Public Works	During and after construction	

Impact 4.4.1b: Tree Removal. With the exception of Pond Sites, proposed facilities are located in previously disturbed areas, and are not anticipated to require removal or damage to protected trees. For areas where proposed facilities require tree removal, the Town shall adhere to measures consistent with the Town of Windsor Zoning Ordinance (Article XXIX) and Sonoma County Ordinance Plan (No. 4014 and No. 4991). Measures necessary for compliance with these ordinances are identified in Measures 4.4.1c through 4.4.1i below.

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IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Comply with conditions of Town Zoning Ordinance and Sonoma County Ordinance Plan as it relates to tree removal by incorporating relevant criteria into specifications.	Final review and approval of plans and specifications.	Town Public Works	During development of specifications	
Construction inspections	Sign-off on inspection report and/or MMRP.	Town Public Works	During or after construction	

Measure 4.4.1c: Tree Survey. All Pond Sites and Irrigation Lands shall be reviewed for compliance with the Town of Windsor Zoning Ordinance (Article XXIX) and Sonoma County Ordinance Plan (No. 4014 and No. 4991). If trees will be removed at a pond site, a site-specific tree survey shall be conducted by a certified arborist to quantify the number of trees and note the species, size, and condition of trees with dbh greater than 9 inches, thereby qualifying as protected trees under the Town and Sonoma County Tree Ordinances. Additionally, the survey shall identify the number and dbh of valley oaks onsite in order to determine mitigation requirements under the Sonoma County Ordinance Plan No. 4991.

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IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
For pond sites or irrigation lands where trees will be removed only – a certified arborist shall conduct a site-specific tree survey to identify protected trees.	Sign-off on final tree survey report	Town Public Works	During design	

Measure 4.4.1d: Protected Trees. All trees removed over 9 inches dbh would qualify as protected trees. Removal of these trees would require review for mitigation based upon the loss of arboreal value at a specific pond site. Arboreal value is based upon the dbh of individual trees, and would be calculated using the results of the site specific tree survey identified in Measure 4.4.1c. The number and size of replacement plantings would be determined using the identical arboreal value charts established in Town of Windsor Zoning Ordinance (Article XXIX) and Sonoma County Ordinance Plan (No. 4014 and No. 4991). If mitigation is determined necessary under these ordinances, mitigation shall occur either onsite or offsite, as appropriate. The replacement seedlings would be of the same species, except in the case of non-native species, and the source material for tree replacement would be obtained from a native plant nursery.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
For removal of protected trees only – incorporate the need to calculate arboreal value of removed trees, if needed, into specifications.	Final review and approval of plans and specifications.	Town Public Works	During design	
Incorporate mitigation measures for removed trees associated with particular arboreal value into specifications.	Final review and approval of plans and specifications.	Town Public Works	During development of specifications	
Post-construction inspection	Sign-off on inspection report and/or MMRP.	Town Public Works	Post-construction	

Measure 4.4.1e: Valley Oaks. For valley oaks removed within unincorporated Sonoma County, the Town shall provide mitigation as required under the Sonoma County Ordinance Plan (No. 4991). As defined by Table 26-67-030 of the ordinance, mitigation may be in the form of (1) tree replacement by planting valley oak seedlings on the subject property or on another site in the county having the geographic, soil, and other conditions necessary to sustain a viable population of valley oaks, (2) retaining other valley oak trees on the subject property, (3) a combination of measures (1) and (2), or (4) paying an in-lieu fee, which shall be used exclusively for valley oak planting programs in the county. Under the Guidelines, the entity cutting down or removing the valley oak(s) has the sole discretion which mitigation measure to use to mitigate the valley oak loss. The selected mitigation measure must be undertaken and completed within one year after the valley oak(s) are removed. Table 26-67-030 is provided in Appendix 4.4, Biological Resources of the EIR.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS

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Incorporate conditions from the Sonoma County Ordinance Plan to protect valley trees into specifications.	Final review and approval of plans and specifications.	Town Public Works, County PRMD	During development of specifications	
Inspection that valley oaks have been replaced or retained, or payment of in-lieu fee have been submitted to County.	Sign-off on inspection report/receipt (for in-lieu fee) and/or MMRP.	Town Public Works, County PRMD	Within one-year after completion of construction	

Measure 4.4.1f: Tree Protection. For construction of both Pond Sites and Irrigation Infrastructure, trees to be removed for construction shall be appropriately marked. Trees to be preserved shall be marked as trees to avoid. If additional trees are removed, additional mitigation for those trees would be required.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
For Pond Sites and Irrigation Infrastructure – Incorporate marking of trees in specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
Inspection that tree marking has been completed.	Sign-off on inspection report and/or MMRP.	Town Public Works	Prior to construction	

Measure 4.4.1g: Revegetation Plan. For Pond Sites and Irrigation Infrastructure located in undisturbed areas, a revegetation plan to replace native herbaceous plants removed due to grading shall be developed by a qualified biologist. The revegetation plan shall be coordinated with erosion control measures required by Measure 2.2.1a. Seedlings within each disturbed community type due to project construction would be obtained from native plant nurseries. Monitoring of the seeded herbaceous areas shall occur prior to the first wet season following revegetation to ensure that sufficient ground coverage has developed to protect slopes from erosion. Additional erosion measures, such as straw mulch, may be necessary if vegetation has not been established prior to the wet season.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
For pond sites and Irrigation infrastructure located in undisturbed areas - A qualified biologist develops a revegetation plan.	Approval of the revegetation plan.	Town Public Works	During design	
Incorporate the revegetation plan into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
Monitoring of seeded herbaceous areas.	Sign-off on monitoring report and/or MMRP.	Town Public Works	Prior to the first wet season following revegetation	

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Measure 4.4.1h: Tree Replacement Plan. For Pond Sites where tree replacement is implemented as mitigation, specific replanting details shall be developed by a qualified tree specialist. Details should include the tree species to be used, the number of trees to be planted, a planting plan and site map. Trees would be spaced as deemed appropriate for each species and would be planted within temporarily disturbed portions of the project area. The replanting process should begin as soon as construction-related activities are completed.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
For pond sites where tree replacement is implemented as mitigation – a tree specialist shall develop specific replanting details in a Tree Replacement Plan.	Approval of Tree Replacement Plan.	Town Public Works	During design	
Incorporate the Tree Replacement Plan into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
Implementation of Tree Replacement Plan.	Sign-off inspection report and/or MMRP.	Town Public Works	Post-construction	

Measure 4.4.1i: Replanting Plan Monitoring. For Pond Sites where plant replacement is implemented as mitigation, a 3-year monitoring program shall be implemented. The monitoring program shall be monitored annually using standard ecological methods to estimate plant cover and document survival rates and growth characteristics. Monitoring shall be conducted by a qualified biologist. Performance standards for tree replacement and other revegetation plans may include (1) no less than 80 percent survival rate of vegetation; (2) no excessive rills, gullies or other erosion features; (3) no noxious or invasive species; and (4) installation of a properly functioning irrigation system for a maximum of two years.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
For pond sites where tree replacement is implemented as mitigation – develop a 3-year monitoring program.	Approval of Monitoring Program.	Town Public Works	During design	
Incorporate conditions of the monitoring plan into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
A qualified biologist conducts monitoring.	Sign-off on monitoring reports and/or MMRP.	Town Public Works	Post-construction	

Measure 4.4.1j: In coordination with Measure 4.4.2a and 4.4.2b, removed native riparian vegetation along intermittent drainages within Pond Sites shall be replaced in accordance with the conditions of the California Department of Fish and Game 1601 Streambed Alteration Agreement and the USACOE 404 permit for construction.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS

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Incorporate condition to replace riparian vegetation in compliance with CDFG and USACOE regulations into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
Post-construction inspection that riparian vegetation has been replaced.	Sign-off on inspection report and/or MMRP.	Town Public Works	Post-construction	

Measure 4.4.1k: In coordination with the above measures, vegetated areas disturbed during construction of Storage Ponds and Irrigation Infrastructure shall be restored to their pre-existing condition using native plant species, to the degree feasible.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
For Storage Ponds and Irrigation Infrastructure – Incorporate restoration of disturbed areas to pre-existing condition into specifications.	Final review and approval of design plans and specifications	Town Public Works	During development of specifications	
Post-construction inspection that disturbed areas are restored to pre-existing condition.	Sign-off on inspection report and/or MMRP.	Town Public Works	Post-construction	

Impact 4.4.2: Construction of Storage Ponds, Irrigation Infrastructure and the Constructed Wetland, could result in permanent and/or temporary impacts to potentially jurisdictional Waters of the United States, such as creeks and seasonal wetlands (including vernal pools), and associated special status plant and animal species. Additionally, proposed Irrigation Lands could contain jurisdictional Waters of the U.S., such as vernal pools, which could be adversely affected by irrigation practices. Substantial changes in seasonal wetland hydrology could affect special status species.

Alternatives 1C, 4X, 4I:

Measure 4.4.2a: For all Storage Ponds (except existing Ponds Z and G), and the Constructed Wetland Site, the Town will conduct a jurisdictional wetland delineation to determine the exact boundary of wetlands and water-associated features that would be disturbed by construction. The USACOE and CDFG will verify the delineation.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
For specific Storage Ponds – Conduct a jurisdictional wetland delineation.	USACOE and CDFG verification.	Town Public Works, USACOE, and CDFG	During design	

Measure 4.4.2b: To the extent practicable, the Town will avoid all effects to jurisdictional features associated with construction of Storage Ponds and Irrigation Infrastructure. For the Southeast System, crossing of Pool and Pruitt Creeks will be via attachment to the existing roadway bridge, or other trenchless methods.

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Where avoidance of jurisdictional areas is infeasible, the Town will obtain all applicable permits and employ measures to reduce and compensate for adverse impacts. Construction in waterways will require permits from the USACOE, RWQCB, and CDFG. Permits likely applicable to the proposed project are identified below.

- For fill in wetlands and other waters of the United States, the project would most likely proceed under Nationwide Permit Nos. 12 (Utilities), 14 (Temporary access roads [if applicable]), and 33 (Temporary construction access and dewatering) pursuant to Section 404 of the Clean Water Act.
- A request for water quality certification (or waiver of certification) from the RWQCB will also be required, pursuant to Section 401 of the Act.
- CDFG has jurisdiction pursuant to Sections 1601-1603 of the California Department of CDFG Code (Streambed Alteration Agreement).

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Where avoidance of jurisdictional areas is infeasible – obtain permits from USACOE, RWQCB and CDFG	Granting of permit by USACOE, RWQCB, and CDFG	Town Public Works, USACOE, RWQCB, and CDFG	During design	

Measure 4.4.2c: The Town will ensure full compliance with all permit conditions and employ the following measures to reduce the impacts to aquatic species and riparian habitat, due to open-trench installation at creek crossings. Permit measures may include, but are not limited to, the following:

- A qualified fisheries biologist will be selected by the Town, with credentials acceptable to the NMFS and CDFG. The project biologist shall ensure that construction-related mortality to California freshwater shrimp, steelhead trout, coho salmon, and chinook salmon, is minimized by the following construction restrictions.
- Work in or near active waterways shall occur only during the summer low-flow period (June 1 through October 15).
- A sediment filter shall be installed below the construction zone and cleaned on a regular basis to preserve integrity.
- Refueling of heavy equipment and vehicles shall only occur within designated, bermed area where potential spills can be readily contained.
- Equipment operating in or near the creek shall be checked and maintained to prevent leaks of fuel, lubricants or other fluids into creek channel.
- Litter and construction debris shall be removed from creek channel and flood plain and disposed of at an appropriate site.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate permit conditions into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
Construction inspection	Sign-off on inspection reports and/or MMRP.	Town Public Works	During construction	

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Measure 4.4.2d: For the Westside System, if attachment of the pipeline to Wohler Bride is identified as infeasible, crossing of the Russian River shall utilize trenchless technologies to minimize potential impacts to the riverbed and adjacent riparian areas. These may include jack-and-bore, directional drill, microtunneling, or other trenchless technologies as deemed appropriate from an engineering and constructibility standpoint. Implementation of trenchless technology shall include the following provisions at a minimum to avoid impacts to riparian areas:

_ Implement proper erosion control measures;
_ Locate pits in upland areas only;
_ Stockpile excavated materials outside the dripline of all protected trees as well as outside water-associated features, the areas of intact native plant communities and special status species habitat;
_ Install protective devices around intact native vegetation and special status species habitats;
_ Segregate subsoils and topsoils;
_ Place spoils in suitable locations in accordance with state and local requirements and install protective barriers to prevent movement of materials;
_ Prepare and implement a revegetation plan for bore pit locations.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate trenchless technology to avoid riparian areas in specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
Construction inspection	Sign-off on inspection report and/or MMRP.	Town Public Works	During construction	

Measure 4.4.2e: As part of the Town *Reclaimed Water User Agreement*, a qualified biologist shall conduct a site-specific botanical survey for irrigation parcels in accordance with USFWS guidelines. The survey shall include a jurisdictional wetland delineation, including vernal pools, identification of oak trees, and appropriate setbacks (buffer zones) from these sensitive resources in coordination with the appropriate agencies (e.g. USACOE, County of Sonoma, and Town of Windsor). At minimum, irrigated areas shall be setback 30 feet from vernal pools and other jurisdictional wetlands. Irrigated areas shall be a minimum of 3 feet from the dripline of oak trees.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
A qualified biologist conducts a site-specific botantical survey for irrigation parcels.	Sign-off on botantical survey.	Town Public Works	Prior to operation	
Post-construction inspection in accordance with the User Agreement regarding setback criteria	Sign-off on inspection report and/or MMRP.	Town Public Works	During operation	

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Measure 4.4.2f: In the event that impacts to wetlands (including vernal pools) cannot be avoided at a specific parcel, the Town shall not enter into an irrigation agreement with that property owner. Alternatively, the Town could consider the provision of preservation and restoration/construction mitigation at a ratio as determined by the USACOE and USFWS Programmatic Biological Opinion. This would require the following:

- Protocol level survey for special status species plants (or assumed presence) to determine the level of mitigation in accordance with the USFWS guidelines.
- Identification of appropriate mitigation, including restoration, enhancement and/or preservation of seasonal wetlands in accordance with the Training Manual to Evaluate Habitat Quality of Vernal Pool Ecosystem Sites in the Santa Rosa Plain.
- Preparation and implementation of a preservation and restoration plan along with a monitoring program, in coordination with CDFG and the California Native Plant Society. Restored areas shall be self-sustaining and ecologically functioning, and monitoring over a period determined by the resource agencies.
- Any off-site locations designated for the restoration, enhancement or preservation of waters of the United States shall be protected in perpetuity (e.g., through such means as conservation easements or mitigation banks).

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
If impacts to wetlands cannot be avoided – restore or construct wetlands at a ratio determined by the USACOE and USFWS PBO. **[**	USACOE, CDFG, RWQCB permit issueance.	Town Public Works USACOE, CDFG, RWQCB	Prior to construction	

Measure 4.4.2g: For the Constructed Wetland Site, a qualified biologist shall conduct a site-specific botanical survey and wetland delineation to identify potential jurisdictional wetlands, including vernal pools onsite, and complete documentation of the habitat quality in accordance with the Training Manual to Evaluate Habitat Quality of Vernal Pool Ecosystem Sites in the Santa Rosa Plain. In the event that high quality seasonal wetlands are identified onsite, the proposed Constructed Wetland site shall be designed to avoid identified high quality seasonal wetland habitat. If this is infeasible, the Town will implement measures described in Measure 4.4.2f, above or examine other potential implementation sites.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
A qualified biologist conducts a site-specific survey and wetland delineation	USACOE verification for wetland delineation	Town Public Works	During design	
If seasonal wetlands are identified onsite, incorporate into design plans and specifications that Constructed Wetland would avoid the seasonal wetland habitat.	Final review and approval of design plans and specifications.	Town Public Works	During design	
If impacts to wetlands cannot be avoided – restore or construct wetlands at a ratio determined by the	USACOE, CDFG, RWQCB permit issueance.	Town Public Works USACOE, CDFG,	Prior to construction	

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USACOE and USFWS PBO. [		RWQCB		

Impact 4.4.3: Construction of Storage Ponds and Irrigation Infrastructure could significantly affect special status bat and raptor species (e.g., cooper's hawk, white-tailed kite and northern harrier) and migratory bird species through breeding disturbance due to construction activities, such as excessive noise and night lighting and tree removal.

Alternatives 1C, 4X, 4I

Measure 4.4.3: For all Storage Ponds and Irrigation Infrastructure, the following measures shall be implemented to reduce potential impacts to nesting raptors and passerine birds within the construction vicinity.

- To the extent feasible, construction activities including tree removal should be scheduled to occur outside of the breeding season (March 1 through September 30). If construction is to occur during the breeding season, a general pre-construction survey for identified special status bats, and protected raptors, passerines and their nests within the proposed construction area should be conducted by a qualified biologist prior to construction to verify species absence. If the survey indicates the potential presence of breeding bats, the results should be coordinated with the Region 3 office of the CDFG. Construction activities should observe the recommended CDFG avoidance guidelines, which include at the minimum, a 500-foot buffer zone surrounding active raptor nests and at least a 250-foot buffer zone surrounding nests of other birds. Construction activities would observe buffer zones of at least 100-feet from active bat roosts during the breeding season. If construction activities occur only during the non-breeding season between August 1 and February 28, no pre-construction surveys would be required.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
For Storage Ponds and Irrigation Infrastructure – incorporate measures to reduce impacts to raptors and birds into specifications.	Schedule construction activites outside breeding period, or implement pre-construction surveys to determine absence. Implement appropriate buffer areas if identified onsite.	Town Public Works	During development of specifications	
Construction inspection.	Sign-off on inspection report and/or MMRP that construction buffers have been maintained.	Town Public Works	During construction	

Impact 4.4.4: Construction of specific facilities could result in permanent impacts to California tiger salamander associated with vernal pool habitats, and red tree vole associated with Douglas-fir forest habitats.

Measure 4.4.4a: Implementation of the following measure would reduce or eliminate potential "taking" of California tiger salamander as a direct result of project construction at Pond J and the Constructed Wetland.

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Pre-construction surveys immediately prior to ground-disturbing activity shall be conducted within Pond J and the Constructed Wetland site by a qualified biologist. Presence/absence surveys shall be completed for adult California tiger salamander and potential aestivation burrows that may occur within the project area. If no burrows are detected during these surveys, then construction-related activities may proceed.

If adult California tiger salamander burrows are found within the construction disturbance zone, they will be allowed to passively leave the construction zone, or will be captured and moved, to suitable sites by a qualified biologist. Capture and moving of listed species may only proceed after applicable permits from USFWS and CDFG are secured. If necessary to prevent animals returning to the site, fencing should be constructed from 4' X 8' plywood panels, joined lengthwise.

_ Implement a construction awareness and monitoring program to ensure minimization of construction-related effects. All construction adjacent to wetland vegetation, or the habitat of special status species (as determined after completion of protocol-level surveys) will be regularly monitored to ensure that impacts do not exceed those included in the project description. Work within 100 feet of wetlands during ponding will be monitored by qualified staff who will document pre-project and post-project conditions to ensure adequate restoration of disturbed aquatic habitat.

_ Habitat for California tiger salamander shall be preserved or enhanced at a 1:1 ratio (i.e., one acre preserved for one acre developed) within the County of Sonoma.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
A qualified biologist conducts a preconstruction survey for California tiger salmander at Pond J and the Constructed Wetland site.	Sign-off that preconstruction survey has been completed.	Town Public Works	During design	
If tiger salmanders are found, allow for tiger salamander to leave construction site or a biologist with a permit will capture and move salmander.	Issueance of permit from USFWS and CDFG.	Town Public Works	Prior to construction	
Construct and inspect fencing, if needed.	Sign-off that appropriate fencing has been installed and regularly inspected during construction.	Town Public Works	After removal of salmander	

Measure 4.4.4b: Implementation of the following measure would reduce or eliminate potential "taking" of red tree vole as a direct result of project construction at Ponds V, W, and Y, and along the Westside Road system pipeline installation.

_ Douglas-fir, and redwood tree removal shall be avoided during pipe line installation.

_ Pre-construction surveys prior to tree removal activity at the proposed pond sites shall be conducted within the Douglas-fir habitats of the site and a 200 foot buffer by a qualified biologist. Presence/absence surveys shall be completed for adult red tree voles that may occur within the project area. If no individuals are detected during these surveys, then construction-related activities may proceed. If present, within the construction disturbance zone, they will be captured

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and moved, to suitable sites by a qualified biologist. Capture and moving of listed species may only proceed after applicable permits from USFWS and CDFG are secured.

- Biological monitors shall monitor tree removal activities. Vagrant red tree voles shall be captured and relocated to suitable sites as designated by a qualified biologist.

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IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate measure to avoid removal of Douglas fir and redwood trees during pipeline installation.	Final review and approval of design plans and specifications.	Town Public Works	During design	
Contract with qualified biologist to conduct pre-construction surveys.	Sign-off on preconstruction survey. Review results with USFWS to identify appropriate relocation procedures and permit requirements.	Town Public Works	During design	
Contract with qualified biologist to monitor tree removal activities; implement permitted relocation of vagrant red tree voles if necessary.	Coordinate monitoring and relocation activities with USFWS.	Town Public Works	During construction	

Impact 4.4.5: Implementation of the constructed wetlands and silviculture pilot project could lead to the spread of invasive plant species.

Alternative 1C, 4X, 4I:

Measure 4.4.5: Design of the constructed wetland and silviculture pilot programs shall incorporate the use of native specifies to the degree feasible, and shall specifically avoid the use or introduction of invasive species.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate requirement to use native species for constructed wetland and silviculture pilot programs into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
Post-construction inspection of constructed wetland and silviculture pilot programs.	Sign-off on inspection report and/or MMRP.	Town Public Works	Post-construction	

Impact 4.4.6: Project implementation will result in disturbance to, or direct mortality of, common wildlife species.

Alternative 1C, 4X, 4I:

Measure 4.4.6: Contractors shall use BMPs to avoid disturbance or direct mortality to common wildlife species. These may include: covering all open trench areas at the end of work days; providing escape ramps; checking trenches daily for trapped wildlife.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS

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Incorporate requirements to avoid disturbance or direct mortality to common wildlife species into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
Construction inspection.	Sign-off that requirements to avoid effects to common wildlife species have been implemented.	Town Public Works	During construction	

Impact 4.4.7: Project implementation could result in secondary effects to migratory fish species due to alterations in discharge quality.

No Mitigation Measure Required

CULTURAL RESOURCES

Impact 4.5.1: Implementation of the proposed project could affect known or unknown prehistoric / historic cultural resources.

Alternative 1C:

Measure 4.5.1a: For the Eastside Road and Westside Road Systems, the Town shall consult with a qualified archaeologist regarding the final pipeline alignment in the vicinity of known cultural resource sites CA-SON-967 and CA-SON 1405H. These sites shall be avoided to the degree feasible.

In the event that avoidance is not feasible, the site shall be assessed with respect to data recovery requirements such that potential impacts as defined by CEQA are reduced to a less than significant level. The program shall include, at a minimum: archival research regarding previous landowners; surface collection of artifacts; subsurface testing define the depth and areal extent of the deposit; excavation of a series of manually excavated test units established to ensure adequate characterize the site, artifact curation at an appropriate facility, preparation of summary report, and submittal of the summary report to appropriate agencies, including the Northwest Information Center.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
A qualified archaeologist will assist in the final pipeline alignment in the vicinity of known cultural resources.	Final review and approval of design plans and specifications.	Town Public Works	During design	
Prepare data recovery program (if known cultural resources cannot be avoided).	Approve data recovery program.	Town Public Works	During design	
Implement data recovery program, if necessary.	Sign-off on research and field investigations.	Town Public Works	Prior to construction	

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Measure 4.5.1b: If the Town decides to support the Westside Road System pipeline from the historic Wohler Road Bridge, it will be necessary to prepare both a Primary and Building-Structure-Object Record (DPR 523) to document and assess the significance of the bridge and the potential effect of the pipeline on the structure. The State Office of Historic Preservation (OHP) shall be consulted and given opportunity to comment regarding potential impacts and mitigation measures associated with sites eligible for listing on either the National Register or California Register of Historic Resources.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
If the pipeline is installed on Wohler Bridge – contract with qualified archaeologist to prepare and submit DPR 523 to State Office of Historic Preservation..	Concurrence and response from State Office of Historic Preservation.	Town Public Works	During design	

Alternatives 1C, 4X, 4I:

Measure 4.5.1c: The Town shall incorporate the following measures into all contract specifications:

- If cultural resources are encountered during construction of the project, the contractor will avoid altering the materials and their context until a qualified archaeologist has evaluated the situation. The qualified archaeologist will conduct data recovery and implement other procedures that would render impacts to a less-than-significant level. Project personnel will not collect cultural resources. Procedures for stopping construction in the event that cultural resources are exposed will be part of the project plans and specifications. In anticipation of discovering cultural deposits, procedures will be in place so that the contractor can move on to another project segment, thus allowing sufficient time to evaluate the nature and significance of the find and implement appropriate management procedures.

- Any identified archaeological resources will be recorded by the archaeologist on form DPR 422 (archaeological sites) and/or DPR 523 (historic properties) or similar forms. In the event that prehistoric human remains are encountered, there shall be no further excavation or disturbance of the site or any nearby areas reasonably suspected to overlie adjacent human remains until the County coroner makes a determination. If the coroner determines that the remains are Native American, then the Native American Heritage Commission in Sacramento shall be contacted within 24 hours, along with the Most Likely Descendant(s) of the deceased Native American. The dignified treatment or disposition of Native American burial remains and artifacts will be agreed upon by the Town and the appropriate Native Americans in advance of construction (as provided by Public Resources Code Section 5097.98) and will be written into construction specifications.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate procedures to address the encountering of unknown cultural resources during construction into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	

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Measure 4.5.1d: With the exception of Ponds Z, S, T, and G, which have been previously surveyed or constructed, all pond sites shall be surveyed by a qualified archaeologist prior to consideration for implementation by the Town. In the event cultural resources are identified during this survey, a program for avoidance or data recovery shall be developed and implemented. The State Office of Historic Preservation (OHP) shall be consulted and given opportunity to comment regarding potential impacts and mitigation measures associated with sites eligible for listing on either the National Register or California Register of Historic Resources. Recommendations for data recovery or construction monitoring will be incorporated as conditions of approval for individual ponds.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
A qualified archaeologist shall survey all pond sites.	Sign-off on survey report.	Town Public Works	During design	
Prepare data recovery program (if known cultural resources cannot be avoided).	Approve data recovery program.	Town Public Works	During design	
Implement data recovery program, if necessary.	Sign-off on research and field investigations.	Town Public Works	Prior to construction	

Measure 4.5.1e: The Native American Heritage Commission should be contacted in writing to request information on known Native American traditions or cultural properties within the project area, and to request a listing of individuals or groups with cultural affiliation to the project area.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Contact the Native American Heritage Commission.	Receipt of response from the Native American Heritage Commission.	Town Public Works	Prior to construction	

Measure 4.5.1f: A qualified archaeologist shall conduct construction employee briefing sessions prior to commencement of construction to aid in reducing inadvertent or intentional damage to archaeological sites, features and objects.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Contract with qualified archaeologist to conduct training sessions on archaeological resources.	Review and sign-off on training materials	Town Public Works	Prior to construction	

LAND USE AND RECREATION

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Impact 4.6.1: Construction of proposed facilities under all three alternatives would result in short-term, temporary disruption to adjacent land uses. Additionally, pipeline construction could temporarily disrupt recreational uses along proposed pipeline routes. Construction requirements would vary among the three alternatives based upon facility requirements.

Alternative 1C, 4X, 4I:

Measure 4.6.1a: All construction activities shall be limited to the hours of 7 am to 7 pm, Monday through Friday, and 8 am to 7 pm on Saturday, or other hourly restrictions as established by appropriate road encroachment permits issued by Sonoma County Permit Resource Management Department.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate restriction of construction hours into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
Construction inspection	Sign-off that construction hours are limited to that specified in the design plans and specifications.	Town Public Works	During construction	

4.6.1b: The Town shall ensure, through preparation of bid documents, that project contractors restore areas disturbed by pipeline installation to the pre-project condition, in accordance with agreements negotiated with Sonoma County PRMD. Proposed restoration plans shall be subject to review and approval by the public works or engineering department of the individual jurisdiction. This mitigation measure does not require the Town to upgrade or improve areas beyond pre-project condition following pipeline installation.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate requirement to restore disturbed areas to pre-project condition, in accordance with applicable County agreements, into specifications.	Final review and approval of design plans and specifications. Review of restoration plans by County PRMD as appropriate.	Town Public Works, County PRMD	During development of specifications	
Construction inspection that disturbed areas are restored pre-construction condition.	Sign-off on inspection report and/or MMRP.	Town Public Works	Post-construction	

Measure 4.6.1c: The Town shall acquire appropriate encroachment permits for pipeline installation within County roadways. Additionally, the Town shall acquire encroachment permits or agreements for installation beneath highway, railway and water supply infrastructure from appropriate agencies. These include Caltrans, Northwestern Pacific Railroad Authority, Sonoma County Water Agency and the State Lands Commission for the following facilities.

- Southeast System (Northwestern Pacific Railroad Authority, Caltrans)
- Westside Road System (State Lands Commission, Sonoma County Water Agency)

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IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Acquire encroachment permits / agreements from affected jurisdictions/agencies.	Issueance of appropriate permits by affected jurisdictions/agencies.	Town Public Works	During design	
Incorporate permit conditions into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	

Impact 4.6.2: Long-term operations of proposed facilities could conflict with existing or proposed adjacent land uses.

Alternatives 1C, 4X, 4I:

Mitigation measures identified in Section 4.7, Traffic, Section 4.8, Air Quality, Section 4.9 Noise, and Section 4.10 Visual Resources would reduce potential long-term land use impacts to a less than significant level. Therefore, no additional mitigation measures are required.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
ease refer to Sections 4.7, 4.8, 4.9, and 4.10.				

Impact 4.6.3: Implementation of the Constructed Wetlands under all three alternatives would provide increased habitat for immature mosquitoes. This increased breeding habitat would increase the requirements for mosquito abatement.

Alternatives 1C, 4X, 4I:

Measure 4.6-3: In coordination with the Marin-Sonoma Mosquito and Vector Control District, the Town shall develop a maintenance program, for long-term mosquito control activities at the proposed wetland sites. The program should include identification of funding mechanisms agreeable to both agencies. Specific operational elements of the program may include:

_ monitoring of algae blooms and periodic removal of floating filamentous algae;

_ monthly monitoring of dissolved oxygen levels;

_ annual harvesting of dead cattails or other large masses of dead plants which enhance mosquito habitat and reduce the effectiveness of mosquitofish;

_ possible introduction of crayfish into the ponds to reduce cattail growth.

_ Provide Vector Control District with one key which will provide access to all storage ponds on Town property.

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IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Develop a maintenance program in coordination with the Marin-Sonoma Mosquito and Vector Control District.	Review and concurrence on maintenance program.	Town Public Works	Prior to construction	
Implement maintenance program.	Sign-off on monitoring reports and/or MMRP.	Town Public Works	During operation of Constructed wetlands	

Impact 4.6.4: Implementation of the Constructed Wetlands under all three alternatives could provide increased breeding habitat for insect vectors capable of transmitting Pierce's Disease, a bacterium that is harmful to grape vines. Breeding habitat for insect vectors capable of transmitting Pierce's Disease is already prevalent within the Mark West Creek riparian corridor adjacent to the proposed wetland site. Given this existing habitat, the addition of 10 acres of wetland habitat is not considered significant. Inclusion of design measures to reduce insect vector breeding potential will be incorporated into final project design.

Alternatives 1C, 4X, 4I:

Measure 4.6.4a: Plant species utilized in the design of the constructed wetland shall be restricted to those species that meet the water quality goals of the wetland and do not provide breeding habitat for sharpshooter leaf-hopping insects. Species that meet this criteria include, but are not limited to, those listed in **Table 4.6-3** of the EIR.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate design restrictions for constructed wetland into design plans and specifications.	Final review and approval of design plans and specifications.	Town Public Works	During design	
Post-construction inspection.	Sign-off on inspection reports and/or MMRP.	Town Public Works	Post-construction	

Measure 4.6.4b: Final design of the constructed wetland, including plant species list, shall be reviewed by the Sonoma County Agricultural Commissioner's Office and the Sonoma County Viticulture Advisor's Office, with respect to inclusion of species that minimize the potential for sharpshooter habitat.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS

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Submit design of constructed wetland to Sonoma County Agricultural Commissioner's Office and the Sonoma County Viticulture Advisor's Office.	Submittal and review by the Sonoma County Agricultural Commissioner's Office and the Sonoma County Viticulture Advisor's Office.	Town Public Works	During design	

Impact 4.6.5: Implementation of Storage Ponds C and X would result in the loss of less than 2 acres of prime agricultural soils currently in production as vineyard at each pond site. As the Town's Master Plan would support agriculture through provision of a long-term, reliable water source under all three alternatives, this minor loss of agricultural soils is considered less than significant.

No Mitigation Measures required.

TRAFFIC AND CIRCULATION

Impact 4.7.1: Construction of proposed facilities would result in short-term increases in vehicle trips by construction vehicular activities and construction workers.

Alternatives 1C, 4X, 4I:

Measure 4.7.1: The Town shall arrange for a detailed Traffic Control Plan, to be prepared by a licensed traffic engineer, for project-affected roadways. The Traffic Control Plan shall comply with requirements of the jurisdictional agency (Sonoma County or Windsor) directly affected by the project construction. The Traffic Control Plan would include, but would not be limited to, the following elements:

Haul routes minimizing truck traffic on local roadways will be used to the extent possible.

To the extent possible, the contractor(s) will schedule truck trips outside of the peak commute hours of 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Contract with licensed traffic engineer to prepare a Traffic Control Plan.	Approval of the Traffic Control Plan.	Town Public Works	During development of specification	
Incorporate the Traffic Control Plan into specifications.	Final review and approval of the design plans and specifications.	Town Public Works	During development of specification	
Construction inspection to ensure compliance with Traffic Control Plan.	Sign-off on inspection report and/or MMRP	Town Public Works	During construction	

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Impact 4.7.2: Pipeline installation within and across streets would reduce the number of, or the available width of, travel lanes on roads. This could result in temporary disruption of traffic flows and increases in traffic congestion, as well as affecting access to adjacent land uses for both general and emergency access.

Alternatives 1C, 4X, 4I:

Measure 4.7.2a: The Traffic Control Plan will contain the following requirements:

The traffic control plan will show specific methods for maintaining traffic flows. This will include identifying roadway locations where special trenching techniques would be used to minimize impacts to traffic flow and operations.

_ Alternate one-way traffic flow past the construction zone will be maintained on all affected roadways.

_ To minimize disruption of access to driveways to adjacent land uses, contractor(s) will be required to maintain steel trench plates at the construction sites to restore access across open trenches. Construction trenches in streets will not be left open after work hours.

_ Construction hours will be limited to off-peak traffic periods.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate requirements into the Traffic Control Plan. e Measure 4.7.1	Approval of the Traffic Control Plan.	Town Public Works	During development of specifications	

Measure 4.7.2b: For highly sensitive land uses such as police, fire, hospitals, schools, and emergency services, the Town will require the construction contractor to develop and implement access plans. The access plans will be developed with the facility owner or administrator. To minimize disruption of emergency vehicle access, affected jurisdictions will be requested to identify detours, which will then be posted by the contractor. The contractor will notify the facility owner or operator in advance of the timing, location, and duration of construction activities and the locations of detours and lane closures.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Include development of access plan(s) for highly sensitive land uses in project design.	Approval of the access plan(s)	Town Public Works	During design	
Incorporate access plans into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
Require construction contractor to notify facility owner or operation in advance of construction activities.	Sign-off that notification has occurred.	Town Public Works	Prior to start of construction	

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Impact 4.7.3: Project construction would increase potential traffic safety hazards for vehicles, bicyclists and pedestrians on public roadways.

Alternatives 1C, 4X, 4I:

Measure 4.7.3a: The traffic control plan prepared by the contractor shall include detours for bicyclists.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate detours for bicyclists in Traffic Control Plan. e Measure 4.7.1	Approval of Traffic Control Plan.	Town Public Works	During development of specifications	

Measure 4.7.3b: The contractor shall provide advance public notification of construction activity and roadway/access closures.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate advance public notification of construction activity in Traffic Control Plan. e Measure 4.7.1	Approval of Traffic Control Plan.	Town Public Works	During development of specifications	

Impact 4.7.4: Project construction would increase wear-and-tear on area roadways used by construction vehicles.

Alternatives 1C, 4X, 4I:

Measure 4.7.4: The Town shall require contractors to conduct a pre-construction survey of road conditions on pipeline installation and access routes to the facility sites. The pavement conditions of local streets and designate roads judged to be in good condition for use by heavy truck traffic should be monitored. It is recommended that construction areas and haul routes be videotaped prior to construction to document pre-construction conditions. Roads damaged by construction should be repaired to a condition equal to, or better than, that which existed prior to construction activity. This measure does not require the Town to upgrade or improve areas beyond pre-project conditions following pipeline installation.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate the requirement to restore/repair damaged roadways to pre-construction condition into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	

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Inspection that damaged roads have been restored.	Sign-off on inspection report and/or MMRP.	Town Public Works	Post-construction	

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AIR QUALITY

Impact 4.8.1: Construction of proposed facilities would generate substantial amounts of dust, which would result in potential health and visibility impacts in the immediate vicinity of construction sites.

Measure 4.8.1: The construction contractor shall implement a dust abatement program. For individual construction projects affecting less than four acres in area such as pipeline installation and WRTP improvements, the dust abatement program should include following elements:

Water all active construction areas at least twice daily;

Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard (i.e., the minimum required space between the top of the load and the top of the trailer);

Pave, apply water three times daily, or apply (non-toxic) soil stabilizers on all unpaved access roads, parking areas and staging areas at construction sites;

Sweep daily (preferably with water sweepers) all paved access roads, parking areas and staging areas at construction sites; and

Sweep streets daily (preferably with water sweepers) if visible soil material is carried onto adjacent public streets.

Designate a person or persons to oversee the implementation of a comprehensive dust control program and to increase watering, as necessary.

For individual construction projects affecting **four** acres or more such as the proposed storage ponds, the dust abatement program should include the above measures plus the following measures:

Hydroseed or apply (non-toxic) soil stabilizers to inactive construction areas (previously graded areas inactive for ten days or more);

Enclose, cover, water twice daily or apply (non-toxic) soil stabilizers to exposed stockpiles (dirt, sand, etc.);

Limit traffic speeds on unpaved roads to 15 miles per hour;

Install sandbags or other erosion control measures to prevent silt runoff to public roadways; and

Replant vegetation in disturbed areas as quickly as possible.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Require the contractor to prepare a dust abatement	Include requirement in contractor specification.	Town Public Works	During development of	

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program that meets BAAQMD recommendations.	Review and approve dust abatement program.		specifications	
Construction inspection of compliance with measures.	Sign-off on inspection report and/or MMRP.	Town Public Works	During construction	

Impact 4.8.2: Proposed storage ponds would contain treated effluent which could be considered a source of odors. However, as stored supplies would be highly treated recycled water, the potential for odor generation is low.

No additional mitigation required.

NOISE

Impact 4.9.1: Construction of project facilities would result in temporary and localized noise impacts.

Alternatives 1C, 4X, 4I:

Measure 4.9.1a: To reduce daytime noise impacts due to construction, the Town should require that construction contractors muffle or otherwise control noise from construction equipment through implementation of the following measures:

- Equipment and trucks used for construction should utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically- attenuating shields or shrouds, wherever feasible and necessary);
- Impact tools (*e.g.*, jack hammers, pavement breakers, and rock drills) used for construction should be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. However, where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust should be used; this muffler can lower noise levels from the exhaust by up to about 10 dBA. External jackets on the tools themselves should be used where feasible, and this could achieve a reduction of 5 dBA. Quieter procedures should be used such as drilling rather than impact equipment whenever feasible; and
- Stationary noise sources should be located as far from sensitive receptors as possible. If they must be located near sensitive receptors, they should be muffled to the extent feasible and enclosed within temporary sheds.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate noise control methods into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
Construction inspection of compliance with measures.	Sign-off on inspection report and/or MMRP.	Town Public Works	During construction	

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Impact 4.9.2: Operation of WRTP facilities and pump stations at the Storage Ponds could result in noise increases in the vicinity of project facilities.

Measure 4.9.2: For proposed pumping facilities, the use of below grade, enclosed pumps shall be the preferred design method. In the event that above ground facilities are necessary due to site conditions, facilities shall be enclosed such that any change in ambient noise conditions is less than 3 dBA at the property line. This criteria will ensure that above ground pumping facilities, if required, will not result in a discernable change in ambient conditions at residences that may be in the vicinity of proposed facilities.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate noise control in design of WRTP facilities and pump station into design plans and specifications.	Final review and approval of design plans and specifications.	Town Public Works	During design	
Post-construction inspection.	Sign-off on inspection reports and/or MMRP.	Town Public Works	During operation of WRTP facilities and pump stations.	

VISUAL RESOURCES

Impact 4.10.1: Development of the proposed facilities would alter the visual character of the project area. Except for Pond J, this impact can be reduced to less than significant through incorporation of revegetation or screening measures.

If Pond J were implemented this impact would remain significant and unavoidable, due its location in direct proximity to a designated scenic corridor.

Alternatives 1C, 4X, 4I:

Measure 4.10.1a: The Town should ensure that its contractors restore disturbed areas associated with pipeline installation to their pre-project condition so that short-term construction disturbance does not result in long-term visual impacts.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate requirement to restore disturbed areas to pre-project condition, in accordance with applicable encroachment agreements, into specifications.	Final review and approval of design plans and specifications.	Town Public Works, affected jurisdictions	During development of specifications	
Construction inspection	Sign-off on inspection report and/or MMRP.	Town Public Works	Post-construction	

Measure 4.10.1b: Ancillary facilities associated with pipeline installation, should be appropriately designed to fit the general character of the area and to minimize visual impacts. For facilities not installed in roadways, disturbed areas should be revegetated with native plant species.

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IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Design ancillary facilities to fit the general character of the area and incorporate requirement to revegetate disturbed areas with native species into specifications.	Final review and approval of design plans and specifications.	Town Public Works, affected jurisdictions	During design	
Construction inspection	Sign-off on inspection report and/or MMRP.	Town Public Works	Post-construction	

Measure 4.10.1c: All constructed berms or dam faces shall be seeded with annual grasses, to the extent allowable by Department of Safety of Dams (DSOD) requirements, in order to provide visual continuity with surrounding areas.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Design of berms and dam faces shall include re-seeding with annual grasses, in accordance with DSOD requirements.	Final review and approval of design plans and specifications.	Town Public Works, DSOD	Post-construction	
Post-construction inspection that grasses have been planted to minimize visual impacts.	Sign-off on inspection report and/or MMRP.	Town Public Works	Post-construction	

Measure 4.10.1d: For Pond Z, the Town shall provide visual screening along the western and southern fencelines of the pond site. Appropriate landscaping trees shall be used to shield and break up views of constructed berms.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate requirement to landscape and provide visual screening for Pond Z in design specifications.	Final review and approval of design plans and specifications.	Town Public Works	During design	
Construction inspection	Sign-off on inspection report and/or MMRP.	Town Public Works	Post-construction	

Measure 4.10.1e: For all ponds, existing vegetation shall be retained to the degree feasible to provide screening and maintain natural vegetation at the pond sites. For Pond T, a vegetation buffer of 25 feet in width shall be retained along the eastern side of Eastside Road to screen the dam from this designated scenic roadway.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS

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Incorporate the requirement to retain existing vegetation to the extent possible in design plans and specifications.	Final review and approval of design plans and specifications.	Town Public Works	During design	

Measure 4.10.1f: Pump station building materials shall use appropriate earthtones in order to blend with surrounding areas and provide visual continuity. Use of reflective or unfinished metallic surfaces, such as corrugated metal, shall be avoided.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Design pump station to use appropriate earthtones.	Final review and approval of design plans and specifications.	Town Public Works	During design	
Post-construction inspection of use of earthtones.	Sign-off on inspection report and/or MMRP.	Town Public Works	Post-construction	

HAZARDOUS MATERIALS

Impact 4.11.1: The project could disturb existing contamination along proposed pipeline alignments.

Alternative 1C, 4X, 4I:

Measure 4.11.1a: Health and Safety Plan. Prepare a project-specific Health and Safety Plan that includes a project-specific contingency plan for hazardous materials and waste operations and submit the plan to the agency with jurisdiction before site activities could proceed. The Health and Safety Plan, applicable to all excavation activities, shall establish policies and procedures to protect workers and the public from potential hazards posed by hazardous wastes. The plan shall be prepared according to federal and California OSHA regulations for hazardous waste site Health and Safety Plans.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Prepare a Health and Safety Plan according to federal and California OSHA regulations.	Approval of the Health and Safety Plan.	Town Public Works	During design	
Incorporate the Health and Safety Plan into specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications.	

Measure 4.11.1b: Dust Abatement Program. Implement Mitigation Measure 4.8.1, which requires the adoption of a Dust Abatement Program. The construction contract shall include the Dust Abatement Program to minimize potential public health impacts associated with exposure to contaminated soil dust.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING	MONITORING	COMPLETION DATE

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		RESPONSIBILITY	SCHEDULE	AND INITIALS
Require preparation of a dust abatement program that meets BAAQMD requirements in specifications.	Approval of dust abatement program.	Town Public Works	During development of specifications	
Construction inspection of compliance with measures.	Sign-off on inspection report and/or MMRP.	Town Public Works	During construction	

Measure 4.11.1c: Reduction of Excavation Impacts. Within areas of suspected contamination, the contractor shall monitor for odors and analyze excavated material with a photoionization detector to determine the potential for soil contamination and the need for specialized soil-handling procedures to reduce excavation impacts.

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IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate requirement to monitor for hazardous materials into specifications.	Final review and approval of design plan and specifications.	Town Public Works	During development of specifications	
Construction inspection for monitoring where there is a potential for soil contamination.	Sign-off on inspection report and/or MMRP.	Town Public Works	During construction	

Impact 4.11.2: The project could require disposal of potentially contaminated soils.

Alternative 1C, 4X, 4I:

Measure 4.11.2a: Disposal Characterization. As part of Irrigation Infrastructure final design, a database and records search of known contaminated sites shall be completed. In high risk areas, excavations shall be observed by a trained health and safety professional equipped with an organic vapor analyzer to screen excavated materials and ensure worker safety. If contamination is encountered, excavated soils shall be segregated and sampled relative to the profiling requirements of the accepting landfill.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Conduct a database/records search of known contaminated sties.	Sign-off on database/records search.	Town Public Works	During design	
Incorporate monitoring of high risk areas into design plans and specifications.	Final review and approval of design plans and specifications.	Town Public Works	During design	
Inspect contractor compliance regarding monitoring in high risk areas.	Sign-off on monitoring report and/or MMRP.	Town Public Works	During construction	
Incorporate procedures for proper storage and/or disposal of contaminated soils in specifications	Final review and approval of design plans and specifications.	Town Public Works	During construction	

Measure 4.11.2b: Health and Safety Plan. The Health and Safety Plan shall also provide for proper storage and/or disposal of any contaminated soils that meet the definition of a hazardous waste. Such a protocol could include off-site treatment of contaminated materials or disposal at an appropriate landfill.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS

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Incorporate procedures for proper storage and/or disposal of contaminated soils in Health and Safety Plan. e Measure 4.11.1a	Approval of Health and Safety Plan.	Town Public Works	During design	

Measure 4.11.2c: Groundwater Testing. In the event Irrigation Infrastructure installation requires dewatering, conduct groundwater testing for petroleum hydrocarbons in high risk areas before dewatering is performed. Treatment would be applied, in consultation with the Regional Water Quality Control Board and/or wastewater treatment plant operators, to ensure that all discharges meet applicable water quality requirements.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Incorporate requirement to conduct groundwater testing hydrocarbons in high risk areas before dewatering in specifications.	Final review and approval of design plans and specifications.	Town Public Works	During development of specifications	
Construction inspection for compliance with this measure.	Sign-off on inspection report and/or MMRP.	Town Public Works	During construction	

Impact 4.11.3: Project construction activities could result in an accidental spill of diesel fuel or other hazardous materials used for equipment or otherwise needed for construction operations.
Alternative 1C, 4X, 4I:

Measure 4.11.3: Hazardous Materials Management/Spill Prevention Plan. A Hazardous Materials Management/Spill Prevention Plan shall be developed and given to all contractors working on the project. At least one copy shall be on-site with the construction manager at all times. The purpose of the plan is to provide on-site construction managers, environmental compliance monitors, and regulatory agencies with a detailed description of hazardous materials management, spill prevention, and spill response/cleanup measures associated with the construction of project elements. The primary objective of the plan is to prevent the spill of hazardous materials. Elements of the plan shall include, but not be limited to, the following:

_ A discussion of hazardous materials management, including delineation of hazardous material and hazardous waste storage areas, access and egress routes, waterways, emergency assemble areas, temporary hazardous waste storage areas;

_ Spill control and countermeasures, including employee spill prevention/response training; and

_ Notification and documentation procedures.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Include development of Hazardous Materials	Final review and approval of design plan and	Town Public Works	During design	

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Management/Spill Prevention Plan in contractor specifications.	specifications.			
Incorporate the requirement that this plan must be onsite with the construction manager at all times in specifications.	Final review and approval of design plan and specifications.	Town Public Works	During development of specifications	
Inspection that the plan is onsite with the construction manager.	Sign-off on MMRP.	Town Public Works	During construction	

Impact 4.11.4: Improvements at the WRTP to provide 3.0 MGD of capacity would involve incremental increases in the quantities of hazardous materials currently used. Additionally, small amounts of hazardous materials, such a hydraulic fluids, would be used at proposed pump stations.

Alternative 1C, 4X, 4I:

Measure 4.11.4a: The WRTP would, by law, conform to appropriate regulations and statutes from the federal, state and local agencies. Any new or additional chemical storage facilities would be constructed or retrofitted to conform to all appropriate regulations including providing secondary containment and testing of pressurized containers. All new or retrofitted facilities will be added to their Hazardous Materials Business Plan. Compliance with these requirements would mitigate potential impacts to worker health and safety and hazardous materials to a less-than-significant level.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Design or upgrade WRTP facilities to conform with appropriate regulations.	Final review and approval of design plan and specifications.	Town Public Works	During design	

CUMULATIVE IMPACTS

Impact 5.1: Concurrent construction of several infrastructure projects within the Windsor area would result in cumulative short-term impacts associated with construction activities. These include short-term impacts associated with erosion, cultural resource disturbance, disturbance of adjacent land uses, traffic disruption, dust generation, construction noise, and visual resources disturbance.

Implement the following Mitigation Measures identified in Chapter 4.0:

_ Erosion Control: 4.2.1a, 4.2.1b, 4.2.1c;
_ Cultural Resources: 4.5.1a, 4.5.1b, 4.5.1c, 4.5.1d, 4.5.1e, 4.5.1f;
_ Land Use Disturbance: 4.6-1a, 4.6.1b;
_ Traffic Control: 4.7.1, 4.7.2a, 4.7.2b, 4.7.3a, 4.7-3b, 4.7.4;
_ Dust Control: 4.8.1;

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_ Short-term Noise Control 4.9.1a;
_ Short-term Visual Resources: 4.10.1a.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Refer to Measures 4.2.1a, 4.2.1b, 4.2.1c, 4.5.1a, 4.5.1b, 4.5.1c, 4.5.1d, 4.5.1e, 4.5.1f, 4.6.1a, 4.6.1b, 4.7.1, 4.7.2a, 4.7.2b, 4.7.3a, 4.7.3b, 4.7.4, 4.8.1, 4.9.1a, and 4.10.1a.				

Impact 5.2: Construction of several infrastructure projects within the Windsor area would result in cumulative long-term impacts to biological resources. For the majority of *Water Reclamation Master Plan* facilities, this cumulative contribution is not considerable. However, for Storage Ponds S, T, V, W, and Y, the loss of oak woodland habitat were identified as significant, and would be cumulative considerable. Construction of these ponds individually, or in combination, would contribute to the cumulative loss of riparian oak woodland habitat within the Windsor area.

No Mitigation Measure Available

Impact 5.3: Both Pond S and SCWA's Pond D could be exposed to damage from earthquakes and geologic hazards. In the event of a catastrophic failure, the location of Pond S upstream of SCWA's Pond D could increase the severity of downstream flooding.

Implement Mitigation Measures 4.1-1a and 4.1-1b of Section 4.1, Geology and Soils.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Refer to Measures 4.1.1a and 4.1.1b				

Impact 5.4: Storage at Pond S could result in the infiltration of recycled water into the underlying groundwater table. Over time, reclaimed water could disperse into capture zones of downgradient municipal, domestic, or private groundwater wells, resulting in secondary impacts to potable water supplies . Due to its location in proximity to SCWA's Pond D, infiltration from both facilities could be cumulatively considerable on a local basis. However, implementation of appropriate design measures would reduce the potential for infiltration, thereby avoiding cumulative impacts.

Implement Mitigation Measure 4.1.4a of Section 4.1, Geology and Soils.

IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS

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Refer to Measures 4.1.1a				

Impact 5.5: Continued discharge to Mark West Creek under the Town's current NPDES permit could result in cumulative reductions in water quality, when considered with other projects within the area.

No Mitigation Measures Required

Impact 5.6: Expansion of irrigation lands would increase the amount of acreage irrigated with reclaimed water. When considered with other projects within the region, continued use of reclaimed water could result in cumulative secondary impacts to surface water and groundwater quality.

No Mitigation Measures Required

Impact 5.7: Expansion of irrigation lands would increase the amount of acreage irrigated with reclaimed water. When considered with other projects within the region, continued use of reclaimed water could result in cumulative secondary impacts to biological resources, including oak trees, wetlands or vernal pool resources.

Implement Mitigation Measures 4.4.2e through 4.4.2g of Section 4.4, Biological Resources.

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IMPLEMENTATION PROCEDURE	MONITORING AND REPORTING ACTION	MONITORING RESPONSIBILITY	MONITORING SCHEDULE	COMPLETION DATE AND INITIALS
Refer to Measures 4.4.2e through 4.4.2g				

GROWTH INDUCEMENT AND SECONDARY EFFECTS

Impact 6.1: By removing wastewater treatment capacity as one barrier to growth, implementation of the Town of Windsor Water Reclamation Master Plan would have indirect, growth-inducement potential to support planned development within the service area that is consistent with and within the levels of development approved in the adopted *General Plan*.

No Mitigation Required

Impact 6.2: The Town of Windsor Master Plan would accommodate planned growth in the Town of Windsor's sphere of influence. Implementation of planned growth would result in secondary environmental effects as outlined in Table 6-4 of the EIR. Some of the secondary effects of growth which have been identified as significant and unavoidable include air quality and traffic congestion.

No Mitigation Required

EXHIBIT E

STATEMENT OF OVERRIDING CONSIDERATIONS

E.1 SUMMARY OF OVERRIDING CONSIDERATIONS

Section 15093 of the CEQA Guidelines establishes the following requirements for a Statement of Overriding Considerations:

(a) CEQA requires the decision-making agency to balance, as applicable, the economic, legal, social, technological or other benefits of a Proposed Project against its unavoidable environmental risks when determining whether to approve the project. If the specific the economic, legal, social, technological or other benefits of a Proposed Project outweigh the unavoidable adverse environmental effects, the adverse environmental effects may be considerable "acceptable".

(b) Where the decision of the public agency allows the occurrence of significant effects, which are identified in the final EIR but are not avoided or substantially lessened, the agency shall state in writing the specific reasons to support its action based on the final EIR and/or other information in the record. This statement may be necessary if the agency also makes a finding under Section 15091(a)(2) or (a)(3).

(c) If an agency makes a statement of overriding considerations, the statement should be included in the record of the project approval and should be mentioned in the notice of determination.

Pursuant to Public Resources Code Section 21081 and CEQA Guidelines Section 15093, the Town Council adopts and makes the following Statement of Overriding Considerations regarding the remaining unavoidable impacts of the Water Reclamation Master Plan for Treatment, Storage, and Disposal – Alternative 4X (Project) and the anticipated economic, legal, social, technological, environmental, and other benefits of the Project.

In approving the Project, the Town Council has weighed the benefits of the Project against the adverse impacts identified in the Certified EIR as significant and potentially significant that have not been avoided or substantially lessened through mitigation to a level of less than significant. The Town Council hereby determines that the benefits of the Project outweigh the unmitigated adverse impacts and the Project should be approved. The Town Council finds that to the extent

that the identified significant or potential significant adverse impacts have not been avoided or substantially lessened, there are specific economic, legal, social, technological or other considerations which support approval of the project.

E.2. UNAVOIDABLE SIGNIFICANT ADVERSE IMPACTS

As identified in Exhibit B, the Town Council has determined that the Project would cause significant unavoidable impacts through the following: 1) removal of protected, native trees; 2) cumulative long-term impacts to biological resources as disclosed in the Certified EIR prepared for the Project. These impacts, which are summarized below, cannot be fully mitigated by changes or alterations to the Project.

BIOLOGICAL RESOURCES, CUMULATIVE IMPACTS TO BIOLOGICAL RESOURCES

The Project includes construction of Pond Z, Pond S or Pond T(T1,T2). According to the Certified EIR, construction of Ponds S or Pond T(T1,T2) will result in significant unavoidable tree loss impacts (Impact 4.4.1) and significant unavoidable cumulative long term impacts to biological resources through loss of trees and related woodland habitat in the Windsor area (Impact 5.2). More specifically, construction of Pond S and Pond T(T1, T2) would result in the removal of protected native trees, including mature valley oaks, compromising mixed oak riparian and mixed evergreen habitat communities. On a cumulative level, this loss would contribute to the cumulative loss of riparian oak woodland habitat as development occurs and other infrastructure projects are built in the Windsor area.

The Certified EIR identifies mitigation measures that will reduce both impacts, which are summarized above in Exhibit B. Even with implementation of these mitigations, however, these impacts will not be avoided or reduced to less than significant.

1. As discussed above in Exhibit C, implementation of Alternative 4I would avoid the significant biological and cumulative impacts by reducing the amount of needed pond storage to 72 MG, which could be accommodated without Pond S or Pond T (T1,T2). Alternative ponds sites would also avoid the significant biological and cumulative impacts by avoiding the Pond S and Pond T(T1,T2) sites. Pond C or Pond X are alternate sites which could avoid the tree loss and cumulative habitat loss impacts. As further set forth in Exhibit C, the Town Council finds Alternative 4I and alternative Pond Site C and X infeasible.

E.3. ADOPTION OF OVERRIDING CONSIDERATIONS

The Town Council adopts this Statement of Overriding Considerations and finds that: a) as part of the approval provisions, the Project has eliminated or substantially lessened all significant effects on the environment where feasible; and b) the remaining unavoidable impacts of the Project are acceptable in light of the environmental, economic, legal, social, technological, and other considerations set forth herein, because the benefits of the Project outweigh the significant and adverse impacts of the Project, as noted below.

The Town Council finds that each of the overriding considerations set forth below constitutes a separate and independent ground for finding that the benefits of the Project outweigh its significant adverse environmental impacts and is an overriding consideration warranting approval of the Project. These matters are supported by substantial evidence in the record that includes, but is not limited to, the Certified EIR, staff reports and analyses, oral and written testimony, and other documents referenced in this Statement of Overriding Considerations and its adopting Resolution.

E.4. BENEFITS OF PROPOSED PROJECT

PROJECT BENEFITS OUTWEIGH DIRECT ENVIRONMENTAL IMPACTS

The Project cannot be implemented in a way that accomplishes the basic project objectives without removal of oak woodland at individual Pond S and Pond T. The Town Council finds that the overall benefit of the Project outweighs unavoidable environmental impacts identified above.

The Project would provide the following benefits:

Social

1. Continue to provide wastewater treatment, storage and disposal in an environmentally sound manner in compliance with all applicable federal, state and local regulations.

2. Develop adequate treatment, storage and disposal facilities to meet projected effluent generation associated with buildout under the adopted General Plan.

Economic

3. Maximize the use of existing or available infrastructure to provide an economically efficient program for effluent treatment, storage, and disposal.

4. Provide the Town with the ability to implement storage ponds that are the most economically efficient available.

5. Provide the Town with the ability to implement storage ponds that are under Town ownership

Environmental

6. Emphasize the reclamation and reuse of treated effluent, rather than its discharge to receiving waters, in accordance with the standards and policies of the Regional Water Quality Control Board (RWQCB).

7. Target two-thirds of its treated effluent for reclamation and reuse, unless otherwise directed by the RWQCB, or the economics of such disposal is no longer cost effective.

8. Provide the Town with the ability to implement storage ponds that are centrally located relevant to both existing Town infrastructure and future irrigation lands

E.5 CONCLUSION

The Town Council has considered the public record of proceedings on the Project, and has weighed the above benefits of the Project against the unavoidable and adverse environmental impacts identified in the Certified EIR. The Town Council hereby determines that these benefits outweigh the environmental impacts, and further determines that these environmental impacts are acceptable. Therefore, the Town Council hereby approves the Project.