

## 3.16 Socioeconomics

This section presents the socioeconomic conditions in the action area and assesses effects on the economy from implementation of the North Bay Water Recycling Program (NBWRP), including project construction; operation and maintenance; increased vineyard production and costs; increased recreational expenditures; and potential changes in customer water and sewer fees. Economic indicators to assess effects include total output, jobs, and wages and salaries. The Impacts and Mitigation Measures section defines significance criteria used for the impact assessment and presents a discussion of potential project-related impacts. Determination of significance of impacts in this EIR/EIS apply only to CEQA, not to NEPA.

### 3.16.1 Affected Environment/Setting

Socioeconomic data is typically available at the county and city levels; therefore, Marin, Sonoma, and Napa County data are presented along with city level data for the Cities of Novato, San Rafael, Sonoma, and Napa. The most current data for the Counties are for year 2006, and the most current data for the Cities are for year 2000.

## Population and Employment

### *LGVSD*

#### **Marin County**

In 2006, Marin County had a population of approximately 246,000. Total personal income in Marin County was approximately \$21 billion and per capita personal income was \$86,062 (Bureau of Economic Analysis [BEA], 2007).<sup>1</sup>

**Table 3.16-1** shows 2006 industry earnings in Marin County. Top earning industries include professional and technical services, finance and insurance, and health care and social assistance. Table 3.16-1 also shows industry employment in Marin County in 2006. In 2006, professional and technical services employed the most people, followed by retail trade, and health care and social assistance. The unemployment rate in Marin County in 2006 was 3.5 percent, well below the state average of 4.9 percent (Economic Development Department [EDD], 2008a).

**Table 3.16-2** shows employment in Novato and San Rafael by industry from the 2000 U.S. Census. In 2000, the largest industries by employment in both Novato and San Rafael were education, health and social services; professional, scientific, management, administrative, and waste management; and retail trade.

<sup>1</sup> Personal income is the income received by persons from all sources. It is calculated as the sum of wage and salary disbursements, supplements to wages and salaries, proprietors' income with inventory valuation and capital consumption adjustments, rental income of persons with capital consumption adjustment, personal dividend income, personal interest income, and personal current transfer receipts, less contributions for government social insurance. Per capita personal income is calculated as the personal income of the residents of a given area divided by the resident population of the area. In computing per capita personal income, BEA uses the Census Bureau's annual midyear population estimates.

**TABLE 3.16-1  
INDUSTRY EARNINGS AND INDUSTRY EMPLOYMENT, MARIN COUNTY, 2006**

<b>Industry</b>	<b>Earnings (thousands \$)</b>	<b>Employment (jobs)</b>
Forestry, fishing, related activities, and other	(D)	(D)
Mining	(D)	(D)
Utilities	\$27,345	251
Construction	\$829,108	12,149
Manufacturing	\$153,173	3,351
Wholesale trade	\$289,828	4,322
Retail trade	\$728,402	18,145
Transportation and warehousing	\$76,635	1,546
Information	\$364,999	3,973
Finance and insurance	\$1,274,884	12,202
Real estate and rental and leasing	\$512,873	14,634
Professional and technical services	\$1,825,604	26,769
Management of companies and enterprises	\$374,851	2,423
Administrative and waste services	\$395,858	10,090
Educational services	\$153,962	5,369
Health care and social assistance	\$1,083,389	17,988
Arts, entertainment, and recreation	\$178,918	7,469
Accommodation and food services	\$277,147	11,598
Other services, except public administration	\$358,139	12,904
Government and government enterprises	\$971,066	14,412
<b>Total</b>	<b>\$9,911,005</b>	<b>181,103</b>

(D) BEA Note - Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

SOURCE: BEA 2007, Regional Economic Information System

**TABLE 3.16-2  
SAN RAFAEL AND NOVATO EMPLOYMENT BY INDUSTRY, 2000**

<b>Industry</b>	<b>Novato</b>		<b>San Rafael</b>	
	<b>Number of Jobs</b>	<b>Percent of All Industries</b>	<b>Number of Jobs</b>	<b>Percent of All Industries</b>
Agriculture, Forestry, Fisheries, and Mining	62	0.2	86	0.3
Construction	1,745	7.0	2,271	7.8
Manufacturing	1,122	4.5	1,427	4.9
Wholesale Trade	820	3.3	994	3.4
Retail trade	3,225	13.0	3,264	11.2
Transportation, warehousing, utilities	834	3.4	749	2.6
Information	1,067	4.3	1,391	4.8
Finance, Insurance, Real Estate	2,811	11.3	2,925	10.1
Professional, scientific, management, administrative, waste management	4,054	16.3	5,662	19.5
Education, health, and social services	4,471	18.0	4,993	17.2
Arts, entertainment, recreation, accommodation, and food service	1,994	8.0	2,624	9.0
Other services	1,510	6.1	1,835	6.3
Public administration	1,158	4.7	855	2.9
<b>Total</b>	<b>24,873</b>	<b>--</b>	<b>29,076</b>	<b>--</b>

SOURCE: U.S. Census Bureau 2000a, U.S. Census Bureau 2000b

## SVCS

### Sonoma County

In 2006, Sonoma County had a population of approximately 463,000. Total personal income in Sonoma County was approximately \$20 billion and per capita personal income was \$43,318 (BEA, 2007).

**Table 3.16-3** shows 2006 industry earnings in Sonoma County. Top earning industries were manufacturing, government and government enterprises, and construction. Table 3.16-3 also shows industry employment in Sonoma County in 2006. In 2006, retail trade employed the most people, followed by government and government enterprises, health care and social assistance, and manufacturing. The unemployment rate in Sonoma County in 2006 was 4.0 percent, which was below the state average of 4.9 percent (EDD, 2008c).

**TABLE 3.16-3  
INDUSTRY EARNINGS AND INDUSTRY EMPLOYMENT, SONOMA COUNTY, 2006**

Industry	Earnings (thousands \$)	Employment (jobs)
Forestry, fishing, related activities, and other	\$69,047	2,425
Mining	\$28,392	383
Utilities	(D)	(D)
Construction	\$1,452,024	22,754
Manufacturing	\$1,789,701	25,629
Wholesale trade	\$597,731	9,585
Retail trade	\$992,482	30,366
Transportation and warehousing	(D)	(D)
Information	\$283,817	4,672
Finance and insurance	\$654,237	11,172
Real estate and rental and leasing	\$413,931	15,931
Professional and technical services	\$1,267,229	23,856
Management of companies and enterprises	\$105,575	1,711
Administrative and waste services	\$441,315	14,011
Educational services	\$81,338	4,415
Health care and social assistance	\$1,390,735	26,352
Arts, entertainment, and recreation	\$124,223	7,675
Accommodation and food services	\$398,326	19,481
Other services, except public administration	\$413,000	16,187
Government and government enterprises	\$1,752,390	29,644
Total	\$12,664,838	277,955

(D) BEA Note - Not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

SOURCE: BEA, 2007

**Table 3.16-4** shows City of Sonoma employment by industry from the 2000 U.S. Census. In 2000, the largest industries by employment in Sonoma were education, health and social services; retail trade; and professional, scientific, management, administrative, and waste management.

**TABLE 3.16-4  
CITY OF SONOMA EMPLOYMENT BY INDUSTRY, 2000**

Industry	Sonoma	
	Number of Jobs	Percent of All Industries
Agriculture, Forestry, Fisheries, and Mining	36	0.8
Construction	258	6.0
Manufacturing	347	8.0
Wholesale Trade	190	4.4
Retail trade	577	13.4
Transportation, warehousing, utilities	240	5.6
Information	135	3.1
Finance, Insurance, Real Estate	358	8.3
Professional, scientific, management, administrative, waste management	487	11.3
Education, health, and social services	907	21.0
Arts, entertainment, recreation, accommodation, and food service	345	8.0
Other services	292	6.8
Public administration	145	3.4
<b>Total</b>	<b>4,317</b>	<b>--</b>

SOURCE: U.S. Census Bureau, 2000d

## ***Napa SD***

### **Napa County**

In 2006, Napa County had a population of approximately 131,000. Total personal income in Napa County was approximately \$6.2 billion and per capita personal income was \$47,491 (BEA, 2007). **Table 3.16-5** shows 2006 industry earnings in Napa County. Top earning industries were manufacturing, government and government enterprises, and construction. Table 3.16-5 also shows industry employment in Napa County in 2006. In 2006, manufacturing employed the most people, followed by government and government enterprises, and accommodation and food services. The unemployment rate in Napa County in 2006 was 3.9 percent, which was below the state average of 4.9 percent (EDD, 2008b).

**Table 3.16-6** shows city of Napa employment by industry from the 2000 U.S. Census. In 2000, the largest industries by employment in Napa were education, health and social services; manufacturing; and retail trade.

## **Agricultural Economy**

This section describes the agricultural economy in Sonoma and Napa Counties. Marin County has limited agriculture, which would not be affected by the NBWRP; therefore, it is not further discussed in this section. The primary agricultural land uses in the action area in southern Sonoma and Napa Counties are vineyards and dairies.

**TABLE 3.16-5  
INDUSTRY EARNINGS AND INDUSTRY EMPLOYMENT, NAPA COUNTY, 2006**

<b>Industry</b>	<b>Earnings (thousands \$)</b>	<b>Employment (jobs)</b>
Forestry, fishing, related activities, and other (D)	\$89,578	2,657
Mining	\$7,877	127
Utilities	\$14,916	170
Construction	\$464,752	6,922
Manufacturing	\$933,718	11,663
Wholesale trade	\$119,278	2,039
Retail trade	\$253,977	7,861
Transportation and warehousing	\$94,428	1,575
Information	\$66,510	944
Finance and insurance	\$184,233	2,777
Real estate and rental and leasing	\$116,446	5,322
Professional and technical services	\$259,608	4,982
Management of companies and enterprises	\$16,116	302
Administrative and waste services	\$165,216	5,030
Educational services	\$56,039	1,814
Health care and social assistance	\$419,210	7,520
Arts, entertainment, and recreation	\$30,782	1,743
Accommodation and food services	\$233,848	8,345
Other services, except public administration	\$121,021	4,560
Government and government enterprises	\$616,592	9,941
<b>Total</b>	<b>\$4,419,358</b>	<b>89,677</b>

(D) BEA Note - Some subcategories not shown to avoid disclosure of confidential information, but the estimates for this item are included in the totals.

SOURCE: BEA 2007, Regional Economic Information System

**TABLE 3.16-6  
CITY OF NAPA EMPLOYMENT BY INDUSTRY, 2000**

<b>Industry</b>	<b>Napa</b>	
	<b>Number of Jobs</b>	<b>Percent of All Industries</b>
Agriculture, Forestry, Fisheries, and Mining	1,185	3.4
Construction	2,552	7.4
Manufacturing	4,882	14.2
Wholesale Trade	1,125	3.3
Retail trade	4,072	11.8
Transportation, warehousing, utilities	1,024	3.0
Information	723	2.1
Finance, Insurance, Real Estate	1,905	5.5
Professional, scientific, management, administrative, waste management	3,054	8.9
Education, health, and social services	6,977	20.3
Arts, entertainment, recreation, accommodation, and food service	3,559	10.4
Other services	1,683	4.9
Public administration	1,640	4.8
<b>Total</b>	<b>35,996</b>	<b>--</b>

SOURCE: U.S. Census Bureau 2000c

### ***SVCS and Napa SD***

Total gross value of agricultural production in 2007 in Sonoma County was approximately \$639.1 million, representing a 7.6 percent increase from the 2006 value of \$593.9 million. Total gross value of production of wine grapes in 2007 was approximately \$416.5 million in Sonoma County, which was the highest in crop and nursery value of production in the County. In 2007, total wine grape bearing acreage was 54,862 acres and non-bearing acreage was 6,030 acres. The weighted average production value for wine grapes was \$2,081 per ton. Market milk had the second highest value of production in Sonoma County, at approximately \$98.7 million. Oat hay was planted on 4,470 acres in 2007 and yielded approximately 11,440 tons. Total value of production for oat hay was approximately \$1.5 million (Sonoma County, 2008a).

Total gross value of agricultural production in 2007 in Napa County was approximately \$484.9 million, representing a 1.4 percent increase from the 2006 value of \$477.9 million. Wine grapes had the highest gross value of production of all crops and livestock in Napa County, approximately \$473.5 million. In 2007, total wine grape bearing acreage was 42,338 acres and non-bearing acreage was 2,820 acres. The weighted average production value per ton for wine grapes was \$3,257 per ton. Livestock has the second highest value, at approximately \$3.4 million in 2007 (Napa County, 2008a).

The costs to establish and produce wine grapes for Chardonnay in Sonoma County in 2004 ranged from \$1,440 per ton to \$4,302 per ton depending on the yield per acre. Yields can range from 3 to 9 tons per acre (UCCE, 2004). The average value of wine grapes for white varieties in Sonoma County was \$1,679 per ton in 2006 and \$1,805 per ton in 2007 (Sonoma County, 2008a).

The costs to establish and produce wine grapes for Cabernet Sauvignon in Napa County in 2003 ranged from \$2,648 per ton to \$4,797 per ton depending on the yield per acre. Yields can range from 3.5 to 6.5 tons per acre (UCCE, 2003). The average value of wine grapes for red varieties in Napa County was \$3,451 per ton in 2006 and \$3,640 per ton in 2007 (Napa County, 2008a).

In addition to contributing to the counties' agricultural economies, wine grape production attracts a significant number of visitors to Napa and Sonoma Counties to support the tourism industry, which provide major revenues and jobs to the counties. A 2007 visitor survey indicated that winery visits were the main motivation for approximately 90 percent of hotel guests to visit Sonoma County and wine country maps ranked second as an influence for the decision to visit Sonoma County. The total amount spent by visitors to Sonoma County in 2006 was \$1.32 billion (Sonoma County Economic Development Board, 2008).

The amount spent by visitors to Napa County in 2005 reached almost \$1 billion. Most visitors cited wineries as their primary reason to visit and 77 percent of all visitors surveyed visited a winery on their trip (Leadership Napa Valley Class XVII Tourism Practicum Group, 2006).

## 3.16.2 Regulatory Framework

The policies and regulations associated with impacts to socioeconomics within the affected jurisdictions are presented in **Appendix 3.16** of this EIR/EIS.

## 3.16.3 Environmental Consequences/ Impacts Analysis

### NEPA Analysis

Under NEPA, economic or social effects must be discussed if they are inter-related to the natural or physical environmental effects of a project. NEPA states the following with regard to analysis of economic effects (Title 40, Code of Federal Regulations, Section 1508.14):

“...economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment.”

Since economic effects of the project are related to physical environmental effects, a NEPA economic analysis is required. However, NEPA does not require that economic impacts be judged for significance.

### Significance Criteria under CEQA

CEQA does not consider economic or social changes resulting from a project as adverse effects on the environment. If a physical change in the environment is caused by economic or social effects, the physical change may be regarded as an adverse effect. Specifically, under the CEQA guidelines (Section 15358[b]), an EIR must analyze impacts “related to physical changes” in the environment. CEQA guidelines Section 15131(a) states that “economic or social effects of a project shall not be treated as significant effects on the environment” unless the economic effects results in physical effects.

The guidelines also state that “An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by economic or social changes. The intermediate economic or social changes caused need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis should be on physical changes.”

In other words, the economic or social effect of a project may be used to determine the significance of physical changes caused by the project. However, analyses of other environmental resources in this document rely on resource specific tools or qualitative discussions to determine environmental effects. Therefore, economic effects are not needed to judge the significance of changes to other environmental resources.

Physical effects of the project alternatives are evaluated separately and do not require economic analysis; therefore, this section does not provide a CEQA analysis and associated significance

criteria. However, this section does provide an analysis of economic effects for NEPA compliance. NEPA economic impacts are typically derived by comparing the No Action Alternative to the action alternatives.

## **Environmental Consequences/Impact Analysis**

### **Impact 3.16.1: Output in Regional Economy. Project construction and operation would increase jobs, wages and salaries, and output in the regional economy. (Less than Significant)**

For the purpose of this analysis, the regional economy includes Marin, Napa, and Sonoma Counties.

Construction activities would create jobs and generate additional economic activity within the region during the period of construction. Regional economic effects are generally characterized as direct effects and secondary effects and occur because of linkages between industries. Any given industry typically purchases goods and services from, and sells goods and services to, another industry within a given geographic area, which in turn, sells to or buys from other industries or supplies final consumers. Direct effects represent the changes in final demand in a single sector, or, in this case, the purchase of materials to construct pipelines, pump stations, treatment plant upgrades, and storage reservoirs. Secondary effects are the changes in demand in industries supplying goods and services and changes in expenditures of household income.

These industry linkages are estimated by economic multipliers (e.g., a multiplier of 2.0 indicates that each dollar of direct sale generates another dollar of secondary sales in the regional economy; a multiplier of 3.0 indicates that each dollar of direct sale generates an additional \$2 of secondary sales in the regional economy, and so on). The analysis uses multipliers from IMPLAN (Impact Planning and Analysis), an input-output database and modeling software commonly used to estimate regional effects.

#### ***No Project Alternative***

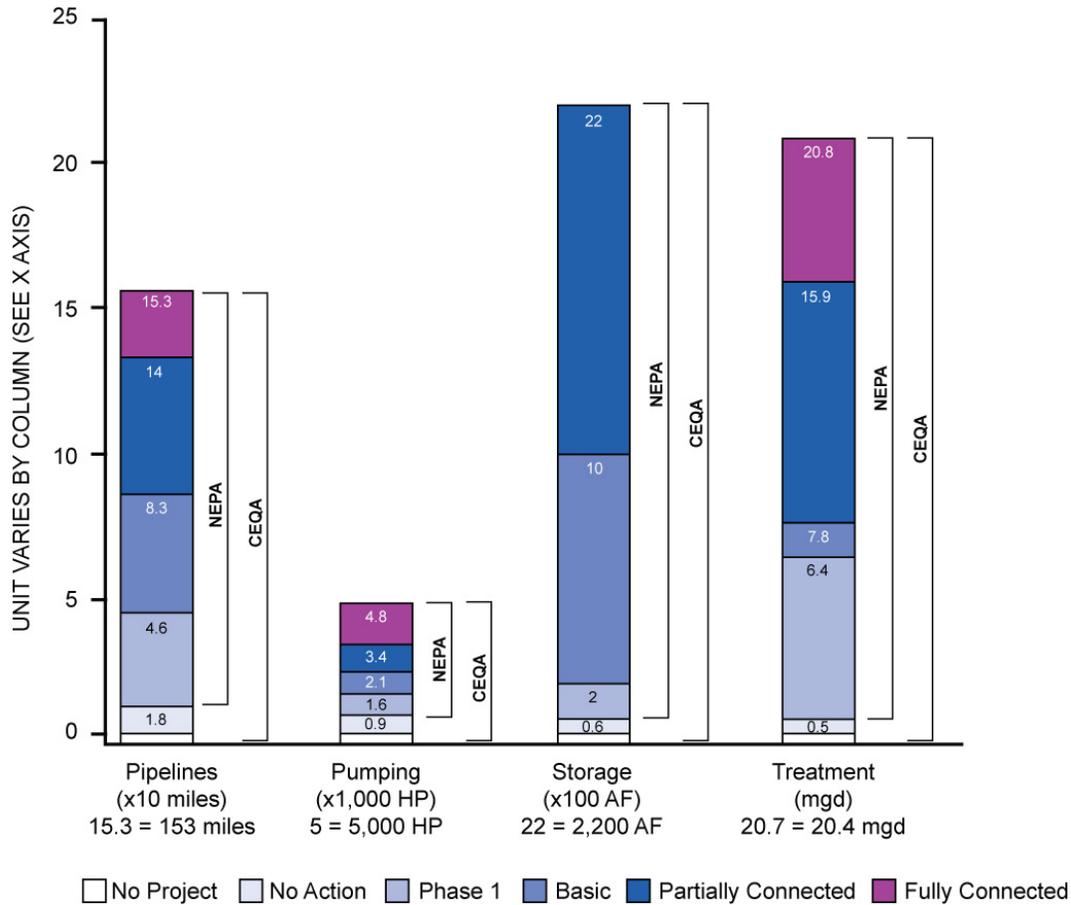
No project facilities would be implemented under the No Project Alternative, therefore no impact would occur. For a discussion of the No Project under future conditions, see No Action Alternative below.

#### ***No Action Alternative***

Under the No Action Alternative, which includes consideration of future conditions, it is likely that a subset of water recycling projects would be implemented by the Member Agencies on an individual basis, without the benefit of regional coordination or federal funding. Relative to existing conditions, construction under the No Action Alternative would generate some economic activity by creating temporary construction jobs and increased spending on project materials. Since no costs have been developed for this alternative, the economic effects were not quantified in dollars through use of IMPLAN multipliers. Implementation of this alternative would result in beneficial, but minor, impacts to the regional economy relative to the existing conditions.

In comparison to the Action Alternatives, it is estimated that approximately 17.5 miles of new pipeline, 912 HP of pumping capacity, treatment facilities providing 0.5 mgd of tertiary capacity, and approximately 65 AF of storage would be constructed by Member Agencies on an individual basis (see **Chart 3.16-1, No Action**).

**CHART 3.16-1  
COMPARISON OF NEPA AND CEQA BASELINES FOR PROPOSED FACILITIES, BY ALTERNATIVE**



SOURCE: CDM, 2009

Under future baseline (2020) conditions, the socioeconomic conditions are anticipated to change in accordance with anticipated development allowed under the approved General Plans within the region.

**Phase 1 (Project level)**

Compared to the No Project Alternative (CEQA Baseline) Phase 1 projects would provide 46 miles of new pipeline, 1,655 HP of pumping capacity, treatment facilities providing 6.4 mgd of tertiary capacity, and 65 AF of storage. Compared to the No Action Alternative (NEPA Baseline),

Phase 1 projects would provide 28 miles of new pipeline, 743 HP of pumping capacity, treatment facilities providing 5.9 mgd of tertiary capacity, and no additional storage.

The impacts on the regional economy related to project construction and operation under Phase 1 would be equivalent to and greater than the impacts discussed for the No Action Alternative, in proportion to the facilities constructed under this alternative.

Phase 1 includes construction of treatment plant upgrades, pipelines, pump stations, and storage reservoirs, which requires the purchase of construction materials and employment of engineers, construction supervisors, and general construction laborers. These activities would result in economic effects, or increases in jobs, wages and salaries, and economic output in the regional economy. **Table 3.16-7** summarizes preliminary capital costs for the NBWRP. If materials are purchased within the action area, economic output would increase. Materials purchased outside the action area would not result in economic benefits to the action area.

**TABLE 3.16-7  
OPINION OF PROBABLE TOTAL PROJECT CAPITAL COSTS  
FOR IMPLEMENTATION PHASE 1**

Major Project Component	Cost (\$ million)
Pipelines	\$89.3
Treatment Improvements	\$14.9
Storage Facilities	\$8.3
Pumping Facilities	\$8.5
<b><i>Probable Total Project Capital Costs</i></b>	<b><i>\$121.0</i></b>

SOURCE: CDM, 2008

The IMPLAN multiplier for total output in the water, sewer, and pipeline construction sector for the three counties was approximately 1.6 (MIG, Inc., 2002). Therefore, for every dollar spent in the sector, \$0.60 would be gained in the total regional economy in secondary effects. The Marin, Sonoma, and Napa Counties do not have large wholesale trade sectors relative to nearby counties, including Alameda, Contra Costa, Sacramento, and San Francisco Counties, which could result in more material purchases outside of the region. For example, if 60 percent of materials are purchased outside the region, direct effects to the region would be approximately \$48.4 million and secondary effects would be approximately \$29.0 million.

The workers employed by the project would earn wages and salaries and would likely spend a portion of wages and salaries within the action area. Workers employed within the action area would generate greater regional economic benefits than workers from outside the action area because these “outside” workers would take their incomes out of the action area and likely increase spending in a different region. Marin, Napa, and Sonoma Counties would likely supply a portion of the workers for the project and others would originate in the greater Bay Area region or Sacramento region. **Table 3.16-8** summarizes hourly wages for employment for construction laborers and supervisors in Marin, Napa, and Sonoma Counties. Construction details for the

**TABLE 3.16-8  
CONSTRUCTION LABORERS AND SUPERVISORS HOURLY WAGES**

	<b>Construction Laborers (\$/hour)</b>	<b>Construction Trades Supervisors (\$/hour)</b>
Marin County (San Francisco – San Mateo – Redwood City Metro MSA)	\$23.24	\$41.08
Napa County (Napa MSA)	\$19.07	\$34.04
Sonoma County (Santa Rosa – Petaluma MSA)	\$20.56	\$36.71

MSA = Metropolitan Statistic Areas

SOURCE: EDD, 2008d

NBWRP, including number of workers needed and construction schedule, have not been identified; therefore, the direct economic effects of project construction cannot be calculated for this analysis. In a 40-hour work week, construction laborers would earn between \$762 and \$929 and supervisors would earn between \$1,361 and \$1,643, depending on the MSA. Construction details for the NBWRP, including number of workers needed and construction schedule, have not been identified; therefore, the direct economic effects of project construction cannot be calculated for this analysis. It can be assumed that a portion of these weekly wages would be spent on goods and services in the action area, which would result in regional economic benefits.

The regional economic effects, using existing conditions as a baseline, would represent a temporary economic benefit to the region and would end when construction is complete. Beneficial impacts would be lower relative to the No Action Alternative because some level of construction would occur under the No Action Alternative, which would result in some regional economic effects.

Similar to the construction activities, project operation would result in regional economic effects. These effects would be long-term, but much smaller in magnitude than the economic effects from construction. Total annual operation and maintenance costs under Phase 1 are estimated at approximately \$1.3 million, which would primarily be associated with power requirements. Current employees would be involved in operation and maintenance, therefore the expenditures would likely not create additional jobs in the region. The regional economic effects from operational expenditures would be beneficial, but minor.

### ***Alternative 1: Basic System (Program level)***

Compared to the CEQA Baseline, the Basic System projects would provide 83 miles of new pipeline, 2,158 HP of pumping capacity, treatment facilities providing 7.8 mgd of tertiary capacity, and 1,020 AF of storage. Compared to the No Action Alternative (NEPA Baseline), Basic System would provide 65 miles of new pipeline, 1,246 HP of pumping capacity, treatment facilities providing 7.3 mgd of tertiary capacity, and 955 AF of storage.

The impacts to the regional economy related to project construction and operation under the Basic System would be equivalent to and greater than the impacts discussed for Phase 1, in proportion

to the facilities constructed under this alternative. However, the regional benefits from construction of the Basic System would be greater than under Phase 1 because the Basic System includes additional recycled water use beyond that proposed under Phase 1. The Basic System would likely require additional construction workers and involve a longer construction schedule. **Table 3.16-9** shows the capital costs of the Basic System. Regional economic impacts would benefit the local region and would only occur during the construction period. (e.g., if 60 percent of materials are purchased outside the region, direct effects to the region would be approximately \$84.0 million and secondary effects would be approximately \$50.4 million). The economic effects of additional construction workers or worker days relative to Phase 1 would likely be low.

**TABLE 3.16-9  
PROBABLE TOTAL PROJECT CAPITAL COSTS  
FOR THE BASIC SYSTEM**

Major Project Component	Cost (\$ Million)
Pipelines	\$129.6
Treatment Improvements	\$29.6
Storage Facilities	\$40.6
Pumping Facilities	\$10.1
<b><i>Probable Total Project Capital Costs</i></b>	<b><i>\$209.9</i></b>

SOURCE: CDM, 2008

***Alternative 2: Partially Connected System (Program level)***

Compared to the CEQA Baseline, the Partially Connected System would provide 139 miles of new pipeline, 3,454 HP of pumping capacity, treatment facilities providing 15.9 mgd of tertiary capacity, and 2,220 AF of storage. Compared to the No Action Alternative (NEPA Baseline), the Partially Connected System would provide 122 miles of new pipeline, 2,542 HP of pumping capacity, treatment facilities providing 15.4 mgd of tertiary capacity, and 2,155 AF of storage.

The impacts to the regional economy related to project construction and operation under the Partially Connected System would be equivalent to and greater than the impacts discussed for the Basic System, in proportion to the facilities constructed under this alternative. However, the regional benefits would be greater than the Basic System. Therefore, it would likely require more construction workers and/or a longer construction schedule. Regional economic impacts would benefit the local region and would only occur during the construction period. **Table 3.16-10** shows the capital costs of the Partially Connected System. If 60 percent of materials are purchased outside the region, direct effects to the region would be approximately \$151 million and secondary effects would be approximately \$90.6 million. This alternative may employ more workers relative to the Basic System; however, the economic benefits of additional construction workers or worker days would likely be minor.

**TABLE 3.16-10  
PROBABLE TOTAL PROJECT CAPITAL COSTS  
FOR THE PARTIALLY CONNECTED SYSTEM**

<b>Major Project Component</b>	<b>Cost (\$ million)</b>
Pipelines	\$198.0
Treatment Improvements	\$64.7
Storage Facilities	\$98.6
Pumping Facilities	\$16.2
<b>Probable Total Project Capital Costs</b>	<b>\$377.5</b>

SOURCE: CDM, 2008

***Alternative 3: Fully Connected System (Program level)***

Compared to the CEQA Baseline, the Fully Connected System would provide 153 miles of new pipeline, 5,021 HP of pumping capacity, treatment facilities providing 20.8 mgd of tertiary capacity, and 2,220 AF of storage. Compared to the No Action Alternative (NEPA Baseline), the Fully Connected System would provide 135 miles of new pipeline, 3,907 HP of pumping capacity, treatment facilities providing 20.3 mgd of tertiary capacity, and 2,155 AF of storage.

The impacts related to project construction and operation under the Fully Connected System would be equivalent to and greater than the impacts discussed for the Partially Connected System, in proportion to the facilities constructed under this alternative except for the additional regional benefits from construction of the additional recycled water facilities beyond those under the Partially Connected System. The Fully Connected System would likely require more construction workers and/or a longer construction schedule. Regional economic impacts would benefit the local region and would only occur during the construction period. **Table 3.16-11** shows the capital costs of the Fully Connected System. If 60 percent of materials are purchased outside the region, direct effects to the region would be approximately \$165.6 million and secondary effects would be approximately \$99.3 million. This alternative may employ more workers relative to the Partially Connected System; however, the economic benefits of additional construction workers or worker days would likely be small.

**TABLE 3.16-11  
PROBABLE TOTAL PROJECT CAPITAL COSTS  
FOR THE FULLY CONNECTED SYSTEM**

<b>Major Project Component</b>	<b>Cost (\$ millions)</b>
Pipelines	\$216.7
Treatment Improvements	\$85.2
Storage Facilities	\$90.7
Pumping Facilities	\$21.4
<b>Probable Total Project Capital Costs</b>	<b>\$414.0</b>

SOURCE: CDM, 2008

**Impact 3.16.2: Effect on Agricultural Economy. Project implementation could affect the agricultural economy. (Beneficial)**

The NBWRP could affect the agricultural economy by changing production costs or irrigated acreages. The effects would be long term in nature. The greater costs associated with the recycled water could decrease net farm incomes and would have an adverse effect to the farmers. Establishment and production of new vineyards would result in beneficial regional economic effects. Businesses trade with farmers; farmers buy goods and services from farm stores, equipment supply stores, custom operators, and other farmers; other regional businesses earn their income by transporting, storing, marketing, and processing agricultural products. Increased vineyards would increase the volume of sales for the businesses.

***No Project Alternative***

The NBWRP would not be implemented under the No Project Alternative, therefore no impact would occur. For a discussion of the No Project under future conditions, see No Action Alternative below.

***No Action Alternative***

Under the No Action Alternative, which includes consideration of future conditions, it is likely that a subset of water recycling projects would be implemented by the Member Agencies on an individual basis, without the benefit of regional coordination or federal funding.

For comparison to the Action Alternatives, it is estimated that approximately 17.5 miles of new pipeline, 912 HP of pumping capacity, treatment facilities providing 0.5 mgd of tertiary capacity, and approximately 65 AF of storage would be constructed by Member Agencies on an individual basis (see **Chart 3.16-1, No Action**).

Under the No Action Alternative, agricultural production would remain the same as existing conditions. Farmers would continue following similar cropping patterns and irrigating with groundwater or surface water supplies. Under the No Action Alternative, farmers would potentially utilize the recycled water provided by the local recycled water projects in Novato, Sonoma, and Napa. As a result, agricultural production costs for the farmers could increase. Participation of the farmers in local recycled water projects would be voluntary; farmers would only likely participate if recycled water use were cost-effective. Recycled water would be a more reliable water supply than existing groundwater or surface water supplies, which may make increased production costs more cost effective in the long-term. The agricultural economy under the No Action Alternative would be similar to existing conditions.

***Phase 1 (Project level)***

Compared to the CEQA Baseline, Phase 1 projects would provide 46 miles of new pipeline, 1,655 HP of pumping capacity, treatment facilities providing 6.4 mgd of tertiary capacity, and 65 AF of storage. Compared to the No Action Alternative (NEPA Baseline), Phase 1 projects

would provide 28 miles of new pipeline, 743 HP of pumping capacity, treatment facilities providing 5.9 mgd of tertiary capacity, and no additional storage.

The impacts on the agricultural economy under Phase 1 would be equivalent to and greater than the impacts discussed for the No Action Alternative, in proportion to the facilities constructed under this alternative.

Under Phase 1, farmers would use recycled water instead of groundwater or surface water for irrigation purposes. Recycled water supplies may be more expensive to farmers than existing groundwater or surface water supplies; however, recycled water supplies would be more reliable and could support long-term agricultural production and farm income.

It generally takes vineyards approximately 3 years to bear fruit and 5 years to reach maturity; however, costs are incurred in the first year (UCCE, 2003). Farmers may not make a profit until the vines reach maturity in five to six years. If water costs increase, farmers producing marginal vineyards may not make a profit if other conditions (i.e., sale price) remain the same. This would be an adverse effect to the agricultural economy. However, participation by farmers in the recycled water program would be voluntary. It can be assumed that farmers would not participate if use of recycled water would not be cost-effective for them in the long-term.

Irrigated acreage of vineyards could increase under the NBWRP as a result of providing recycled water supply. Based on the existing nature and location of land uses in the action area within Sonoma County and the assumed use of recycled water, it is not expected that recycled water deliveries would change acreages of vineyards in Sonoma County relative to the No Project Alternative. Farmers would continue to plant the same acreage under the No Action Alternative. However, in Napa County, recycled water deliveries to the MST area would increase vineyard production relative to the No Project/No Action Alternative. In light of the existing nature and location of land uses in the action area within Napa County, and the assumed use of recycled water, it is estimated that approximately 2,086 acres of new vineyards would be planted as a result of the NBWRP.<sup>2</sup> This would increase spending in the agricultural economy and increase farm incomes (Please refer to Chapter 5, for impacts related to growth).

Establishing vineyards requires farmers to spend money on vines, trellis and irrigation systems, fertilizer, and other production inputs and hire workers for site preparation, planting, and pruning vines. The three-year establishment cost for Cabernet Sauvignon vineyards in Napa County was \$26,579 per acre, including labor, fuel, materials, and overhead costs (UCCE, 2003). When the vines begin to produce fruits, farmers would continue expenses on production inputs and employing workers, which would increase regional economic benefits. The total production costs ranged from \$4,797 to \$2,648 per ton based on increasing crop yields from 3.5 to 6.5 tons. Labor requirements were approximately 80 full time workers per 1,000 acres (UCCE, 2003). Establishment and production of vineyards would benefit the regional economy by increasing sales for agricultural support industries and increasing employment for farm workers.

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<sup>2</sup> It is assumed that this land is currently idle. If the land is producing another crop, economic benefits would be the net farm income.

Farmers would receive revenues from the sale of the crop. Sale prices vary based on market conditions. In 2007, Napa County reported average sales for red grape varieties of \$3,640 per ton. Based on this price and UCCE cost estimates, profits would range from \$1,188 per ton for a yield of 5 tons per acre to \$6,434 per tons for a yield of 6.5 tons per acre. The economic benefits would occur at a regional level as farmers spend a portion of increased net household income in the local economy.

Increased spending, employment, and farm incomes relative to the No Action Alternative would be a beneficial impact to the agricultural economy.

***Alternative 1: Basic System (Program level)***

Compared to the CEQA Baseline, the Basic System projects would provide 83 miles of new pipeline, 2,158 HP of pumping capacity, treatment facilities providing 7.8 mgd of tertiary capacity, and 1,020 AF of storage. Compared to the No Action Alternative (NEPA Baseline), Basic System would provide 65 miles of new pipeline, 1,246 HP of pumping capacity, treatment facilities providing 7.3 mgd of tertiary capacity, and 955 AF of storage.

The impacts on the agricultural economy under the Basic System would be equivalent to and greater than the impacts discussed for Phase 1, in proportion to the facilities constructed under this alternative. The Basic System would serve only existing vineyards and there would be no new vineyard production above that identified for Phase 1 (i.e., it is anticipated that existing opportunities for the planting of new vineyards based on the availability of recycled water would be largely, if not fully, realized under Phase 1; additional recycled water deliveries above and beyond Phase 1 are not expected to result in further establishment of new vineyards to any notable degree).

***Alternative 2: Partially Connected System (Program level)***

Compared to the CEQA Baseline, the Partially Connected System would provide 139 miles of new pipeline, 3,454 HP of pumping capacity, treatment facilities providing 15.9 mgd of tertiary capacity, and 2,220 AF of storage. Compared to the No Action Alternative (NEPA Baseline), the Partially Connected System would provide 122 miles of new pipeline, 2,542 HP of pumping capacity, treatment facilities providing 15.4 mgd of tertiary capacity, and 2,155 AF of storage.

The impacts on the agricultural community under the Partially Connected System would be equivalent the impacts discussed for Phase 1, in proportion to the facilities constructed under this alternative. Any additional vineyards served by the Partially Connected System would be existing vineyards and there would be no new vineyard production above that identified for Phase 1.

***Alternative 3: Fully Connected System (Program level)***

Compared to the CEQA Baseline, the Fully Connected System would provide 153 miles of new pipeline, 5,021 HP of pumping capacity, treatment facilities providing 20.8 mgd of tertiary capacity, and 2,220 AF of storage. Compared to the No Action Alternative (NEPA Baseline), the Fully

Connected System would provide 135 miles of new pipeline, 3,907 HP of pumping capacity, treatment facilities providing 20.3 mgd of tertiary capacity, and 2,155 AF of storage.

The impacts on the agricultural community under the Fully Connected System would be equivalent to and greater than the impacts discussed for Phase 1, in proportion to the facilities constructed under this alternative. Any additional vineyards served by the Fully Connected System 3 would be existing vineyards and there would be no new vineyard production above that identified for Phase 1.

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**Impact 3.16.3: Impact to Winery-related Industry. Recycled water deliveries to vineyards would support the winery-related tourism industry. (Beneficial)**

***No Project Alternative***

No new vineyard production would occur under the No Project Alternative. The winery-related tourism industry would continue to attract a similar number of visitors and generated similar economic activity as existing conditions. For a discussion of the No Project under future conditions, see No Action Alternative below.

***No Action Alternative***

Under the No Action Alternative, which includes consideration of future conditions, it is likely that a subset of water recycling projects would be implemented by the Member Agencies on an individual basis, without the benefit of regional coordination or federal funding.

For comparison to the Action Alternatives, it is estimated that approximately 17.5 miles of new pipeline, 912 HP of pumping capacity, treatment facilities providing 0.5 mgd of tertiary capacity, and approximately 65 AF of storage would be constructed by Member Agencies on an individual basis (see **Chart 3.16-1, No Action**).

Under future baseline (2020) conditions, recycled water use within the region is anticipated to increase, in accordance with local water supply or management plans and anticipated development allowed under the approved General Plans within the region. A discussion of individual Member Agencies is provided below.

No new vineyard production would occur under the No Action Alternative. The winery-related tourism industry would continue to attract a similar number of visitors and generated similar economic activity as existing conditions.

***Phase 1 (Project level)***

Compared to the CEQA Baseline Phase 1 projects would provide 46 miles of new pipeline, 1,655 HP of pumping capacity, treatment facilities providing 6.4 mgd of tertiary capacity, and 65 AF of storage. Compared to the No Action Alternative (NEPA Baseline), Phase 1 projects would

provide 28 miles of new pipeline, 743 HP of pumping capacity, treatment facilities providing 5.9 mgd of tertiary capacity, and no additional storage.

The impacts to the winery-related tourism industry under Phase 1 would be equivalent to and greater than the impacts discussed for the No Action Alternative, in proportion to the facilities constructed under this alternative.

The NBWRP would result in approximately 2,086 acres of new vineyards in Napa County. Increased grape production would support the winery-related tourism industry in Napa County, which generates over a \$1 billion a year. The increased acreage may not have a direct effect on tourism by attracting visitors to the new vineyards, however it would help maintain vineyards in Napa County and continue to attract visitors to the region. This impact would be minor, but beneficial (Please refer to Chapter 5, for impacts related to growth).

Recycled water deliveries would provide a more reliable water supply for irrigation of existing vineyards in both Napa and Sonoma Counties. A reliable water supply helps maintain vineyard production in the long-term, which would also provide long-term support for the tourism industry.

#### ***Alternative 1: Basic System (Program level)***

Compared to the CEQA Baseline, the Basic System projects would provide 83 miles of new pipeline, 2,158 HP of pumping capacity, treatment facilities providing 7.8 mgd of tertiary capacity, and 1,020 AF of storage. Compared to the No Action Alternative (NEPA Baseline), Basic System would provide 65 miles of new pipeline, 1,246 HP of pumping capacity, treatment facilities providing 7.3 mgd of tertiary capacity, and 955 AF of storage.

The impacts to the winery-related tourism industry under the Basic System would be equivalent to the impacts discussed for Phase 1, in proportion to the facilities constructed under this alternative. The Basic System would serve only existing vineyards and there would be no new vineyard production above that identified for Phase 1.

#### ***Alternative 2: Partially Connected System (Program level)***

Compared to the CEQA Baseline, the Partially Connected System would provide 139 miles of new pipeline, 3,454 HP of pumping capacity, treatment facilities providing 15.9 mgd of tertiary capacity, and 2,220 AF of storage. Compared to the No Action Alternative (NEPA Baseline), the Partially Connected System would provide 122 miles of new pipeline, 2,542 HP of pumping capacity, treatment facilities providing 15.4 mgd of tertiary capacity, and 2,155 AF of storage.

The impacts to the winery-related tourist industry under the Partially Connected System would be equivalent to the impacts discussed for Phase 1, in proportion to the facilities constructed under this alternative. The Partially Connected System would extend service only to existing vineyards and there would be no new vineyard production above that identified for Phase 1.

### ***Alternative 3: Fully Connected System (Program level)***

Compared to the CEQA Baseline, the Fully Connected System would provide 153 miles of new pipeline, 5,021 HP of pumping capacity, treatment facilities providing 20.8 mgd of tertiary capacity, and 2,220 AF of storage. Compared to the No Action Alternative (NEPA Baseline), the Fully Connected System would provide 135 miles of new pipeline, 3,907 HP of pumping capacity, treatment facilities providing 20.3 mgd of tertiary capacity, and 2,155 AF of storage.

The impacts associated with the Fully Connected System would be equivalent to the impacts discussed for Phase 1, in proportion to the facilities constructed under this alternative. The Partially Connected System would extend service only to existing vineyards and there would be no new vineyard production above that identified for Phase 1.

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### **Impact 3.16.4: Increase in water/sewer charges. Project implementation could increase municipal and industrial customer water or sewer charges. (Less than Significant)**

The funding mechanisms for the project that are being considered by the member agencies include applying for state and federal loans and/or grants. The NBWRA would repay any loans acquired through charging a fee to users for recycled water supply. The project costs would thus affect the user fees, however the extent of increase is not known at this time. It is assumed that customer fees would increase as the project costs increase.

### ***No Project Alternative***

Under the No Project Alternative, the existing water and sewer fees would likely remain the same as under existing conditions. No impact is expected. For a discussion of the No Project under future conditions, see No Action Alternative below.

### ***No Action Alternative***

Under the No Action Alternative, which includes consideration of future conditions, it is likely that a subset of water recycling projects would be implemented by the Member Agencies on an individual basis, without the benefit of regional coordination or federal funding.

For comparison to the Action Alternatives, it is estimated that approximately 17.5 miles of new pipeline, 912 HP of pumping capacity, treatment facilities providing 0.5 mgd of tertiary capacity, and approximately 65 AF of storage would be constructed by Member Agencies on an individual basis (see **Chart 3.16-1, No Action**).

Under future baseline (2020) conditions, municipal and industrial customer water/sewer charges within the region are anticipated to increase and would occur in accordance with anticipated development allowed under the approved General Plans within the region. A discussion of individual Member Agencies is provided below.

Under the No Action Alternative, the existing water and sewer fees would likely increase as Novato SD, SVCSD, and Napa SD would implement local recycling projects and need to finance debts.

**Phase 1 (Project level)**

Compared to the CEQA Baseline, Phase 1 projects would provide 46 miles of new pipeline, 1,655 HP of pumping capacity, treatment facilities providing 6.4 mgd of tertiary capacity, and 65 AF of storage. Compared to the No Action Alternative (NEPA Baseline), Phase 1 projects would provide 28 miles of new pipeline, 743 HP of pumping capacity, treatment facilities providing 5.9 mgd of tertiary capacity, and no additional storage.

The impacts on water and sewer fees under Phase 1 would be equivalent to and greater than the impacts discussed for the No Action Alternative, in proportion to the facilities constructed under this alternative. Table 3.16-10 shows the potential costs for the member agencies for construction and operation of the project. A firm plan for funding the of Phase 1 construction costs has not yet been developed among the four wastewater districts and their potential partners. **Table 3.16-12** shows the anticipated costs (life cycle costs)<sup>3</sup> analysis for Phase 1 for each Member Agency.

**TABLE 3.16-12  
ANTICIPATED COSTS FOR PHASE 1 BY MEMBER AGENCIES**

	<b>LGVS</b>	<b>Novato SD</b>	<b>SVCSD</b>	<b>Napa SD</b>	<b>Total</b>
Total Capital Costs	\$7,941,000	\$20,041,000	\$56,213,000	\$36,806,000	\$121,000,000
Annual Capital Costs	\$308,631	\$778,903	\$2,184,746	\$1,430,483	\$4,702,725
Annual O&M Costs	\$114,000	\$345,000	\$346,000	\$576,000	\$1,381,000
Total Annual Costs	\$422,631	\$1,123,903	\$2,530,746	\$2,006,483	\$6,083,725

SOURCE: CDM, 2008

Total annual costs of implementing Phase 1 would be approximately \$6.1 million, based on a 50-year period of analysis and 3 percent real discount rate. As discussed in Chapter 2, Project Description, NBWRA is in the process of applying for federal funding through the Bureau of Reclamation’s Title XVI Water Reclamation and Reuse Program for \$25 million. Each individual agency would be responsible for their non-federal share. NMWD is a potential partner for sharing in costs allocated to LGVS and Novato SD. Costs allocated to SVCSD could be shared by SCWA, the City of Sonoma, and Valley of the Moon Water District. Napa SD costs may be shared by Napa County. There are several possible funding sources being considered by the wastewater districts and potable water agencies for their non-federal share of construction costs. Funding sources include user funding for capital improvements, contribution from agency reserves, state or local grants,

<sup>3</sup> The life cycle costs analysis calculates annual capital costs of implementation over a 50-year period of analysis using a 3 percent real discount rate and adds annual operation and maintenance costs. All facilities are expected to have a service life of at least 50 years with proper maintenance; costs incurred after 50 years would be significantly discounted and were not considered in this analysis. Use of a real (inflation-adjusted) discount rate alleviates the need to project future cost levels.

loans in the form of Certificates of Participation or the State Revolving Fund. Any construction funds not covered by user funding, district reserves, grants, or loans would probably be raised through issuance of revenue bonds. For some Member Agencies and/ or Participating Agencies, it is possible that the final funding plan would include some combination of the above measures.

It is expected that any debt instruments (e.g., loans and bonds) acquired to fund construction would be repaid primarily through user fees, both for wastewater service and for recycled water supply deliveries. For some Member Agencies and/ or Participating Agencies, it is possible that the rates for all users in the wastewater and water agency service areas, not just the users receiving the recycled water supply, could be raised for debt service for this project. In addition, tax assessments could be used by some Member Agencies and/ or Participating Agencies, to retire project debt, although assessments are not now a large portion of agency revenues. The annual operational expenses for Phase 1 may be collected in the same manner as the annual debt service.

Because the exact funding mechanisms are not known, it is difficult to evaluate potential changes in customers' water and sewer fees. While it can be generally concluded that increased water and sewer fees would have an adverse effect to disposable personal income of customers in the three counties relative to the No Project/No Action Alternative, it would be speculative at this time to assess the extent to which customers may be financially affected. However, the use of recycled water may have a beneficial effect on future water and sewer fees by postponing fee increases for development of other water sources. The agencies are continuing to pursue additional outside funding mechanisms, and the portion of total project cost to be borne by rate payers is unknown at this time. Any potential environmental justice effects on low-income populations are discussed in **Section 3.15, Environmental Justice**.

### ***Alternative 1: Basic System (Program level)***

Compared to the CEQA Baseline, the Basic System projects would provide 83 miles of new pipeline, 2,158 HP of pumping capacity, treatment facilities providing 7.8 mgd of tertiary capacity, and 1,020 AF of storage. Compared to the No Action Alternative (NEPA Baseline), Basic System would provide 65 miles of new pipeline, 1,246 HP of pumping capacity, treatment facilities providing 7.3 mgd of tertiary capacity, and 955 AF of storage.

The impacts on water and sewer fees under the Basic System would be equivalent to and greater than the impacts discussed for Phase 1, in proportion to the facilities constructed under this alternative. **Table 3.16-13** shows the total costs analysis for the Basic System.

**TABLE 3.16-13  
ANTICIPATED TOTAL COSTS FOR THE BASIC SYSTEM**

Total Capital Costs	\$210,000,000
Annual Capital Costs	\$8,161,754
Annual O&M Costs	\$1,824,000
Total Annual Costs	\$9,985,754

SOURCE: CDM, 2008

Potential cost shares for the member agencies have not been developed at the project-level. The options available for funding the Basic System are the same as described in Phase 1. Based on a 50-year period of analysis and 3 percent real discount rate, the total annual implementation costs including capital and operation and maintenance would be approximately \$10 million. Depending on how the project is funded, water and sewer fees may increase even more than identified above, relative to the No Project and No Action Alternatives and Phase 1 because the Basic System would be comparatively more expensive to implement. As described above, it can be generally concluded that any increase in water and sewer fees would have an adverse impact on the disposable income of customers, but it is speculative at this time to estimate the extent of such an impact. However, the use of recycled water may have a beneficial effect on future water and sewer fees by postponing fee increases for development of other water sources.

***Alternative 2: Partially Connected System (Program level)***

Compared to the CEQA Baseline, the Partially Connected System would provide 139 miles of new pipeline, 3,454 HP of pumping capacity, treatment facilities providing 15.5 mgd of tertiary capacity, and 2,220 AF of storage. Compared to the No Action Alternative (NEPA Baseline), the Partially Connected System would provide 122 miles of new pipeline, 2,542 HP of pumping capacity, treatment facilities providing 15.4 mgd of tertiary capacity, and 2,155 AF of storage.

The impacts on water and sewer fees under the Partially Connected System would be equivalent to and greater than the impacts discussed for the Basic System, in proportion to the facilities constructed under this alternative. **Table 3.16-14** shows the life cycle costs analysis for the Partially Connected System.

**TABLE 3.16-14  
ANTICIPATED TOTAL COSTS FOR THE PARTIALLY CONNECTED SYSTEM**

Total Capital Costs	\$377,500,000
Annual Costs	\$14,671,724
Annual O&M Costs	\$2,789,000
Total Annual Costs	\$17,460,724

SOURCE: CDM, 2008

Potential cost shares for the member agencies have not been developed at the project-level. The options available for funding the Partially Connected System are the same as described in Phase 1. Based on a 50-year period of analysis and 3 percent real discount rate, the total annual implementation costs would be approximately \$17.5 million. Depending on how the project is funded, water and sewer fees may increase even more than under the No Project/No Action Alternative, Phase 1 and the Basic System because Partially Connected System would be comparatively more expensive to implement. As described above, it can be generally concluded that any increase in water and sewer fees would have an adverse impact on the disposable income of customers, but it is speculative at this time to estimate the extent of such an impact. However, the use of recycled water may have a beneficial effect on future water and sewer fees by postponing fee increases for development of other water sources.

### **Alternative 3: Fully Connected System (Program level)**

Compared to the CEQA Baseline, the Fully Connected System would provide 153 miles of new pipeline, 5,021 HP of pumping capacity, treatment facilities providing 20.8 mgd of tertiary capacity, and 2,220 AF of storage. Compared to the No Action Alternative (NEPA Baseline), the Fully Connected System would provide 135 miles of new pipeline, 3,907 HP of pumping capacity, treatment facilities providing 20.3 mgd of tertiary capacity, and 2,155 AF of storage.

The impacts on water and sewer fees under the Fully Connected System would be equivalent to and greater than the impacts discussed for the Partially Connected System, in proportion to the facilities constructed under this alternative. **Table 3.16-15** shows the life cycle costs analysis for the Fully Connected System.

**TABLE 3.16-15  
LIFE CYCLE COST ANALYSIS FOR THE FULLY CONNECTED SYSTEM**

Total Capital Costs	\$414,000,000
Annual Costs	\$16,090,315
Annual O&M Costs	\$3,067,000
Total Annual Costs	\$19,157,315

SOURCE: SCWA and Reclamation 2008

Potential cost shares for the member agencies have not been developed at the project-level. The options available for funding the Fully Connected System are the same as described in Phase 1. Based on a 50-year period of analysis and 3 percent real discount rate, the total annual implementation costs would be approximately \$19.2 million. Depending on how the project is funded, water and sewer fees may increase even more than under Phase 1, the Basic System, and the Partially Recycled System because the Fully Connected System would be comparatively more expensive to implement. As described above, it can be generally concluded that any increase in water and sewer fees would have an adverse impact on the disposable income of customers, but it is speculative at this time to estimate the extent of such an impact. As a basis of comparison between alternatives, notwithstanding that funding plans have not been formulated for any of the alternatives, the Fully Connected System has the potential for the greatest adverse impact to disposable incomes because it is the most expensive of all the alternatives. However, the use of recycled water may have a beneficial effect on future water and sewer fees by postponing fee increases for development of other water sources.

### **Impact 3.16.5: Impact on Recreational Spending. Recycled water deliveries to the Napa Salt Marsh Restoration Area could increase recreational spending in the region. (Beneficial)**

#### **No Project Alternative**

No project would be implemented under the No Project Alternative, therefore no impact is expected. For a discussion of the No Project under future conditions, see No Action Alternative below.

### **No Action Alternative**

Under the No Action Alternative, which includes consideration of future conditions, it is likely that a subset of water recycling projects would be implemented by the Member Agencies on an individual basis, without the benefit of regional coordination or federal funding.

For comparison to the Action Alternatives, it is estimated that approximately 17.5 miles of new pipeline, 912 HP of pumping capacity, treatment facilities providing 0.5 mgd of tertiary capacity, and approximately 65 AF of storage would be constructed by Member Agencies on an individual basis (see **Chart 3.16-1, No Action**).

Under future baseline (2020) conditions, recreational spending within the region could increase, in accordance with anticipated development allowed or recreational resources developed under the approved General Plans within the region. A discussion of individual Member Agencies is provided below.

#### **LGVSD/NMWD, Novato SD/NMWD, and Napa SD**

Recreational spending within the LGVSD, Novato SD, and the SVCSD would not likely change under the No Action Alternative.

#### **SVCSD**

Recreation at the Napa Salt Marsh would not likely change under the No Action Alternative. Recreation activities at the Napa Salt Marsh include hiking, bird watching, fishing, and hunting. The site receives approximately 1,000 visitors annually, of which approximately 60 percent visit for hunting and fishing and 40 percent visit for other nature-related recreation activities (JSA, 2003). Two duck clubs also operate at the Napa Salt Marsh (USACE, 2003). There would be no impact to recreational spending under the No Action Alternative.

#### **Phase 1 (Project level)**

Compared to the CEQA Baseline, Phase 1 projects would provide 46 miles of new pipeline, 1,655 HP of pumping capacity, treatment facilities providing 6.4 mgd of tertiary capacity, and 65 AF of storage. Compared to the No Action Alternative (NEPA Baseline), Phase 1 projects would provide 28 miles of new pipeline, 743 HP of pumping capacity, treatment facilities providing 5.9 mgd of tertiary capacity, and no additional storage.

The impacts to recreational spending under Phase 1 would be equivalent to and greater than the impacts discussed for the No Action Alternative, in proportion to the facilities constructed under this alternative.

The project would deliver a reliable, water supply to the Napa Salt Marsh for restoration purposes via new pipelines from the SVCSD WWTP. During non-peak periods, SVCSD could potentially provide up to 2,362 acre-feet of recycled water to the Napa Salt Marsh. The amount of water required at the Napa Salt Marsh would be determined by SVCSD and appropriate regulatory agencies.

Recycled water deliveries would enhance wildlife and estuarine habitat, which could improve recreational opportunities and attract more visitors to the site. More visitors to the site would likely increase recreation-related spending in the region because visitors may stop to purchase food, picnic supplies, gasoline, or other recreation goods. A U.S. Army Corps Engineers (USACE) study (2003) estimated that visitors within 30 miles of the site spend \$11.89 per person on day use, non-boating recreation (USACE, 2003). This increased spending within the regional economy would boost sales and output for local recreation-related businesses, which would be a beneficial impact. This impact would only be an overall increase to the regional economy if visitors from outside the region traveled into the region to visit the site and purchased goods and services within the region. Otherwise, it is assumed that new local visitors are already spending their money elsewhere in the region on other goods and services, which would not result in a net increase in economic output. This analysis does not assume that many new visitors from outside the action area would visit the Napa Salt Marsh as a result of this project. Therefore, this impact would be minor, however beneficial, relative to the No Project/No Action Alternatives.

#### ***Alternative 1: Basic System (Program level)***

Compared to the CEQA Baseline, the Basic System projects would provide 83 miles of new pipeline, 2,158 HP of pumping capacity, treatment facilities providing 7.8 mgd of tertiary capacity, and 1,020 AF of storage. Compared to the No Action Alternative (NEPA Baseline), Basic System would provide 65 miles of new pipeline, 1,246 HP of pumping capacity, treatment facilities providing 7.3 mgd of tertiary capacity, and 955 AF of storage.

The impacts to recreational spending associated with the Basic System would be generally similar to the impacts discussed above for Phase 1, to the extent that additional recycled water supplies would further enhance wildlife and estuarine habitat and improve recreational and visitor opportunities.

#### ***Alternative 2: Partially Connected System (Program level)***

Compared to the CEQA Baseline, the Partially Connected System would provide 139 miles of new pipeline, 3,454 HP of pumping capacity, treatment facilities providing 15.9 mgd of tertiary capacity, and 2,220 AF of storage. Compared to the No Action Alternative (NEPA Baseline), the Partially Connected System would provide 122 miles of new pipeline, 2,542 HP of pumping capacity, treatment facilities providing 15.4 mgd of tertiary capacity, and 2,155 AF of storage.

The impacts to recreational spending associated with the Partially Connected System would be generally similar to the impacts discussed above for Phase 1, to the extent that additional recycled water supplies would further enhance wildlife and estuarine habitat and improve recreational and visitor opportunities.

#### ***Alternative 3: Fully Connected System (Program level)***

Compared to the CEQA Baseline, the Fully Connected System would provide 153 miles of new pipeline, 5,021 HP of pumping capacity, treatment facilities providing 20.8 mgd of tertiary capacity, and 2,220 AF of storage. Compared to the No Action Alternative (NEPA Baseline), the Fully

Connected System would provide 135 miles of new pipeline, 3, 907 HP of pumping capacity, treatment facilities providing 20.3 mgd of tertiary capacity, and 2,155 AF of storage.

The impacts to recreational spending associated with the Fully Connected System would be generally similar to the impacts discussed above for Phase 1, to the extent that additional recycled water supplies would further enhance wildlife and estuarine habitat and improve recreational and visitor opportunities.

### 3.16.4 Impact Summary by Service Area

**Table 3.16-16** provides a summary of potential socioeconomic impacts relative to NEPA associated with implementation of the alternatives.

**TABLE 3.16-16  
POTENTIAL IMPACTS AND SIGNIFICANCE – SOCIOECONOMICS**

Proposed Action	Impact by Member Agency Service Areas			
	LGVSD/ NMWD	Novato SD/ NMWD	SVCS	Napa SD/ Napa County
<b>Impact 3.16.1: Effect on the regional economy.</b>				
No Action Alternative	LTS	LTS	LTS	LTS
Phase 1	BI	BI	BI	BI
Alternative 1: Basic System	BI	BI	BI	BI
Alternative 2: Partially Connected System	BI	BI	BI	BI
Alternative 3: Fully Connected System	BI	BI	BI	BI
<b>Impact 3.16.2: Effect on the agricultural economy.</b>				
No Project Alternative	NI	NI	NI	NI
No Action Alternative	NI	NI	NI	NI
Phase 1	NI	NI	NI	BI
Alternative 1: Basic System	NI	NI	NI	BI
Alternative 2: Partially Connected System	NI	NI	NI	BI
Alternative 3: Fully Connected System	NI	NI	NI	BI
<b>Impact 3.16.3: Impact on winery-related industry.</b>				
No Project Alternative	NI	NI	NI	NI
No Action Alternative	NI	NI	NI	NI
Phase 1	NI	NI	NI	BI
Alternative 1: Basic System	NI	NI	NI	BI
Alternative 2: Partially Connected System	NI	NI	NI	BI
Alternative 3: Fully Connected System	NI	NI	NI	BI
<b>Impact 3.16.4: Increase in water/sewer charges.</b>				
No Project Alternative	NI	NI	NI	NI
No Action Alternative	NI	NI	NI	NI
Phase 1	LTS	LTS	LTS	LTS

**TABLE 3.16-16 (Continued)**  
**POTENTIAL IMPACTS AND SIGNIFICANCE – SOCIOECONOMICS**

Proposed Action	Impact by Member Agency Service Areas			
	LGVSD/ NMWD	Novato SD/ NMWD	SVCS	Napa SD/ Napa County
<b>Impact 3.16.4: Increase in water/sewer charges. (cont.)</b>				
Alternative 1: Basic System	LTS	LTS	LTS	LTS
Alternative 2: Partially Connected System	LTS	LTS	LTS	LTS
Alternative 3: Fully Connected System	LTS	LTS	LTS	LTS
<b>Impact 3.16.5: Impact on Recreational Spending.</b>				
No Project Alternative	NI	NI	NI	NI
No Action Alternative	NI	NI	NI	NI
Phase 1	BI	BI	BI	BI
Alternative 1: Basic System	BI	BI	BI	BI
Alternative 2: Partially Connected System	BI	BI	BI	BI
Alternative 3: Fully Connected System	BI	BI	BI	BI

NI = No Impact  
BI = Beneficial Impact  
LTS = Less Than Significant

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