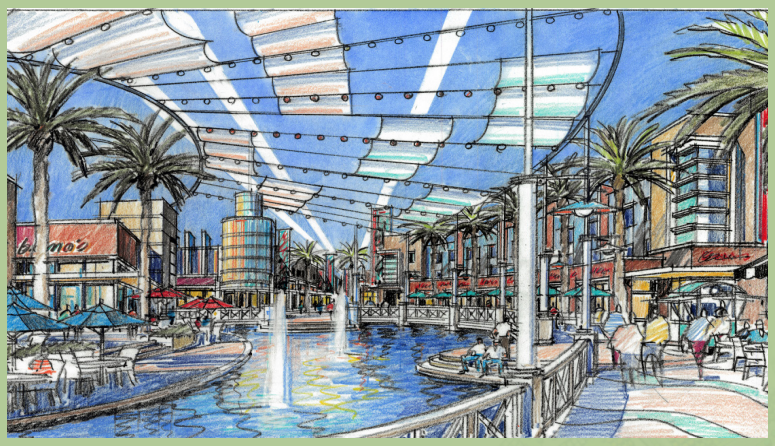
QUAY VALLEY

PRELIMINARY DESIGN PLAN

New Community Application



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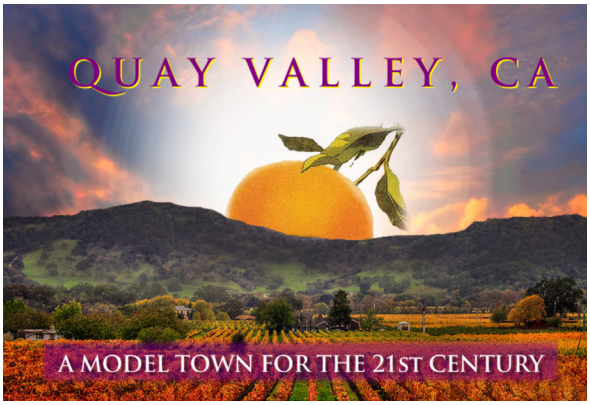

Quay Valley

Preliminary Design Plan

New Community Application

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Purpose of Document

The Quay Valley Preliminary Design Plan (PDP) is the first step under the New Community Application and Processing procedure for a project area totaling approximately 7,175 acres within Kings County, California. This document is intended to provide the overall direction in generalized terms of the proposed land use changes and necessary infrastructure and services needed to support the proposed community.

The project applicant, GROW Holdings, LLC intends to utilize this PDP application to lead into the 2nd and 3rd phases of the application process with a New Community Plan and subsequent Specific Plan(s) respectfully. The proceeding Community Plan and subsequent Specific Plan(s) are intended to establish specific land uses, regulations and guidelines for a comprehensive master planned community.

This Preliminary Design Plan is a part of the application process for a General Plan Amendment to change the Development Code, and does not render a decision by the County for entitlement purposes. The Kings County Community Development Agency's acceptance of this application does not in any way commit the County to approval of the entitlement or development of the proposed new community.

The California Environmental Quality Act (CEQA) review and compliance processes are tied to the Phase Two and Phase Three application phases. If the County determines these applications are sufficient, the next steps would be to move forward toward public hearings and Kings County Planning Commission consideration before going onto Board of Supervisors consideration. This PDP application contains a preliminary Land Use Plan and Conceptual Master Plans for services and infrastructure which will be evaluated against the Kings County General Plan goals, policies, and objectives.

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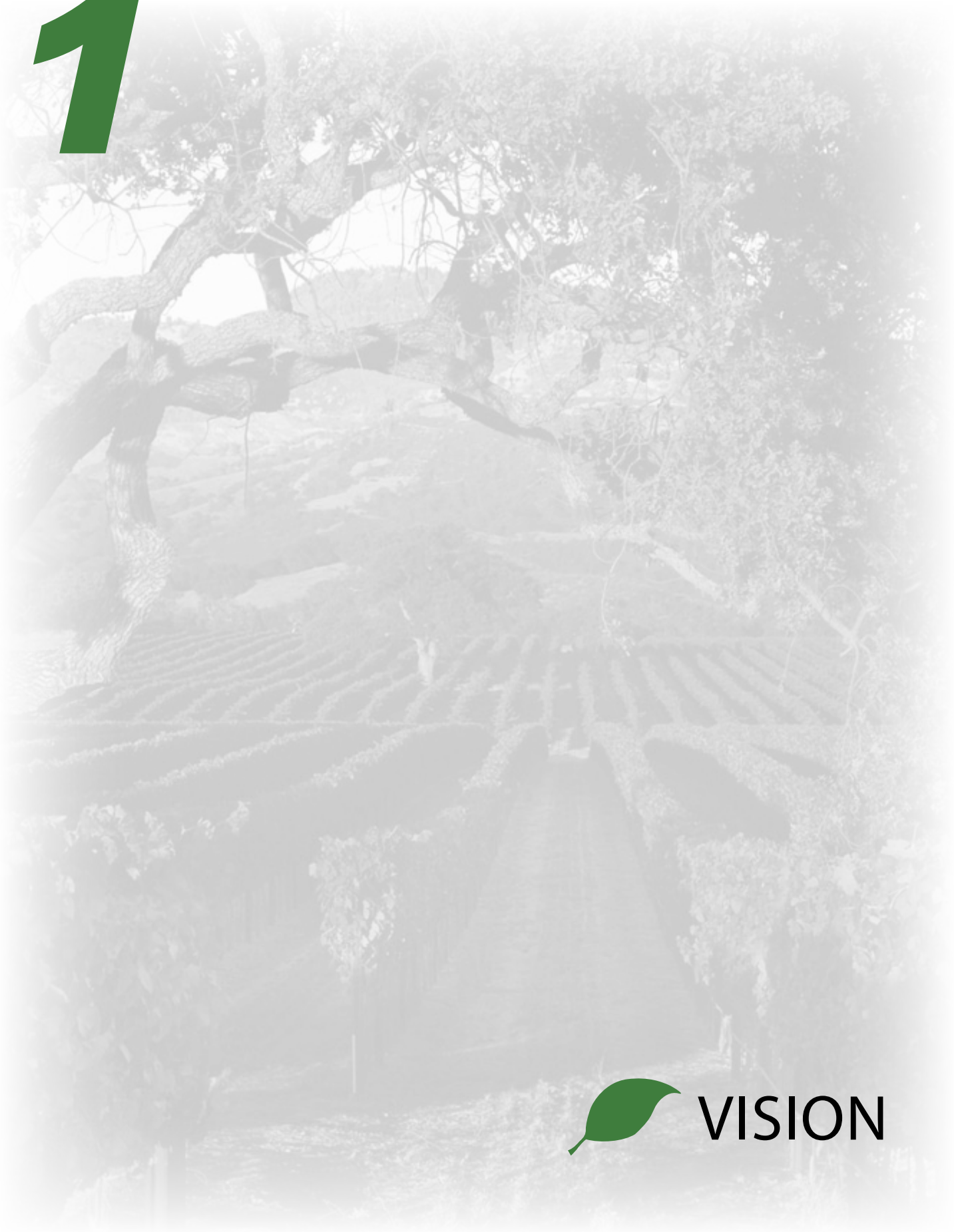

VISION

1.1 NEW COMMUNITY VISION

The founding vision for Quay Valley is a model new town for the 21st century; a melding of the early 20th century values and agrarian traditions of small rural towns of California's San Joaquin Valley with cutting edge, self sustaining technology and a world-class entertainment and retail destination. The proposed master plan represents a fresh departure from typical suburban development, a community that strives to ensure the long-term viability of natural resources and social systems.

A balanced mix of land uses is proposed within Quay Valley, creating an economically viable center where residents can live, learn, work, play, and shop within a short walk or bike ride. Full integration of alternative transportation methods is envisioned, which would result in a lifestyle that minimizes the need for automobiles thereby reducing greenhouse gas emissions to the fullest extent possible.

The over arching priorities of the 2035 Kings County General Plan call for protection of prime agricultural land, integration of smart growth principles and an increase of economic and community sustainability with an emphasis on energy efficiency, water re-use, and greenhouse gas reduction. The following General Plan objectives and policies are applicable:

- **Land Use Objective D1.2**: Establish Community Plan land use policies and associated improvement standards to integrate smart growth principles and compact urban design to revitalize existing communities.
- **Land Use Objective D1.4**: Designate sufficient land to accommodate projected urban population growth to the year 2035 and encourage development of safe and affordable quality housing alternatives for all income levels while ensuring the proper payment of fair share impact fees.
- **Land Use Policy F1.1.3**: New community proposal(s) are to have a close proximity to major transportation facilities, State Highways or Interstate Freeway.

Although LU Objective D1.2 indicates growth is to be delegated to existing communities, the proposed project would respond to the needs of the projected population increase within Kings County by converting areas of diminished agricultural importance into a wide variety of uses. The proposed site location along Interstate 5 outside designated prime agricultural land areas is consistent with General Plan policy F1.1.3. Overall, the reduced reliance on the automobile and execution of other smart growth principles described within this document carry out the intent of many of the land use policies and objectives of the Kings County General Plan .

1.2 GUIDING PRINCIPLES

In accordance with what has become known as smart growth principles, the proposed plan for Quay Valley embodies many of the elements reminiscent of small rural towns of the early 1900's before our built environment was shaped by automobile transportation design. Shaded tree lined streets, front porches, and the ability to walk or bike to work is planned to be a part of everyday life. "Main Street" shopping within close proximity to homes and fresh, healthy food from nearby productive agricultural areas are vital components of the master plan. This close proximity of many land use types would result in a reduction of automobile trips, and is key to the Quay Valley lifestyle.

Simultaneously, cutting edge, environmentally friendly technology is envisioned to launch the community into the future. Sustainable building practices far beyond the California Building Code minimum standards for energy efficiency are proposed. Implementation of the following framework of core values is vital to the success of the Preliminary Design Plan for Quay Valley:

1. Honor the Agricultural Heritage of Kings County

Create a community firmly rooted in the values of "New Ruralism" where agriculture is valued and incorporated throughout. Promote agricultural education and participation through provision of community gardens and farmers markets. Provide mechanisms for creation of a healthy community.

2. Integrate Environmentally Responsible Practices

Adopt practices that ensure the long term viability of natural resources and integrate sustainability into every aspect of the community design. Provide systems and facilitate practices that go beyond minimization of harmful impacts to regeneration and healing of the surrounding environment.

3. Optimize Open Space Relationships

Provide community gathering spaces and recreational opportunities in locations easily assessable to residents, visitors, employees and students.

4. Create Connectivity

Encourage mobility by providing enhanced access to all plan features through an extensive network of pedestrian and bicycle trails. Include new systems for alternative transportation, reducing reliance on the automobile to the maximum possible extent.

5. Encourage Diversity

Provide a complementary, balanced mix of land uses and amenities, as well as a variety of home types appealing to a range of buyers within a diverse mix of life stages, needs, and preferences.

6. Enhance Local Economic Well-Being

Provide office, industrial, retail, educational, medical, and entertainment land uses which would result in job creation and enhancement of the regional and local economy.

7. Celebrate Uniqueness of Place

Create memorable places that capitalize on the unique aspects of the site location and surrounding environment through carefully crafted land planning, architecture, and landscape design.

8. Encourage Life-Long Learning

Provide a regional higher education center geared toward providing learning opportunities for people of all ages. Encourage learning about environmental systems and processes through provision of interpretive centers and signage.

9. Encourage Public-Private Partnerships

Actively pursue community partnerships between businesses and public agencies as an essential component of the civic, life long learning, healthcare, and employment infrastructure.

10. Create a Unique Lifestyle

Shape a new way of living distinguished by a complementary and lasting relationship between the land and the community. This embodiment of a harmonious balance between the natural and built environments is the core of the Quay Valley lifestyle.

1.3 COMMUNITY SUMMARY

Consisting of approximately 7,175 acres along both sides of Interstate 5 at the southern border of Kings County, the new community of Quay Valley is envisioned as a self-sustaining model new town featuring a seamless blending of the best qualities of traditional town planning with a foundation of integrated land stewardship. As envisioned, Quay Valley would be one of the most modern, livable, and environmentally responsible communities in the world. The following major components provide a summary of the overall Preliminary Design Plan:

- A series of residential villages will be home to 80,000 - 85,000 permanent residents in approximately 26,000 dwelling units. Implementation of advanced construction methods and materials for conservation and pollution prevention is planned to bring forth an environmentally sustainable community.
- A family-oriented commercial entertainment destination of over 1,900 acres featuring retail, themed resort hotels, an action sports complex and other attractions is planned to bring visitors from outside the region, having a positive impact on the surrounding economy.
- Additional proposed commercial land uses providing a significant job base include a town center of approximately 50 acres, 170 acres of village and highway commercial areas, a 110-acre office and university research park, a 30-acre medical center, 350 acres of industrial and manufacturing uses, and a 230-acre office and residential mixed use area.
- A civic center totalling 6 acres is proposed within the town center which is to include an administration and law enforcement facility.
- School facilities include a proposed new charter school system. Facilities will include sixteen elementary schools serving grades K-6, each with a capacity of 600 students, two middle schools serving grades 7-8 with a capacity of 1,000 students,

and two high schools serving grades 9-12 with a capacity of 2,000 students.

- Permanent agriculture is planned for over 200 acres of working orchards, vineyards, and community gardens. Additionally 250 acres has been set aside as areas of agriculture buffer zones.
- The historic contribution of production of petroleum is planned to be acknowledged through setting aside 140 acres within seven 10-acre oil and gas drilling areas, each surrounded by a 10-acre buffer area.
- A network of open space and greenways totalling approximately 130 acres is planned to include passive and active recreation areas designed to appeal to a variety of ages and life stages.
- A linear park totaling 103 acres is planned to serve a variety of functions including flood control, stormwater collection and conveyance, wildlife habitat and transportation. Adjacent bicycle paths and pedestrian trails provide recreational opportunities along the perimeter.
- Community infrastructure uses are to be allocated within approximately 170 acres including three Interstate 5 interchanges, sewer treatment plants, and water reservoirs.

This balanced mix of uses is planned to be sensitively integrated into the surrounding community through the use of a variety of types of buffers. Six edge conditions are identified within this document which designate appropriate treatments for blending specific elements with the surrounding agriculture, riparian habitat, utility easement and Interstate 5.

Guided by a cohesive central vision and over arching core principles, this PDP is the first step of the New Community Application process. The Conceptual Master Plans for proposed land uses, public services and infrastructure within this document will be evaluated against the goals, policies, and objectives of the Kings County General Plan during the application review process.

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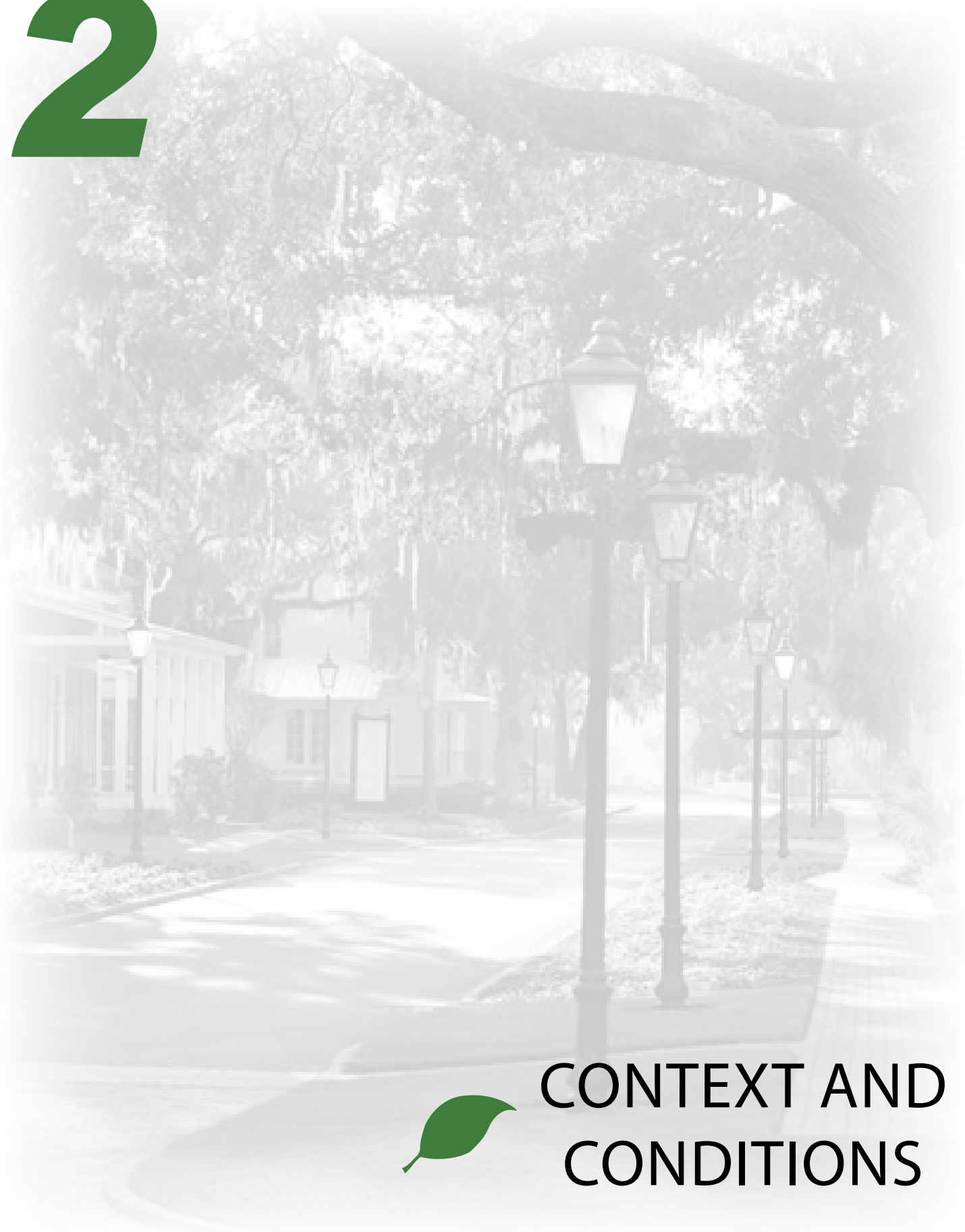


CONTEXT AND CONDITIONS

2.1 SITE LOCATION AND CONTEXT

The project area is located within south central Kings County, adjacent to the Kern County border, and is intersected by Interstate 5. A total of 1,056 acres lies on the western side of I-5 and 6,119 acres are located on the eastern side for a total of 7,175 acres. The project area extends approximately six miles north from the Kern / Kings County line(refer to Figures 2.1, *Regional Location Map* and 2.2, *Local Vicinity Map)*. The Kings County General Plan designates the area as General Agricultural – 40 Acre Minimum (refer to Figure 2.4, *General Plan Designation*), and the Kings County Development Code designates the area as AG-40, General Agriculture. The Property is comprised of the following assessor's parcel numbers (also shown in Figure 2.3, *Assessor's Parcel Numbers*):

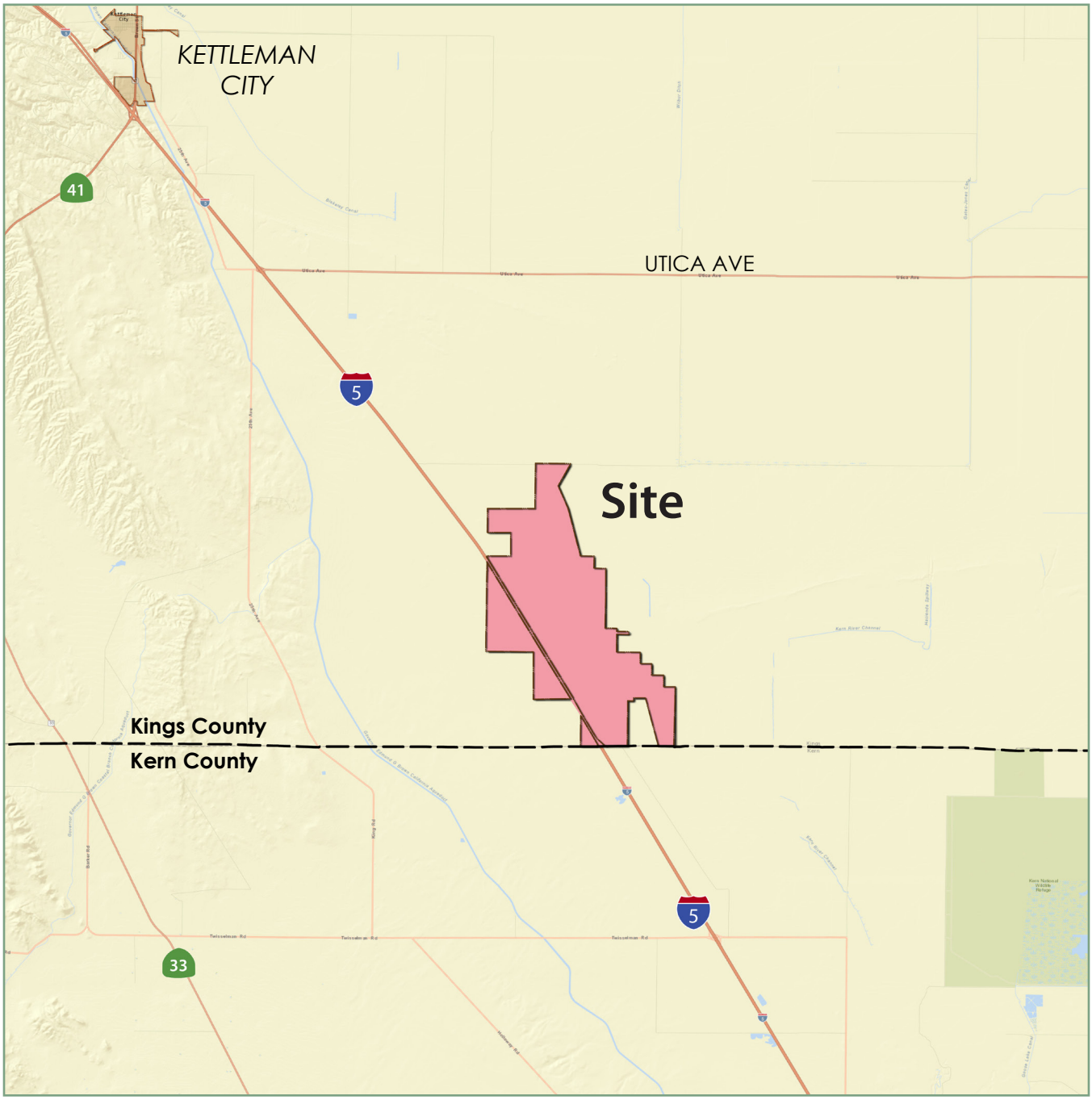
Table 2.1: Assessor's Parcel Numbers (APNs)

048-260-005	048-280-023	048-300-007	048-300-022	048-370-015	048-380-072
048-270-001	048-280-025	048-300-008	048-300-024	048-370-016	048-380-073
048-270-012	048-280-026	048-300-009	048-370-002	048-370-017	048-380-026
048-280-017	048-280-027	048-300-018	048-370-003	048-370-018	
048-280-002	048-280-028	048-300-019	048-370-004	048-370-019	
048-280-003	048-280-029	048-300-020	048-370-006	048-300-025	
048-280-022	048-300-006	048-300-021	048-370-007	048-300-026	

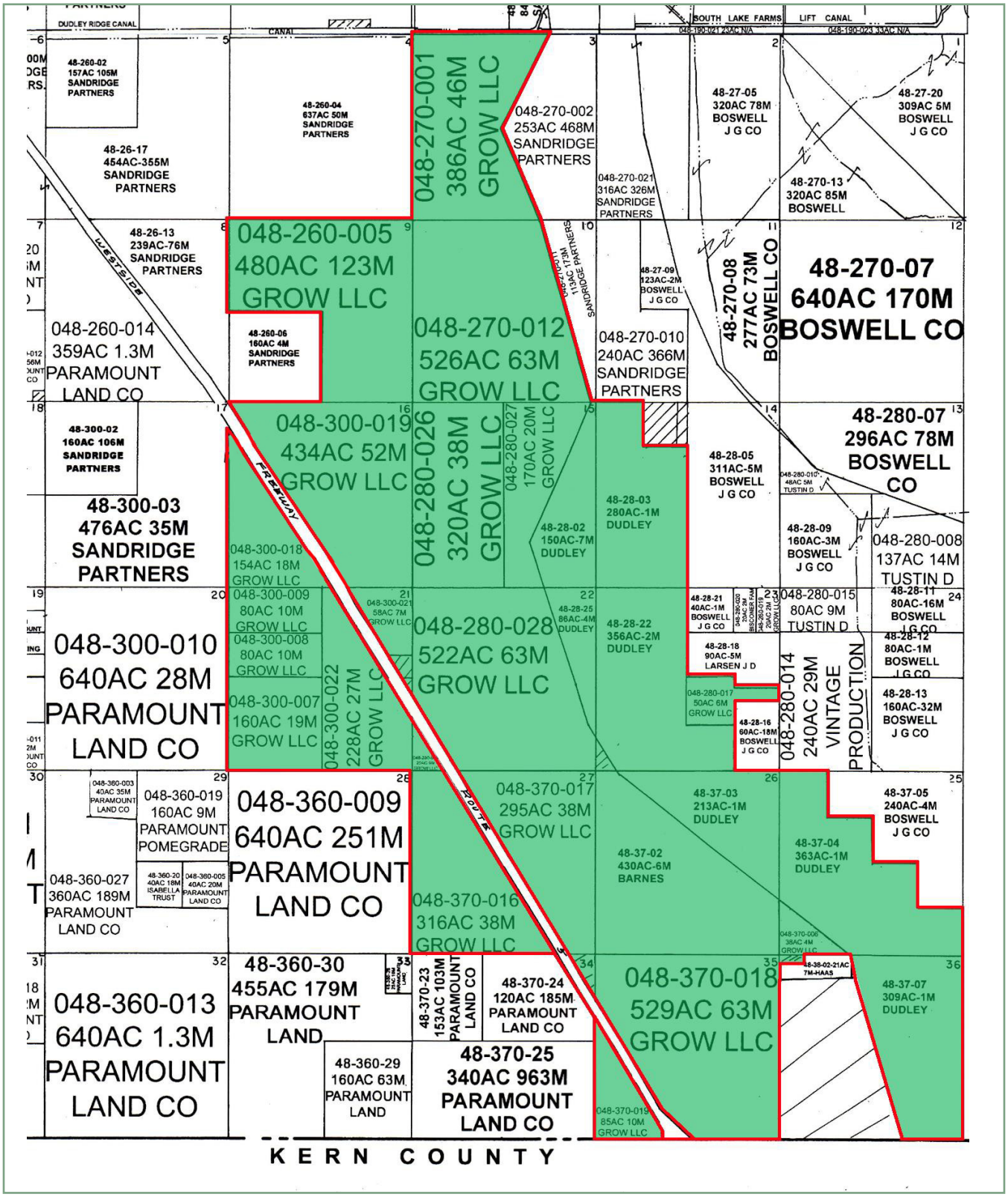
The neighboring properties primarily consist of fallow agricultural land. Portions of the neighboring properties to the east lie within the former Tulare Lake bed and are occasionally flooded in wet years by the farmers in the area to provide for water storage. The neighboring properties to the west consist of fallow agricultural land, with some scattered acreage utilized for growing and cultivating almonds and pistachios. The nearest active agriculture area is a pistachio orchard approximately one quarter mile south of the southwest corner of the property.

REGIONAL LOCATION MAP
FIGURE 2.1

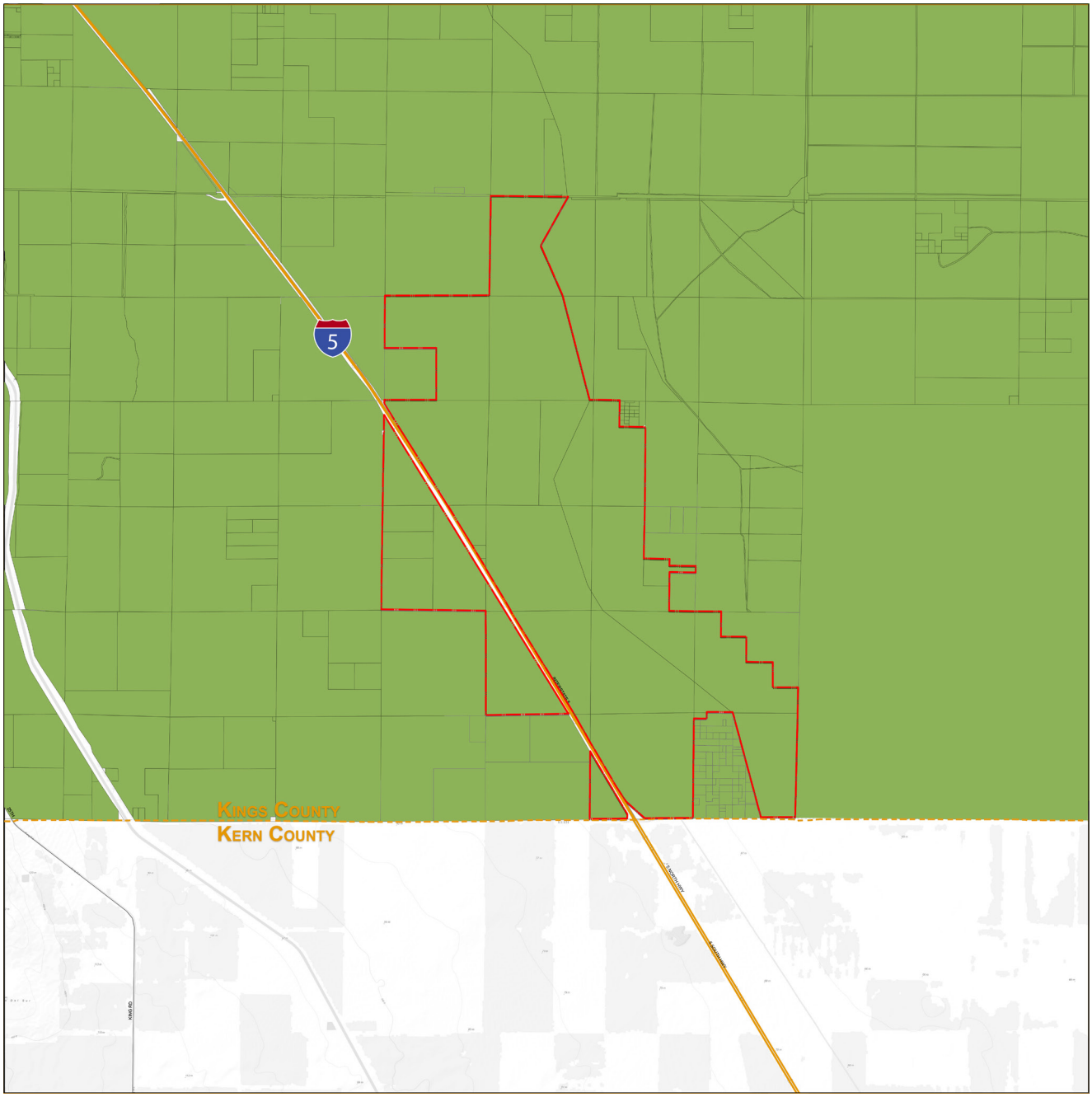
LOCAL VICINITY MAP
FIGURE 2.2



ASSESSOR'S PARCEL MAP
FIGURE 2.3



GENERAL PLAN DESIGNATION
FIGURE 2.4



LEGEND

	General Agriculture – 40 Acre Minimum
	Project Boundary

2.2 SITE CONDITIONS

Consisting of fallow, previously disturbed land, the project area has most recently been used for grazing cattle. Approximately 1,700 acres of the project site are defined as "prime farmland" by Kings County Assessor's Office according to assessed crop value, as shown on Figure 2.5, *Prime Farmland Maps*. These areas are either outside Williamson Act contracted agricultural land protection areas or in the process of non-renewal. The Williamson Act Contract (Kings County Land Conservation Contract Number 932) covering the Dudley Ridge Oil Company property of 1,757 acres expires on January 1, 2017.

Interstate 5 bisects the site from north to south, and access to the Quay Valley proposed land use areas is intended be established from three proposed interchanges from I-5 (refer to Chapter 3, *Community Structure* for a complete description of proposed interchanges). Currently, limited access to the site exists from I-5. The area adjacent to I-5 measures approximately 25,000 linear feet (4.7 miles), and the I-5 portion of the site area is 132 acres.

Portions of the project area along the southeast boundary adjacent to the Tulare Lake Basin appear within the FEMA 100-year floodplain, as shown in Figure 2.6, *FEMA Zone Map*. These areas are subject to flooding during very rare and extreme rainfall events. Flooding is typically shallow, with depths of one to two feet above the nearly level ground surface. A Conditional Letter of Map Revision based on a proposed levee system has been submitted to FEMA indicating changes to the existing areas which would result in modifications to the 100-year floodplain location.

Mineral and oil reserves are present within the site area which historically has been used for production of petroleum reserves. Additional information regarding oil and gas production is included in Chapter 3, *Community Structure*. The site lies within the Pacific, Gas, and Electric service territory, with the State's main north / south transmission grid bisecting a portion of the site. The project area contains several easements. A major three-tower, 500kV and 230kV section of the State's power grid runs parallel to Interstate 5 on the east side in a northwest-southeast direction from the Kings/Kern County line for approximately five miles. The easement for all three towers is 342.5 feet wide. A single tower 230kV portion of the power grid runs in an east-west direction within a 100 foot easement. This easement runs across the project site and Interstate 5 at approximately three and one-half miles north of the Kings/Kern County line.

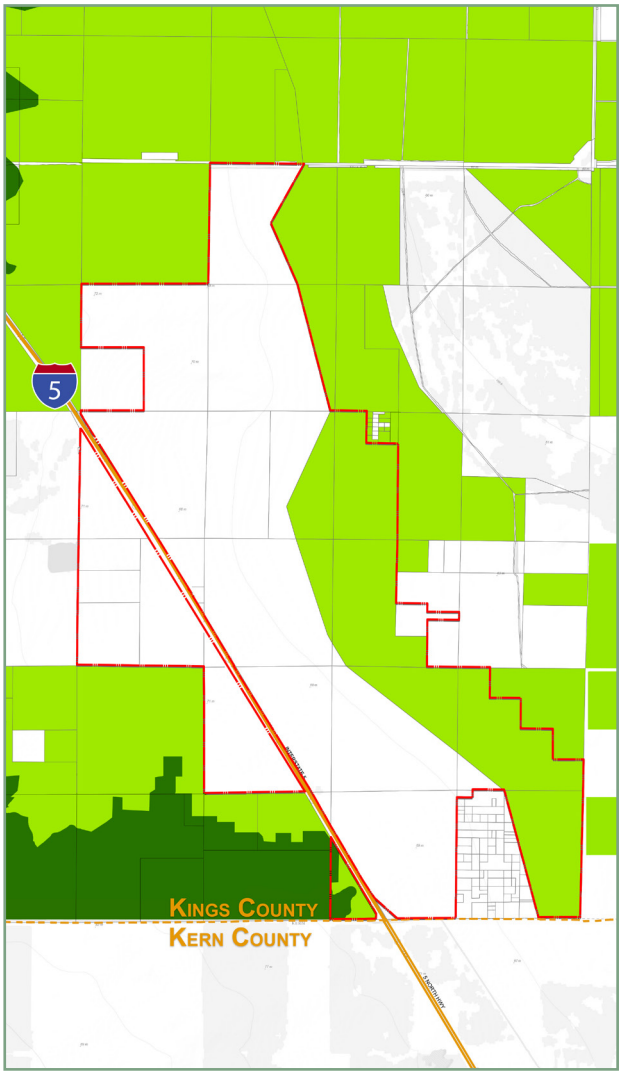
Two active Pacific Gas and Electric natural gas pipeline easements 15 feet wide run parallel to the east side of Interstate 5 north from the Kings/Kern County line. A Shell Oil Company oil pipeline runs within a 15 foot easement parallel to the east side of Interstate 5 north from the Kings/Kern County line.

A Hyperloop Research Center is to be developed by Hyperloop Transportation Technologies (HTT) along a five mile stretch of Interstate 5. The location of the stations

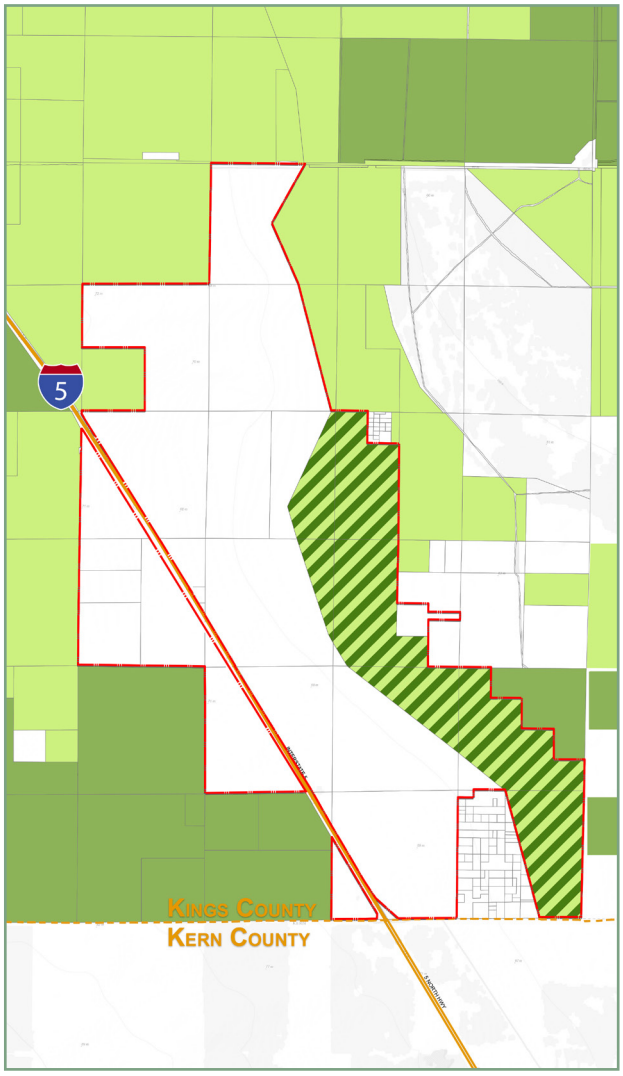
and track alignment is shown in Figure 2.7, *Hyperloop Development Center*. The concept proposes pressurized "capsules" or "pods" that move through an elevated continuous steel tube maintained at a partial vacuum, similar to maglev technology. This facility will be submitted as a separate project from this PDP and will have a separate approval process.

PRIME FARMLAND MAPS
FIGURE 2.5

A: ASSESSOR'S PRIME FARMLAND



B: WILLIAMSON ACT & FARMLAND SECURITY ZONE MAP



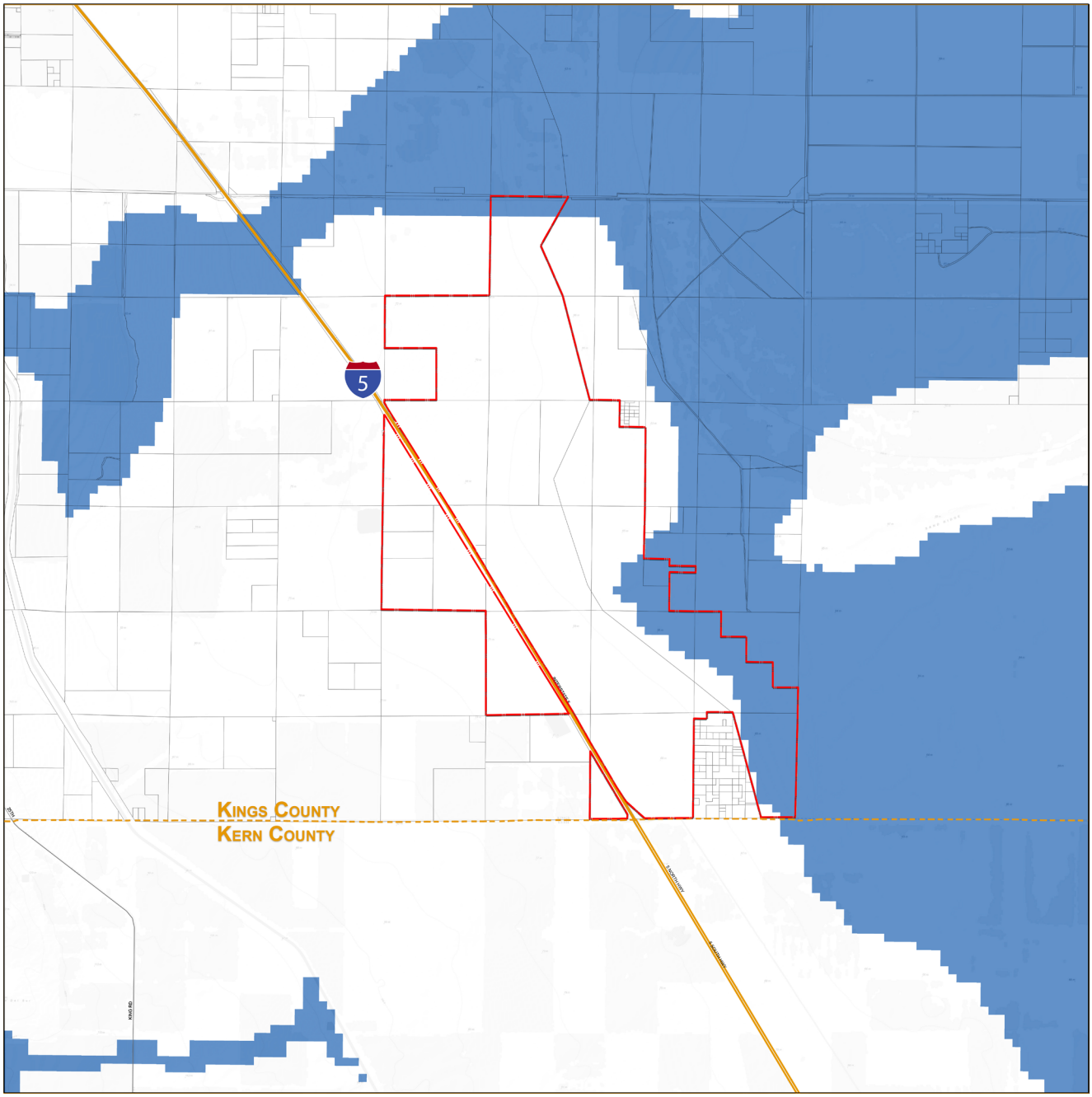
LEGEND

	Department of Conservation - Prime
	Assessor - Prime
	Project Boundary

LEGEND

	Farmland Security Zone - 20 Year Contracted Land
	Williamson Act (Prime) - 10 Year Contracted Land
	Williamson Act - Non Renewal
	Project Boundary

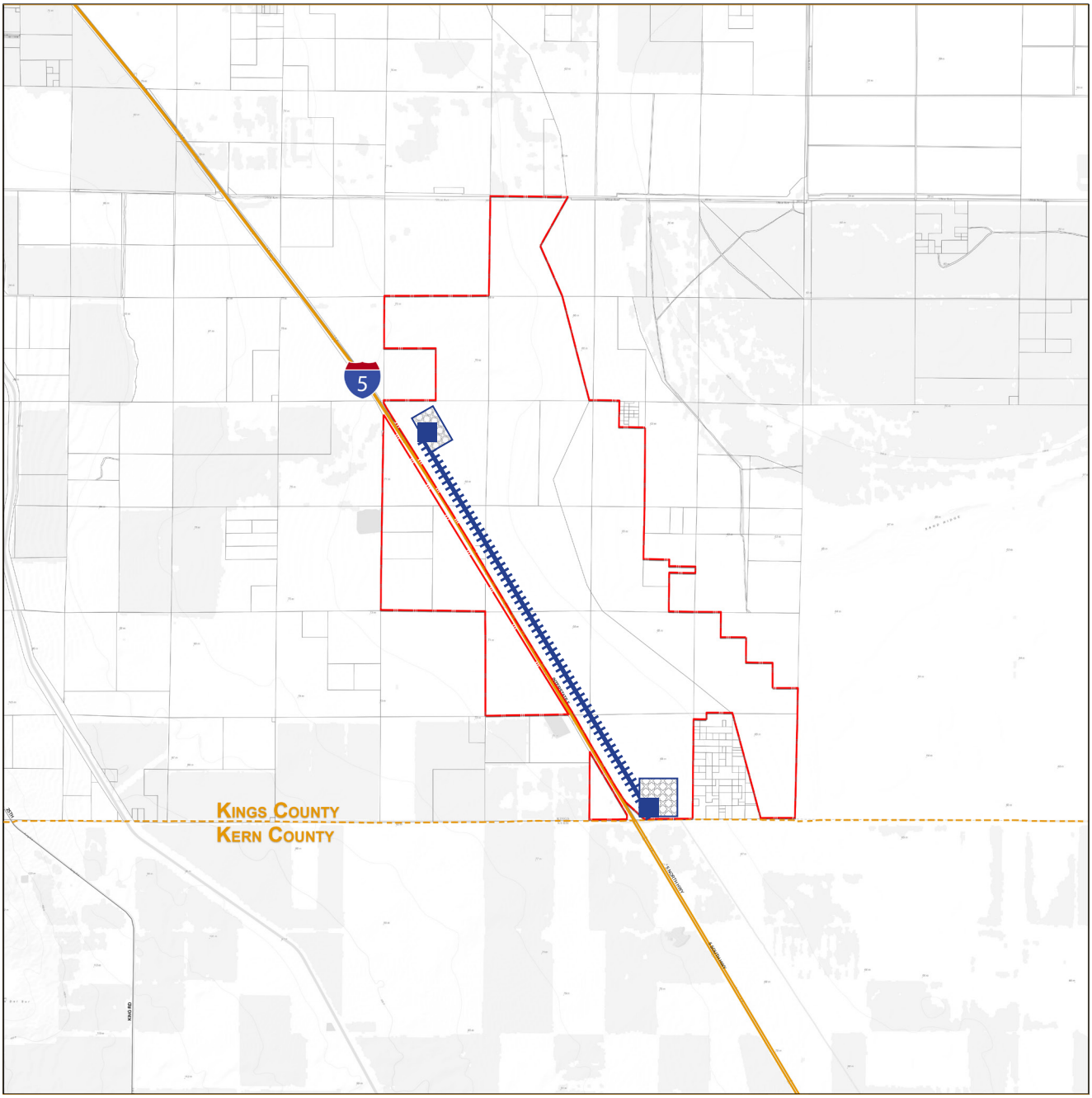
FEMA ZONE MAP
FIGURE 2.6



LEGEND

	100 Year Flood Plain
	Project Boundary

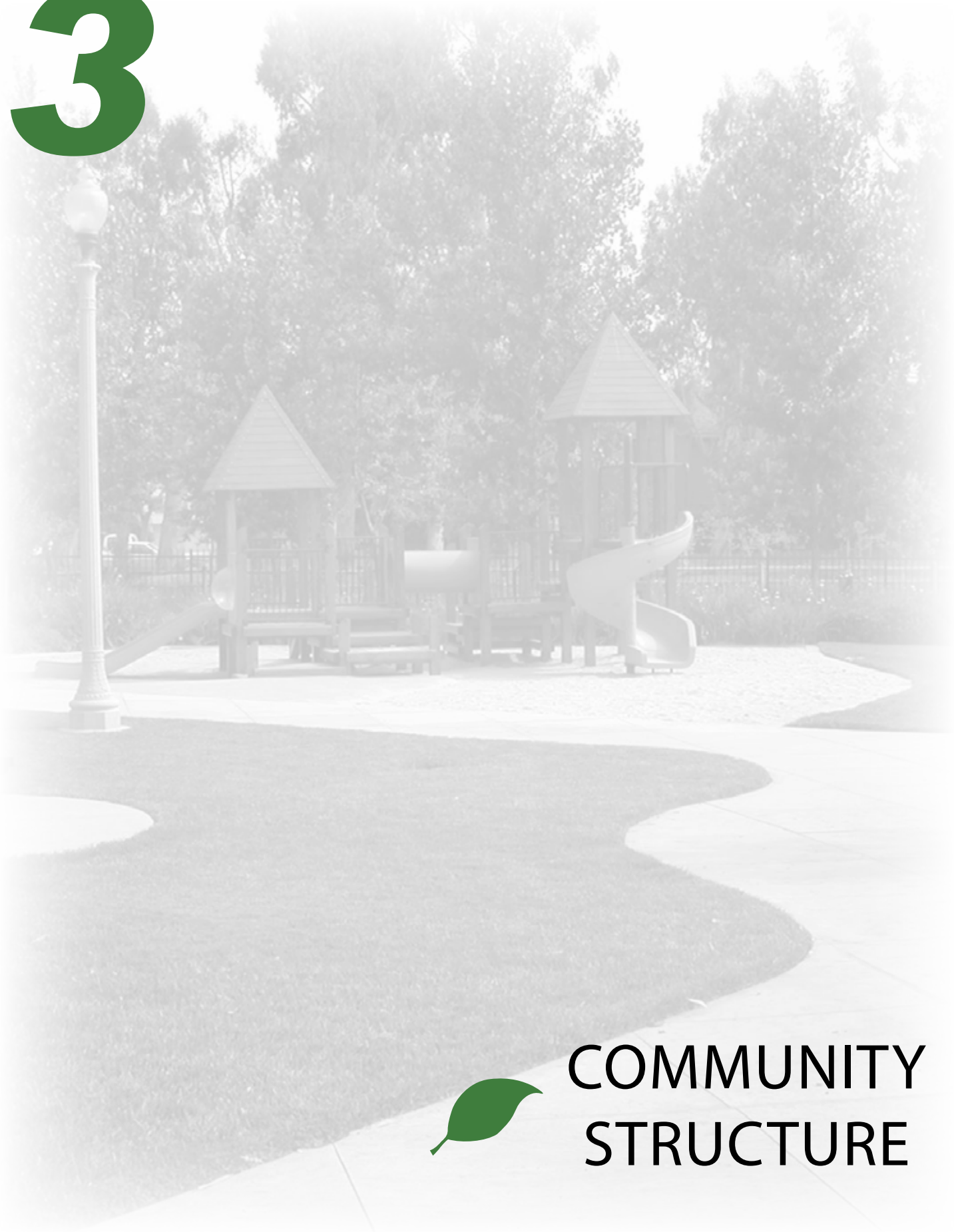
HYPERLOOP RESEARCH DEVELOPMENT CENTER
FIGURE 2.7



LEGEND

	Proposed HTT Alighment
	HTT Station
	HTT Station Area
	Project Boundary

3



COMMUNITY STRUCTURE

3.1 CONCEPTUAL LAND USE PLAN

The Conceptual Land Use Plan for Quay Valley provides a guide for the ultimate development of the project area, and has been designed to establish a community setting of well-balanced land uses. A diverse, integrated mix of residential, commercial, light industrial, and natural resources uses is planned. The scale of the project area presents a unique opportunity to create a community that fulfills the Kings County General Plan land use objective to provide safe and affordable, high quality housing for all income levels while integrating smart growth principles and compact urban design.

A sensitivity to adjacencies is reflected through the thoughtful placement of diverse land uses as shown in the Land Use Diagram below. Upon completion of the proposed plan, the 5-mile Interstate 5 corridor would be flanked on both sides by a destination entertainment / retail center along the central and north portions of the site. Industrial and transportation commercial uses would be located near the Kern/Kings County boundary. A 300' - 500' wide agricultural buffer area would separate the industrial and commercial areas from the residential, mixed use, and open space areas.

LAND USE DIAGRAM

A diagram of the community concept for Quay Valley is included in Figure 3.1, *Land Use Plan, and* summarized in Table 3.1, *Statistical Land Use Table*. Where possible, the proposed land use categories have been created to coincide with the Kings County General Plan designations. A full description of each proposed use is included within this chapter. The Specific Plan, to be prepared as a part of the third stage of the New Community Procedure will regulate the development standards for the project area. An accompanying set of design guidelines will guide the physical character of all development to ensure that a high level of design quality, sense of place and identity are established.

3.1.1 Residential Development

California State Housing Element law requires each city and county to identify and analyze existing and projected housing needs within their jurisdiction and prepare goals, policies, programs and quantified objectives to further the development, improvement, and preservation of housing. The following policies contained within the 2035 Kings County General Plan Housing Element are applicable to the Quay Valley PDP:

- **Goal 2. Facilitate and encourage the provision of a range of housing types and prices to meet the diverse needs of residents.**
- **Policy 2.4: Support the construction of high quality single and multi-family housing which is well designed and energy efficient.**

A mix of housing appealing to a wide range of income levels, lifestyles, and age groups is envisioned within Quay Valley. The Land Use Plan designates approximately 2,900 acres within the residential land use area. An additional 140 acres has been designated for development of residential uses within the Mixed Use areas. New homes planned within the project area comprise approximately 26,000 dwelling units. Residential neighborhoods will include a mix of single family detached, single family attached, and multi-family housing types developed at several density levels ranging from 5.0 dwelling units per acre up to 25.0 dwelling units per acre.

Walkability has been prioritized within the Quay Valley Land Plan. The creation of five villages provides a variety of uses and open space within close proximity to homes. Approximately 80% of residences would be located within one half mile of one of the five mixed use core areas (refer to Figure 3-2, *Walkability Diagram*). Residential densities would radiate outward from each village core - highest residential densities would be within the five Downtown Mixed Use (DMU)areas, and high density multi-family areas would be located within close proximity. Medium and low density single-family neighborhoods would be closer to the residential perimeter. Each village would be composed of several neighborhoods centered on an activity node such as a park, school, neighborhood commercial, or community recreation facility.

Construction phasing has been planned within the context of the village structure. The I-5 interchanges at the center and southern boundary are planned to be the first to

be constructed, so the first phase will include the Town Center Downtown Mixed Use area and surrounding residential areas. Future phases would radiate outward from the center, as depicted in Figure 3-3, *Conceptual Phasing Plan*.

Community design should encourage social interaction and a mix of ages, uses and lifestyles. A diverse mixture of housing types is to be achieved through the designation of a minimum and maximum number of units for each land use category. Residential density is calculated by dividing the sum of the number of units proposed on an individual parcel by the total area of the parcel in acres.

MULTIFAMILY RESIDENTIAL

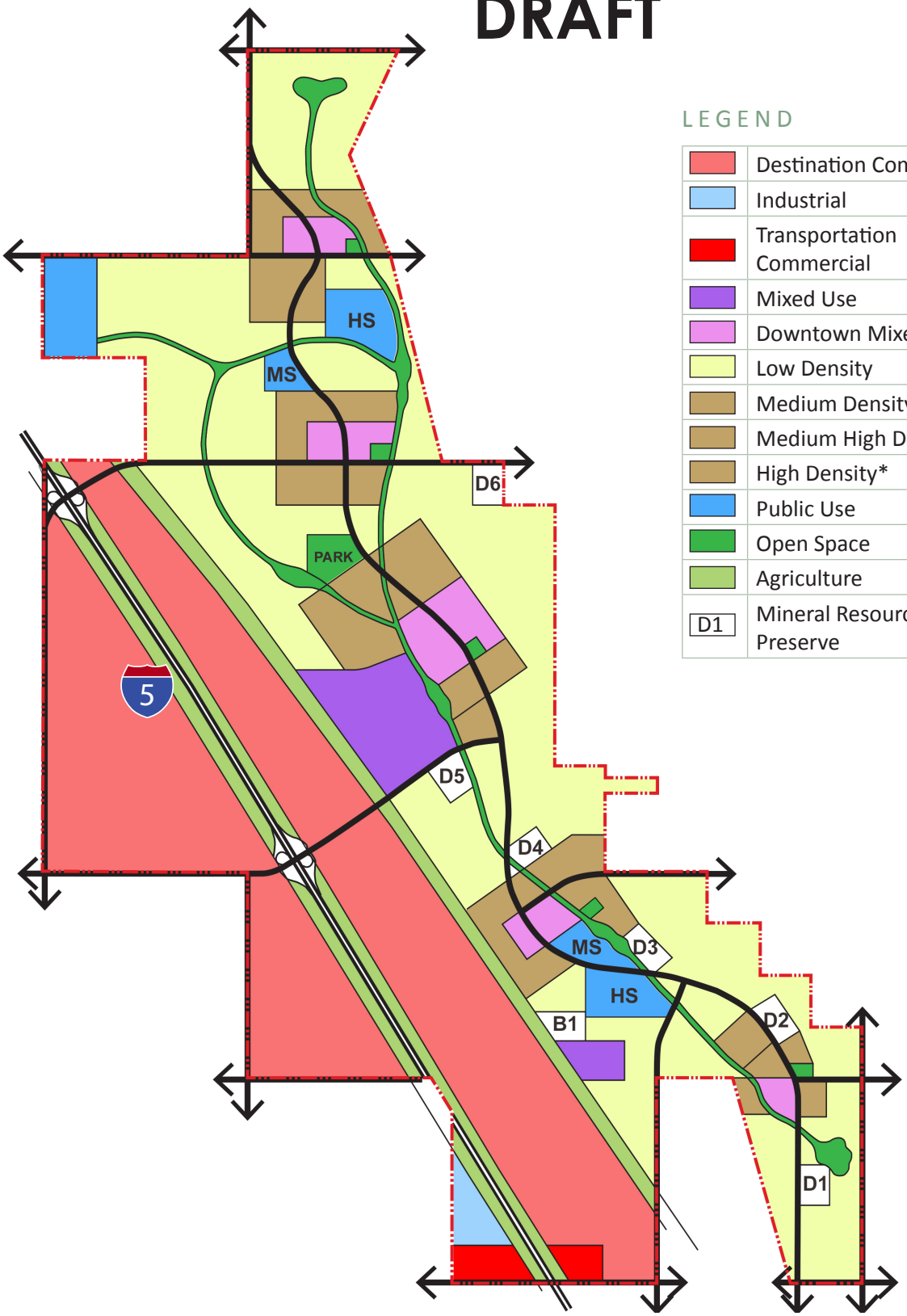
Multifamily homes within Quay Valley are permitted within two designations: **Medium High Density (MHD)** at 12.1 to 18.0 units per net acre, and **High Density (HD)** at 18.1 to 30.0 units per net acre. Multifamily housing can attach both horizontally and vertically, with shared walls and access to each unit provided internally on each floor either through an enclosed or exterior walkway. Vehicular access and parking configurations can be provided through external drive isles and parking lots, or through attached or detached garages. Units may be offered as townhomes, stacked flats, or a combination of both.

SINGLE FAMILY RESIDENTIAL

Conventional single-family dwellings are generally designed to be accessed from the local street with an architectural orientation toward the front. Densities can range from one to twelve units per acre, at heights from one to three stories. Garages can be shallow, mid, or deeply recessed, and may include a split, or tandem configuration. A variety of garage placements should be encouraged to avoid monotonous streetscape configurations. Single family units may be configured as conventional lots with individual driveways, cottage homes with rear access to an alley, or courtyard homes. Single family homes are designated within two categories: **Low Density (LD)** at 1.0 to 8.0 units per acre and **Medium Density (MD)** at 8.1 to 12 units per acre.

LAND USE PLAN

FI



LEGEND

	Destination Commercial
	Industrial
	Transportation Commercial
	Mixed Use
	Downtown Mixed Use
	Low Density
	Medium Density*
	Medium High Density*
	High Density*
	Public Use
	Open Space
	Agriculture
D1	Mineral Resources Preserve

*Note: The specific locations of the Medium Density, Medium High Density, and High Density Land Use areas will be determined when the Community Plan is prepared, the second stage of the New Community Procedure.

Table 3.1 Statistical Land Use Table

Land Use Designation	% Residential / Commercial	Gross Acres	Dwelling Units	Bldg. Sq. Ft.
Residential		2,907.0	22,850	
Destination Commercial		1,652.3		6,441,318
Transportation Commercial		67.1		584,575
Downtown Mixed Use	41% residential 59% commercial	240.4	2,050	2,183,663
Mixed Use	10% residential 90% commercial	389.4	1,006	5,506,463
Industrial		354.3		6,173,323
Public[1]		664.7		
Agricultural		328.3		
Open Space		431.0		
Mineral Resource Preserve		140.0		
Total		**7,174.5**	**25,906**	**20,889,342**

Notes:

[1]Public land use areas include school area of 336.0 acres, sewer treatment facilities area of 25.0 acres, recycled water storage area of 4.0 acres, and 299.7 acres for Interstate 5, water treatment, and water reservoir areas. Elementary schools have not been indicated but will be distributed within residential neighborhoods.

WALKABILITY DIAGRAM

FIGURE 3.2

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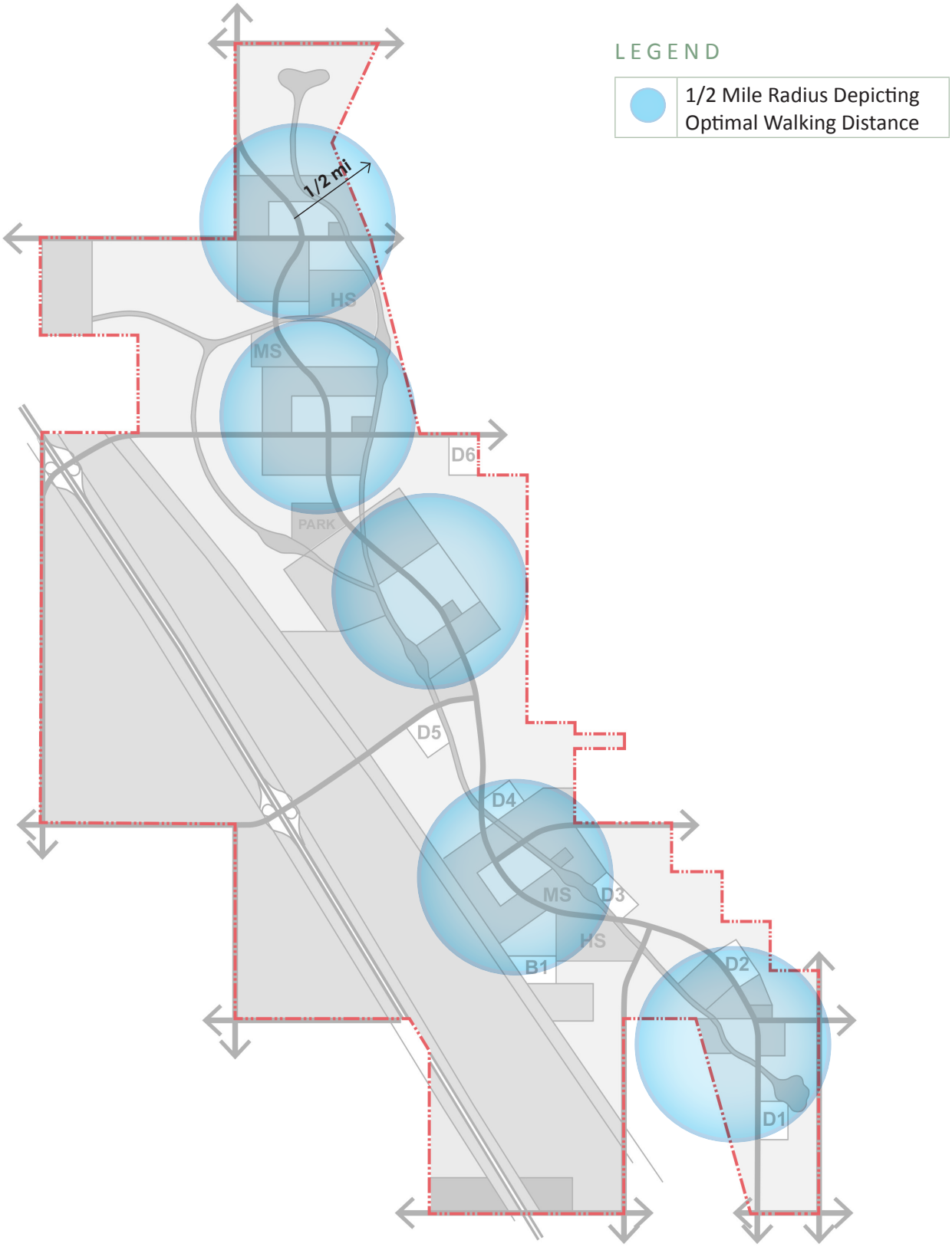
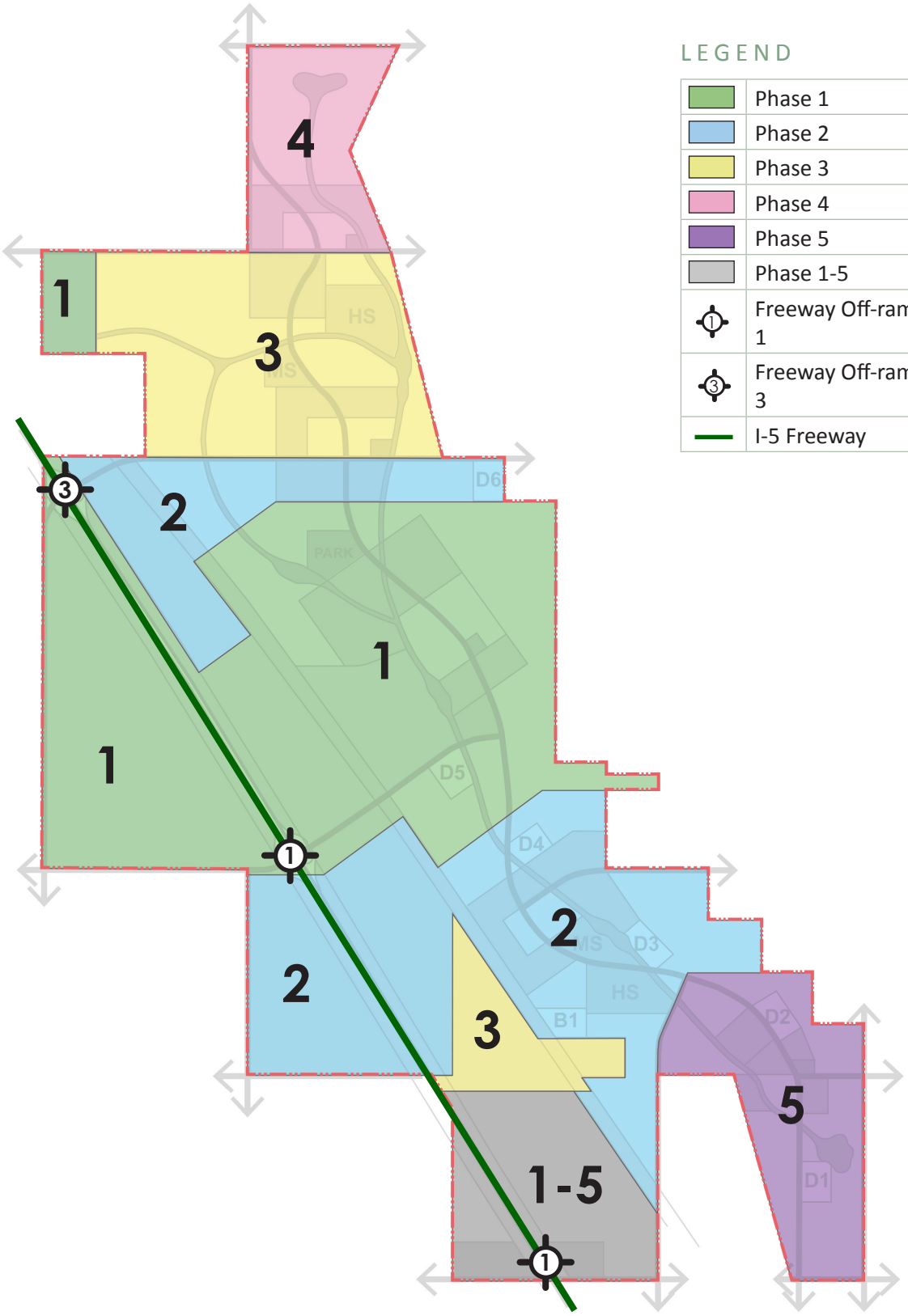
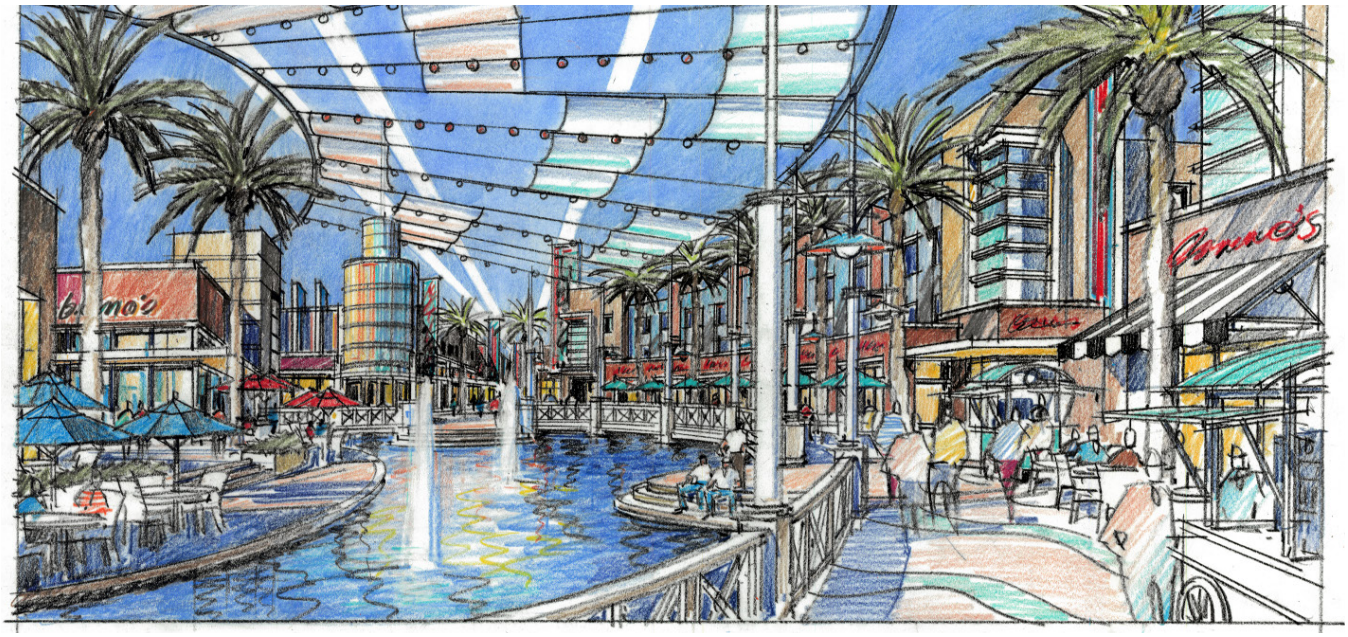


CONCEPTUAL PHASING PLAN

FIGURE 3.3





ARTIST'S CONCEPT OF THE DESTINATION COMMERCIAL CENTER

3.1.2 Destination Commercial

Planned to occupy approximately 1,650 acres along both sides of a three-mile segment of Interstate 5, development of the proposed Destination Commercial use area would bring a significant economic benefit to Kings County. A major shopping center totalling over two million square feet is proposed, including premium outlet shops, restaurants, cafes, movie theaters and other specialty retailers. In addition, 3 themed resort hotels are planned along with a convention center, and regional sports facility. The proposed uses would provide convenient retail shopping and commercial service opportunities so residents are able to meet the majority of their shopping needs locally within walking or biking distance minimizing automobile trips.

Destination Commercial would be a new land use designation within the Kings County General Plan, relating most closely to Neighborhood Commercial but more comprehensive and inclusive to serve a larger regional area.

3.1.3 Downtown Mixed Use

A Downtown Mixed Use (DMU) area is planned at the center of each of the five villages. Approximately 240 acres of the proposed site area are allocated to this designation which would allow a variety of compatible and integrated land uses. The plan proposes

a 40% residential / 60% commercial mix and would include 2,050 residential units and over 2 million square feet of retail, civic, and office space. Buildings within DMU areas are envisioned to share common structures in a manner that establishes a downtown atmosphere of uses and activity.

The Kings County General Plan allows for DMU areas to be established in definable core areas which tie to the community's desired downtown theme. The designation is intended to provide flexibility in design and use for contiguous parcels having multiple owners, and to enhance the character of a community area. The close proximity of residences to DMU areas would result in eclectic gathering spaces conveniently located to accommodate a variety of uses within a short walk or bike ride, reducing automobile trips and generation of greenhouse gases.

Within Phase One, a central 90 acre DMU is envisioned as the major Town Center where a variety of service, cultural, recreational, and entertainment activities would be configured as a "Main Street". Both daytime and nighttime activities would be featured as well as a major civic center.

3.1.4 Mixed Use

The Mixed Use (MU) designation is similar DMU but is intended for areas less oriented toward a particular community-wide design theme. A variety of compatible and integrated land uses would be allowed, and sharing of common structures would be encouraged. The designation is intended to provide flexibility in design for contiguous parcels. Approximately 389 acres fall within the MU designation in the proposed Land Use Plan. The proposed ratio of uses is 10% residential for approximately 1,000 units and 90% commercial for approximately 5,500,000 square feet of office, research, retail, medical, civic, and educational uses.

An approximately 100-acre mixed use University Research Park is planned within Phase One of the project area. An institution of higher education, or research and development office space is envisioned. The proposed location of the University Research Park site will offer tenants the opportunity to live and shop within walking or biking distance of their place of schooling or employment. Potential uses for development within the University Research Park could include California State University facilities, a community college, a private university, research and administrative offices associated with educational uses, or research and development laboratories.

The office, medical, and business facilities within the Mixed Use area would consist of modern, green, and multifunctional buildings utilizing state-of-the-art technology. Implementation of the design guidelines to be provided within the Specific Plan will ensure buildings exemplify high quality construction and advanced environmentally friendly design, creating great value for the community.

3.1.5 Transportation Commercial

The Transportation Commercial area along the Kings/Kern County boundary is intended to provide for the needs of travelers along Interstate 5. Approximately 67 acres of the project area are assigned this designation. High and mid-quality hotels within this area would support the entertainment components as well as provide lodging and meeting facilities. This use area would help assure the success of the business, industrial, commercial, and office uses, helping each to accommodate the needs of the significant amount of truck traffic along Interstate 5.

3.1.6 Industrial

Over six million square feet of industrial space within approximately 354 acres are planned for the southern portion of Quay Valley. Light industrial uses such as warehouse distribution facilities, truck stops, and light manufacturing operations are envisioned which would be instrumental in the creation of a broad job base. Access to this use area would be via a new Interstate 5 interchange to be designed and built at the Kings/Kern County line.

3.1.7 Open Space

Public and private parks within Quay Valley total approximately 431 acres. A linear park and drainage system covers about 228 acres and transverses the residential portion of the project area. Planned as a multipurpose facility providing for recreation, stormwater management and drainage, this amenity also would support the ecosystem and water quality objectives of Quay Valley. Additional information regarding parks and other specific uses within this designation is included in Section 3.3, *Open Space Plan*.

3.1.8 Public

Approximately 665 acres of the project area are planned to be designated as public use. This designation is intended for application where public or semi-public facilities or operations provide services beneficial to the community. School facilities, a water reservoir, a sewer treatment facility, and water recycling areas are planned, which is further described in Chapter 6, *Infrastructure and Facilities*, and Chapter 7, *Schools*.

3.1.9 Mineral Resource Preserve

The historic contribution of the project area to the production of petroleum and gas reserves is planned to be acknowledged through the establishment of seven Mineral Resource Preserve areas. Oil and gas production potential is to be preserved throughout

the project area, but these activities are envisioned to be focused within in the seven designated areas. Isolating production to these areas would reduce the surface area potentially devoted to these activities and address concern for any undesired effects. The Mineral Resources Preserve land use areas consist of approximately 140 acres which support the oil and gas production potential existing throughout the project area.

Each Mineral Resources Preserve would include a 10-acre Mineral Operating Area centered in a 20-acre area, providing a surrounding buffer-zone between potential oil and gas operations and other uses. These areas would be used for agriculture until operations are commenced. An effort has been made to locate each Mineral Resources Preserve immediately adjacent to either the planned major north-south road or another major street. These locations permit access to the preserves while minimizing potential impact to other nearby uses and development to avoid degradation of environmental quality. This designation would further address environmental concerns by requiring oil and gas development sites to be timely reclaimed by the operator upon termination of such activities.

3.1.10 Agriculture

The San Joaquin Valley farming traditions are planned to be continued through the support and encouragement of agricultural production within designated areas of Quay Valley. Approximately 328 acres would be designated as agricultural use, consisting of buffer areas along both sides of Interstate 5 and the area within the electrical transmission easement.

Potential conflicts between agriculture and non-agricultural uses would be managed by a number of measures. A Notice, Disclosure and Acknowledgement of Agricultural Land Use Protection and Right to Farm statement would be required to be recorded as a condition of approval for land divisions and zoning permits. The notice would be recorded against the land and shown on title reports.

Policies and objectives to ensure continued productive agricultural operations are possible would be incorporated in the Specific Plan. These policies include treatment of edge conditions such as requiring a buffer zone of at least 150 feet between residential development and adjacent agricultural lands. Agricultural Operations Disclosures would be provided to all prospective residents and tenants of parcels which adjoin the agricultural buffer or agricultural operations as mandated by Kings County's Right to Farm ordinance No. 608.

Landscape design guidelines reflecting the agricultural heritage of Kings County are to provide thematic standards to the broader landscape plan across the project area. For example, orchards have contributed significantly to the landscape of western Kings County, including pistachios, almonds, pomegranates and stone fruit. This orchard heritage is to be reflected in the community landscape plan for Quay Valley.

3.1.11 Edge Treatments

Five types of edge conditions within Quay Valley are planned to provide an integrated rural landscape that is diverse yet consistent with the overall scale and land use patterns of the valley's agricultural areas. The detailed landscape plans for these edge conditions shall be described in detail in project Design Guidelines during the Specific Plan phase of the Kings County New Community Procedure.

EDGE NEIGHBORHOODS

Neighborhood landscapes on the edges of the project area will provide visual and functional transitions between the more urban and densely populated areas and the surrounding open space buffer zones while creating social spaces for neighborhood residents. The plant selection shall reduce traditional water demand and meet contemporary needs for open space while integrating sustainable landscape principles and goals.

FOOTHILL EDGE

The Foothill Edge on the western border offers the opportunity to create an integrated edge through careful placement of buildings, crafting of site grading and placement of trees and other landscape features to promote a seamless edge between the project area and the foothills beyond.

TULARE LAKE BED EDGE

The Tulare Lake bed Edge along the project area's eastern border is vegetated with natural plant species and gives visual relief within the valley while providing vital habitat. Portions of the Tulare Lake bed Edge are also in the 100-year flood plain. Flooding into the project area will be prevented by a levee along the eastern edge. The landscapes of the Tulare Lake bed Edge shall be designed to protect and enhance the natural landscape of that area.

INTERSTATE 5 EDGES

The Interstate 5 project area interface is planned to be lined with permanent tree crop and grapevines to soften the transition for travelers driving along the freeway.

QUAY VALLEY LINEAR PARK EDGE

The linear park planned within the residential areas of Quay Valley and would provide informal recreational opportunities and pedestrian and bicycle pathways. The park would function as a part of the storm drainage system, providing conveyance, natural

filtration and water restoration. This park would act as a spine of green infrastructure for the entire project area. The plant palette would consist primarily of trees providing shade over the water to inhibit evaporation, along with other native plants. Hardscape areas would be limited and shall include permeable materials consistent with Quay Valley's sustainability goals.

PG&E POWER LINE EASEMENTS EDGE

The PG&E power line easement extends through the project area in a north to south direction and would be designated as an Agricultural land use area. The easement also would serve as a buffer between the more intense commercial, industrial, mixed use, entertainment and residential land use areas. These areas would be maintained as permanent agricultural lands and utilized for productive farming and buffer areas.

3.2 MOBILITY PLAN

The Quay Valley Conceptual Mobility Plan reflects the strong relationship between land use and transportation. Careful placement of higher-intensity land uses relative to logical, connected transportation routes is planned. Relatively short travel encourages walking, bicycling, or neighborhood electric vehicle (NEV) use. Transit routes adjacent to higher density residential uses and major trip destinations are planned to significantly increase the use of transit as an alternative to private automobiles.

A hierarchy of streets within Quay Valley is planned to safely accommodate a range of transportation choices. A network of off-street trails would connect residential, commercial, office, community/civic and open space internally as well as areas surrounding Quay Valley to encourage walking and cycling. The following policies contained within the 2035 Kings County General Plan Circulation Element (CE) are applicable to the PDP:

- **CE Objective A1.2: Improve the quality of life of residents through Transportation projects that enhance environmental benefits related to air quality, energy use, noise, and land use.**
- **CE Goal B1: Develop Community street design, centralized transportation options, and pedestrian walkability in each community plan and foster increased efficient mobility of residents to and from job centers, educational facilities, and services that meet their daily needs.**
- **CE Objective B1.2: Enhance pedestrian/bicycle access and safety through traffic calming street design measures and bicycle rack integration into new commercial structures.**
- **CE Objective C1.3: Promote Public Transit and van pooling within the County urbanized areas to increase ridership and decrease traffic demand on County roadways.**

CONCEPTUAL VEHICULAR CIRCULATION PLAN

FIGURE 3.4

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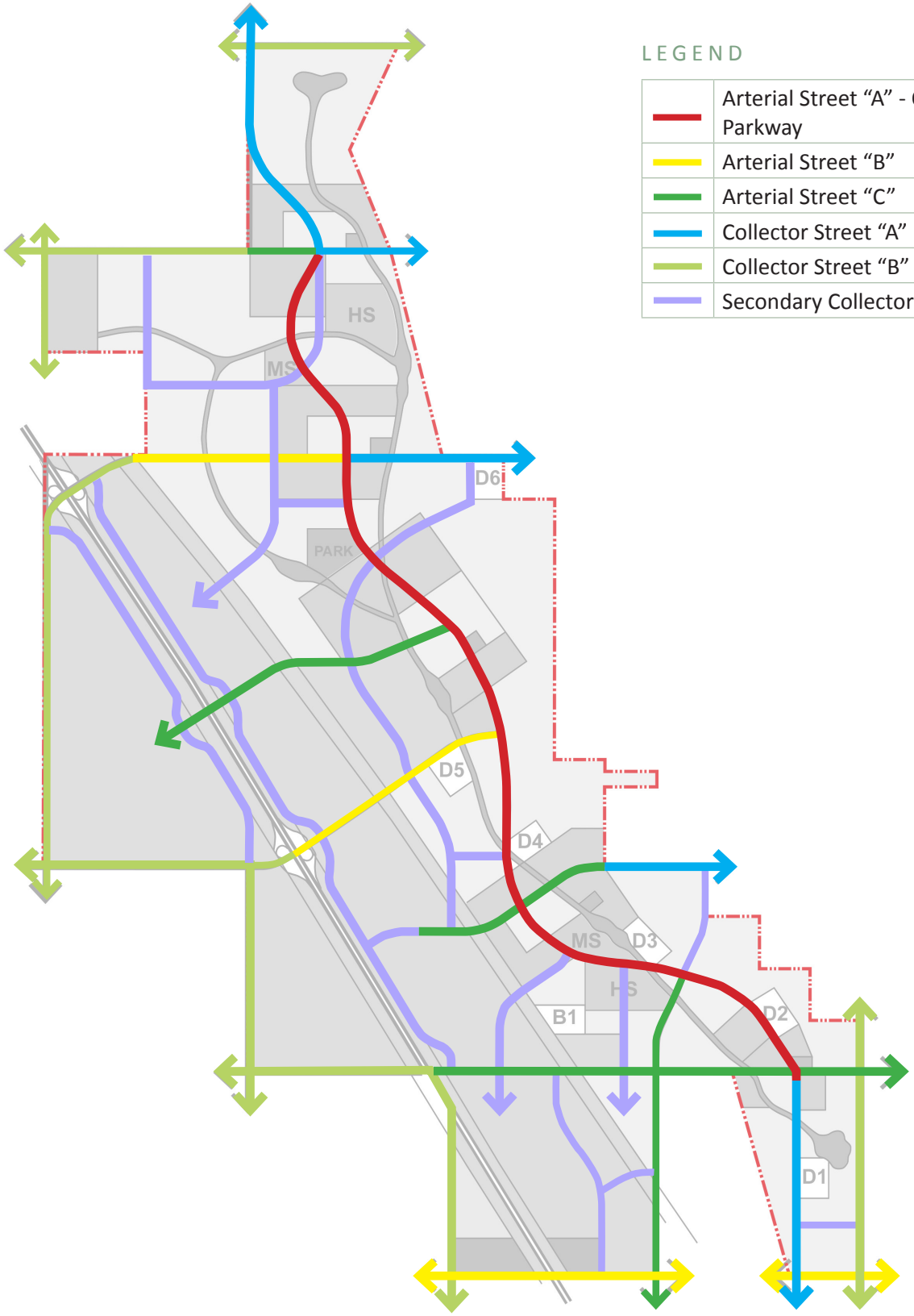

LEGEND

	Arterial Street "A" - Quay Valley Parkway
	Arterial Street "B"
	Arterial Street "C"
	Collector Street "A"
	Collector Street "B"
	Secondary Collector

- **CE Objective C1.4: Integrate Non-Motorized transportation system alternatives into the layout of Community District plans to promote bicycling and walking as alternatives to the automobile, and interconnect those routes where practical into larger regional efforts with Cities.**

Quay Valley is planned to include a high degree of connectivity. All development would be required to connect to pedestrian and bicycle routes. Primary daily trip destinations such as schools, parks, jobs, shopping and commercial services are planned to be located such that trips can be consolidated and the overall number of trips reduced.

3.2.1 Vehicular Circulation

The Conceptual Vehicular Circulation Plan incorporates a hierarchy of street types to provide an adequate level of service for the proposed land use densities and traffic loads(refer to Figure 3.4, *Conceptual Vehicular Circulation Plan*). A fully integrated transportation network is envisioned to serve the needs of all through functional streets, pedestrian, bicycle facilities, and rights-of-way for public transit. The well-connected network would have many short links, numerous vehicular or pedestrian route intersections and few dead-ends. The plan would also incorporate features designed to minimize barriers to pedestrian access and interconnectivity and to calm traffic to support these activities. The following street types are included within the Vehicular Circulation Plan:

ARTERIAL STREETS

Primary access to and from the project area would be provided by two to three new interchanges from I-5 (subject to final determination from Caltrans) spaced at approximately two mile increments starting from the south at the Kings/Kern County line. Each interchange would connect to an arterial street leading into the project area. A diversity of arterial street types is planned, including four-lane thoroughfares which carry a high volume of traffic.

The backbone of the vehicular circulation system is Quay Valley Parkway (Arterial Street "A" in Figure 3.4), which connects all the villages and provides a link between the northern and southern areas of the community. Quay Valley Parkway would be specifically designed with integrated pedestrian and bike trails along the landscaped corridor. Two additional major arterials (Arterial Streets "B" and "C" in Figure 3.4)would bisect the project from the western to the eastern boundaries.

A significant feature along arterials is the use of roundabouts to provide unimpeded integration with secondary streets (collectors). Used as gateways into neighborhoods and for traffic calming, roundabouts may also benefit air quality levels. Recent studies have shown reductions in vehicular emissions such as carbon monoxide (CO), carbon dioxide (CO2), nitrogen oxides (NOx), and hydrocarbons (HC) through improvement of traffic flow at intersections.

COLLECTOR AND SECONDARY COLLECTOR STREETS

Collector and secondary collector streets are planned to be the primary internal circulation network within villages connecting local residential streets to arterial streets (collector Streets "A" and "B" are shown in Figure 3.4, along with one sub-collectors). Relatively few collector streets are included, but instead a series of local residential streets are utilized to disperse traffic and provide multiple routes for pedestrians and bicyclists. Collector and secondary collector streets may include traffic calming devices to slow traffic and discourage "cut-through," non-resident traffic in neighborhoods. Some of these measures would provide shorter crossing distances at intersections, thereby enhancing the pedestrian experience and encouraging people to walk for many routine daily errands and recreation.

RESIDENTIAL STREETS

Two-lane streets with detached sidewalks and parking on both sides are planned throughout most residential neighborhoods. The design of neighborhood streets may vary in specific cases. Bulb-outs and lane width restrictions may be used at residential street intersections to slow traffic within neighborhoods. The location and design of these features will be addressed in the Tentative Subdivision Map and Final Map for individual neighborhoods.

ALLEYS

Alley width, construction material, and allowed uses within a private access drive would vary depending on the housing type, proposed underground utilities, and site design. Several residential product types in Quay Valley may utilize a rear alley for garage access, rather than a conventional, "front loaded," local residential street.

3.2.2 Non-vehicular Circulation and Transit

An extensive, integrated system of non-vehicular circulation is planned for Quay Valley consisting of Neighborhood Electric Vehicle (NEV) lanes, sidewalks, pedestrian and bicycle trails and neighborhood paseos. This network (refer to Figure 3.5 *Conceptual Pedestrian and Bikeway Plan*) would provide multiple routes for diverse, convenient and interesting connections between all parts of the community. The mobility plan for the residential portions of Quay Valley is planned to emphasize walkable neighborhoods. Bicycling and walking would be encouraged for short trips through the provision of sidewalks, multi-purpose trails, and a pleasant landscaped environment. Walkable street design is characterized by narrow, pedestrian-friendly, tree-lined streets, which dampen vehicle speeds and make alternate modes of travel practical, safe and attractive.

CONCEPTUAL PEDESTRIAN AND BIKEWAY PLAN

FIGURE 3.5

NEIGHBORHOOD ELECTRIC VEHICLES (NEV)

NEVs offer short range (typically up to 40 miles between charges) and low speed (25 to 35 mph) transportation well suited to local community trips for shopping, socializing, recreation and many other common errands that make up the majority of daily activities outside the home. NEVs would be restricted to streets with a maximum speed limit of 35 mph.

BICYCLE AND NEV LANES

NEV, bicycle, and pedestrian facilities are planned along the minor residential, primary residential, and collector streets within Quay Valley. The streets would be designated with appropriate signage alerting residents to the shared use function of the street or separated NEV lanes where necessary. Bicycle traffic would be permitted within NEV lanes on arterial streets, but a separate multi-use trail would be located in the corridor adjacent to the street when a dedicated NEV lane is included.

PEDESTRIAN CIRCULATION

An extensive trail network is planned to provide ample, convenient opportunities for residents to bicycle or walk throughout the community for recreation and exercise providing a multitude of interconnected loops so residents can choose from a variety of routes of different lengths and destinations. The local street system is would allow local paseos and major pedestrian trails to have dominance over vehicular traffic. Residential streets would be designed for slower speeds with pedestrian crossings at key locations including landscape enhancements.

Key services and community focal points are planned to be within close proximity (1/4 to 1/2 mile radius) of a large percentage of homes. These features are linked through the trail network consisting of formal sidewalks along streets, a Class II bike trail system, multi-use trails, secondary bike trails, and pedestrian paseos. At convenient intervals, stopping places providing shade, seating and a visual focal point would be included. Interpretive signage is planned to indicate locations along a primary route, the distance to the next major destination, and a description of the primary view, where appropriate.

The pedestrian network is planned to facilitate walking to school from home. Schools would be located along collector, primary residential, or local streets that provide a safe, direct, and convenient pedestrian route. Major street crossings would be avoided as much as possible. Within neighborhoods, priority would be given to pedestrian and bicycle circulation rather than vehicles.

Paseos are planned to include a variety of pedestrian and bicycle routes not located adjacent to streets, and are a major connectivity component. Dispersed throughout the villages, paseos would provide connections between neighborhoods and the multi-use trails located along streets and within the linear park.

TRANSIT PLAN

Within the central Town Center, a Transit Center is envisioned as the hub of local and regional transportation, serving all areas within Quay Valley as well as the outlying areas of Kings County. This key location would minimize traffic congestion by reducing the number and length of automobile trips, thus decreasing air quality impacts. A transit right-of-way along Quay Valley Parkway would provide two-directional access between housing areas and all employment centers. Bus turnouts would be strategically located along the major arterials and residential collectors. At a minimum, the facility is envisioned to be large enough to support local bus service within southwest Kings County. The facility may ultimately act as a regional hub, offering connecting services to the outlying areas of Hanford, Fresno, Visalia, Lemoore and Bakersfield.

It is the intension of Master Developer (Grow Holdings LLC) that the transit system would be operated under contract to a proposed Community Service District (CSD) which would provide Transportation Management Authority (TMA) services or contract with another agency for management. A description of the procedure proposed to form a CSD is included in Section 8.2.4, *Formation of the CSD*. The internal services may include a range of ride share initiatives, travel demand management methods, and alternative mode promotional activities. The system is planned to begin with limited services employing only an internal shuttle service. As the community grows the transit plan would be expanded to an internal loop system. Eventually service would be provided along the primary street system, a modified grid form allowing flexibility to serve the greatest number of potential riders.

Funding for the shuttle system is proposed through a special tax or assessment levied by the CSD (refer to Section 8.2.3, Financing Constraints and Opportunities for a description of proposed funding of services to be provided by the CSD). The district will own and maintain the transit shelters and signage, contract with a transit operator for the buses and drivers and provide routing information in real time through a community communications network. A park-and ride facility consisting of a 24-hour parking lot would accommodate both public transit users and drivers wishing to carpool from Quay Valley. The facility location will be determined prior to the approval of the first Tentative Tract Map.

HYPERLOOP PROTOTYPE SYSTEM

A research and development site for a Hyperloop testing center along a five-mile stretch of Interstate 5 has been submitted as a separate application as shown in Figure 2.8 *Hyperloop Research Development Center*. The Hyperloop concept is transportation system proposed to operate by sending pressurized, specially designed "capsules" or "pods" through a continuous steel tube maintained at a partial vacuum, similar to maglev technology.

The Hyperloop is planned as a research facility initially but is envisioned as one of several ways to move people and goods throughout the Destination Commercial area. The

technology requires little energy since it combines magnetic levitation and evacuated tubes which decrease weight. The tubes would be mounted on reinforced concrete pylons 20 feet high spaced approximately 200 feet apart, creating a small effective footprint and encouraging other uses such as a bikeway or green space below the tube and around the pylons.

3.3 OPEN SPACE PLAN

Open space within Quay Valley would include a variety of types and sizes of parks supporting both active and passive recreation. The Land Use Plan includes approximately 429 acres of dedicated open space consisting of a regional park, linear park, neighborhood and urban parks, and natural open space (refer to Figure 3-6, *Conceptual Open Space Plan*). The following policies contained within the 2035 Kings County General Plan Open Space Element are applicable to the Quay Valley PDP:

- **Goal A1: Preserve agricultural land as open space.**
- **Goal D1: Provide for parks, recreation and open space that will serve the current and future needs of County residents and visitors.**
- **Goal F1: Ensure that Community Districts integrate adequate open space as part of their Community Plans.**

The amount of park area recognized as "adequate" has been defined within the State of California by the Quimby Act as a minimum of three acres per one thousand residents. Useable open space within Quay Valley is planned to be provided at a rate of five acres per one thousand residents, as shown in Table 3-2, *Open Space Calculation*. The population for Quay Valley has been projected to be approximately 3.3 people per household.

A 25-acre public regional park is planned for a central location within the residential area. The specific components to be included would be determined by the needs of the region. Approximately 228 acres winding throughout the residential areas are planned to be dedicated as a linear park which will include the storm drainage system.

The design details of the linear park and drainage system would vary according to the surrounding land uses. Bulkheads may be used to create a steeper shoreline and permit uses such as walking paths, courtyards, or plazas immediately adjacent to the park. Stormwater from adjacent development would be treated before discharging into drainage swales where runoff would be stored for irrigation use or conveyed to storage facilities. Dry weather runoff would be captured and recycled as irrigation water or used to partially offset evaporation losses. A wide variety of native species would be planted along with carefully selected non-native, non-invasive species to fill special aesthetic, water quality, or wildlife habitat niches.

A five-acre urban park is planned within each of the five villages core areas to serve as an organizing feature, providing each village an opportunity for creation of a separate identity. These urban parks would total 25 acres. Additionally, approximately 150 acres is planned to be dedicated as neighborhood parks, each ranging from one-half to two acres.

Table 3.2 Open Space Calculations

Land Use Designation	Gross Acres	Dwelling Units	Population[1]	Park Acres[2]
Residential	2,907	22,850	76,605	383
Downtown Mixed Use	100	2,050	6,150	31
Mixed Use	40	1,006	3,018	16
Total	**3,047**	**25,906**	**85,494**	**429**

Notes:

[1]The estimated household size is approximately 3.3 people per household.
[2]Calculations are based on 5 acres park land per 1,000 population.

OPEN SPACE DIAGRAM

FIGURE 3.6

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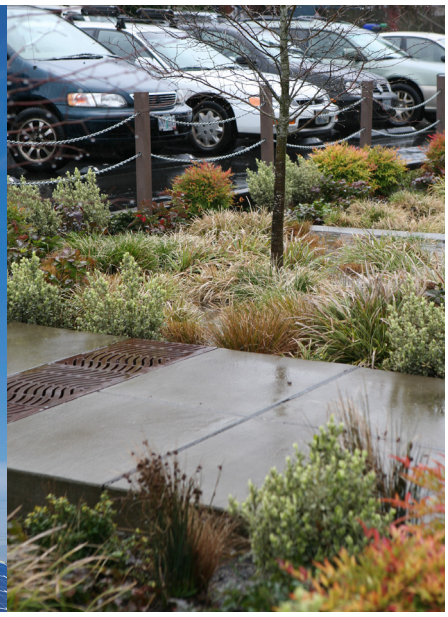
LEGEND

	Linear Park
	Urban Park
	Regional Park

Note: Neighborhood Parks are included in the residential use, not shown in this map.

4

SUSTAINABILITY



4.1 SUSTAINABILITY OVERVIEW

A wholistic approach to sustainability is woven throughout the Quay Valley Preliminary Design Plan. This approach is related to a number of goals defined by the State of California regarding conservation of energy and water, and the reduction of greenhouse gases,.The California Green Building Code ("CGBC"), a part of Title 24 amended in 2013, contains a relatively complex set of proposed regulations to be imposed across a variety of site planning and building components and technologies. The 2013 CGBC became effective on January 1, 2014, and includes both mandatory and voluntary measures. It is applicable to all cities and counties and to both residential and nonresidential occupancies in the State of California, as annotated in the code. Local public agencies within the State have incorporated the CALGreen Code provisions into their own construction plan review and field inspection processes. The 2013 CGBC includes green and sustainable building measures organized in the following five categories:

- Planning and Design
- Energy Efficiency
- Water Efficiency and Conservation
- Material Conservation and Resource Efficiency
- Environmental Quality

The goals, strategies, and commitments necessary for Quay Valley to achieve CAL Green objectives and Greenhouse Gas compliance are summarized in this chapter and are intended to create a comprehensive framework to guide future land use development within the project area.

4.2 PLANNING AND DESIGN

The master plan for Quay Valley implements the basic principles of Smart Growth: design, diversity, density, accessibility and distance to transit. The implementation of these principles, as described in Chapter 3, *Community Structure* would result in a sustainable community which will grow responsibly while enhancing and respecting the efforts of Kings County and the State of California to reduce the impacts of climate change.

The implementation of community-wide connectivity is a major aspect of the sustainability plan. The proximity of a variety of uses to each other, the trail, bikeway network and transit system all reduce dependance on the automobile for transportation which reduces harmful greenhouse gas emissions.

Another aspect of connectivity planned for Quay Valley is a community-based telecommunications network platform which would provide fully integrated internet hardware. This Smart Telecommunications System (STS) would provide a network connecting homes, workplaces, retail shops, entertainment centers and public/governmental facilities. The STS would enhance sustainability by supporting the technology for the energy and water efficiency monitoring systems, such as smart meters, irrigation controllers and weather stations. The STS is planned to provide the platform for residents, business owners, workers and students to share and obtain information on community activities, carpools, bike-pools, ride-sharing and bus schedules. The platform would also aid in energy and fuel efficiency and a reduction in Vehicle Miles Traveled (VMTs) through the exchange of information between people and machines.

A plan for a healthy jobs/housing balance to reduce the number of residents needing to leave the community to commute to work is another aspect of the sustainability plan. A significant employment base estimated at over 36,000 high quality jobs is planned for Quay Valley, helping to build a successful self-supporting economy. Other elements that support social sustainability are the development of a full service medical center, state-of-the-art educational facilities, and a Community Activities Services Organization to promote and organize community activities.

4.3 ENERGY EFFICIENCY

Quay Valley is planned to incorporate advanced energy efficiency measures and renewable energy resources, which will reduce dependence on non-renewable energy and energy-related greenhouse gas (GHG) emissions. Specifically, GHG emissions are planned to be reduced by lowering energy demand, improving water and energy efficiency, and increasing the amount of electricity and heat generated from renewable energy sources.

4.3.1 Solar Power

Solar power systems planned for Quay Valley include solar photovoltaics (PV) on

rooftops, community solar gardens and floating solar photovoltaic systems. The main items included in a solar power system are modules, charge controllers, batteries and inverters. The solar modules are physically mounted on a racking structure and produce DC power when activated by sunlight. This energy is conducted through a charge controller into an inverter to convert the power into AC electricity. The energy is then conducted through wiring into the structure to supply electricity or into a battery bank for storage. The charge controller serves two functions: to prevent the battery from being overcharged and eliminate any reverse current flow from the batteries back to the solar modules at night. The battery bank stores the surplus energy produced by the solar array during the day for use at any time day or night. Batteries come in many sizes and grades. The inverter takes the DC energy stored in the battery bank and inverts it to 120 volt AC electricity to run appliances.

It is anticipated that Quay Valley will generate enough solar electricity during daylight hours to cover the community's 24 hour power requirements and achieve the community's goal of providing 100% solar power by providing surplus daytime electricity to the grid and using or reclaiming a portion of that surplus during evening hours on overcast days. Quay Valley will rely on a provider/supplier relationship with PG&E to ensure that electricity is available when needed. PG&E currently owns and operates three transmission and distribution lines within the specific plan area. These transmission lines run north-south through the San Joaquin Valley and parallel to Interstate 5 within the project area.

4.3.2 Net Zero Energy Buildings

According to the California Public Utilities Commission, the definition of Zero Net Energy (ZNE) is a building that produces as much energy as it consumes over the course of a year. These buildings achieve ZNE first through high levels of energy efficiency, and then through the addition of clean, on-site renewable power generation, typically solar photovoltaics. ZNE homes and commercial buildings are higher performing, more resilient to the impacts of climate change, and less vulnerable to the instability of energy prices. Energy efficiency improvements in building design and operations substantially reduce the costs and environmental impacts associated with buildings. The energy used in buildings is the second largest contributor to California's greenhouse gas (GHG) emissions. With rising energy costs, and increasing climate-related impacts and natural disasters, ZNE buildings help reduce our demand for energy and provide more resilience to climate impacts.

California's building energy efficiency standards (Title 24 - CGBC) are constantly moving towards increasing levels of energy performance in new buildings. To date, California has more buildings that are closer to ZNE than any other state in the nation. The state is continuing its leadership by requiring all new residential buildings to meet ZNE standards by 2020 and all new commercial buildings are required to meet the standard by 2030.

In anticipation of this requirement, the stainability plan for Quay Valley will include advanced energy efficiency standards which will reduce consumption to two-thirds or

less of the energy used by a typical existing home or commercial building through the following measures:

- Reduce energy consumption through utilization of the most efficient envelope design strategies, day lighting, as appropriate, and application of highly energy-efficient technologies including lighting, HVAC, and controls.

- Optimize building operation and useage, including management of plugged-in devices and system controls.

- Install renewable generation on-site to meet the remaining energy needs of buildings, primarily photovoltaic (PV) panels.

The standards for implementation of these measures will be included within the Design Guidelines of the Quay Valley Specific Plan.

4.3.3 Advanced and Energy Efficient Transportation

In addition to efficient building design and solar energy, sustainability is planned also to be achieved through the utilization of advanced transit system vehicles (electric, hybrid, plug-in, or alternative fueled) and energy efficient transportation (mass transit, car sharing). A full description of this plan is included within Section 3.2, *Mobility Plan*. The integration of advanced vehicles and energy efficient transportation with sustainable buildings would result in a true renewable energy community.

4.4 WATER EFFICIENCY AND CONSERVATION

Water conservation is an important element of sustainability and is planned to be addressed at all levels of development within the Quay Valley project area. The goal of the water conservation program is to reduce water use through a combination of measures, including installation of advanced plumbing fixtures, high efficiency irrigation systems, water use monitoring systems for building use, and rain water harvesting systems. Use of recycled water harvested from the wastewater treatment plant is planned to provide irrigation to public parks and open space, private front yards of single family homes and landscape medians.

Water quality is an equally important measure for a sustainable community. A comprehensively designed drainage system and Low Impact Design (LID) methods are planned to be key components of long-term sustainability that reduce levels of sediment and pollutants in stormwater. Water quality features would be designed to collect urban runoff and retain it long enough for the majority of the pollutants to be removed. The water quality within the storm drainage conveyance system would be further enhanced by the use of bio-filters in addition to submerged and emergent wetland vegetation located along the storm drainage way edge.

4.5 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

Quay Valley will comply with the goals and policies of the Kings County Integrated Waste Management Plan, adopted in April 1995 pursuant to requirements of the California Integrated Waste Management Act of 1989 (AB 939). The purpose of this act was to require local agencies to implement source reduction, recycling, and composting activities to reduce solid waste generation by 50 percent by the year 2000.

With an emphasis on sustainability, recycling and composting will be heavily encouraged and become a part of all portions of the planning, construction, and final development of the districts within the project area. As a part of a comprehensive material conservation program, appropriate standards for construction waste recycling and limits for construction waste generation will be established within Quay Valley including the following operational goals:

- Create robust recycling programs to encourage and incentivize recycling at the user/generator level.
- Enhance awareness of the importance and availability of waste management, composting and recycling programs.
- Construct a Materials Recovery Facility (MRF) for recycling within the project at the earliest feasible opportunity.
- Create an efficient and effective waste management infrastructure to reduce waste generation that leaves the property limits.

The Quay Valley community recycling program is planned to reduce solid waste by promoting aggressive waste prevention and recycling activities. The CSD shall promote the development of environmentally and economically sound practices regarding the collection, processing and end-use of recyclable material and compostable material.

When feasible, an on-site MRF would be located within the industrial area of the project area. Curbside residential and commercial pickup would be offered for recyclable items and materials of all types including green waste. This material would be transported to the MRF for recycling to the maximum extent feasible, and transported to facilities at the Kettleman Hills Sanitary Landfill if infeasible to recycle.

The MRF would allow the collection and recycling of trash with the potential of green waste to be reused throughout proposed common areas and by homeowners as well as the sale of recyclables. This would reduce materials that would otherwise be deposited into area landfills. Materials that can be recycled include glass, plastic, paper, metals, green waste, petroleum products, etc. Materials that cannot be recycled for environmental or economic reasons will be transported off-site to appropriate facilities with costs borne by the generator or the CSD.

The plan for solid waste disposal and recycling will be prepared in conjunction with an application and review for viability by Cal Recycle, with a permit ultimately issued by Kings County Environmental Health Department. The plan would generally follow a two-step implementation. First, a contract would be entered into with a private company for trash collection and hauling as a part of the CSD. The initial operation would focus on construction and demolition waste expanding into the household and business waste as development comes on line. Trash collected would be transported to the appropriate facility for disposal, recycling or other handling. The second phase would be a recycling and composting facility to reuse waste. An MRF would be brought on line as early as possible.

4.6 ENVIRONMENTAL QUALITY

Beginning in 2005, California pioneered an effort to reduce greenhouse gas emission. Executive Order S-3-05 established greenhouse gas emission reduction targets, and was followed by enactment of the Global Warming Solutions Act of 2006 or AB 32 (codified at Health and Safety Code Section 38500 et seq.). This legislation directed the California Air Resources Board to establish a comprehensive program to reduce greenhouse gases by 2020. In addition to these legislative mandates, the statewide goal of greenhouse gas emissions has been incorporated into implementation of existing environmental statutes and regulations, including the California Environmental Quality Act ("CEQA"). SB 97, which was signed by the Governor in 2007, requires the Governor's Office of Planning and Research to prepare, develop and transmit guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions as evaluated under CEQA.

The following objectives and policies contained within the Air Quality Element of the 2035 Kings County General Plan are applicable the the Quay Valley environmental quality plan:

- **Air Quality Goal B1: Improve Air Quality, Land Use and Transportation Planning integration and reduce impacts through appropriate project location, design and application of best available technologies.**

- **Air Quality Goal E1: Minimize air emissions and potential climate change impacts related to energy consumption in the County.**

- **Air Quality Objective E1.1: Increase the use of energy conservation features, renewable sources of energy and low-emission equipment in new and existing development projects within the County.**

- **Air Quality Goal G1: Reduce Kings County's proportionate contribution of** greenhouse gas emissions and the potential impact that may result on climate change from internal governmental operations and land use activities within its authority.

- **Air Quality Objective G1.1:** Identify and achieve greenhouse gas emission reduction targets consistent with the County's proportionate fair share as may be allocated by ARB and KCAG.

4.6.1 Greenhouse Gas Overview

A Greenhouse Gas ("GHG") is a gas in the atmosphere that absorbs and emits radiation within the thermal infrared range. This process is the fundamental cause of the greenhouse effect. The primary greenhouse gases in the Earth's atmosphere are water vapor, carbon dioxide, methane, nitrous oxide, and ozone. Anthropogenic carbon dioxide (CO2) emissions (i.e. emissions produced by human activities) come from combustion of carbon-based fuels, principally wood, coal, oil, and natural gas. Carbon dioxide is released into the atmosphere by the burning of solid waste, wood and wood products, and fossil fuels (oil, natural gas, and coal). In California, a major portion of GHG emissions are related to transportation.

4.6.2 Quay Valley Climate Change Goals

The scientific community considers that increasing concentrations of greenhouse gases (GHGs) due to human activity is a primary cause of the current global warming phenomenon. The United Nations Intergovernmental Panel on Climate Change predicts that changes in the Earth's climate will continue through the 21st century and that the rate of change may increase significantly in the future due to human activity. Responding to climate change includes two components - reducing practices which contribute to GHG's and adapting to changes which may occur as a result of climate change.

The primary strategy for minimizing GHG emissions at Quay Valley is to reduce vehicular trips through the provision of an extensive green transportation infrastructure system. In addition, non-transportation GHG emissions can be avoided through energy efficiency measures, renewable energy production, and water efficiency standards. Implementation of the following goals provides the framework for GHG plan within Quay Valley:

- Reduce operational GHG emissions by 29 percent compared to business as usual as recommended by the San Joaquin Valley Air Pollution Control District.

- Implement strategies and programs to reduce single occupant vehicle use and increase use by providing transit opportunities both within the project area and externally.

- Provide renewable energy infrastructure to support zero emission electric vehicles (EVs) to the fullest extent possible.

- Provide pedestrian and bicycle infrastructure (lanes, trails, storage areas, and

facilities) to facilitate use of NEVs and non-vehicular transportation to jobs.

- Incorporate design measures to conserve energy through the use of energy efficient building design methods and materials.

- Implement Low-Impact Development ("LID") strategies and a comprehensive water conservation strategy.

4.6.3 San Joaquin Valley Air Pollution Control District (SJVAPCD)

To assist project proponents and interested parties in assessing and reducing the impacts of project specific GHG emissions on global climate change, the San Joaquin Valley Air Pollution Control District ("SJVAPCD") has adopted Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA.

The guidance relies on the use of performance based standards, otherwise known as Best Performance Standards ("BPS") to assess the significance of project specific GHG emissions on global climate change during the environmental review process, as required by CEQA. Use of BPS is a method of streamlining the CEQA process of determining significance, not a required emission reduction measure. Projects implementing BPS will be determined to have a less than cumulatively significant impact. Otherwise, demonstration of a 29 percent reduction in GHG emissions, from business-as-usual, is required to determine that a project will have a less than cumulatively significant impact. The guidance does not limit a lead agency's authority in establishing its own process and guidance for determining significance of project related impacts on global climate change.

The following objectives and policies within the Air Quality element of the Kings County General Plan are applicable to the plan for Quay Valley:

- **AQ Goal C1: Use Air Quality Assessment and Mitigation programs and resources of the San Joaquin Valley Air Pollution Control District ("SJVAPCD") and other agencies to minimize air pollution, related public health effects, and potential climate change impacts within the County.**

- **AQ Objective C1.1: Accurately assess and mitigate potentially significant local and regional air quality and climate change impacts from proposed projects within the County.**

- **AQ Policy C1.1.1: Assess and mitigate project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD and require that projects do not exceed established SJVAPCD thresholds.**

- **AQ Policy C1.1.2: Assess and mitigate project greenhouse gas/climate change impacts using analysis methods and significance thresholds as**

defined or recommended by the SJVAPCD, KCAG or California Air Resources Board (ARB) depending on the type of project involved.

4.6.4 Transportation Greenhouse Gas Reduction

The primary source of environmentally harmful emissions is transportation, and the plan to minimize greenhouse gas involves both reduction of vehicular trips and promotion of zero emission vehicles.

Formation of a Transportation Management Association ("TMA") is planned with the primary goal of increasing use of alternative transportation modes and services to residents, employers, and employees, and managing transit services. Ride-sharing and car-sharing programs are planned, as well as shuttle services and public transit incentives to reduce use of single-occupant vehicles. Bicycle lanes and NEV routes are planned to be incorporated into street systems, with easy access to destination points such as schools and shops.

The following components of the Mobility Plan (described in detail in Chapter 3) will maximize reduction of harmful Greenhouse Gases:

- Office, mixed use, and industrial buildings are planned to be located in close proximity to transit, bicycle, or pedestrian corridors. Setbacks between buildings and sidewalks would be minimized and entry ways would be oriented toward the public street frontage.
- The Hyperloop system research area would provide transportation within the Destination Commercial area. The system is a prototype which is proposed to be self-powered by electricity generated by solar panels on top of the tube.
- A transit system featuring bus turnouts, benches and shelters is planned to connect all major amenities and features of the community.
- Paid parking within 1/4 mile from tansit stop would be provided to employees, residents, and visitors.
- A bus rapid transit system for high quality and cost-effective transit service is planned including modal integration with walking and cycling facilities, taxi services, and car sharing services.
- A complete bicycle transportation plan would be established including locker, racks, shower, parking, and charging facilities in addition to lanes and trails.
- Street Traffic calming measures resulting in slower speeds are planned to encourage walking or biking instead of driving a vehicle. Examples are on-street parking, planter strips with street trees, chicanes, bollards, and roundabouts.
- Measures to avoid cruising in parking areas are planned through the implementation of a system that facilitates quick location and occupation of a vacant parking space.
- Allowance of NEVs on all streets with a speed limit less than 35 miles per hour. Other

streets would include a dedicated lane for NEVs which are zero emission vehicles.

- Electric vehicle charging stations with both conductive and inductive capabilities would be installed in all residential garages and parking lots.

4.6.5 Non-transportation Greenhouse Gas Reduction

The planned integration of residential, retail, and office areas in a fine-grained vertical or horizontal mix, is planned to be a powerful tool for reducing GHG emissions within Quay Valley. The frequency and distance of driving trips would be much lower compared to the typical suburban community. The planned inclusion of mixed-use, high density residential, and public transit in village core areas would also support vehicle trip reduction and promotion of alternatives to individual vehicle travel, as well as the efficient delivery of services and goods. Location of residential densities would be strategized by placing people in close proximity (1/4 to 1/2 mile) to planned transit stops. Bicycling and walking to work or other destinations would be encouraged by providing amenities or incorporating convenient access to each project site.

Another important component of the GHG reduction plan for Quay Valley is the goal of creating a community powered 100% by renewable energy, which implements the following objective of the Kings County 2035 General Plan:

- **Resource Conservation Objective G1.2: Promote the development of sustainable and renewable alternative energy sources, including wind, solar, hydroelectric and biomass energy.**

The vast size of the planned photovoltaic micro-grid presents an opportunity to take advantage of economies of scale. This micro-grid would provide connected but decentralized management and control of power through the linking of photovoltaic systems. Advanced software systems would allow integration of renewable energy with homes and cars, where power is dispatched efficiently according to system needs, supporting wide use of zero emission electric vehicles.

Options for implementation of this plan include community solar gardens where a large array is shared by residents in a neighborhood, a floating solar generating station over the water storage reservoir, and solar canopies over parking lots.

Additional non-residential components of the GHG reduction program include the following:

- The increased density of residential development within Quay Valley compared to the typical suburban community would result in reduced Vehicle Miles Traveled (VMT) as associated with other communities featuring higher density.

- The proposed water conservation program would reduce GHG emissions through the avoidance of energy used for conveyance and delivery of water. Use of reclaimed water for landscaping would reduce the energy required to treat, collect, and redistribute water compared to potable water.

5

ECONOMIC DEVELOPMENT

5.1 JOBS-HOUSING BALANCE

This chapter summarizes anticipated job generation and implementation of programs to achieve the required relationship between jobs and housing. The following goals and policies are directly applicable to the provision of a balance of jobs and housing in Quay Valley:

- Create jobs concurrently with housing to the greatest extent possible. Include requirements to ensure a reasonable ongoing balance between housing and jobs by phase. Strive to match overall wages to home prices.
- Promote live/work uses, such as home occupations and employee housing.
- Ensure provision of a range of new home prices including for-sale and rental units that are affordable to families at all household income levels within each community.
- Encourage high density and affordable housing to be located near existing and proposed transit routes, employment centers, shopping facilities, schools, medical facilities, and other services.

5.1.1 Jobs-Housing Relationship

Quay Valley is planned to maximize the number of workers who live in the community by having a strong correlation between wages and housing prices. The following four job-housing principles are expected to encourage workers to live within the community and reduce travel to outside destinations:

- The land use plan designates the appropriate amount of job-generating land uses to meet or exceed the overall requirement of 1.4 jobs per household at build out.
- The phasing plan will maintain an approximately equal balance between new job generating uses and new housing units developed within each phase.
- An Economic Development Plan designed to attract job producing development in targeted industries in each phase of development will be prepared. A summary of this strategy is provided in Section 5.5.
- A sufficient population base to support a wide range of destinations for school, shopping, services, and recreation would be included.

5.1.2 Jobs-Housing Proximity

Many factors contribute to an individual's decision to live and work in the same city or zip code. The proposed jobs-housing principals are expected to increase the extent to which residents choose to live and work in Quay Valley. Development will benefit the planned Quay Valley community by supporting "quality of life" amenities that would otherwise not be available. These are planned to include grocery stores, basic medical services, schools, as well as municipal services such as law enforcement, fire and emergency medical services, municipal water, sewer, and storm-water services.

A strong employment base would make it possible for many residents to live, learn, work, shop, and play in their new hometown. It is projected that there will be in excess of 42,500 permanent new jobs of all types created within Quay Valley.

5.2 ECONOMIC DEVELOPMENT PLAN

Every new community must include elements to create or support the local economy. For many reasons, housing development alone cannot create viable economic sustainability. The proposed ratio of 1.4 jobs per home would assure a sound local economy with sufficient tax revenue to pay for superior public services. It would also reduce vehicle miles traveled, a core component of Quay Valley's sustainability plan.

According to several economic reports, a limited job market has created a cyclical problem for parts of California's Central Valley, where a lack of certain business opportunities and high-paying jobs has led to a "brain drain". Many motivated and well-educated residents who grew up in the Valley, are compelled to seek careers and opportunities elsewhere. As a result, fewer new businesses are created and the employment opportunities may not be as plentiful and diverse as they could be. Counteracting this cycle requires deliberate and aggressive measures to create high-quality jobs.

The Quay Valley Economic Development Plan seeks to promote a diverse and robust economy by creating and attracting new high-quality employers by utilizing six cornerstones of business enticement:

- Provide available land at more attractive prices than other areas of California.
- Provide a large available skilled workforce.
- Provide a high quality of life with safe neighborhoods, good schools, an efficient transportation system, and a clean, picturesque environment.
- Provide quality, 21st century housing at reasonable prices with no electric bill.
- Provide opportunities and access to the entire education spectrum.
- Leverage existing incentives and create new ones for businesses to locate in Quay Valley.

These cornerstones will allow Quay Valley to assist Kings County in overcoming existing or perceived obstacles to attracting new employers.

5.2.1 Jobs During Project Construction

An estimated 3,200 construction jobs per year will be created over the build-out period. Additional jobs directly related to project construction include engineering, surveying, planning, analytical studies, energy, utility, haulers, merchants, food service, retail, installers, mechanics, landscapers, drivers, architects, electrical engineers, mechanical engineers, botanists, water specialists, and pipe layers, as well as jobs increased by higher demand at a wide variety of area vendors.

5.2.2 Education and Research

A 100-acre University Research Park is proposed to help facilitate learning and research opportunities for a wide variety of disciplines in a higher-education environment. Plans involving nearby universities and community colleges include the creation of "The California Institute of Sustainability and Innovation" as well as a "Green Collar" Job Training Program. Discussions and work sessions have been conducted over the past several years with Fresno State to manage the Institute as a satellite university campus as part of the California State University system. Details to formally sanction and establish the Institute in Quay Valley are in progress. These programs would encourage and help green technology-based businesses to locate in the vicinity due to this potential supply of research and trained workers.

5.2.3 Technology

California is home to some of the most prolific technology innovators in the world. The two biggest tech centers in the nation are Silicon Valley in San Jose, less than a three hour drive from the project area, and Silicon Beach, two and a half hours away in Los Angeles. These geographic areas suffer from insufficient housing, resulting in an unaffordable cost of living for a large portion of their workforce. With high data capacity enabled by fiber optic cable and other efficient transmission methods, telecommuters have become the fastest growing part of many tech companies' employee base. These employees work in San Jose or Los Angeles where housing affordability is often challenging.

Quay Valley is designed to offer a high quality of life for a much lower cost of living than the major metropolitan areas of California. As an advanced, modern community featuring significantly lower priced "smart" homes connected by clean transportation options in a safe environment that embraces nature and powered by renewable energy, the locale would be aligned with the sensibilities of the tech industry.

5.2.4 Tourism

A signature component of the project's plan is a 1,650 acre Destination Commercial area consisting of hotels, retail, attractions, museums, sports complex and amphitheater. This area would provide a safe and clean working environment for virtually the entire spectrum of jobs, from maintenance to finance and engineering, and animal husbandry to museum curators and lifeguards. In addition, this area is expected to provide summer and seasonal job opportunities for those still in school, and part-time opportunities for those who have household or other obligations.

5.2.5 Agriculture

Agricultural job opportunities are planned to be created by the permanent agriculture embedded in the community, as well as the processing, distribution, storage and manufacturing opportunities in the Industrial area of the land use plan. Direct access to I-5 in the center of the state provides appeal to many potential businesses in the agriculture value chain.

5.2.6 Service

In addition to the Destination Commercial area, services needed throughout the community would include restaurants, hotels, fire, police, doctors, nurses, administrators, security, real estate, domestic, mechanical, plumbers, repair, delivery, mail, office, secretarial, beauty technicians, dry cleaners, community non-profits, veterinarians, trainers, and many others.

5.2.7 Manufacturing and Light Industrial

Many new manufacturing and industrial businesses are planned to be established to efficiently deliver goods, both during construction and after completion of the community. Access to I-5 at a point half way between Los Angeles and the San Francisco Bay Area, as well as the Ports of Los Angeles and Oakland, provides many opportunities for strategic manufacturing and distribution. Since energy is a large expense for manufacturing, this central location offering affordable land prices and renewable energy could attract many industrial and technological businesses.

5.2.8 Workforce

The Kings County Economic Development Corporation has provided information in a number of areas, including job training, unemployment rates, education attainment levels, current commuting ratios, and other workforce matters. Discussions have ensued with West Hills Community College and Fresno State University to understand the strengths of local education programs and determine job opportunities that may be conducive

to local higher education student interests and skills. Students at these and other nearby institutions would be able to participate in programs related to the development of Quay Valley in the areas of engineering, planning, surveying, construction management, transportation and other specialties such as the Hyperloop and animal husbandry at a planned Serengeti themed hotel.

5.2.9 Incentives

DPFG has been retained to create a public financing plan consisting of direct financial incentives which have been identified in collaboration with the Kings County Economic Development Corporation, specifically for businesses in the Destination Commercial area as part of a Tourism Improvement District. This type of financial incentive package has had a tremendous track record of success creating and enhancing entertainment destinations throughout California as well as other locations within the United States. Described in Chapter 9, *Financing*, the plan creates no financial burden on the county while creating additional tax revenue to pay for infrastructure and other public costs associated with the proposed development.

A multi-modal mobility transit plan, managed by the proposed CSD is planned to provide alternative modes of transportation including energy- efficient buses which would be available for residents to commute to employment. State-of-the-art integrated fiber optic networks providing high speed internet access, and reliable power supplies are planned throughout Quay Valley. These advanced fiber optic systems would also support residents who work from home. The latest technology and telecommunication systems, and a desirable environment would make Quay Valley an attractive business address for a wide variety of national and regional companies.

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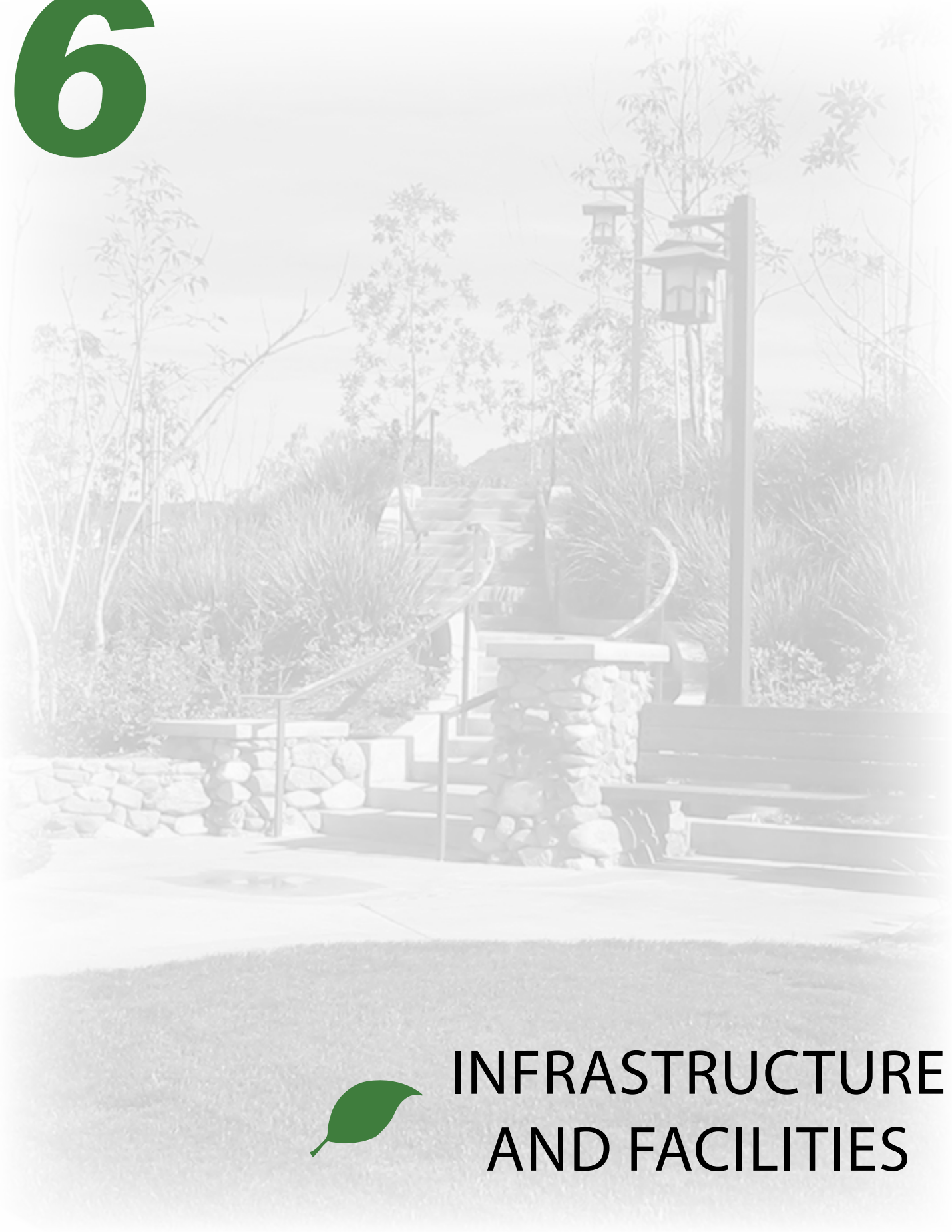


INFRASTRUCTURE AND FACILITIES

6.1 INFRASTRUCTURE AND FACILITIES

This Preliminary Design Plan outlines a conceptual program for backbone public infrastructure and community facilities to be provided within Quay Valley. Backbone public infrastructure consists of streets, trails, parks, water, sewer, storm drainage, recycled water, stormwater detention, erosion control, interchanges, bridges, signalization, electrical, gas, telecommunications, advanced smart technology and water/wastewater treatment. This chapter includes summary tables for water supply and demand, and additional detailed support data has been included in Appendix D, *Water Supply and Demand Tables*. Note that schools, fire protection and law enforcement will be addressed in more detail in later chapters.

6.1.1 Backbone Public Infrastructure

A summary of the estimated costs of the proposed Backbone Public Infrastructure required to support the project, delineated in 2015 dollars is listed in Table 6.1. These costs are preliminary and are based on studies conducted by Developers Research Associates. The most up to date information available will be included in the final Public Facilities Master Plan to be submitted later in the project review process.

BACKBONE PUBLIC INFRASTRUCTURE PHASING

The project area is expected to be constructed in five distinct phases. Portions of the backbone infrastructure will be constructed from the outset and through all the phases of development. Table 6.2 provides estimated costs of the backbone infrastructure by phase (however, because a portion of the backbone infrastructure will serve the entire project area, it is difficult to strictly classify specific improvements into just one phase). A list of milestones for construction of infrastructure will be detailed in a Development Agreement ("DA") later in the entitlement process.

Table 6.1 Backbone Public Infrastructure Cost Estimates

Facility	Total in Millions
Water	$139
Sewer	$192
Storm Drainage	$48
Streets (includes bicycle and pedestrian paths)	$118
Interchanges	$44
Parks/Landscaping (includes Erosion control)	$258
Linear Park (includes Water detention)	$40
Bridges	$37
Signalization	$57
Advanced/Smart Technology	$72
Dry Utilities (includes electrical, gas, and telecommunications)	$285
Total	**$1,290**

Table 6.2 Backbone Public Infrastructure Estimated Cost by Phase (in millions)

Facility	Total Cost	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5
Water	**$139**	$14	$20	$52	$27	$26
Sewer	**$192**	$20	$27	$72	$37	$36
Storm Drainage	**$48**	$5	$7	$18	$9	$9
Streets	**$118**	$12	$17	$44	$23	$22
Interchanges	**$44**	$29	$15	$0	$0	$0
Parks/Landscaping	**$258**	$26	$36	$97	$50	$49
Lake System/Waterways	**$40**	$4	$6	$15	$8	$7
Bridges	**$37**	$4	$5	$14	$7	$7
Signalization	**$57**	$6	$8	$21	$11	$11
Advanced/ Smart Technology	**$72**	$10	$12	$20	$15	$15
Dry Utilities	**$285**	$29	$40	$107	$55	$54
Total	**$1,290**	$159	$193	$460	$242	$236

BACKBONE PUBLIC INFRASTRUCTURE TRIGGERS

In compliance with the terms of the DA, the Master Developer will deliver to the County a Tentative Subdivision Map that will define the parcels, easements, and rights-of-way necessary for the portion of the backbone infrastructure, drainage areas, community parks, neighborhood parks, open space areas, and other facilities, for the areas of initial development. Following approval of the Tentative Subdivision Map, a Final Subdivision Map will be prepared showing all required dedications for approval, acceptance, and recordation by the County. Subsequent phases will also include Tentative and Final Subdivision Maps to define the backbone infrastructure, easements and facilities parcels for each phase.

Development of the backbone infrastructure and Community Facilities will be driven by triggers determined during the DA process. These triggers will be identified for both residential and nonresidential development. The development of the backbone infrastructure will be secured by bonds prior to the recordation of the first Final Subdivision Map or building permit (whichever comes first) and construction must be completed prior to the issuance of the first certificate of occupancy. Threshold figures shall be anticipated and improvements planned and designed to accommodate future expansions, extensions, widening or ultimate widths.

6.1.2 Community Facilities

The development of Quay Valley requires community facilities to support residents, employees and visitors. During development, oversight of the community facilities and public services is envisioned to be placed under the authority of the Community Services District (CSD). A complete discussion of the process for formation of the CSD is included in Section 8.2, *Governance and Community Services District Plan*. Proposed community facilities include a government center, trails, open space, a library, transit, law enforcement and fire protection and the corporation yard.

COMMUNITY FACILITIES ANALYSIS

The Quay Valley community facilities analysis is based on the approach taken in the Public Facilities Financing and Urban Services Plans prepared in conjunction with the Sutter Pointe Specific Plan. The Sutter Pointe Urban Services and Public Facilities Plans were developed based on a comparison to the City of Folsom. The City of Folsom was chosen as the comparable city based on the following similarities to the Specific Plan area: population served at build-out (approximately 74,000), similar demographics of new home buyers, and anticipated similarity of services.

The City of Folsom costs were analyzed on a per capita basis and adjusted to the estimated Sutter Pointe population. A similar approach is utilized in the estimated Quay Valley levels of service. Sutter Pointe's levels of service on a per capita basis were adjusted to the Quay Valley projected population (3.3 persons per household times the approximately 26,000 dwelling units). Note that at this initial stage, the levels of service are merely estimates based on the similarities of the Sutter Pointe project to the Quay Valley project. The levels of service will be adjusted subsequent to discussions with Kings

County individual departments. A formal Urban Services Plan will then be prepared by Quay Valley's Public Finance consultant and submitted to the Kings County Community Development Agency for review.

COMMUNITY FACILITIES COSTS

A summary of the total cost associated with development of the Quay Valley community facilities is included below in Table 6.3, *Public Facilities Cost Estimates*. These costs are further refined by phase in Table 6.4, *Preliminary Public Facilites Cost and Phasing Plan*.

Table 6.3 Public Facilities Cost Estimates

Facility	Total Cost (in millions)
Schools	$390
Trails	$6
Open Space	$9
Library	$11
Transit	$8
Sheriff Sub-Station	$10
Fire Protection Facilities*	$24
Government Center	$8
Corporation Yard	$4
Total	**$470**

***Includes temporary and permanent stations, equipment and fire support facilities.**

Table 6.4 Preliminary Public Facilities Cost and Phasing Plan (in thousands)

Description	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Totals
Schools	$138,000	$71,000	$138,000	$14,000	$29,000	$390,000
Trails - (Lineal Feet)	$1,500	$1,500	$1,400	$1,100	$500	$6,000
Open space	$5,000	$4,000	$0	$0	$0	$9,000
Library (31,000 Square Feet)	$0	$3,000	$4,000	$4,000	$0	$11,000
Transit	$2,000	$2,000	$1,800	$1,600	$600	$8,000
Sheriff Sub-Station	$0	$2,900	$2,900	$4,200	$0	$10,000
Temporary Fire Facility & Equip.	$1,000					$1,000
Master Fire Station & Equipment	$10,000	$0	$0	$0	$0	$10,000
Sub-Fire Station & Equipment	$0	$5,000	$0	$0	$0	$5,000
Fire Support Facili-ties	$0	$0	$8,000	$0	$0	$8,000
Government Center	$1,500	$0	$2,500	$4,000	$0	$8,000,
Corporation Yard	$4,000	$0	$0	$0	$0	$4,000
Total	$163,000	$89,400	$158,600	$28,900	$30,100	$470,000

CIVIC CENTER

The 6.0-acre Civic Center, envisioned as a core area and network of community staff office buildings needed to maintain a full-service community, is planned to be located in the central Downtown Mixed Use area and would include Quay Valley's central police station in addition to administrative offices.

The 55,000-square-foot Civic Center is envisioned to include space for all administration (31,000 sf) and law enforcement activities (24,000 square feet, including holding cell facilities). Specific siting criteria and design intent for the Civic Center shall be established in the Quay Valley Development Regulations to be set forth at a later date.

The Civic Center is proposed to be built in phases. The first phase of 6,000 square feet would need to be completed prior to the 3,200th building permit. Before the construction of the Civic Center, administrative activities will be housed in temporary facilities at the outset of development, and the costs will be funded by the developer.

TRAILS

The proposed trail system is intended to provide a system of pedestrian and bicycle trails that connects park, schools, residential neighborhoods, and commercial and employment centers. Trails are proposed to be constructed in phases to serve the Quay Valley community as it develops. The trigger for development of the proposed trails will be as established by the DA and implementation will occur in conjunction with tentative and final tract map processing.

OPEN SPACE

Open space proposed as parks and greenbelts are planned to support both active and passive recreation. Greenbelts are designed to be linked by trails and recreation features to enhance the natural environment. The Land Use Plan includes approximately 431 acres of designated open space. The acreage consists of a 25-acre regional park, five urban parks, neighborhood parks, and a linear park including drainage basins and channels. Phasing of open space development is to be established by the DA and implemented though the subdivision approval process.

LIBRARY

A 31,000 square foot Library is planned within the project area. The Kettleman City branch, located about 8 miles north is the closest existing library to the project site. It is anticipated that library service would be provided either by the Kettleman City branch, a bookmobile or a temporary branch library within the project area. The library may lease space in a retail or office building. The timing and funding for the library would be detailed in the DA.

TRANSIT

Kings Area Rural Transit ("KART") is Kings County's public transportation provider. KART provides public transit service Monday thru Friday and limited service on Saturdays. KART provides transportation services to the cities of Armona, Avenal, Corcoran, Grangeville, Hardwick, Hanford, Kettleman City, Laton, Lemoore, and Stratford. Dial-A-Ride (origin to destination) is available to eligible certified ADA riders. In addition, KART provides regular transportation service to Fresno and Visalia Monday thru Friday.

New transit services and other types of shared transportation are envisioned for Quay Valley. As development progresses and demand for transit service increases, ride share programs and commuter services could be implemented (including local service and bus rapid transit). Transit could eventually connect with key activity centers in Hanford, Visalia and Fresno.

Transit service for Quay Valley is envisioned to be administered through a locally organized and funded by a proposed Transportation Management Association (TMA). The Town Center, Industrial Center, and Destination Commercial Center are planned to be connected by transit service with park and ride facilities. Proposed components include buses to serve the project area, the planned park-and-ride facility, a bus-maintenance facility, and bus shelters.

Phase 1 population thresholds are not expected to be sufficient to support a local transit service. However, a limited commuter bus service between the Phase 1 residential neighborhoods, the Town Center, the Village Centers, the Industrial Center and the Destination Commercial Center may be viable. As travel patterns for Phase 1 are understood, the TMA may be able to develop and market programs such as car/vanpool and a commuter bus service.

CORPORATION YARD

A corporation yard is planned to be located in the Industrial land use area east of Interstate 5. This yard would provide maintenance and service space to support the following government functions: park maintenance, road maintenance, transit services, and landscape and lighting maintenance. The corporation yard is expected to include approximately 3.0 acres and contain 20,000 square feet of indoor storage.

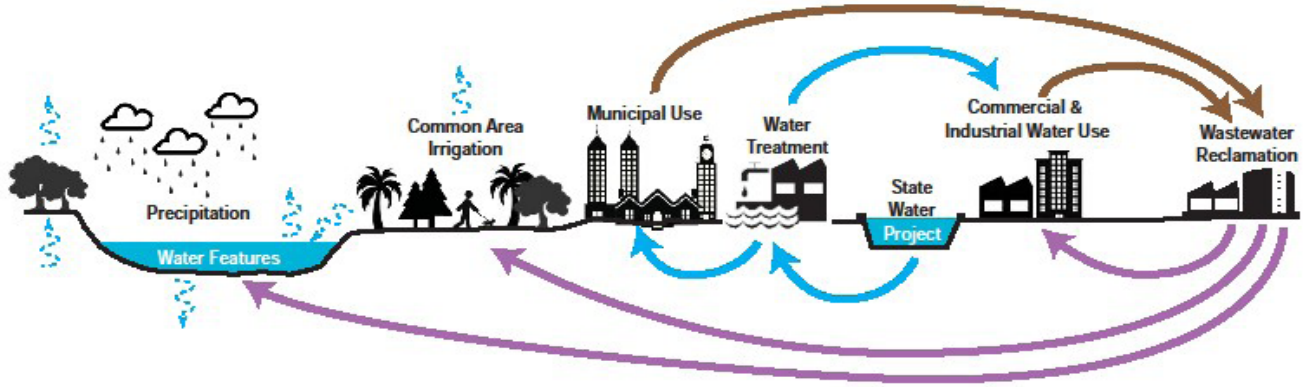
It is anticipated that temporary facilities will be used until the corporation yard is completed, and the cost will be funded initially by the Master Developer. Development triggers for the phasing of construction of the Corporation Yard will be incorporated in the DA. Costs initially funded by the Master Developer are to be reimbursed. An agreement between the Master Developer and the CSD shall be required for each community facility completed.

6.2 WATER DEMAND AND SUPPLY

The total water consumption of the project area is composed of both potable and wastewater (non-potable) demands. The non-potable water demand would be supplied through a combination of wastewater reclamation, stormwater run-off harvesting, and raw water supplies not used for potable water demand. Non-potable water use accounts for a significant portion of the community's water demand. This section describes the overall water demand and supply for the project area and the following sections provide detail on potable and non-potable water use. Figure 6.1 below depicts cycles of potable and recycled water supply and usage on a regional level.

REGIONAL WATER SUPPLY DIAGRAM

FIGURE 6.1



6.2.1 Water Balance (Demand/Supply)

The estimated average annual water demand for the project is detailed in Table 6.5 by land use type except for the projected demand for the Destination Commercial area, which is included in Appedix D. The potable water supply would be utilized for human consumption, single family residential irrigation, commercial and industrial areas, and for body-contact water features. The non-potable water supply would be primarily from recycled water and captured stormwater when available, although as will be shown later, a small amount of imported water may be required during summer months to provide a balance between demand and supply.

Quantification is based on actual demands within similar communities accounting for land use type, adjusting for climate differences, and aggressive implementation of water conservation measures. Wastewater generation and recycled water demands are also shown for consistency and illustration of the entire water demand and supply strategy.

Some potable water will be used for irrigation on private residences and non-public areas shown as local outside water use in Tables 6.5 and 6.6. Finally, common area irrigation demands are calculated using percentages of gross land use parcel area to account for landscaping and using water application rates typical for the climate and type of plant palettes proposed for the development. While the demand projections utilized assume rather aggressive water conservation, the new Model Water Efficient Landscape Ordinance (MWELO) adopted July 15, 2015 by DWR in response to water conservation goals should confirm the water demand projections assumed herein, or even potentially reduce them.

Table 6.5 Estimated Average Annual Water Demand*

Land Use Designation	%Residential / Commercial	Gross Acres	Dwelling Units	Building (Sq. Ft.)	Interior Water (MGD)	Local Outside Water (MGD)	Common Area Irrigation (MGD)	Total Water Demand (MGD)
Low Density		2,126	12,758		2.23	1.53	0.80	4.56
Medium Density		462	4,620		0.74	0.28	0.23	1.25
Medium High Density		251	3,771		0.60	0.09	0.10	0.80
High Density		68	1,703		0.26	0.00	0.03	0.28
Destination Commercial		1,652.3		6,441,318	1.46	0.43	1.34	3.23
Transportation Commercial		67.1		584,575	0.12	0.00	0.04	0.16
Downtown Mixed Use	40% Residential	100.0	2,050		0.31	0.00	0.04	0.35
	60% Commercial	140.4		2,183,663	0.23	0.00	0.07	0.30
Mixed Use	10% Residential	40.0	1,006		0.15	0.00	0.02	0.17
	90% Commercial	349.4		5,506,463	0.55	0.00	0.19	0.73
Industrial		354.3		6,173,323	0.62	0.00	0.21	0.83
Public		664.7			0.18	0.46	0.38	1.01
Agricultural		460.7			0	0.00	1.17	1.17
Open Space		431.0			0	0.00	1.19	1.19
Mineral Resource Preserve		140.0			0	0.00	0.17	0.17
Total		**7,306.9**	**25,908**	**20,889,342**	**7.43**	**2.80**	**5.96**	**16.19**

***Refer to Appendix D, Water Demand and Supply Tables for detailed support data regarding water demand calculations.**

6.2.2 Total Project Water Demand

Based on the demand projections detailed in Tables 6.5, and a summary of the demand requirements is shown in Table 6.6 below, in million gallons per day (MGD) and acre-feet per year (AFY).

Table 6.6 Water Demand Summary

Demand	MGD	AFY
Interior Water	7.43	8,327
Local Outside Water	2.80	3,131
Total Potable Water	**10.23**	**11,458**
Common Area Irrigation	5.96	6,676
Total Project	**16.19**	**18,134**

Demand projections assume fairly aggressive conservation. To summarize residential demand, an average of 50 gallons per capita per day (gpcpd) has been utilized for inside water use (wastewater generation) with total residential water demand at 93 gpcpd. Therefore, for residential use only, approximately 46 percent of water use is outside the home. In terms of total residential use only, this equates to 279 gallons per day per dwelling unit (gpd/du) or 0.313 acre-feet per year (AFY)/du. In terms of total Project water demand (including all residential and non-residential demand) these figures equate to 629 gpd/du or 0.704 AFY/du.

6.2.3 Total Project Water Supply

Interior water demand or wastewater generation would be treated and reused to supply recycled water via a separate recycled water distribution system to all common area irrigation demands. To account for water losses during the liquid and solids handling treatment processes as well as evaporative losses, it is conservatively estimated that recycled water production would be 90 percent of the wastewater generated (inside water demand). Approximately 148 AFY would be needed to balance the projected common area irrigation demand with the estimated recycled water supply so this volume would be imported to supplement the recycled water supply as shown in Table 6.7, *Water Supply Summary*. This small imbalance would typically occur in late summer and imported water can be introduced into the recycled water system by discharging water into a recycled water storage reservoir via an air-gap at a convenient point where the potable and recycled water systems are in close proximity to one another.

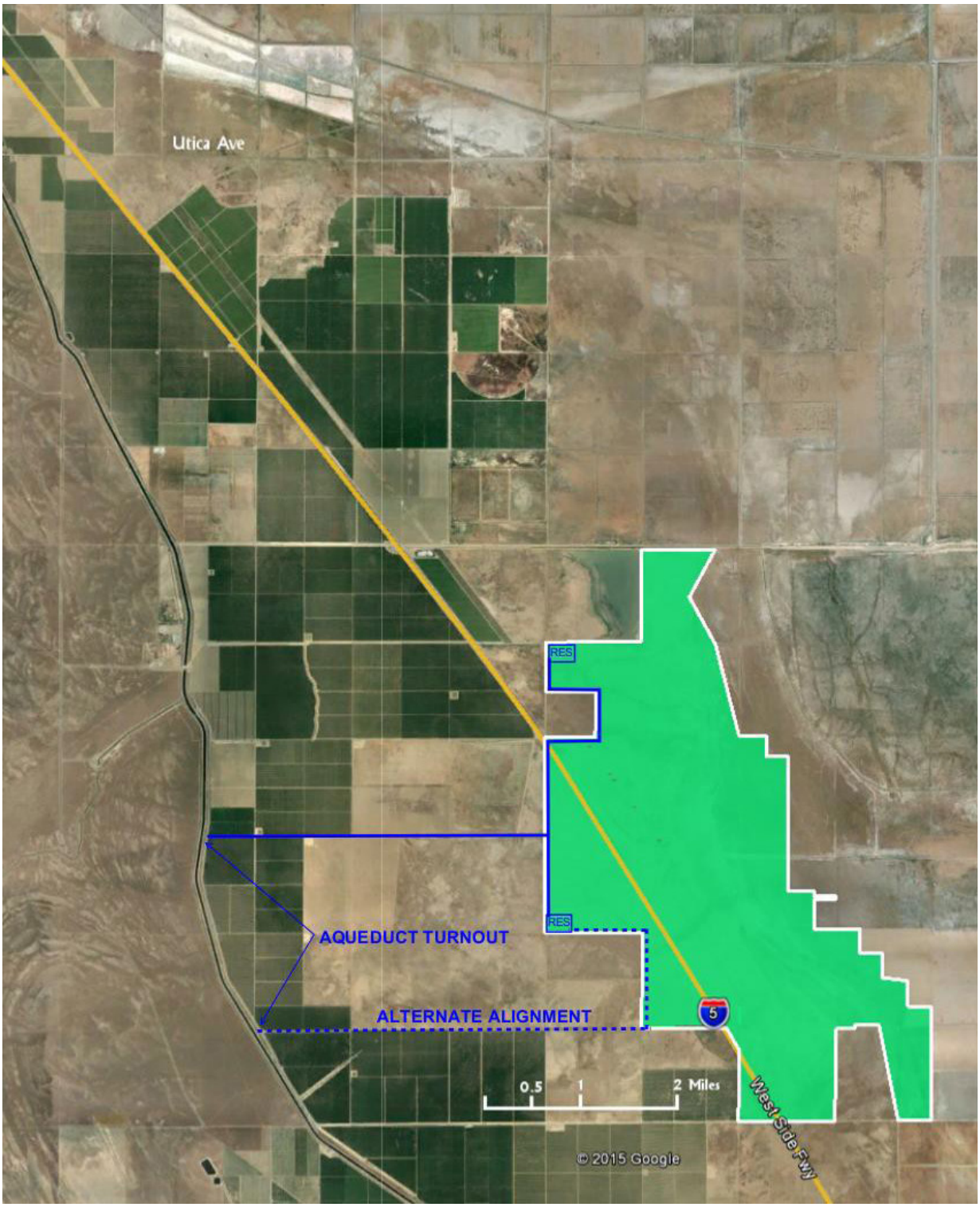
Table 6.7 Water Supply Summary

Supply	MGD	AFY
Imported Water	10.06	11,266
Recycled Water (90% Interior Water)	6.35	7,117
Total Project	16.41	18,383

Note: Imported Water includes Potable Water of 11,038 AFY and Non-Potable Water of 220 AFY

WATER CONVEYANCE ALIGNMENTS

FIGURE 6.2



6.3 POTABLE WATER

The following description covers the production, distribution and storage of potable water facilities within the project area as illustrated in Figure 6.3. *Potable water Plan* will be supplied from imported surface water from Dudley Ridge Water District (DRWD) via their imported surface water currently drawn from the California Aqueduct or State Water Project (SWP), which will be conveyed to the site and treated by on-site surface water treatment facilities. In addition to DRWD's access to SWP water, Article 21 water, and Turnback Pool water, DRWD also has rights within a number of water storage projects. SWP water quality data indicates that the raw water supply can be treated to meet primary and secondary drinking water standards with available, conventional surface water treatment technologies, such as described above.

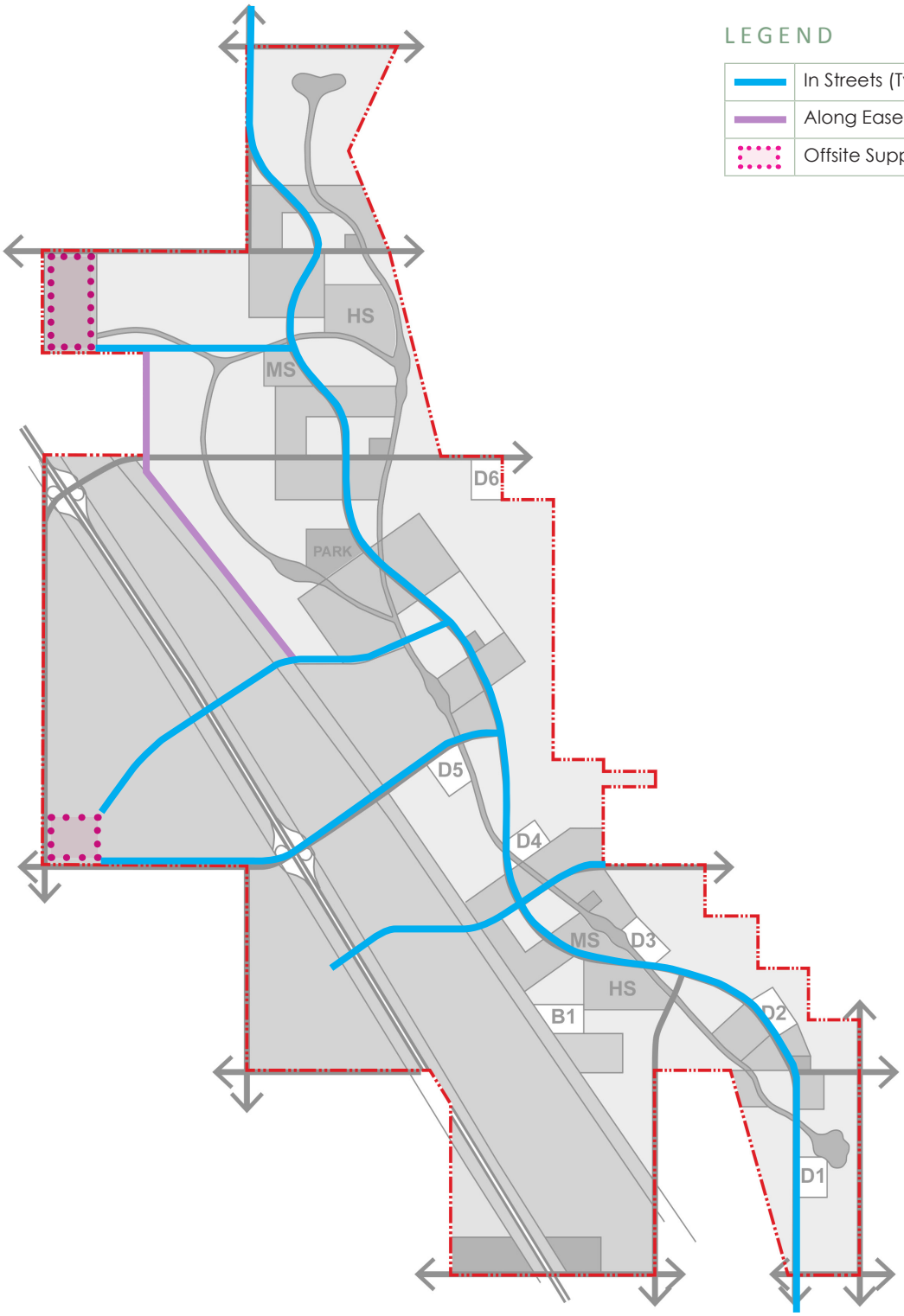
The Quay Valley property currently within DRWD is 1,068 acres, of which 588 acres has water rights set by DRWD at 1.97 AF/acre, entitling the project to 1,158 AFY of DRWD's SWP amount. The remainder of the project area would be annexed to DRWD as a subordinate annexation enabling the 1,158 AF of water to be used anywhere within the project area but without additional water rights. However, as tentative maps are recorded, the Master Developer is envisioned to purchase permanent water rights in the SWP and assign them to the land being developed, satisfying the conditions of Senate Bill 221. Those water rights would be transferred to DRWD as the SWP contractor.

The DRWD's SWP water supply is subject to the allocations on SWP contractors set annually by DWR based on hydrology within the SWP system. Based on the draft SWP Reliability Report 2015 (dated April 2015) available on DWR's website, a 62% reliability is used to determine average year supply, which would reduce the supply during an average year. For example, the current supply of 1,158 AF would be reduced to 718 AF (1,158 x 0.62). Therefore, during average or normal years, an additional 17,453 AFY of imported water would be required, which is derived by dividing the total imported water supply requirement of 11,266 AFY by 0.62 and subtracting the average supply available of 718 AFY. Rights to this supplemental water supply may be purchased from various sources, either private individuals with water rights, or a public agency willing to transfer water rights to DRWD on behalf of the project. When SWP supplies are less than normal, water could be drawn from on-site and off- site storage/water banks. Alternately, spot water purchases could be made in wet years and stored, or in dry years and utilized to supplement available supply.

A new turnout on the California Aqueduct is planned to be constructed by DRWD to provide water, along with a transmission main connecting this turnout to the two raw water storage reservoirs within the project area. The turnout would consist initially of a siphon-type pump to lift the water over the levee on the east side of the aqueduct. The water would then flow by gravity to the project area's untreated water storage reservoirs. This pipeline could run along one of two alignment corridors to the project area as shown on Figure 6.2, in either one approximate 48- inch pipeline or two smaller pipelines with equivalent capacity that could be constructed for phasing purposes. Once the pipelines reach the westerly property boundary they would split and connect to each of the raw water storage reservoirs.

POTABLE WATER PLAN

FIGURE 6.3



LEGEND

	In Streets (Typical)
	Along Easement
	Offsite Supply

6.3.1 Potable Water Supply Design Criteria

The criteria used to plan the water supply facilities meet or exceed established Kings County and State of California guidelines and standards. A summary of the criteria used for each element of the potable water supply system is provided below.

POTABLE WATER DEMAND PEAKING

Based on the detailed demand projection tables, the Annual Average Potable Water Demand is calculated to be approximately 9.93 MGD. Peaking factors are applied to the Average Day Demand (ADD) to determine the Maximum Month Demand (MMD), Maximum Day Demand (MDD) and Peak Hour Demand (PHD) rates. The Annual Average Day Demand is used to assess the sufficiency of water rights and raw water supply. Maximum Month Demand typically occurs during the summer season, and is used to predict the impacts of extended increased water demand on water resource supply (i.e. surface water delivery/storage). The Maximum Day Demand is used to size water production elements, including surface water diversions and pumping, surface water treatment plants, and storage capacity.

For a community as large and diverse as Quay Valley, the MMD and MDD are typically about 1.4 and 1.6 times the ADD. These factors are used for the majority of the project potable water demands with the exception of the Destination Commercial area, where it is assumed approximately 50 percent of the total annual visitors would be visiting over about 15 weeks in the summer, with July and August as the peak months. Therefore, an additional peak demand applied on top of the factors above would commensurate with the additional number of visitors to the area during that period.

The Peak Hour Demand factor is believed to be conservative enough to accommodate the seasonal difference in visitors to the area as the peak from visitors will occur during the middle of the day whereas typical community demands peak during mornings and evenings out of sync with the day visitor peak. The PHD as well as fire flow requirements are used to size distribution pumping systems, pipelines, and operational storage to deliver adequate capacity while maintaining service pressures. Table 6.8, *Peak Potable Water Demands* summarizes the calculated demands under these various scenarios.

Table 6.8 Peak Potable Water Demands

Demand	Peaking Factor	Total Flow Rate
Average Day Demand (ADD)	NA	9.9 MGD
Maximum Month Demand (MMD)*	ADD X 1.4	14.3 MGD
Maximum Day Demand (MDD)*	ADD X 1.6	16.3 MGD
Peak Hour Demand	ADD X 4.0	39.6 MGD

* MMD and MDD totals are slightly higher than factors to account for seasonal visitors

WATER STORAGE

The principle function of storage is to provide a reserve supply of water for: 1) operational equalization, 2) fire reserve, and 3) emergency needs as summarized in Table 6.9, *Water Storage by Type*.

Operational equalization storage is directly related to the amount of water necessary to meet peak daily demands. The intent of operational storage is to provide storage to supply the daily fluctuations in demand and typically consists of 35 percent of a maximum day or in this case 5.6 MG.

Fire flow reserve is provided to fight the maximum fire, which has been conservatively assumed to be 5,000 gpm for a duration of 6 hours or 1.8 MG.

Emergency needs vary from agency to agency and should be based on the reliability of supply sources. Since Quay Valley will have a substantial amount of untreated storage between the imported source and the on-site water treatment facilities, an emergency storage volume of treated water of 2 maximum days or 32.6 MG is considered adequate.

Treated water storage of approximately 40 MG would be provided downstream of the water treatment facilities by multiple storage tanks connected via a header pipeline to provide for logical phased construction in concert with development phasing.

Untreated water storage would be handled in two large reservoirs with a total capacity of approximately 4,800 acre-feet (AF) or 1,564 MG. This amount would be available if imported water supply is interrupted or cut back due to prolonged drought or other emergency situations.

Table 6.9 Water Storage by Type

Storage Type	Volume
Operational	5.6 MG
Fire	1.8 MG
Emergency (Treated)	32.6 MG
SUBTOTAL TREATED	**40.0 MG**
Reliability (Untreated)	1,759 MG
TOTALS	**1799 MG**

WATER TREATMENT

Currently two sites for treatment facilities are proposed within the conceptual Quay Valley land plan. Raw water from surface water sources will be delivered to on- site surface water treatment facilities. These facilities will consist of raw water storage, inlet pumping stations, chemical pre-treatment, flocculation and clarification, filtration (with conventional or membrane media filters) and disinfection using either chlorination or UV processes. The design of the facilities will produce a final water meeting or exceeding all Federal and State requirements for surface water treatment. Final product water will

be discharged to water tanks located on-site prior to discharge to the potable water distribution system.

Treatment residuals and wastes would be managed on the treatment plant sites by recovering backwash and dewatering solids for ultimate disposal in a landfill. Residuals requiring further treatment would be discharged to the sanitary sewer system and treated by the on-site wastewater reclamation facilities.

WATER DISTRIBUTION

The water distribution system will be designed to provide reliable flow and near constant pressure at varying water demands and to provide fire flow protection for the community. The distribution system will be looped, connecting all neighborhoods so that water can be moved throughout the project providing access to both treatment plants and all storage reservoirs for redundancy purposes.

From the water treatment plants, reservoir water will be pumped into the distribution system via a large booster pumping station located adjacent to each treated water reservoir. These booster stations will consist of multiple pumps, some with variable frequency drives to maintain constant pressure at various flow levels.

Design will be based on Kings County standards as stated in the Kings County Department of Public Works Design Standards manual. The entire water system is envisioned to be operated by a private, PUC-regulated water agency and design standards will be generated in conjunction with their staff at the outset of project planning.

6.4 WASTEWATER

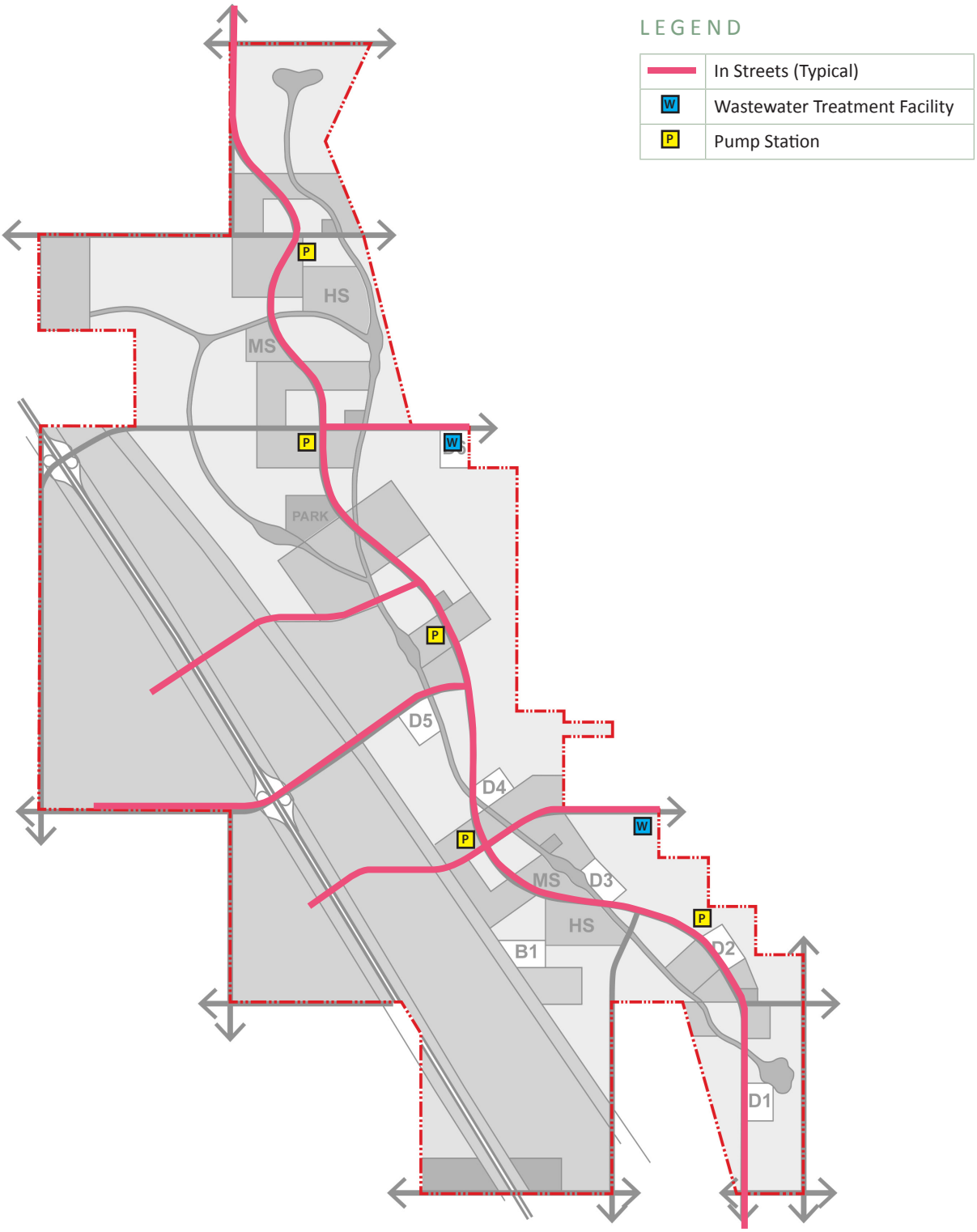
The following conceptual plan describes the generation, collection and treatment of wastewater. Storage and distribution of generated non-potable water for the project area is also included. As described previously, the total water consumption for the project is made up of both potable and non-potable demands. Wastewater would be generated from the "inside" water use, collected in a sanitary sewer system, and conveyed to Wastewater Reclamation Plants (WRP). These Plants would generate non-potable water that would be distributed to the community for non-potable water uses such as landscaping and maintenance. This recycled water is a key element in the sustainable use of resources and accounts for a significant portion of the community's water supply. Figure 6.4, *Wastewater Plan* illustrates these concepts.

6.4.1 Wastewater Generation and Re-Use

The estimated average annual wastewater generation for the project area at full build-out is calculated as 7.06 million gallons per day (MGD). Water reclamation can conservatively produce recycled water at a 90% efficiency or an average of 6.35 MGD for the project area. This volume is slightly below the non-potable demand requirement of 6.49 MGD. The 0.14 MGD difference can be provided through collection and re-use of captured storm water as the primary method, or with additional imported potable

WASTEWATER PLAN

FIGURE 6.4



water if little or no rainfall occurs. Stormwater generation would be collected in a system of pipes from each home and user within street rights-of-way or public easements and conveyed to a Wastewater Reclamation Plant (WRP). The conveyance system would consist primarily of gravity sewer pipes and access holes (manholes) from each wastewater generator to the WRP's. However, some sewer lift stations and force mains would be required at key locations throughout the project area. The sewer lift stations would consist of a series of holding chambers, pumps, sensors, and electrical equipment to direct the appropriate number of pumps to operate during daily and seasonal variations in flow rates. Additional back up pumps and generators will also be provided to allow for maintenance and replacement of equipment, and for emergency operation in the event of a power failure. Pump stations would be located at appropriate intervals to avoid pipe depths in excess of approximately 25'.

The WRP's will treat all of the wastewater generated by the project on an annual, seasonal, and daily basis with appropriate peaking factors incorporated into their design. Further description of the treatment facilities is provided below. The recycled water generated would be stored at the WRP facility for immediate re-use, or pumped to longer term storage facilities for later use during peak periods. Distribution of recycled water would be through a separate piping system, parallel to the potable water system and distributed in a similar manner. Recycled water piping and meter systems are clearly identified as non-potable through the use of purple pipes and meter boxes, as well as signage.

6.4.2 Wastewater Design Criteria

The criteria used to plan the wastewater and recycled water will meet or exceed established Kings County and State of California guidelines and standards. A summary of the criteria used for each element of the sewer collection and treatment, and non-potable water supply system is provided below. The project's water system is illustrated on Figure 6.5 Wastewater *Plant Diagram*, Figure 6.6, *Reclaimed Water Plan*, and Figure 6.7 *Stormwater Plan*.

WASTEWATER GENERATION PEAKING

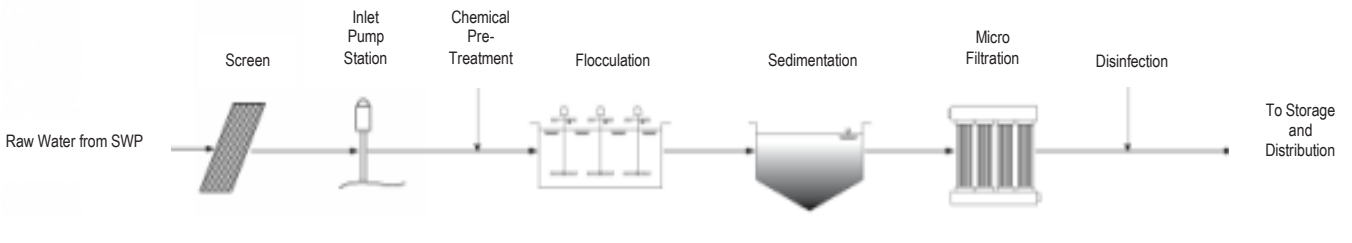
Based on the generation rates and water demand projection, the Average Daily Generation (ADG) is calculated to be approximately 7.06 MGD. Peaking factors are applied to the ADG rate to determine the Peak Hour Generation (PHG) rates. The ADG rate is used to assess the overall treatment requirements on an annual basis. The PHG rate is used to size sewerage lift stations, sewer pipelines, and for operational short-term storage. Peak rates are dependent on the uses for the discharge tributary areas varying from about 1.3 for very large tributary areas with diverse land use up to about 3.0 for small areas with similar land uses. Specific pipe and pump sizing will be determined at the time of development and tailored to the final development type and layout.

WASTEWATER TREATMENT

As shown in Figure 6.5, *Wastewater Plant Diagram*, raw wastewater is planned to be conveyed to on-site surface WRP facilities. There are currently two proposed sites for treatment facilities shown on the project land plan. These facilities will consist of wastewater storage, pumping stations, chemical pre- treatment, flocculation and clarification, filtration and disinfection using chlorination and/or UV processes. Treatment residuals and wastes will be managed on the reclamation plant sites by recovering backwash and dewatering solids for ultimate disposal in a landfill. The design of the facilities will produce a final water meeting or exceeding all Federal and State requirements for recycled water usage for irrigation. Recycled water needed on a daily basis will be conveyed to the recycled distribution system. Separate pumping facilities will transfer the excess recycled water from the WRP's to the longer term surface water ponds, tanks, and features located on-site for future use.

WASTEWATER PLANT DIAGRAM

FIGURE 6.5



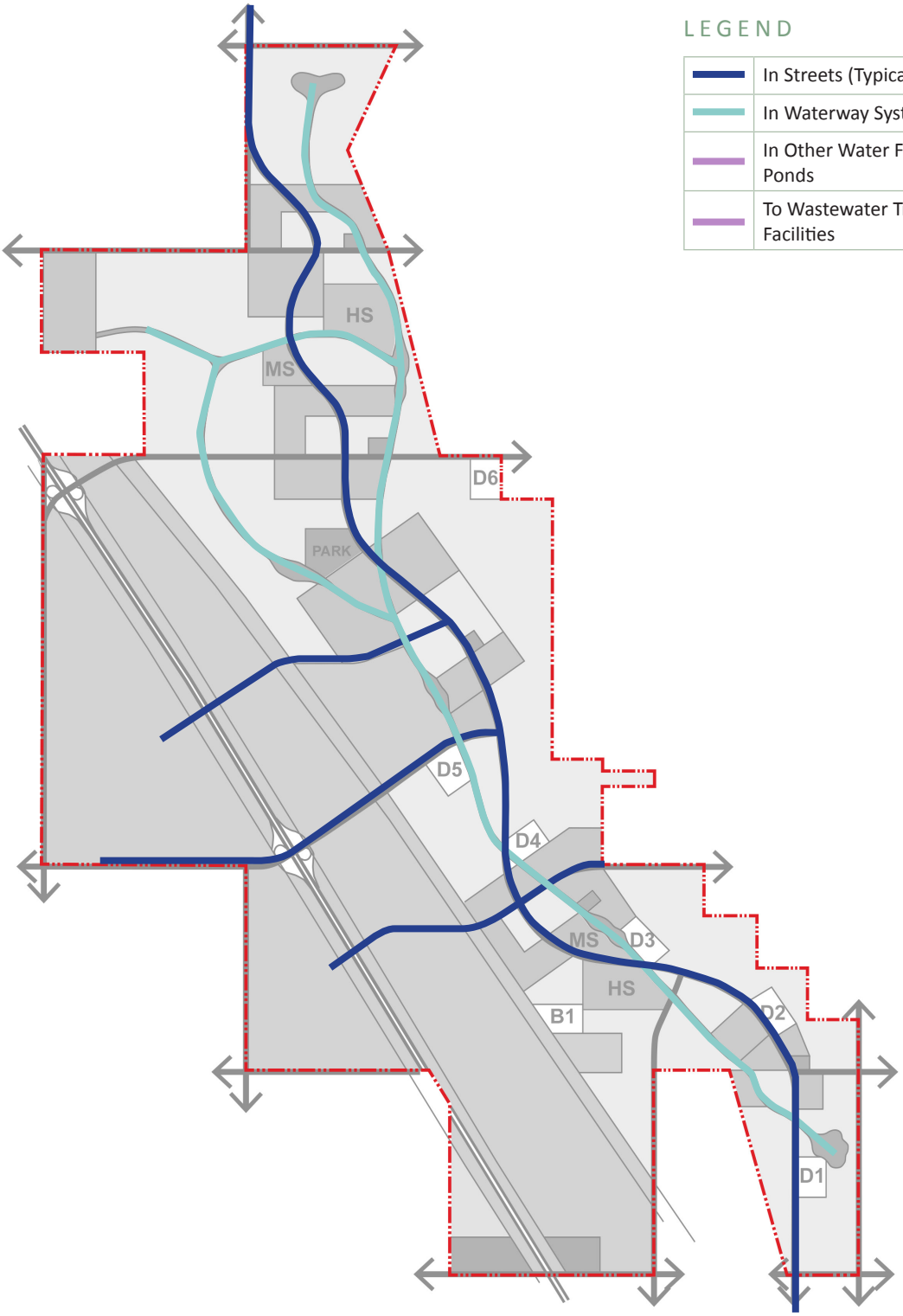
SEWERAGE AND RECYCLED WATER STORAGE

The principle function of storage is to ensure that all wastewater generated is collected for treatment without the need for discharge of treated effluent. The volume of raw wastewater generated will be stored for immediate treatment and use as needed, and the excess treated effluent (recycled water) stored as a reserve supply of water for operational equalization and emergency needs. Operational storage of recycled water is directly related to balancing the non-potable water demands (mostly in the nighttime hours) with the daily recycled water produced from the WRP (primarily constant after going through the entire treatment process). The intent of daily operational storage is to provide storage to supply the daily fluctuations in generation and will be tailored to the WRP facility. This volume will be stored in tanks and/or holding ponds at or near the WRP facilities.

System seasonal storage is related to the water balance needs of storing excess treated wastewater during the winter months for higher usage periods in the summer months. The major system storage requirement is a result of the relatively uniform wastewater generation produced during the year, with the exception of the slight seasonal variation due to increased visitors to the Entertainment Destination area in the summer months,

RECLAIMED WATER PLAN

FIGURE 6.6



LEGEND

	In Streets (Typical)
	In Waterway System
	In Other Water Features & Ponds
	To Wastewater Treatment Facilities

versus the highly variable irrigation usage cycle with higher demand in the summer months and lower demand in the winter months. The excess treated wastewater from the winter months must be stored until needed during the summer months. The water balance calculation shows 1,548 AF of excess recycled water will be required in the April through September time frame. Peaking factors are not necessary for this storage volume. This volume will be stored throughout the project within tanks, ponds, and water features.

RECYCLED WATER DISTRIBUTION

The recycled water distribution system will be designed to provide reliable flow and near constant pressure at varying irrigation demands to provide reliable irrigation for the community. The distribution system will be provided to connect all neighborhoods so that water can be moved throughout the project providing access to both treatment plants and all storage reservoirs for redundancy purposes. A preliminary concept of this system is depicted in Figure 6.6, *Reclaimed Water Plan*.

When the stored water is needed for irrigation use, the storage facilities will have pump stations to convey the stored water back for final treatment or polishing (screening and re-chlorination) and distribution. Final treatment will be performed for this stored recycled water prior to being pumped into the distribution system via booster pumping stations located adjacent to each treated water reservoir. These booster stations will consist of multiple pumps, some with variable frequency drives to maintain constant pressure at various flow levels.

Design would be based on Kings County standards as stated in the Kings County Department of Public Works Design Standards manual and State Department of Public Health (CDPH) standards.

The entire wastewater collection and treatment system and non-potable water system is envisioned to be operated by a private, PUC-regulated water/wastewater agency and design standards will be generated in conjunction with their staff at the outset of project planning.

6.4.3 Estimated Wastewater Costs and Phasing

The estimated costs for the Backbone Public Infrastructure in this conceptual plan are preliminary and are based on studies conducted by Developers Research Associates. Developers Research Associates continues to update the information as the plans evolve. The most up-to-date information available will be included in the Public Facilities Plan to be submitted later in the project review process.

Initially, one of the wastewater reclamation facilities will be constructed to serve the first development. This plant will be expanded with additional pumps, storage, and surface treatment as development continues. Recycled water storage facilities will also be

phased into development throughout the project.

As noted in previously, development of the backbone infrastructure and public facilities would be driven by triggers specified in the Development Agreement. These triggers are to be identified for both residential and non-residential development.

6.5 STORMWATER

The following conceptual plan describes the community's stormwater collection system, including off-site and on-site watersheds, primary stormwater facilities, secondary stormwater facilities, the Quay Valley Waterway, BMP treatment, flood protection, and phasing of the stormwater collection system (as shown in Figure 6.7, *Stormwater Plan)*. The analysis and preliminary design of the stormwater collection system are based on the Kings County Improvement Standards and the Municipal and Industrial/Commercial California Storm Water Best Management Practice Handbooks.

All stormwater, flood protection and terminal discharge improvements necessary for the project development and each development phase shall be approved by the Community Services District (CSD), Kings County Public Works, Kings County Flood Control, and any State or Federal Agency having jurisdiction over any of the improvements.

6.5.1 Primary Stormwater Collection System

The primary stormwater system provides for the conveyance of all off-site and on-site precipitation, plus any urban runoff. On-site flows are planned to be directed into a stormwater drainage system within the linear park. Limited flows from off-site may also reach this collection system which would include major open-channels and detention facilities with some local stormwater pipes.

The community is divided into a number of urban drainage areas that surface drain to open channels and treatment facilities. Internal drainage boundaries are approximate and may change as the community develops. Much of the project area will drain directly to the drainage swale within the linear park through surface conveyance facilities or standard urban stormwater systems. Runoff from these areas will receive pre-treatment either within the facilities, as in the case of swales, or upon reaching the waterway in pretreatment wetlands adjacent to or within the waterway. In all cases, the waterway itself will serves as the primary stormwater treatment BMP.

Some portions of the project are planned to drain to local BMPs such as a wet pond or man-made lake that will provide stormwater treatment and detention of smaller

storm flows. These BMPs will be connected to the waterway via open channels that will convey flows during larger storm events, typically in excess of the 2 year storm event. These channels will be constructed with very flat gradients to accommodate the gentle natural slopes of Quay Valley, and will connect to the Quay Valley Waterway. Because they will receive runoff only in rare events, these channels may serve as parkways, paths, landscaped areas, or other purposes in addition to their role in stormwater conveyance.

6.5.2 Secondary Stormwater Collection System

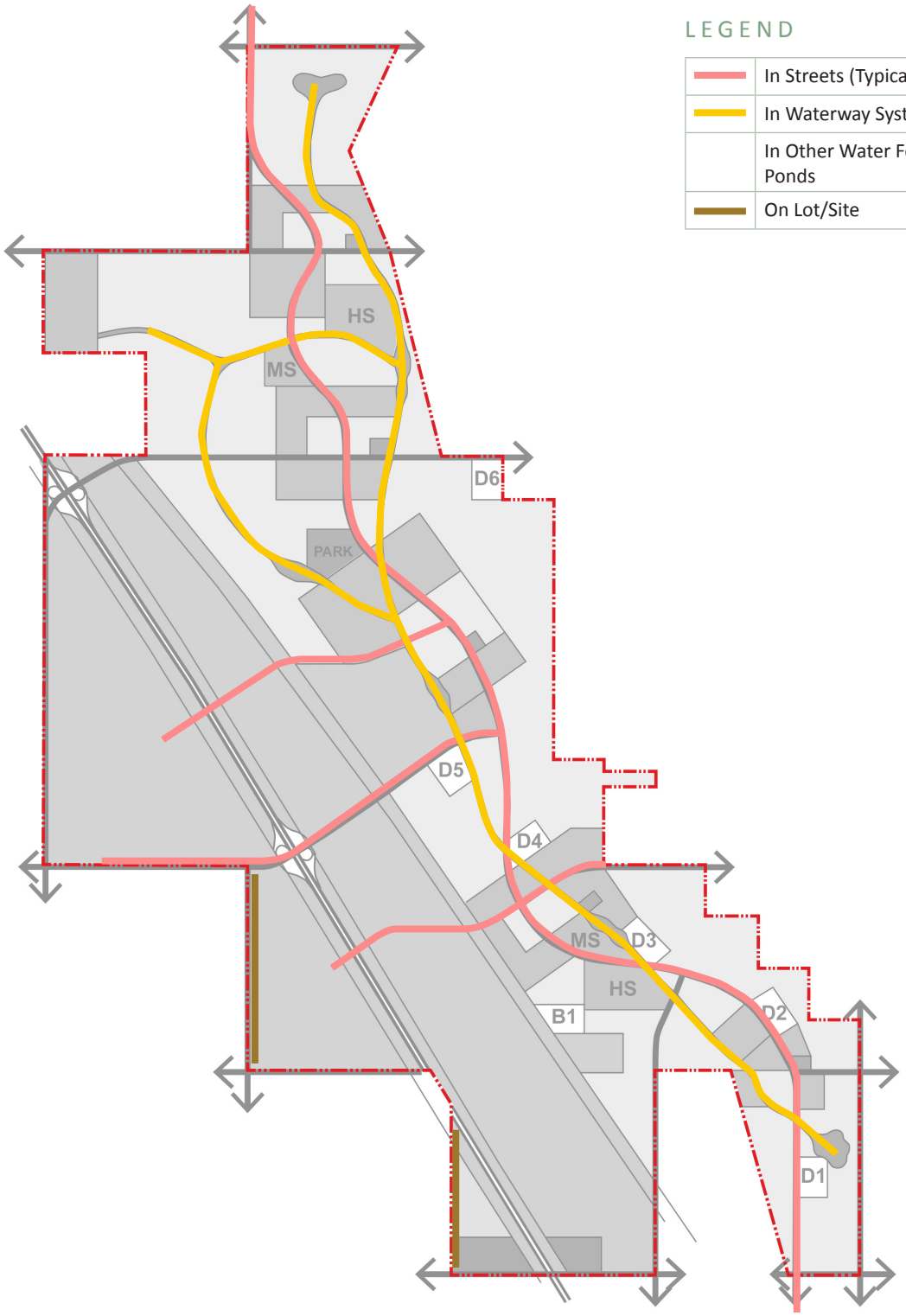
The secondary stormwater collection system is primarily located within the local and collector streets of the community. However, a number of secondary systems serve the major arterials, parks and other areas. The secondary stormwater collection system consists of gutters, parkways, local drain swales, minor channels, catch basins, catch basin laterals and underground pipes. These facilities transport on-site drainage to main conveyance systems, detention facilities, retention basins, or terminal drains.

6.5.3 Quay Valley Linear Park Improvements

The Quay Valley Linear Park will provide improvements for flood control, wetland creation and erosion control. A hydrologic model was developed to demonstrate that the storage volume within the proposed Quay Valley Linear Park would store a 100-year storm event. Based upon the on-site hydrology model, the water surface in the Linear Park shall rise approximately 2.27 feet above the design water surface. A detailed on-site hydrology and design report for the proposed Quay Valley Linear Park shall be included in the Stormwater Master Plan required prior to the EIR approval and first tentative maps within phase I of Quay Valley.

6.5.4 Best Management Practices (BMPs)

The stormwater system design for Quay Valley incorporates Best Management Practices (BMPs) as described below, to address the collection and treatment of urban runoff and to fully comply with NPDES Phase II Stormwater Programs in force throughout California. At the current time, Quay Valley is not subject to NPDES Phase II regulations. However, in order to protect local water quality and in anticipation of future regulations, Quay Valley will fully comply with Phase II standards from the beginning. This will be accomplished by developing a Standard Urban Stormwater Management Plan (SUSMP) for Quay Valley that is consistent with requirements of the State Water Resources Control Board and other Phase II programs in effect in California. The submittals for each phase of the project will include a Water Quality Management Plan (WQMP) that described how the design of the phase is consistent with the WQMP. Future Specific Plans will be designed to meet or exceed the anticipated regulations, through the incorporation of these or other BMP's. The Quay Valley Linear Park itself will serve as the primary stormwater treatment BMP.



LEGEND

	In Streets (Typical)
	In Waterway System
	In Other Water Features & Ponds
	On Lot/Site

6.6 UTILITIES

Extensive on-site and off-site dry utilities, including electricity, natural gas, telephone, and cable television, will be required to serve the Quay Valley Specific Plan area. In its current condition, the Plan area lacks any significant dry utilities to support urban development. This conceptual Master Plan will provide information on type of utility, siting, costs and phasing.

6.6.1 Electric

Quay Valley is located within the service territory of Pacific Gas & Electric (PG&E). PG&E has a major transmission corridor that transects a portion of the site. Studies conducted with PG&E and the California Independent System Operator (CAISO) have shown that Quay Valley can be served from PG&E's existing 230 kV transmission lines. New substations will be placed near PG&E's transmission lines and will provide the necessary electric distribution infrastructure to serve the project.

The goal is for Quay Valley to be a net zero energy community utilizing solar photovoltaic (PV) and other renewable generation options at the individual user and community levels. Solar PV will provide the main source of generation for daily consumption. The California Public Utility Commission has implemented a variety of Net Metering Tariffs that allow for customers to generate power with excess generation feeding into the utility grid. During customer non- generation periods the customer receives power back from the grid.

Quay Valley's solar PV will include rooftop solar on residential and non-residential buildings, solar carports, floating solar arrays on water storage facilities, and ground mounted arrays. In addition, other generation sources may be deployed including wind and fuel cell technology. Utilizing "Smart Metering", "Smart Grid", residential and non-residential energy management systems, and demand management systems combined with the on-site generation, Quay Valley will be a model for future development and sustainable energy practices.

6.6.2 Natural Gas

PG&E operates two 30" natural gas transmission pipelines that transect a portion of the site and run parallel to Interstate 5. In discussions with PG&E it has been confirmed that these transmission pipelines can be utilized to provide natural gas to Quay Valley. New regulator stations will be placed near PG&E's gas transmission lines. PG&E's regulator stations will connect to new distribution gas mains that will provide the necessary gas distribution infrastructure to within the project.

6.6.3 Telecommunications/Cable

Quay Valley will have a state of the art telecommunications network that will serve the community with high speed data, voice, and video services. Placing fiber optic lines to each residential and non-residential user will be a key component of this network in addition to a wide area wireless community network. Quay Valley will work with Incumbent Local Exchange Carriers (ILEC's) and Competitive Local Exchange Carriers (CLEC's) to provide the community with this state of the art telecommunication network.

6.6.4 Siting and Energy and Communications Facilities

ELECTRICAL TRANSMISSION AND DISTRIBUTION FACILITY SITING POLICIES

More than one utility company shares transmission corridors. Transmission facilities will be located in a manner that maximizes the screening potential of topography and vegetation. Preference will be given to the location of transmission lines first within existing transmission rights of way.

ELECTRICAL SUBSTATIONS

Electrical substations will be designed and constructed in such a manner so as to minimize off-site visual and noise impacts (e.g. walls, landscaping).

NATURAL GAS FACILITIES

Gas infrastructure will be designed and constructed to provide a safe and reliable gas distribution system. Gas regulator stations will be located in areas which will allow for ease of maintenance by utility crews. New gas mains will be located within roadways and easements as appropriate and typical for new development.

COMMUNICATION FACILITIES

Communications transmission and distribution facilities may be located in any land use designation, and where feasible, located underground in easements or rights of way that permit access for maintenance with minimal disruption of surrounding properties.

6.7 SOLID WASTE AND RECYCLING

Through funding by the Community Services District, Quay Valley will provide a solid waste management system to comply with State and local requirements for waste management through recycling programs, composted, collection and disposal of solid waste, and other related services. The system created will be integrated to encourage reduction in waste generation and use of recycling and composting to the maximum extent feasible.

6.7.1 Waste Management Goals and Policies

Quay Valley will comply with the goals and policies of the Kings County Integrated Waste Management Plan, adopted in April 1995 pursuant to requirements of the California Integrated Waste Management Act of 1989 (AB 939). The purpose of this act was to require local agencies to implement source reduction, recycling, and composting activities to reduce solid waste generation by 50 percent by the year 2000.

With the emphasis on all aspects of sustainability, recycling and composting will be heavily encouraged and become a part of all portions of the planning, construction, and final development of the communities and districts within the project areas.

REGULATORY GOALS:

- Comply with Chapter 13 of the Kings County Code of Ordinances pertaining to solid waste collection and disposal
- Obtain all applicable permits, approvals and contracts to construct, operate, manage and regulate waste management facilities, programs and services
- Create the CSD and contract with Chemical Waste Management, Inc. (CWMI), a subsidiary of Waste Management Inc., prior to the first generation of any solid waste that is to leave the project to allow use of the Kettleman Hills Facility for solid waste disposal

OPERATIONAL GOALS:

- Create robust recycling programs to encourage and incentivize recycling at the user/generator level.
- Enhance awareness of the importance and availability of waste management, composting and recycling programs.
- Construct a Materials Recovery Facility (MRF) for recycling within the project at the earliest feasible opportunity.
- Create an efficient and effective waste management infrastructure to reduce waste generation that leaves the property limits.

6.7.2 Solid Waste and Recycling Thresholds

Quay Valley will incorporate and fund an extensive program to maximize recycling and reuse of all types of generated waste. Thresholds for generation allowed will be incorporated into each aspect of the program as implemented. Exceeding the established limits will result in reimbursement of additional costs to the CSD from the generating entity.

6.7.3 Materials Recovery Facility

When feasible to implement, an on-site MRF will be located within the industrial area of the project toward the south. Curbside residential and commercial pickup will be offered for recyclable items and materials of all types including green waste. This material will be transported to the MRF for recycling to the maximum extent feasible, and transported to facilities at the Kettleman Hills Sanitary Landfill if infeasible to recycle.

6.7.4 Recycling

The Quay Valley community recycling program is planned to reduce the amount of solid waste by promoting aggressive waste prevention and recycling activities. The CSD shall promote the development of environmentally and economically sound practices regarding the collection, processing and end-use of recyclable material and compostable material.

The MRF will allow the collection and recycling of trash with the potential of green waste to be reused throughout proposed common areas and by homeowners as well as the sale of recyclables. This will reduce materials that would otherwise be deposited into area landfills. Materials that can be recycled include glass, plastic, paper, metals, green waste, petroleum products, etc. Materials that cannot be recycled for environmental or economic reasons will be transported off-site to appropriate facilities with costs borne by the generator or the CSD.

6.7.5 Waste Management Plan Implementation

The plan for solid waste disposal and recycling will be prepared in conjunction with an application and review for viability by Cal Recycle, with a permit ultimately issued by Kings County Environmental Health Department. The plan would generally follow a two-step implementation. First, a contract would be entered into with a private company for trash collection and hauling as a part of the CSD. The initial operation would focus on the construction and demolition waste expanding into the household and business waste as development comes on line. Trash collected would be transported to the appropriate facility for disposal, recycling or other handling. Recycling of material would also be an integral part of the effort.

The second phase would be to construct a recycling and composting facility on the property to reuse the waste. An MRF would be brought on line as early as possible.

CWMI has indicated they do have capacity in their existing facilities to accommodate both the inflow on a daily basis and at least twenty years capacity if running at full daily capacity for the approximately 92,000 tons per year of solid waste that may be generated at full build out. CWMI has also indicated that they have additional assets which can be provided for longer term capacity. The confirmation of this capacity will be provided as part of the environmental review process.

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7

SCHOOLS

7.1 SCHOOLS OVERVIEW

This section describes the objectives, policies and programs related to the provision of school facilities and services for kindergarten through twelfth grade in Quay Valley, an integral part of the overall vision for the model urban community. As the community grows, it is paramount that the educational components also grow in a manner reflecting current needs. The size of schools and the number of students per school is planned to be a priority within the community.

The Quay Valley project area is currently within the jurisdiction of the Reef-Sunset School District (District). The closest schools in proximity to the project area are in Kettleman City approximately 10 to 12 miles to the north. The schools are neither close enough nor large enough to accommodate future students for the project area. The applicant anticipates de-annexing from the District and reorganizing the Quay Valley project area (Territory) as a new Charter School System (CSS) with an educational program of Community Learning Centers to serve the students of Quay Valley.[1] The owner(s) of uninhabited territory may file a reorganization petition, if the owner has either filed a tentative subdivision map or an application for any "project." (Ed. Code § 35700(c).) "Uninhabited" territory is territory in which fewer than twelve persons are registered to vote at least fifty-four days before the reorganization petition is filed. (Ed. Code § 35517.) The Process for De-annexation and Reorganization is detailed in Appendix C, *School Distric Reorganization*.

1. A charter school is a public school that may provide instruction in any combination of grades (kindergarten through grade twelve). Parents, teachers, or community members may initiate a charter petition, which is typically presented to and approved by a local school district governing board. The law grants chartering authority to county boards of education and the State Board of Education under certain circumstances, such as the appeal of a petition's denial by a school district governing board or the direct approval of countywide benefit or statewide benefit charter schools. Charter Schools are authorized in California under the California Charter Schools Act (Education Code Section 47600 et. seq.)

Students residing within the Quay Valley Specific Plan Area are envisioned to have a variety of educational choices available to them. Section 47606 allows an All-Charter School District formation subject to the conditions set forth in that code section, which requires alternative public school attendance arrangements for pupils residing within the school district who choose not to attend charter schools. Students in Quay Valley may attend the CSS designated attendance area school, a non-charter public school (through an inter-district transfer per Ed. Code Section 47606(2)), a private school, or another suitable alternative.

The Charter School District for Quay Valley subsequent to formation will provide a non-charter public school enrollment option for any student residing in Quay Valley whose parents elect not to have the student attend a Charter School. Quay Valley would enter into agreements with local school districts to assist with inter-district transfers for pupils pursuant to Education Code Section 47606(2).

7.2 QUAY VALLEY SCHOOL FACILITIES

The following section describes the planning and provision of adequate and safe school facilities and services based upon minimum standards as identified in Title 5 of the California Code of Regulations, Division 1, Chapter 13, Sub-Chapter 1, Article 1, Section 14001 et. seq. Approximate school capacities have also been identified, based on preliminary student generation factors from a study conducted by David Taussig & Associates.

- Sixteen (16) elementary (K-6) schools shall be sited to serve the Quay Valley residential neighborhoods, each with a capacity of approximately 600 students.
- Two (2) intermediate (7-8) schools and two (2) high schools (9-12) shall be sited to provide efficient access to all portions of the community and serve the expected distribution of school students. The approximate capacity of the intermediate schools would be 1,000 students each, and the approximate capacity of the high schools would be 2,000 students each.
- Temporary facilities shall be provided while permanent schools are built.

7.2.1 Implementation

- Prior to approval of the first tentative map, a Petition for Reorganization of the Reef-Sunset School District shall be submitted to the Kings County Superintendent of Schools. (See Section 7.4 for a description of the reorganization process).

2. Private schools are considered a quasi-public facility as they are privately owned and maintained. The Quay Valley Specific Plan provides areas for both types of school facilities.

- Subsequent to the approval of the Reorganization of the Reef-Sunset School District by the State Board of Education (SBE) and an election to reorganize the school districts, a petition to create the New School District as an All Charter School System (see Section 7.5, *All Charter School District*) shall be submitted by the New School District Board to the SBE and Superintendent of Public Instruction for joint approval. Education Code §47605 and §47606.

7.2.2 Facility Improvement Costs

Table 7.1, *Quay Valley Student Generation Projections* shows potential estimated costs of up to $228 million for the sixteen (16) new elementary schools, $51 million for the two (2) middle schools and $111 million for the two(2) new high schools. Total school costs are estimated to be approximately $390 million at build-out.

Assumptions

School District Reorganization. De-annexation of the Quay Valley plan area (See Section 4.4 - Reorganization Process) from the Reef-Sunset School District and Reorganization under a Charter School System (See Appendix C - *School District Reorganization*).

Serving School District. The serving school district is planned to be the Quay Valley Charter School System for grades K-12. The Charter School System's grade structure of K-6 elementary schools, 7-8 intermediate schools and 9-12 high schools is planned.

School Construction/Availability. The School System would provide the schools as needed. Interim facilities would be provided before the first on-site schools are completed.

Student Generation. The number of students at buildout shown in Table 7.1 reflects the estimated student generation per dwelling unit and the ultimate number of students at buildout for each of the proposed residential land use designations. The generation rates used are based on a study conducted by David Taussig & Associates. Table 7.2, *Quay Valley School Facilities Phasing* provides the estimated student generation for each of the five (5) phases of Quay Valley.

Proposed Role of the CSD. While all school facility plans require the final approval authority of the New School District (NSD), it is intended that a CSD would play a supporting and assisting role where appropriate and feasible.

Table 7.1 Quay Valley Student Generation Projections

Dwelling Units:

Low Density	12,758
Medium Density	4,620
Medium High Density	3,771
High Density	4,757
Totals	25,906

Single Family Detached:

Grade	Factor	Units	Student Generation
K-6	0.421	17,378	7,316
7-8	0.101	17,378	1,755
9-12	0.167	17,378	2,902
Totals			12,413

Multi-Family:

Grade	Factor	Units	Student Generation
K-6	0.258	8,528	2,200
7-8	0.06	8,528	512
9-12	0.096	8,528	819
Totals			3,348

Totals:

Grade	Factor	Units
K-6	0.367	25,906
7-8	0.088	25,906
9-12	0.144	25,906
Totals		

School Facilities Projection

Grade	Students Per School	Total Students	Total Schools	School Site Size (acres)	Total School (acres)
K-6	600	9,516	16	12	192
7-8	1,000	2,267	2	22	44
9-12	2,000	3,721	2	50	100
Totals		15,504	20		336

California Department of Education Data:

School Description	Construction Cost per Student	Students per School (1)	Thousand $ Construction Cost per School (1)	Square Feet per Student (2)	School Site Size-Acres (1)	Thousand $ Total Costs Per School	Thousand $ Project Costs School Facilities
Elementary	$23,750	600	$14,250,000	59	12	$14,250,000	$228,000
Middle	$25,500	1,000	$25,500,000	85	22	$25,500,000	$51,000
High School	$27,750	2,000	$55,500,000	92	50	$55,500,000	$111,000
Totals							$390,000

(1) Includes land - Costs from Developer's Research Associates infrastructure analysis adjusted to February 2015
(2) Square feet per student, students per school , and school site size data from California Department of Education Facilities Handbook

Table 7.2 Quay Valley School Facilities Phasing

Description	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Totals
Dwelling Units:						
Low Density (LD)	2,986	3,660	3,309	1,281	1,522	12,758
Medium Density (MD)	1,288	1,366	1,162	363	441	4,620
Medium High Density (MHD)	1,458	1,082	621	377	234	3,772
High Density (HD)	1,666	855	1,218	498	519	4,756
Totals	7,398	6,963	6,310	2,519	2,716	25,906
Students Generated:						
K-6 Students	2,605	2,616	2,357	918	1,021	9,516
7-8 Students	619	624	562	219	243	2,267
9-12 Students	1,014	1,025	923	359	400	3,721
Totals	4,238	4,265	3,842	1,495	1,664	15,504
Cum. Students Generated:						
K-6 Students - Cumulative	2,605	5,221	7,578	8,496	9,516	9,516
7-8 Students - Cumulative	619	1,243	1,805	2,023	2,267	2,267
9-12 Students - Cumulative	1,014	2,039	2,962	3,321	3,721	3,721
Totals	4,238	8,503	12,345	13,840	15,504	15,504
Cumulative Schools Required:						
Elementary Schools Required	4	8	11	14	16	16
Middle Schools Required	1	1	2	2	2	2
High Schools Required	1	1	2	2	2	2
Totals	6	10	15	18	20	20
School Facilities Costs ($ 000's)						
Annual School Facilities Cost	$138,000	$71,000	$138,000	$14,000	$29,000	$390,000
Cumulative School Facilities Cost	$138,000	$209,000	$347,000	$361,000	$390,000	$390,000

7.3 SCHOOLS FUNDING STRATEGY

Funding for schools typically comes from three sources: the Master Developer provides initial funds, then is reimbursed through development impact fees, state funding, and other local sources, such as Mello-Roos bonds.

7.3.1 School Mitigation Fees

Level 1 Fee

The Level 1 Fee is assessed when the school district can establish a reasonable relationship between new development and the assessment of fees required to pay for facilities needed to accommodate future students (Education Code Section 66001). Level 1 fees for 2014 were $3.36 per square foot for residential development and $0.54 per square foot for nonresidential and senior communities.

Level 2 Fees

Districts meeting certain conditions may adopt Level 2 fees as an alternative to the residential Level 1 fees. If state funding is available, the Level 2 Fee is assessed if a school district (i) makes a timely application to the State Allocation Board ("SAB") for new construction funding, (ii) conducts a School Facility Needs Analysis, and (iii) satisfies at least two of the four requirements set forth in Education Code Section 65995.5(b)(3) (e.g., district has "substantial enrollment" or has reached maximum bonding capacity) (Education Code Section 65595.5). Level 2 fees are calculated annually and vary by school district.

Level 3 Fees

If state funding is no longer available, the Level 3 Fee can be assessed, thereby allowing a school district to impose a developer fee up to 100% of the School Facility Program new construction project costs (Education Code Section 65995.7). The Level 3 fee is intended to represent one hundred percent (100%) of a school district's school facility construction costs per new home served, and is applicable when the State Allocation Board officially declares that it is no longer making apportionments of state school facility funding to school districts.

8

PUBLIC SERVICES

8.1 URBAN SERVICES PLAN

It is the intention of the Master Developer of Quay Valley for the delivery of urban services to be administered by a Community Service District (CSD). A complete description of the mechanism for the formation of the CSD has been included in Section 8.2.4, *Formation of the CSD*. Staffing for the administration of the CSD is estimated on the basis of per 1,000 residents, and the Local Agency Formation Commission (LAFCo) of Kings County will make the determination whether the initial board is to be a dependent or independent board.

Estimated annual urban services costs, based on communities of a comparable size to Quay Valley at build-out, are provided in Table 8.1. As described in Chapter 9, *Finance Plan*, the cost analyses for Quay Valley would be based on the Urban Services Plan prepared for the proposed Sutter Pointe community (a 7,582 acre planned community), and Sutter Pointe's urban services were designed based on a comparison to the City of Folsom Facilities (comparable population of 74,000). The City of Folsom costs were analyzed on a per capita basis and adjusted to the Sutter Pointe population. A similar approach is utilized in the estimated Quay Valley levels of service. Sutter Pointe's levels of service on a per capita basis were adjusted to the Quay Valley projected population (3.3 persons per household multiplied by 25,906 dwelling units). These amounts are estimates only, and are subject to adjustment based on a number of planning and other changes and conditions. The Public Facilities Financing Plan provides additional detail. Table 8.2, *Urban Services Provided by CSD* outlines urban services eligible for provision by the CSD under Government Code Section 61100.

Table 8.1 Estimated Urban Services Costs at Build-Out

Description	Estimated Costs
Administration	$3,000,000
Park Maintenance	$5,300,000
Recreation Services	$3,500,000
Fire Protection Services	$16,400,000
Law Enforcement	$21,900,000
Library Services	$2,300,000
Road Maintenance	$4,300,000
Drainage System Maintenance	$1,300,000
Transit Services	$1,800,000
Landscaping and Lighting Maintenance	$15,700,000
Total Public Services Costs at Build-out	**$75,500,000**

Table 8.2 Urban Services to be provided by CSD

Description of Services	Yes	No	Possibly
Eligible CSD Services			
Animal Control	X		
Community Facilities	X		
Community Recreation	X		
Emergency Medical	X		
Fire Protection (1)	X		
Flood Control	X		
Graffiti Abatement	X		
Library	X		
Police Protection and Law Enforcement (2)	X		
Parks (Public) and Open Space	X		
Pest Control	X		
Postal and Mailboxes		X	
Public Recreation	X		
Public Transit	X		
Road Maintenance and Improvements	X		
Security Services		X	
Solid Waste and Trash Collection	X		
Street Lights and Landscaping	X		
Vector Control	X		
Waste Water Treatment (Sewage, Recycled Water & Storm	X		
Water Supply	X		
Weed Abatement	X		
Other Non-Eligible Services*			
Building Inspection		X	
Business Licenses		X	
Code Enforcement		X	
Hospital		X	
Land Use Regulation		X	
Planning		X	
School		X	

(1) Fire Protection is proposed to be provided by a contract between the CSD and Kings County Fire Department.

(2) Law enforcement services are proposed to be provided by contract between the CSD and Kings County Sheriff Department.

***With the exception of hospitals and schools, non-eligible service is planned to be provided by the County.**

8.1.1 Services Provided, Service Levels, and Cost Estimates

Table 8.3 summarizes the proposed urban services envisioned for Quay Valley and represents a rough estimate of the service levels that may be provided in the project area. Specific staffing and facility standards have been identified based on data availability.

Table 8.3 Proposed Services, Preliminary Levels, & Estimated Costs

Service	Services Provided	Preliminary Service Level	Estimated Service Costs
Administration	The delivery of urban services to Quay Valley initially is planned to be administered by a Community Service District (CSD). During this stage, it is anticipated that urban services would be administered by the CSD with staffing to oversee the administration of the urban services and the financing of Public Facilities. The CSD may contract with the County for specific services (i.e., fire and law enforcement) or with external service providers.	Staffing for the Administration of the CSD is estimated at .83 employees per 1,000 residents. The Administrative Facility is estimated to be 500 square feet per employee or approximately 31,000 square feet.	Annual Administration services costs at build-out are estimated to be $38 per resident for a total of $3.0 million.
Park Maintenance	Park Maintenance services comprise maintenance of park facilities and upkeep of all parklands, including turf, irrigation, playgrounds, and lighting and sport facilities. Staff crews also clean restrooms and repair facilities damaged by vandalism. In addition, park maintenance service also includes maintenance on publicly owned pedestrian and bike trails.	Staffing for the Park Maintenance is estimated at 0.43 employees per 1,000 residents. Parks are provided in Quay Valley at 5 acres per 1,000 residents. Estimated park acreage at build-out is 429 acres.	Annual park maintenance services costs at build-out are estimated to be $13,383 per acre for a total of $5.3 million.
Recreation Services	Recreation services encompass the coordination of recreational activities, leagues, programs, and special events through the park department or in partnership with local businesses, community groups, or volunteers.	Recreation Services Staffing Standards is .18 employees per resident. The Community Center Facility is estimated at 400 square feet per 1,000 residents or 30,000 square feet.	Estimated annual Recreation Services costs at build-out are estimated to be $45 per resident for a total of nearly $3.5 million.

Fire Protection Services	Fire Protection services provide services associated with fire suppression, rescue, fire prevention, public education, hazardous materials response, and Emergency Medical Services (EMS).	Fire Protection Staffing Standards are 1.00 Firefighters per 1,000 residents and .09 support personnel for each 1,000 residents. Estimated staffing for the Quay Valley community at build-out is 75 firefighters and 7 support personnel. Fire personnel would be housed in the two fire stations planned for Quay Valley; A master fire station of 11,810 square feet and a sub-fire station of 6,120 square feet.	Annual Fire Protection services costs at build-out are estimated to be $210 per resident for a total of approximately $16.4 million.
Law Enforcement	Law Enforcement provides public protection services in the form of patrol and traffic operations, investigations of crimes, and support services (Dispatch/911, records, and crime prevention).	Staffing for Law Enforcement is estimated at average service level of 1.14 sworn officers and 0.62 support personnel per 1,000 population. Estimated staffing at build-out is 86 Sworn Officers and 47 Non-sworn personnel. Estimated Vehicle Needs:1 Marked vehicle for every 2 Patrol Officers; 1 Plain Sedan for every 2 Non-sworn personnel; 1 K-9 unit for every 20 Sworn Officers with a total of 70.	Annual Law Enforcement services costs at build-out are estimated to be $280 per resident for a total of approximately $21.9 million.
Library Services	Library services include collection development, electronic services, public programming, inter-library loans, and reference services, cataloging, and processing of new materials. Estimated costs assume operation for 6 to 7 days a week with open hours on four evenings a week.	Staffing for Library Services is estimated at .25 employees per 1,000 residents. Estimated staffing at build-out is 19 personnel. Library Services Facilities service standard is .46 square feet per resident. It is estimated that the Library Facility to be provided is 31,000 square feet at build-out.	Annual library services costs at build-out are estimated to be $30 per resident for a total of $2.3 million.

Road Maintenance	Road Maintenance services comprise traffic signal, lighting, sign, and surface road maintenance.	Staffing for Road Maintenance is estimated at .37 employees per 1,000 residents. Estimated staffing is 28 employees.	Annual Road Maintenance services costs at build-out are estimated to be $55 per resident for an estimated total of $4.3 million.
Drainage Maintenance	Drainage Maintenance is defined broadly and includes storm drainage, creek channel maintenance, street sweeping and repair and replacement of capital facilities and equipment.	A forthcoming master facilities plan for Quay Valley will indicate the project area's facility when available. Staffing for Drainage Maintenance is estimated at .17 employees per 1,000 residents. Estimated staffing is 13 employees.	Annual drainage maintenance services costs at build-out are estimated at $16 per resident for a total of $1.2 million.
Transit Services	Transit Services encompass public transportation services ranging from fixed-route service five to seven days per week, along with dial-a-ride and shuttle services supporting regional transit systems and major employment centers.	A forthcoming master facilities plan for Quay Valley will indicate the project area's facility standards for Transit. This information will be incorporated into the Urban Services Plan once available. Transit Services staffing is estimated at .28 employees per resident. Estimated staffing at build-out is 21 employees.	Annual Transit Services costs at build-out are estimated at $30 per resident or gross annual costs of $2.3 million. Net annual costs at build-out after expected fare-box revenue is estimated at $23 per resident for a total of $1.8 million.
Landscaping and Lighting Maintenance	Landscaping and Lighting (L & L) services include public landscaping, streetlights, irrigation systems, water features, walls, fences, mini-parks, and public art in the districts.	A forthcoming master facilities plan for Quay Valley will indicate the project area's facility standards for L & L Services. This information will be incorporated into the Urban Services Plan once available. Staffing for Lighting and Landscaping Maintenance is estimated at .03 employees per 1,000 residents. Estimated staffing at build-out is 2 employees.	Annual L & L services costs, which include all parks, streetscapes and open space landscape and lighting are estimated at build-out to be $200 per resident or a total of approximately $15.7 million.

8.1.2 Proposed Urban Services Financing Mechanisms

Two possible mechanisms for funding annual urban service costs for the Quay Valley project area include a public services CFD that could provide funding through (1) a special tax levied on the property owners (Government Code Sections 53313 and 61121) and (2) special assessments charged through the CSD (Government Code Section 61122) and Article XIII D of the California Constitution.

There is a mutual interest on the part of Kings County and Quay Valley to create a governance structure that clearly defines the County's role and responsibilities in ensuring municipal services delivery and that minimizes the potential for future intergovernmental conflicts as Quay Valley develops. In the long term, Quay Valley may seek to become an incorporated city.

URBAN SERVICES CFD

The Mello-Roos Community Facilities Act (Government Code Section 53311 et. seq.), enacted in 1982, provides a method for local governments to fund public facilities and certain services, particularly for newly developing areas. Cities, counties and special districts may form CFD(s) over specific defined areas in their jurisdiction; a CFD is a special financing entity through which a local government (including CSDs) is empowered to levy special taxes and issue bonds authorized by a two-thirds (2/3) vote of the qualified electors of the district.

The CSD may form one or more Urban Services CFDs to fund those urban services permitted by the Community Facilities Act. A CFD may fund a variety of urban services including, but not limited to:

- Sheriff services.
- Fire Protection and Emergency Medical Services.
- Flood and Storm Drainage Maintenance.
- Recreation program maintenance.
- Library Services.
- Trails, parks, parkways and open space maintenance.

A CFD special tax approved by vote of the landowners of the district may only finance the services authorized in this section to the extent that they are in addition to those provided in the territory of the CFD prior to its creation. Any additional services shall not supplant services already available within that territory when the CFD was created. (Government Code Section 53313).

Bonds shall not be issued pursuant to Government Code Section 53313 to fund any of the services specified in that section, although bonds may be issued to fund capital facilities to be used in providing these services.

ASSESSMENTS

The cost of services not funded through the CFD could be met through annual assessments (Article XIII D of the California Constitution). Assessments for the following urban services may be levied in an unincorporated area of a County:

- Sheriff services.
- Fire Protection and Emergency Medical Services.
- Flood and Storm Drainage Maintenance.
- Recreation program maintenance.
- Library Services.
- Trails, parks, parkways and open space maintenance.
- Animal control.
- Vector control.
- Public transit.
- Street lights and landscaping.
- Weed abatement.
- Graffiti abatement.
- Road maintenance.
- Pest control.

According to Government Code Sections 61123 and 61124, a CSD can establish zones with special tax rates, service charges, benefit assessments, or connection charges. A benefit assessment would be based on "the particular and distinct benefit over and above general benefits conferred on real property located in the district or to the public at large" (California Constitution, Article XIII D). To authorize the imposition of benefit assessments, ballots in favor of the assessment must equal or exceed ballots in opposition to the assessment. Ballots are weighted according to the proportional financial obligation of the affected property.

Assessments could vary with the extent of benefit from services provided to the property within each zone. Whereas a CSD special tax can be apportioned among taxable land uses on any reasonable basis, a CSD benefit assessment must be based on the direct, proportionate special benefit derived from each service or maintenance cost (according to Article XIII of the California Constitution).

8.1.3 Annual Operating Costs

Possible future development of backbone infrastructure and public facilities would be driven by the triggers set forth in the Development Agreement. Annual urban services costs are planned to be phased in over time, as shown in Table 8.4.

Table 8.4 Estimated Urban Services Phasing

Description	Unit	Factor	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Totals
Administration	Resident	$38	$720,000	$690,000	$660,000	$600,000	$330,000	$3,000,000
Park Maintenance	Acre	$13,383	$1,272,000	$1,219,000	$1,166,000	$1,060,000	$583,000	$5,300,000
Recreation Services	Resident	$45	$840,000	$805,000	$770,000	$700,000	$385,000	$3,500,000
Fire Protection Services	Resident	$210	$3,936,000	$3,772,000	$3,608,000	$3,280,000	$1,804,000	$16,400,000
Law Enforcement	Resident	$280	$5,256,000	$5,037,000	$4,818,000	$4,380,000	$2,409,000	$21,900,000
Library Services	Resident	$30	$552,000	$529,000	$506,000	$460,000	$253,000	$2,300,000
Road Maintenance	Resident	$55	$1,032,000	$989,000	$946,000	$860,000	$473,000	$4,300,000
Drainage System Maintenance	Resident	$16	$312,000	$299,000	$286,000	$260,000	$143,000	$1,300,000
Transit Services	Resident	$23	$432,000	$414,000	$396,000	$360,000	$198,000	$1,800,000
Landscaping & Lighting Maint.	Resident	$200	$3,768,000	$3,611,000	$3,454,000	$3,140,000	$1,727,000	$15,700,000
Total Urban Services			**$18,120,000**	**$17,365,000**	**$16,610,000**	**$15,100,000**	**$8,305,000**	**$75,500,000**

8.2 GOVERNANCE AND COMMUNITY SERVICES DISTRICT PLAN

The following plan provides a basis for the Master Developer to have discussions with Kings County, other affected public agencies, and LAFCo regarding the provision of urban services and governance for Quay Valley. The formal Application to LAFCo will follow the County's final approval of all necessary project entitlements.

Quay Valley is proposed to grow in time to a population of 80,000-85,000. As such, it is envisioned to require construction and operation of substantial public infrastructure, including water and sewer utilities, roads, solid waste disposal, drainage, parks and open spaces, and civic facilities. These facilities would require ongoing operations and maintenance. The Governance Plan recognizes that urban services demanded must be efficient and have the revenue-generating capacity necessary to fund infrastructure and ongoing urban service standards and operations and maintenance costs.

8.2.1 Objectives

The Governance Plan is intended to achieve several urban service and fiscal objectives for Quay Valley including the following:

- Provide a high level of urban services consistent with policies set forth in the County's General Plan and consistent with any Community and / or Specific Plans adopted within the new community project area.
- Establish a multi-purpose Community Services District (CSD) that (1) provides urban services, and (2) enfranchises community residents regarding local urban service provisions and future transitions.

- Provide an adequate fiscal base for Quay Valley so that planned urban service levels can be achieved and maintained over time, while also maintaining "revenue neutrality" for the County and other urban service providers.

8.2.2 Proposed Community Service District Framework

A CSD is envisioned to be formed to provide an administrative and financial framework for providing the urban services proposed for Quay Valley that will not be provided by existing agencies. CSDs have become a common form of governance for providing urban services in unincorporated areas around the State.

Cooperation between government agencies, including contracting for services, can promote efficient use of existing capacity and the most efficient way to increase staff capacity as service demands grow. It is envisioned that agreements (i.e., an Urban Services Agreement or specific service contracts) between the CSD and other agencies will define and regulate what services are provided by which agency based on the most efficient approach.

Framework Policies

- The proposed sphere of influence of the CSD is intended to coincide with the New Community project area. The initial CSD boundaries are expected to include sufficient land and a an adequate balance of land uses to ensure a viable community.
- Annexation into the CSD is expected to be required for all new development in the Quay Valley community, with the exception of Preliminary Maps. As a condition of a development permit, land zoned Agriculture may or may not be required to annex to the CSD, at the discretion of the governing board.
- An adequate urban level of public services is expected to be provided for the future residents of Quay Valley.
- The civic and public administration buildings are anticipated to be located in the Town Center Area.
- Agreements regarding public services for Quay Valley are anticipated to be consistent with the applicable Preliminary Design Plan provisions.
- Phasing for funding of CSD public services and countywide public services are expected to be coordinated so that they are available when needed as development of the project area occurs.
- A financing strategy is expected to be developed to ensure that the County's General Fund is not negatively impacted by the cost of providing countywide public services to Quay Valley.
- When public financing is utilized the resulting annual tax and/or assessment rates for property shall not exceed fiscally prudent levels.

CSD Range of Services

If formation of a CSD is authorized by LAFCo, it is envisioned that an existing local agency or private firm would be contracted to provide actual services. As described in Section 8.1.2, a CSD is empowered to levy special taxes, special assessments, and can issue bonds. Because a CSD has access to a broad scope of services and financing methods it is often looked upon as a mini-city in its own right. The CSD is envisioned to be authorized to provide the following services:

- Parks and recreation
- Open space and trails
- Fire Protection
- Law Enforcement
- Library
- Street Lighting
- Street Maintenance
- Vector Control
- Enhanced levels of landscaping
- Transit operations and maintenance
- Water Supply
- Sewage Treatment
- Storm drainage
- Solid Waste Disposal
- Administration and community communications

8.2.3 Financing Constraints and Opportunities

Section 8.1, *Urban Services Plan* describes the funding plan for the services that are expected to be provided by the CSD. A Mello-Roos Community Facilities District (CFD) special tax could be considered to pay for services not funded directly through user fees/charges or other revenue sources. Special taxes could be established to pay for services not funded directly through user fees/charges or other revenue sources. Special taxes on undeveloped property could cover shortfalls in the early years until the tax base has grown to a sufficient level to fund needed services.

When a CSD exists, a portion of the property owner's taxes would go to the CSD to pay for the services provided. Taxes are collected upon assessed value of the land and improvements and placed on the property tax bill. CSD's are limited to a maximum ad valorem tax of 1% of assessed valuation. A CSD may levy special taxes which exceed the base 1% property tax, pursuant to Government Code Section 61121 (a) and 61121(b) and the Mello-Roos Community Facilities Act (Government Code Section 53311 et. Seq.).

Initially, where possible, the CSD services/facilities would be phased to match the special tax/assessment revenue, along with user fees and other revenues. Service levels are envisioned to increase to meet the planned services standards over time. Minimum service levels are planned to comply with mitigation requirements in the EIR, final map conditions, and Development Agreement requirements.

During the Formation of the Community Facilities District (CFD), a Special Tax Consultant could provide a Sensitivity Analysis that establishes the rate and method of apportionment of the CFD special taxes. That analysis includes a projection of costs to provide the Public Services Annual Special Tax levy for developed residential and commercial property within the boundaries of the CFD. The projection may analyze the Special Tax Levy for a period of 25 to 30 years. The annual CFD assessment cannot be determined until the rate and method of apportionment is determined and bond sizing is analyzed.

Special Features of the Special Tax

The special tax may not be based in proportion to the value of real property, nor does it have to be based on benefit. Instead, special taxes should be apportioned on any reasonable basis and may be spread across developable land uses based on some other measure (e.g., density of development, square footage of construction, flat acreage).

Deficit Funding

Should Quay Valley develop at a slower rate than anticipated, deficit funding may be necessary to provide the level of Urban Services required. Mechanisms to provide deficit funding under that circumstance are as follows:

Tax on Undeveloped Land

A special tax on undeveloped properties within the boundaries of the CFD can also be subject to a special tax levy. When special tax revenues do not provide adequate funds for public services, the CFD can levy a special tax on properties with approved small lot tentative maps that have not yet received a Building Permit. The owner of the undeveloped property is typically the Master Developer and/or other developers of the residential and non-residential projects within Quay Valley.

The tax rate on undeveloped property should be on a per acre basis. The Development Agreement should establish the hierarchy for levying the special tax on undeveloped property if needed.

Urban Services Shortfall Fee

An additional funding mechanism for public services is the Urban Services Shortfall Fee, which is a one-time fee which would be paid at the time the building permit is issued.

Master Developer Subsidy

A provision could be included in the Development Agreement that the Master Developer enter into an Agreement with the CSD to subsidize any deficit, subject to a Reimbursement Agreement.

8.2.4 Formation of the CSD

The specific authorized services and other features of the CSD must be specified in the Petition or Resolution of Formation (Government Code Section 61000, et. Seq.). LAFCo, as part of its discretionary proceedings, will conduct a feasibility analysis that addresses potential effects on existing agencies and also will develop detailed terms and conditions that guide formation and operation of the CSD.

Process

The formation process may be initiated by presenting to LAFCo a petition signed by not less than 25 percent of the registered voters residing in the area to be included in the district, as determined by LAFCO (Government Code Section 61011), or by presenting to LAFCo a resolution of application from the legislative body of any county or city, which contains territory proposed to be included in the district (Government Code Section 61013). Before adopting a resolution of application, the legislative body shall hold a public hearing on the resolution.

If LAFCo approves the formation of the district, the legislative body shall call and give notice of an election to be held in the area of the proposed district. After the election, if the majority of the votes are cast in favor of the formation, the district shall be formed.

Governing Body

The Governing Body of a Community Services district may be appointed or elected, and is composed of a five-member board of directors (Government Code Section 61040). The method of selection and the number of directors would be as set forth in the petition of formation. Government Code Section 61022(a) provides that in the case of a proposed district which contains only unincorporated territory in a single county and less than 100 voters, the LAFCo may provide, as a term and condition of approving the formation of the district, that the County Board of Supervisors shall be the initial board of directors until conversion to an elected board of directors.

8.3 FIRE PROTECTION PLAN

The CSD is envisioned to provide for an urban level of fire protection service and emergency response either as a direct provider or by contracting for services. Fire protection is proposed to be provided by the Kings County Fire Department under a contract with the CSD in compliance with Kings County General Plan requirements and the standards of the Fire Protection Plan required by the Fire Plan and prepared by the CSD prior to entering into the contract. The cost of fire safety service depends upon desired response times, quality, and quantity of service, as well as environmental conditions.

Fire department services provided in the Quay Valley area are expected to consist of fire prevention, fire operations, emergency medical services, hazardous materials, rescue services, and dispatch communication services. Fire department units responding to

medical emergencies within the Specific Plan area are expected to operate at the paramedic first responder level. It is anticipated that two fire stations would provide adequate facilities to support fire protection and emergency response services.

The Quay Valley fire stations are envisioned to be located to take advantage of controlled intersections. Where a fire station exits onto a thoroughfare, it could have control over the flow of traffic with signalization. Fire station entrances onto a roadway should be at least 300 feet from an intersection. The stations could be sited in a manner that ensures the least restrictive routing to remote portions of the station's primary response area.

The Quay Valley Fire Facilities analysis is patterned on the Public Facilities Financing and Urban Services Plans as set forth in Chapter 9, *Financing*, which used the approach taken in the Sutter Pointe Specific Plan.[1]

8.3.1 Service Level Goals

- To provide for a five-minute response time.
- At build-out level of development for Quay Valley, the standard for fire protection is expected to be provided at an urban level of 1.0 firefighters per 1,000 population or such other levels that may be specified in the General Plan consistent with the standards for comparable urban communities within Kings County, and any additional needs determined by the Quay Valley community.

8.3.2 Facility Needs

Approximately 3.0 acres within the project area are envisioned to be occupied by two fire stations (including a 1.0 acre master fire station, one 0.5 acre sub-station, and 1.5 acres for support facilities). A total of approximately 18,000 square feet of facility space is anticipated to be provided.

Station #1 (the master station) is envisioned to be approximately 12,000 square feet in size. Station #1 would be the first to be built and serve as primary response until such time as Station #2 is completed. Station #1 is intended to provide fire suppression services to residential and commercial uses that would come online in the early phases of the project. Station #1 would be built in Phase 1.

Station #2 is envisioned to be approximately 6,000 square feet in size. Station #2 would be built in Phase 2. Support facilities are expected to be built in Phase 2 through Phase 5.

The fire stations are anticipated to be designed to support at least 75 safety employees, 7 non-safety employees, and 30 vehicles. In addition, 8,000 square feet of support facilities and 5.0 acres of land dedicated to training facilities is expected to be provided near the Corporation Yard in the Industrial /Transportation land use designation area. Timing of construction and staffing of each fire station would be completed in a manner that

maintains Kings County Fire Department response standards.

Quay Valley proposes to initially construct a temporary fire station facility, which would be completed prior to the issuance of the first Certificate of Occupancy Permit. Based on research, the minimum temporary facilities would include these components:

- A standard three-bedroom, two-bathroom modular residence with handicap access and one handicap-accessible bathroom.
- An 8' x 20' office trailer with handicap access.
- A two-bay apparatus building (30'W x 36'D) on a concrete slab with two 12' x 12' bay doors.

It is possible that existing stations located in adjacent portions of the County could provide interim and secondary response. Timing and specific details related to the construction of fire station facilities could be addressed in the Public Facilities Financing Plan and the Quay Valley Development Agreement.

Services are envisioned be provided through a combination of interim and permanent facilities, as determined by the Fire Protection Plan, in terms of timing and facility needs. Interim services are envisioned to be provided through a phasing plan which establishes milestones for the provision of facilities.

8.3.3 Implementation

CSD Fire Service. The CSD is planned to have fire protection powers. Alternatively, County Fire Department Services would be responsible for fire protection should formation of a CSD be determined not to be feasible.

Fire Stations. Fire stations are planned to be provided to meet the requirements of the adopted Fire Protection Plan and the General Plan.

Location of Fire Stations. Fire stations will be strategically located so as to offer fire protection to all portions of the community to meet the adopted Fire Protection Plan and the General Plan. Station locations will be determined based on a five- minute response time and prior to the approval of each Tentative Map. Public land is planned to be made available for the stations.

Structure Types. The size and types of commercial buildings constructed within Quay Valley are expected to dictate the fire equipment needs. Structures higher than two stories will require additional specialized equipment, and, if proposed, will require an evaluation of added needs.

Fire Prevention. The CSD Fire Department Prevention Bureau's (FPB) primary goal is

1. The Sutter Pointe Development is a Specific Plan located in South Sutter County. The Sutter Pointe Specific Plan proposes a total of 17,500 residential units, 49,733,000 square feet of commercial/employment development and other resident and visitor serving uses on 7,582 acres. The Specific Plan was approved by the Sutter County Board of Supervisors on June 30, 2009. An amendment to the approved Specific Plan was approved on October 28, 2014.

planned to be to promote and preserve fire and life safety in Quay Valley. Staffing for the FPB will be determined prior to the first tentative map. Full-time members will be responsible for fire investigations, fire code enforcement, fire and life safety plan reviews, public education, and special enforcement programs.

Fire Protection Standards. Any necessary standards for fire protection are expected to be contained in the CSD Fire Protection Plan or agreements with the County and consistent with the General Plan. Issues addressed in the standards will include:

- Construction shall meet the Building Code and the Fire Code.
- Additional or specialized fire suppression equipment may need to be provided as a condition of construction for those uses not protected by available equipment.
- Implementation of public education, public safety, and fire prevention through adoption of regulations and policies.
- Regulations for weed abatement and elimination of potential fire hazards in industrial waste materials.
- A hazardous material labeling program and classification system.

Communications. A communications system that provides for coordinating fire and police as well as utilities will be established.

Fire Protection Plan. A Fire Protection Plan is envisioned to be accepted by the County before submittal of the first Development Permit.

Service Standards. The Insurance Services Office (ISO) rating is the recognized classification for a fire department or district's ability to defend against major fires. A rating of 10 generally indicates no protection, whereas an ISO rating of 1 indicates high fire fighting capability. The ISO standard for construction of a new fire station is to have a station within 1.5 miles of all areas within the project area once the project reaches 20 percent of build-out. This Preliminary Design Plan has proposed the following response time standards:

- 5 minutes 80 percent of the time for urban responses.
- 7 minutes 80 percent of the time for rural responses.

Equipment Needs. Fire Suppression Fleet and Emergency Medical Fleet specific equipment needs will be detailed in the Fire Protection Plan.

8.3.4 Facility Improvement Costs

The costs listed below for the two fire stations and support facilities are estimated to potentially be up to $23.4 million and are detailed below:

- Two fire stations.
- Engines.

- Rescue, command and grass units.
- Staff and support vehicles.
- Support facilities (administration, prevention, training, logistics, communications, and maintenance).

8.3.5 Phasing and Triggers

Timing of construction and staffing of each fire station will be completed in a manner that maintains the proposed Service Standards.

One station is planned for Phase 1 and should be operational prior to the issuance of the first occupancy permit for either residential or non-residential. Station No. 1, (the master station) is estimated at 12,000 square feet and is planned for Phase 1. Station No. 2, estimated to be 6,000 square feet is planned for Phase 2.

8.4 POLICE PLAN

The project area is served by both the Kings County Sheriff's Department and the California Highway Patrol (CHP). It is envisioned that under contract with the CSD, the Kings County Sheriff's Department would provide law enforcement services, except for the area of traffic safety and enforcement, which would likely be managed by the CHP. Alternatively, County Sheriff's Department would provide services directly should formation of a CSD be determined not to be feasible.

An urban level of police service consistent with standards for comparable communities within Kings County, as consistent with the General Plan is envisioned to be provided. Such services are anticipated to be provided by the CSD, with supplementary private contracts for certain duties related to special events. The current law enforcement protection is provided at a rural level of service by the Kings County Sheriff's Department.

Law enforcement services for Quay Valley are envisioned to be centered in a headquarters facility located in the Town Center area. Detention facilities at that location could also be provided. The addition of police substations would be evaluated as Quay Valley develops and could be added if necessary to maintain public safety within the project area. An ongoing system to monitor calls for service, analyze crime statistics and resident survey data, and make changes in staffing and patrols should be created to reflect the growing community's needs. A goal of this Preliminary Design Plan is to provide for the safety and security of the community, and the solicitation of community involvement.

8.4.1 Facility Needs

Approximately 24,000 square feet within the Civic Center is envisioned to be occupied by law enforcement personnel. Facilities should be designed at build-out to support sworn personnel, non-sworn personnel, and vehicles.

Quay Valley envisions that it will also be necessary to provide a temporary Law Enforcement facility until the permanent facility is constructed and operational. All future development within the project area will require consultation with the Kings County Sheriff's Department regarding safety and security. Upon incorporation, the new City may assume both law enforcement and traffic safety functions.

8.4.2 Implementation

Law Enforcement Facility. A law enforcement facility is envisioned to be provided in the Quay Valley community. The law enforcement facility may be part of a larger multi-purpose building. It will be determined as the population expands whether a law enforcement sub-station is also needed to comply with the Priority 1 response level of service.

Interim Staffing. Law Enforcement protection is envisioned at least initially be provided by contract with the Kings County Sheriff's Department.

Description of Law Enforcement Services. A detailed description of police services is planned to be prepared as part of the Law Enforcement Protection Plan which could be an appendix to the contract between the CSD and the County for the Sheriff's Department, as may be updated from time to time. The envisioned contract would be prepared prior to submittal of the first Development Permit.

Communications. Local law enforcement dispatching is envisioned if found viable by the Sheriff's Department and the CSD.

Response Times. The Law Enforcement Department's goal is to maintain an average response time for Priority One calls for service of five minutes or less. A Priority One call is a violent crime against a person, or emergencies requiring an immediate response to preserve a life.

8.4.3 Facility Improvement Costs

The estimated cost for the 24,000 square foot Law Enforcement facility is anticipated to be approximately $10.0 million, assuming a cost of approximately $420 per square foot. Phase 1 costs are estimated at $2.9 million.

8.4.4 Phasing and Triggers

The Law Enforcement Center is proposed to be built in phases. The first phase of 7,000

square feet would need to be completed prior to issuance of the 3,200th building permit. Before the construction of the government center, administrative activities are anticipated to be housed in temporary facilities at the outset of development, and the costs could be funded by the developer.

If necessary, a temporary Law Enforcement facility could be utilized until the permanent facility is constructed and operational. It is estimated that leased office space of approximately 10,000 square feet could be shared with Administration personnel with 6,000 square feet allocated to the Law Enforcement Department.

8.5 HEALTH SERVICE FACILITIES PLAN

Medical services are normally private operations, with the exception of most emergency medical services, which require a critical population base before operators will locate within a community. In the early phases of Quay Valley development, residents will likely need to utilize existing facilities and doctors in surrounding areas. As the community grows, medical care services will develop in response to market demand.

Even from the initial stages, Quay Valley is planning to develop partnerships with Kings County healthcare providers to incorporate regular wellness related programs, campaigns, and site- specific projects. Programs may include health fairs, nutrition, blood drives, inoculation clinics, well-child care, elderly assistance, and family support networks. Providers of these services will be encouraged to establish temporary facilities if appropriate, until such time as the population warrants permanent facilities.

8.5.1 Medical Services

The following medical services are envisioned to be provided to future residents of Quay Valley:

Emergency Services

Emergency medical services within Kings County are currently provided through a combination of fire protection services and private vendors. As noted in the Fire Protection Section, first response is envisioned to be done by the Fire Department, in cooperation with trained paramedics with these services included as part of Quay Valley's community services. Initially, in combination with paramedic services, a private ambulance service is anticipated to be used for transport.

2 The Sutter Pointe Development is a Specific Plan located in South Sutter County. The Sutter Pointe Specific Plan proposes a total of 17,500 residential units, 49,733,000 square feet of commercial/employment development and other resident and visitor serving uses on 7,582 acres. The Specific Plan was approved by the Sutter County Board of Supervisors on June 30, 2009. An amendment to the approved Specific Plan was approved on October 28, 2014.

Community Health Care

Quay Valley's plans include the establishment of a full service hospital in the community at approximately 50% build-out. For this purpose, an area within the Mixed Use designation of the Conceptual Land Plan has been planned for the establishment of a hospital.

Private medical offices and emergency care centers will be encouraged to locate in Quay Valley as demand increases. Medical facilities are expected to be permitted to locate within the community at sites which are easily accessible to residents and employees and which are appropriate for such uses.

Medical offices, urgent care centers, hospitals, and other facilities providing emergency medical care are expected to be permitted in commercial and/or mixed use areas, except for commercial freeway service areas. Such uses should be mainly situated on Arterial streets, and located and configured to minimize the impact of ambulance and other traffic on nearby residential neighborhoods. A major roadway, landscape easement, or other effective buffer should separate such uses from residential and other sensitive land uses except for smaller offices where being in closer proximity to residences could be a benefit. Access to such facilities should be provided from Arterial streets and should be separate from Neighborhood access points.

Emergency Medical Preparedness Program

Quay Valley is envisioned to incorporate paramedics into its Emergency Medical Preparedness Program. Supplemental transport service by a private contractor or as specified in the Fire Protection Plan would also be utilized as needed. Additional emergency response should be in accordance with the Emergency Medical Services System Pre Hospital Emergency Medical Care Personnel Act (EMS Act).

8.5.2 Wellness Lifestyle

The Quay Valley community is planned to encourage a wellness lifestyle by providing health, recreation and fitness facilities, extensive trails and a pedestrian paseo network. Healthy living and productivity for employees and residents is envisioned to be promoted through physical activity and health networks in the community. Convenient recreation and outdoor activities are expected to be incorporated into daily living. Ongoing health programs and initiatives may be provided to support individual and community well-being.

Recreation / Outdoor Activities

One of Quay Valley's sustainability goals is to encourage occupants, residents, and visitors to utilize the community's convenient network of hiking and biking trails through tours and walking/biking clubs. Further, Quay Valley's recreational programs are envisioned to incorporate competitive events and programs for all ages to provide incentives to

stay fit.

8.5.3 Medical Service Costs

It is assumed that private medical offices, emergency care centers, and hospitals will want to locate in Quay Valley as the community expands. As these facilities are assumed to be managed by private operators, no public facility costs are anticipated. However, as noted above, supplemental paramedic services are intended to be provided by the Fire Department serving Quay Valley; therefore, these costs are included in the Public Facilities Financing Plan and the Fire Protection Plan.

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9

FINANCING

9.1 FINANCING PLAN OVERVIEW

This conceptual plan for financing identifies the estimated cost to construct the backbone infrastructure and public facilities for Quay Valley. Proposed and existing financing mechanisms to fund those costs are also described. The Final Public Facilities Financing Plan will be submitted to the Kings County Board of Supervisors for approval as a companion document to the Quay Valley Specific Plan at a later point in the development application process. The purpose of this plan is to describe the preliminary strategy to fund major backbone infrastructure and public facilities needed to serve the new development. This strategy can be accomplished through the following steps:

- Specification of the major public facilities to be constructed. Costs are based on available engineering data, existing County department data, and other estimates.
- Identification of funding sources to pay for the backbone infrastructure and public facilities, including any existing and potential future fee programs or financing districts.
- Provision of information regarding the development timing of backbone infrastructure and public facilities improvements.
- Establishment of policy framework for financing the required backbone infrastructure and public facilities improvements.

The selection and formation of a Community Facilities District (CFD) and the subsequent sale of bonds is one mechanism to fund public facilities within the project area. The formation of an Assessment District (AD) is an alternative to the CFD, and is less flexible than a CFD in terms of the types of improvements that can be funded, the method by which special taxes for the improvements can be apportioned among properties, and the ability to pay directly for construction without incurring debt and/or public services (if necessary). Furthermore a CFD is not required to place a lien on publicly-owned property benefiting from improvements as is an AD, which is often important if a financing mechanism is to be politically viable. The choice between AD or CFD funding is to be determined at a later date.

9.1.1 Quay Valley Financing Strategy

A combination of funding sources will ultimately fund the backbone infrastructure and public facility improvements. The potential funding sources are listed below:

- **Private Capital** would be required from the Master Developer to fund backbone infrastructure and possibly fee credits could be received in return for the funding.
- **Existing Fee Programs** administered by Kings County and other public agencies such as school district development impact fees. Because the funding of items covered by these fees is the responsibility of these agencies, the cost of these items is not included in the conceptual financing plan.
- **Quay Valley Development Impact Fee Program** is proposed to fund improvements not already included in the capital improvement program of existing fee programs. This fee program may be administered privately by the Master Developer or publicly by the County. Kings County may prefer to administer the portion of the fee dedicated to funding public facilities, while the Master Developer could internally implement a fee program to cover the costs of backbone infrastructure. Further consideration and discussion between the Master Developer and the County is required to determine how the fee program could be administered.
- **Community Facilities Districts** (CFDs) would fund infrastructure improvements needed during the development before the collection of sufficient fees or other sources of revenue for reimbursement. The bonds could be repaid through special taxes levied on property through the CFDs.
- **Matching State School Funding** for the school district in Quay Valley which would be eligible for grant funding from the State School Facility Program (SFP).
- **Other Funding Sources** to fund the backbone infrastructure and public facility costs will be required. This may include state highway funding or other state/federal funding for transit facilities and equipment. In addition, Section 5.6 through Section 5.8 details other potential sources of funding that may be available.
- **Local Tax Revenue Funding** may be pledged from property tax, sales tax, or other tax revenues generated in the project area to fund construction of public facilities and infrastructure. These local revenues would only be available after ensuring sufficient funding is provided to the County to provide the required countywide and urban services. This funding mechanism has the potential to expedite the absorption of non-residential land uses and promote the desired jobs/housing balance.
- **Master Developer Advances** are planned to finance infrastructure improvements needed in the initial phases of the project area before collection of fees or other revenue sources. Fee credits or reimbursements for facilities otherwise funded by fee programs may be available if developers fund and construct fee-funded facilities. Developer advances could potentially be repaid as the County acquires facilities through the Mello- Roos CFD bond proceedings.

Because developers of individual parcels within Quay Valley are planned to be conditioned to complete specific infrastructure improvements and in many instances, may advance-fund more than their proportionate share of infrastructure costs, private reimbursement agreements may be appropriate. Private reimbursement agreements may be prepared for each development project that provides more than its proportionate share of infrastructure costs.

9.2 PUBLIC FACILITIES FINANCING

To limit liability of Kings County for the costs associated with development of Quay Valley, a CSD could provide an independent entity to finance a broad range of services allowing operation as a "junior city." (Government Code Section 61000, et. Seq.). A CSD may be used to pay for facilities and services including water supply, sewage treatment, storm water disposal, solid waste disposal, fire protection, recreation, street lighting, police protection, library, street maintenance, and various other services. A County or private firm may be contracted to provide services and facilities, or the CSD may be solely responsible. A CSD is empowered to levy special taxes, special assessments, and can also issue bonds.

9.2.1 BACKBONE INFRASTRUCTURE & PUBLIC FACILITIES FUNDING

Backbone infrastructure funding is proposed to be provided by the Master Developer from private sources. The Master Developer could potentially receive fee credits for development impact fees from the CSD to pay back initial funding of infrastructure. The majority of improvements are envisioned to be financed through private financing obtained by the Master Developer and, in some cases, complemented by the issuance of bonds. Some facilities, such as water and power utility infrastructure could be constructed with funds from the Master Developer. The utilities, anticipated to be Cal Water and PG&E, respectively, could then purchase the built infrastructure from the Master Developer over a five year period at cost plus interest. The utility providers could then be reimbursed through connection charges, development fees, and rates charged to end users.

9.2.2 PUBLIC SERVICES ALLOCATION AGREEMENT AND PRIVATE FINANCING STRUCTURE

GROW Holdings, LLC, as the Master Developer, is seeking certain approvals required for the commencement of development of Quay Valley and if the required approvals are granted would enter into a Development Agreement (DA) with Kings County vesting certain development rights. The approvals, including the DA are envisioned to contain conditions and requirements imposed by Kings County which would be monitored and enforced by the County.

PUBLIC SERVICES ALLOCATION AGREEMENT

Subsequent to the planned formation of a CSD, a Public Services Allocation Agreement (PSAA) would be reached. The PSAA is planned to provide allocation of public services and improvements between the County and the CSD, including an agreement for the allocation of tax and other revenue (including the transfer to the CSD of any Quay Valley Impact Fees collected by the County). The major objective of the PSAA is to protect the fiscal resources of Kings County by allocating to the CSD the responsibility of providing certain public services and Improvements. A negative fiscal impact placed on the County would be avoided by the formation of the PSAA. The County would continue to provide services such as land use planning, building inspections, business licenses, Code Enforcement and other services set forth in the PSAA.

FINANCING IMPLEMENTATION PLAN & CAPITAL IMPROVEMENTS PROGRAM

Subsequent to the finalization of the PSAA, the CSD would approve a Financing Implementation and Capital Improvements Program (FICIP) and adopt ordinances, resolutions and policies providing for fees, charges and other sources of revenues contemplated by the Financing Implementation Program.

The Master Developer proposes to provide private funding of the public facilities, subject to a reimbursement agreement with the CSD. The Master Developer and the CSD are envisioned to enter into a Master Acquisition and Reimbursement Agreement (MARA) which sets forth the process, general procedures and general financial criteria for acquisition and purchase by the CSD of elements of infrastructure to be privately funded by the Master Developer, pursuant to separate Project Acquisition Agreements or Project Reimbursement Agreements and for sources of payments, fee credits and reimbursements to the Master Developer as applicable under the CSD's FICIP.

The Master Developer would design, construct and fund the infrastructure facilities pursuant to the FICIP. Prior to design and construction of each facility improvements, the CSD shall enter into a Project Acquisition and Reimbursement Agreement (PARA) with the Master Developer. The reimbursement portion of the PARA is intended to specify the source of reimbursement funds to be provided to the Master Developer upon completion and delivery of the public facility to the CSD.

9.2.3 PRELIMINARY PUBLIC FACILITIES FINANCING PLAN

Quay Valley's specific objectives in preparing this preliminary Public Facilities Financing Plan (PFFP) are to (1) identify the required public capital facilities costs and phasing for the Public Facilities required to build the Project, (2) select the appropriate public finance mechanism(s) to pay for Public Facilities and Public Services costs, (3) compute the annual and total financing burden by land use type and financing mechanism that will support the necessary infrastructure and services, (4) provide a quantitative evaluation of the overall feasibility of the public financing component of the PFFP, subject to public policy and market constraints, and (5) provide an implementation blueprint for Kings County.

In selecting public financing mechanisms appropriate for funding the public facilities necessary to support the project, Quay Valley will be cognizant of the County's concern that the Kings County General Fund, as well as its taxpayers will not bear the costs of the proposed improvements. As further explained below, the analysis was limited to public financing mechanisms that could be charged exclusively to property owners within the project area. Public facilities may be financed through a specific financing mechanism, by the Master Developer and/or future merchant builders, federal and state subsidies (e.g., schools), or County-wide or local development impact fee programs established by the County.

BACKBONE INFRASTRUCTURE AND PUBLIC FACILITIES FINANCING

The following definitions characterize financing terms used in this plan:

Backbone Infrastructure. This term includes most of the essential public service based items located underground or at ground level, and may be both on or off site. Backbone infrastructure is sized to serve the project area as a whole and in some cases may be sized to serve broader development areas. For the project area, backbone infrastructure includes the following items:

- Storm drainage facilities.
- Water transmission facilities.
- Recycled water facilities.
- Water treatment plant(s).
- Joint trench costs.
- Wastewater transmission facilities.
- Grading and Earthwork costs.
- Wastewater treatment plant(s).
- Roadways (primary, collector, and local roadways).
- Parks and landscaping.
- Bridges.
- Signalization.
- Dry utilities and solar facilities.

Public Facilities. This group of items provides amenities to the project area (e.g., parks, schools) or houses employees providing services to the area (e.g., law enforcement, fire). For the project area, public facilities includes the following items:

- Open space / trails.

- Schools.
- Library.
- Transit facilities.
- Fire facilities.
- Law enforcement facilities.
- Administration facilities.
- Corporation yard.

In addition to the project-specific public facilities listed above, projects may incur fees at building permit issuance that fund the impact of new development on County wide facilities. The backbone infrastructure, other public facility, and supplemental backbone infrastructure cost estimates do not include the costs of in-tract and other subdivision specific improvements, which would be privately financed. These are considered subdivision improvements and, therefore, are not part of this Preliminary Financing Plan.

In-tract or subdivision improvements include in-tract improvements (e.g., mass grading, sewer, storm drainage, water, and local roads) in an individual subdivision, commercial, or multifamily project. The development community considers these costs in their private financing structure as "Subdivision Improvements," "Lot Costs," or "Site Development" costs in the case of nonresidential projects. These costs are excluded from the Preliminary Financing Plan because they are assumed to be the responsibility of the developer that is moving forward with specific on-site development.

9.2.4 ESTIMATED BACKBONE STREET COSTS

A summary of the estimated costs of the proposed backbone streets are provided in Section 4.5 above. Street costs at build-out are estimated at $118.0 million. The estimated costs for the backbone public infrastructure in this plan are preliminary based on studies conducted by Developers Research Associates. The information continues to be updated as plans evolve. The most up-to-date information available will be included in the final Public Facilities Master Plan to be submitted later in the project review process.

PHASING

The proposed project is expected to be constructed in phases, and for purposes of this plan the construction of the backbone infrastructure, as well as the public facilities can be divided into five distinct phases. The cost for construction of Phase 1 backbone streets is estimated at $12.0 million. Phasing of street improvement construction will be driven by the goal of maintaining Level of Service (LOS) D or better for all road segments and intersections affected by trips generated within Quay Valley. An implementation schedule tied to specific development areas and phases is proposed.

9.2.5 Development Triggers

Backbone infrastructure and public facilities are planned be constructed at the outset of development as specified in the DA. Prior to the effective date of the DA, the Master Developer is envisioned to deliver to the County irrevocable offers of dedication for backbone infrastructure, drainage areas, community parks, neighborhood parks adjacent to planned school sites, open space areas, and other County facilities. Following receipt of all dedication documents, a Record of Survey would be prepared showing all required dedications on a single map.

The development of backbone infrastructure and public facilities will be driven by triggers determined during the DA process. The identification of backbone infrastructure will include roads, sewer, water, storm drainage, recycled water, and dry utilities. The triggers will be identified for both residential and nonresidential. The southern and middle interchanges for Interstate 5 must be completed prior to the issuance of the first building permit. Threshold figures shall be anticipated and improvements planned and designed to accommodate future expansions, extensions, widening or ultimate widths. These improvements include installation of conduits, controllers, dry utilities, poles, streetlights or other fixed utilities.

9.2.6 Financing Objectives

The following objectives policies shall guide the financing of backbone infrastructure and public services for Quay Valley:

- Fund major infrastructure and public facilities required for development to proceed using a suitable and appropriate combination of public and private financing.
- Development projects will be required to fund and construct the costs of extending the backbone infrastructure necessary to adequately serve and support the project, consistent with various public facilities plans subject to fee credits or future reimbursements. The costs for backbone infrastructure and public facilities could be allocated to the extent possible based on a project's fair share of required improvements.
- Existing County/other agency fee programs will be used to fund project infrastructure to the extent the improvements are eligible for such funding.
- "Pay-as-you-go" financing could be used to the fullest extent possible. The principal use of debt financing could fund those broad scale facilities needed to facilitate development of the entire community or significant portions thereof. Debt financing is envisioned to be used only when needed to permit development or in order to maintain established level of service standards.
- A Development Impact Fee program is envisioned to be established for backbone improvements not funded by existing fee programs or by public debt. A fair share

cost allocation of the project area fee for required public improvements would be established for each land use parcel.

- When using debt financing, the total annual tax and/or assessment rates for developed land is envisioned not exceed fiscally prudent standards consistent with County rules and procedures.

9.2.7 Development Impact Fees (DIF)

Development impact fees are a method whereby the impact of new development upon the infrastructure is assessed, and a fee system developed and imposed to mitigate the impact of new development. Development impact fees are collected at the time of building permit issuance. Funds collected are deposited in a special interest bearing account and can only be used for identified facilities serving the community in which they were collected. As sufficient funds are collected, the County and/or CSD proceeds with a construction program. The use of development impact fees is one of the financing methods under consideration for Quay Valley.

9.2.8 Enhanced Infrastructure Financing District (EIFD)

One or more of these districts may be created within a city or county and used to finance the construction or rehabilitation of a wide variety of public infrastructure and private facilities. An EIFD may fund these facilities and development with the property tax increment of those taxing agencies (cities, counties, special districts, but not schools) that consent. EIFD's are also authorized to combine tax increment funding with other permitted funding sources including property tax revenue distributed to a city, county, or special district after payment of a successor agency's debts.

Revenues dedicated to the EIFD from property tax corresponding to the increase in assessed valuation of taxable property attributed to those property tax shares received by a city or county pursuant to in lieu of Vehicle License Fee (VLF). Loans from a city, county or special district, that must be repaid at no more than the LAIF interest rate that is in effect on the date the loan is approved by the governing board of the city, county or special district making the loan. Facilities financed by an EIFD may include but are not limited to:

- Public infrastructure and facilities.
- Highways, interchanges, ramps and bridges, arterial streets, parking, and transit facilities.
- Sewage treatment, water reclamation plants, and interceptor pipes.
- Facilities for the transfer and disposal of solid waste, including transfer stations and

vehicles.

- Facilities to collect and treat water for urban uses.
- Flood control levees and dams, retention basins, and drainage canals.
- Parks, recreational facilities, open space, and libraries.
- Brownfield restoration and other environmental mitigation (any powers of the Polanco Redevelopment Act to may be used to remediate property).
- Projects on a closed military base consistent with approved base reuse plans funds may also be used to repay loans made pursuant to Section 67851 to a military base reuse authority on or after the creation of the district.
- Private facilities.
- Acquisition, construction, and repair of industrial structures for private use.
- Transit priority projects as defined under Section 21155 of the Public Resources Code.
- Projects which implement a sustainable communities strategy.
- Mixed-income housing developments (An EIFD may fund only those units dedicated to low or moderate income housing, and childcare, after-school care, and social services integrally linked to the tenant of the restricted.
- Reimbursement for a project located within the boundaries of a district for permit and other expenses incurred when constructing affordable housing pursuant to the Transit Priority Project Program under Section 65470 of the Government Code.
- Facilities constructed to house providers of consumer goods and services.
- Childcare facilities.

9.6 TOURISM IMPROVEMENT DISTRICT FUNDING

A Tourism Improvement District to be formed by the CSD is planned as an overlay of the Destination Commercial designation area. A Tourism Improvement District is statutorily known as a Business Improvement District (BID). An innovative financing tool for commercial neighborhoods such as shopping malls and regional business districts. BIDs allow the opportunity for sales tax and transient occupancy tax revenue bonds. Established by law in the late 1980's and early 1990's, BIDs are public/private sector partnerships that perform a variety of services to improve the image of their cities and promote individual business districts. Economic development services are also carried out by working to attract, retain and expand businesses.

9.6.1 Business Improvement District Law

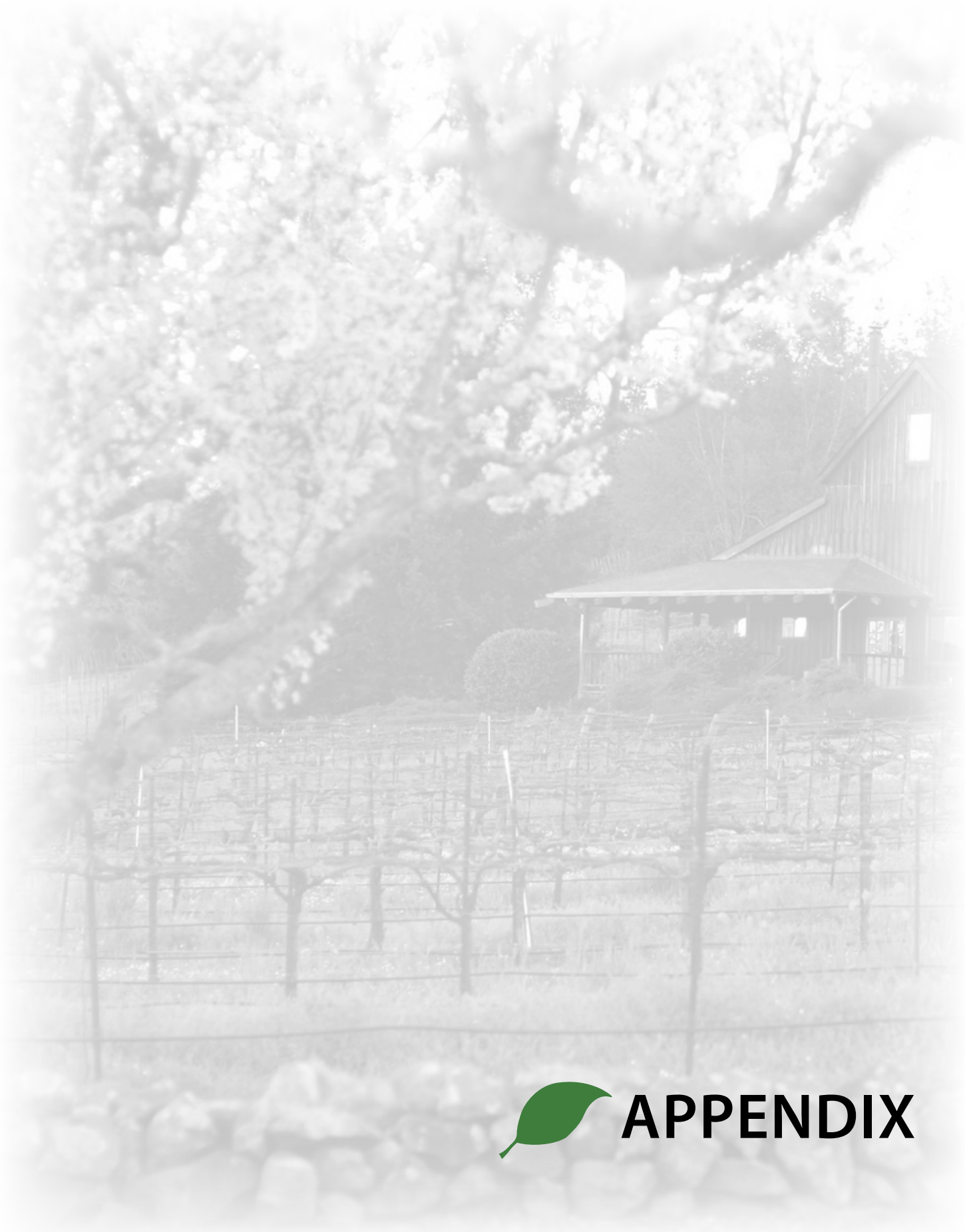
In California, two separate laws authorize the formation of a BID. The Parking and Business Improvement Area Law of 1989 (Streets & Highways Code §36500 et seq.) enables a city, county, or joint powers authority made up of any combination of cities and counties to establish areas of benefit and to levy assessments on businesses within those areas to finance the following improvements:

- Parking facilities.
- Parks.
- Fountains, benches, and trash receptacles.
- Street lighting.
- Decorations.
- Promotion of public events benefiting area.
- Businesses which take place in public places within the area.
- Furnishing music to any public place in the area.
- Promotion of tourism within the area.
- Any other activities which benefit businesses located in the area.

The Property and Business Improvement District Law of 1994 (Streets & Highways Code §36600 et seq.) pertains to improvements which may be financed by these assessments including those enumerated under the Parking and Business and Improvement Area Law of 1989, as well as the following other items:

- Closing, opening, widening, or narrowing existing streets.
- Rehabilitation or removal of existing structures.
- Facilities or equipment, or both, to enhance security within the area.
- Marketing and economic development.
- Security, sanitation, graffiti removal, street cleaning, and other municipal services supplemental to those normally provided by the municipality.

Both laws enable a city, county, or joint powers authority (made up of cities and/or counties only) to establish a BID and levy annual assessments on businesses within its boundaries. These assessments would provide financing for the improvement and ongoing maintenance of the proposed Destination Commercial area.



APPENDIX

APPENDIX A:

ENVIRONMENTAL RECONNAISSANCE REPORT

Quay Valley Preliminary Mitigation Measures

Aesthetics

Mitigation will require Quay Valley developments to be evaluated for compliance with the specific plan guidelines and design criteria.

- **Mitigation Measure AES 1:** Ensure that new development embodies the sustainable features and low impact design identified in the PDP, ensuring consistency throughout the development (County of Kings 2010).

Agricultural

- **Mitigation Measure AG 1:** Maintain the Limited Agriculture designation around community districts until substantial build out of a community district has occurred according to an adopted community plan. New locations for urban uses is necessary to accommodate additional population growth.
- **Mitigation Measure AG 2:** Apply the Limited Agriculture or Open Space land use designation around Community Districts and Urban Fringe areas to serve as a buffer between urban and intensive agricultural uses.
- **Mitigation Measure AG 3:** Proposed land uses on agriculture designated land within any Urban Fringe shall comply with the provisions of Section C of the County's Land Use Element policies for Agriculture Open Space.
- **Mitigation Measure AG 4:** Maintain implementation of the County's "Right to Farm Ordinance" adopted in 1996 to continue placing land owners on notice that they live within an agricultural County and may be subject to agriculture related inconveniences or discomforts.

Air Quality

- **Mitigation Measure AQ 1:** Consult with the SJVAPCD and KCAG during CEQA review of discretionary projects having the potential for causing adverse air quality, transportation, and climate change impacts. Participate in the SJVAPCD Climate Change Action Plan implementation.
- **Mitigation Measure AQ 2:** Minimize air quality and potential climate change impacts through project review, evaluation, and conditions of approval when planning the location and design of land uses and transportation systems needed to accommodate expected County population growth. Integrate decisions on land use and development locations with the SJV Blueprint.

- **Mitigation Measure AQ 3:** Consult with KCAG and transit providers during the planning stages of land use and transportation projects to assess project impacts on long range transit plans and ensure that potential impacts are avoided.
- **Mitigation Measure AQ 4:** Assess and mitigate project air quality impacts using analysis methods and significance thresholds recommended by the SJVAPCD and require that projects do not exceed established SJVAPCD thresholds.
- **Mitigation Measure AQ 5:** Mitigate project greenhouse gas/climate change impacts using analysis methods and significance thresholds as defined or recommended by the SJVAPCD, KCAG or California Air Resources Board (ARB) depending on the type of project involved.
- **Mitigation Measure AQ 6:** Ensure that air quality and climate change impacts identified during CEQA review are minimized and consistently and fairly mitigated at a minimum, to levels as required by CEQA.
- **Mitigation Measure AQ 7:** Locate residential development projects and projects categorized as sensitive receptors an adequate distance from existing and potential sources of hazardous emissions such as major transportation corridors, industrial sites, and hazardous material locations in accordance with the provisions of ARB's Air Quality and Land Use Handbook.
- **Mitigation Measure AQ 8:** Coordinate with the SJVAPCD to ensure that construction, grading, excavation and demolition activities within County's jurisdiction are regulated and controlled to reduce particulate emissions to the maximum extent feasible.
- **Mitigation Measure AQ 9:** Require all access roads, driveways, and parking areas serving new commercial and industrial development are constructed with materials that minimize particulate emissions and are appropriate to the scale and intensity of use.

Biological Resources

- **Mitigation Measure BIO 1:** The project would evaluate all discretionary land use applications in accordance with the screening procedures contained in the Biological Resources Survey located in Appendix C of the Kings County General Plan. Mitigation may include habitat improvement or protection, acquisition of other habitat, or payment to an appropriate agency to purchase, improve, or protect such habitat.
- **Mitigation Measure BIO 2**: If sensitive species are identified on the site project applicants are required to consult with the California Department of Fish and Wildlife (CDFW) and the United States Fish and Wildlife Service (USFWS) and to obtain appropriate authority for any such take pursuant to Endangered Species Act requirements if new development or other actions are likely to result in incidental take of any threatened

or endangered species.

- **Mitigation Measure BIO 3:** The project would maintain to the maximum extent practical the natural plant communities utilized as habitat by threatened and endangered species (see Appendix C for a listing and map of these plant communities).

- **Mitigation Measure BIO 4** : A qualified biologist shall conduct a pre-construction survey for nesting birds (including raptors) on and closely adjacent to the Project Area no more than 30 days prior to any ground disturbance, if ground disturbance is to occur during the breeding season (February 1 to August 31). These surveys shall be based on the accepted protocols (for example, the current Swainson's hawk protocol) for the target species. If an active nest is detected, an appropriate construction buffer may be needed. The actual size of the buffer would depend on species, topography, and type of construction activity that would occur near the nest, and would be determined in consultation with the CDFW and USFWS, as appropriate.

- **Mitigation Measure BIO 5:** A qualified biological monitor shall be present while ground-disturbing activities are occurring if it is determined that sensitive resources are present on or closely adjacent to the Project Area and those resources may be affected by project activities. In addition to conducting pre-construction surveys as described in BIO-1, the biological monitor shall: 1) aid crews in satisfying take avoidance criteria and implementing project mitigation measures, 2) document all pertinent information concerning project effects on sensitive species, and 3) assist in minimizing the adverse effects of project activities on sensitive species. The biological monitor shall be empowered to order cessation of activities if take avoidance or mitigation measures are violated.

- **Mitigation Measure BIO 7**: To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, USFWS and CDFW shall be contacted as noted under measure 16 referenced below.

- **Mitigation Measure BIO 8:** Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4 inches or greater that are stored at a construction site for one or more overnight periods shall be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is discovered inside a pipe, that section of pipe shall not be moved until the Service has been consulted. If necessary, and under the direct supervision of a biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

- **Mitigation Measure BIO 9**: If suitable habitat is identified for the Blunt-nosed Leopard

Lizard, a qualified biologist(s) will conduct protocol surveys according to CDFW Approved Survey Methodology (CDFG 2004). Upon completion of surveys, the findings will be reported to the CDFW and consultation will occur, as necessary.

Cultural Resources

- **Mitigation Measure CUL-1:** A Native American monitor and a qualified professional archaeologist are required to be on-site during all ground-disturbing construction activities. Construction that requires monitoring includes demolition activities that could disturb native soil. The appointed Native American monitor and project archaeologist shall develop appropriate mitigation measures and make recommendations pertaining to the preservation of cultural resources.

- **Mitigation Measure CUL-2:** If, during the course of project construction or operation, any prehistoric or historical resources are discovered, activities within one hundred (100) feet of the find shall stop and the Kings County Community Development Agency shall be notified. The project proponent shall retain a qualified archaeologist to assess the significance of the find and make mitigation recommendations, if warranted. The archaeologist shall be required to submit to the County for review and approval a report of the findings and method of curation or protection of the resources. The archaeologist shall document any discovered resources using DPR 523 forms and submit the forms and an accompanying report to the California Historical Resources Information System (CHRIS).

- **Mitigation Measure CUL-3:** Prior to initiation of construction activities, the applicant shall conduct a site visit in concert with a representative(s) from the Cultural Department of the Santa Rosa Rancheria (Rancheria). The purpose of the site visit is to provide an opportunity for the Rancheria to assess the site and discuss their recommendations. In addition to the site visit, a cultural resource sensitivity class will be taught by the Rancheria for the construction crew. Prior to initiation of construction, the applicant shall consult with the Rancheria to determine if they would like to provide one Tribal Cultural Consultant (TCC) during project grading. The applicant and the Rancheria shall enter into a reburial agreement as well as a curation agreement for any artifacts that may be discovered during construction (per CEQA Guidelines, California Code of Regulations, Title 14, Section 15064.5). If prehistoric artifacts are found, the project archaeologist will work with the TCC to determine their significance and the landowner to identify potential reburial options.

- **Mitigation Measure CUL-4:** Pursuant to State Health and Safety Code §7050.5(c) and State Public Resources Code §5097.98, if human bone or bone of unknown origin is found at any time during on- or off site construction, all work shall stop in the vicinity of the find and the Kings County Coroner shall be contacted immediately. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission who shall notify the person believed to be the most likely descendant. The applicant shall work with the likely descendant to develop a

program for the re-internment of the human remains and any associated artifacts. Additional work cannot take place within the immediate vicinity of the find until the appropriate procedures have been implemented.

Geology and Soils

- **Mitigation Measure GEO 1:** The proposed project shall be in accordance with the Kings County Multi-Hazard Mitigation Plan.
- **Mitigation Measure GEO 2:** A Storm Water Pollution Prevention Plan (SWPPP) shall be developed for the project that shall be implemented during both the construction and decommissioning periods to reduce potential for soil erosion.
- **Mitigation Measure GEO 3:** A representative from the contracted Geoengineering Firm shall be present during all site clearing and grading operations to test and observe earthwork construction.
- **Mitigation Measure GEO 4:** Any buried structures or loosely backfilled excavations should be properly removed and the resulting excavations backfilled with Engineered Fill. Demolition activities should include the proper removal of any buried structures.
- **Mitigation Measure GEO 5:** Fill soils shall be excavated and stockpiled in order for native soils to be prepared properly.
- **Mitigation Measure GEO 6:** Temporary excavations planned for the construction of the proposed construction and any other associated underground structures, should be excavated according to the accepted engineering practice following Occupational Safety and Health Administration (OSHA) standards by a Contractor experienced in such work.
- **Mitigation Measure GEO 7:** The project shall implement over-excavation and soil replacement, a structural slab or mat foundation system, or supporting the building on a deep foundation system to minimize structural damage due to the liquefaction settlement of the loose and compressible soils.
- **Mitigation Measure GEO 8:** If groundwater is encountered, the contracted Geoengineering firm shall be consulted prior to dewatering the site. Installation of a standpipe piezometer is suggested prior to construction should groundwater levels be a concern.

Greenhouse Gas Emissions

- **Mitigation Measure GHG 1:** A Energy and Carbon Reduction Master Plan shall be developed which would include mitigation measures aimed to achieve Quay Valley's goals to:
    - ◊ Reduce Quay Valley's operational GHG emissions by 29 percent compared

to business as usual.

- ◊ Implement strategies and programs to reduce single occupant vehicle use, to ncrease use of alternative modes, and to increase use of energy efficient building design materials.
- ◊ Provide transit opportunities to reduce automobile traffic and trips both within the Specific Plan area and externally.
- ◊ Incorporate sound land use and design measures to encourage use of alternative transportation and conservation of energy.
- ◊ Implement low-impact development (LID) strategies and a comprehensive water conservation strategy.

- **Mitigation Measure GHG 2:** The project shall include Net Zero Energy Buildings. These buildings would integrate photovoltaics which would reduce fossil fuels and emission of ozone depleting gases and would achieve 20 percent beyond Title 24 requirements. In addition.
- **Mitigation Measure GHG 3:** A Transportation Master Plan shall be developed to analyze potential impacts from additional vehicle miles traveled prior to project construction.

Hazards and Hazardous Materials

- **Mitigation Measure HAZ 1:** Support Kings County Emergency Services operations that improve countywide coordination, monitoring and implementation of the Kings County Multi-Jurisdictional Multi-Hazard Mitigation Plan.
- **Mitigation Measure HAZ 2:** The constructor and operator of the Project shall develop an Injury and Illness Prevention Program and project-specific health and safety plans. These plans should include but not be limited to the following:
  - ◊ Train workers on the applicable evacuation activities to protect workers from potential hazards posed by hazardous wastes;
  - ◊ Compliance with the SJVAPCD's Regulation VIII and SJVAPCD-approved Dust Control Plan;
  - ◊ Train workers and supervisors on how to recognize symptoms of illness related to Valley Fever;
  - ◊ Provide pre-construction training and instruction regarding requirements for on-site construction pursuant to the approved Dusts Control Plan;
  - ◊ Limit workers' exposure to outdoor dust in disease-endemic areas;
  - ◊ When soil will be disturbed by heavy equipment or vehicles, wet the soil with

water or other permitted soil stabilizer before disturbing it and continuously wet it while digging to keep dust levels down;

- ◊ Heavy equipment, trucks, and other vehicles generating heavy dust should have enclosed cabs equipped with air filters;
- ◊ When exposure to dust is unavoidable, provide NIOSH-approved respiratory protection to all employees.

- **Mitigation Measure HAZ 3:** Mitigation Measure HAZ 2: Support Kings County Emergency Services operations that improve countywide coordination, monitoring and implementation of the Kings County Multi-Jurisdictional Multi-Hazard Mitigation Plan. Evaluate the potential site impact associated with the presence of the eight former oil wells we recommend that assessment and remediation as necessary be performed in the vicinity of the oil wells. In order to confirm the location of the former oil wells, we recommend that well completion logs from the office of the Department of Oil and Gas (DOG) be obtained and reviewed. Based on the accuracy and detail of the DOG maps, a geophysical survey may be necessary to identify the exact location of the sump areas in the vicinity of the oil wells. Based on the review of the DOG records and the geophysical survey (if necessary), we recommend that soil samples from the sump areas near the oil wells be obtained and analyzed for petroleum-hydrocarbons. In addition, the oil wells may need to be re-abandoned pursuant to current DOG oil well abandonment requirements.

Hydrology and Water Quality

- **Mitigation Measure HYDRO 1:** An engineering study would be prepared to determine the current base flood elevation and determine the effect of constructing a new levee system. If the new levee system would cause the water to rise by a foot or more and displace water onto other people's property, then It would not be allowed pursuant to Section 5A-22(a)(4) of the Kings County Flood Damage Prevention Ordinance. In addition, the new levee system would need to be certified by the Army Corps of Engineers and possibly be approved by any relevant affected agency such as Reclamation Districts.

- **Mitigation Measure HYDRO 2:** The project would be required to provide a Detailed Flood Study based on FEMA publication 265, Managing Floodplain Development in Approximate Zone A Areas.

Noise

The Noise Element within the 2035 Kings County General Plan contains standards and policies designed to protect individuals from the unwanted effects of exposure to excessive noise.

- **Mitigation Measure NOI 1**: Appropriate noise mitigation measures shall be included in a proposed project design when the proposed new use(s) will be affected by

traffic or railroad noise sources and exceed the County's "Noise Standards for New Uses Affected by Transportation Noise Sources" (Table N-7). Mitigation measures shall reduce projected noise levels to a state of compliance with this standard.

- **Mitigation Measure NOI 2:** Appropriate noise mitigation measures shall be included in a proposed project design when the proposed new use(s) will be affected by or include non-transportation noise sources and exceed the County's "Non-Transportation Noise Standards" (Table N-8). Mitigation measures shall reduce projected noise levels to a state of compliance with this standard within sensitive areas. These standards are applied at the sensitive areas of the receiving use.
- **Mitigation Measure NOI 3:** Noise associated with construction activities shall be considered temporary, but will still be required to adhere to applicable County Noise Element standards.
- **Mitigation Measure NOI 4:** A noise analysis shall be prepared in accordance with the County's "Requirements for Acoustical Analyses Prepared in Kings County" (Table N-9) for capacity enhancing roadways or rail projects, or the construction of new roadways or railways. If the proposed project will result in a significant noise level increase as defined below, or the project would cause noise levels to exceed the County's noise standards (Table N-7), noise mitigation measures should be considered to reduce traffic and/or rail noise levels to a level consistent with those standards. A significant increase is defined as follows:

Pre-Project Noise Environment (Ldn)	Significant Increase
Less than 60 dB	5+ dB
60 - 65 dB	3+ dB
Greater than 65 dB	1.5+ dB

This policy requires only that noise mitigation measures be considered in cases where the significance thresholds described above would be exceeded. However, there are various factors which may affect the feasibility or reasonableness of the mitigation which should be considered during the project environmental review process, including the following:

A. The severity of the impact.

B. The cost and effectiveness of the mitigation.

C. The number of properties which would benefit from the mitigation.

D. Aesthetic, safety and engineering considerations.

- **Mitigation Measure NOI 5:** All noise analyses prepared to determine compliance with the noise level standards contained within this Noise Element shall be prepared in accordance with the County's "Requirements for Acoustical Analyses Prepared in Kings County" (Table N-9).
- **Mitigation Measure NOI 6:** Where noise mitigation measures are required to satisfy the noise level standards of this Noise Element, emphasis shall be placed on the use of setbacks and site design, prior to consideration of the use of noise barriers.
- **Mitigation Measure NOI 7:** Noise analyses prepared for multi-family residential projects, town homes, mixed-use, condominiums, or other residential projects where floor ceiling assemblies or party-walls are common to different owners/occupants, shall address compliance with the State of California Noise Insulation standards.
- **Mitigation Measure NOI 8:** Noise sources from public schools, parks, playgrounds, and related activities during daytime hours shall be exempt from the provisions of this Noise Element.

Population and Housing

- **Mitigation Measure POP 1:** A Community Master Plan shall be developed with goals to attain the highest quality of livability, the planning requires walkable neighborhoods, integrated land uses, transportation choices, protection and integration of natural resources, housing choices, and a sense of place.
- **Mitigation Measure POP 2:** The project would implement an "Affordable Housing Strategy," which would price a significant number of dwelling units to allow for low and moderate income households to meet Kings County's Affordable Housing Criteria. The Affordable Housing Strategy would also aim to:
    - ◊ Work collaboratively with nonprofit and for-profit developers to seek state and federal grants to support the production of affordable housing.
    - ◊ Support the provision of rental assistance to provide affordable housing options for extremely-low-, very-low- and low-income households.
    - ◊ Participate in efforts to expand homeownership opportunities to lower and moderate-income households through down payment assistance and other homeownership programs.
    - ◊ Support the provision of housing suitable for special needs groups, including seniors, people with disabilities, homeless people, military personnel, large households, single-parent families, and farm workers.
    - ◊ Develop and maintain collaborative efforts among nonprofits, for-profit developers, and public agencies to encourage the development, maintenance, and improvement of housing.

Public Services

The proposed project would be compliant with the mitigation measures incorporated into the CSD in order to reduce any significant environmental impacts to a less than significant level.

- **Mitigation Measure PS 1:** Prior and during construction, consult with the Fire and Police Department.
- **Mitigation Measure PS 2:** During construction, provide the required fire flows to water mains and fire hydrant system.
- **Mitigation Measure PS 3:** Fire protection services must be developed to support 1.0 firefighter per 1,000 persons and comply with specified standards identified in the General Plan.
- **Mitigation Measure PS 4:** Fire and Police Department services shall increase as the Quay Valley population grows in order to maintain existing levels of service.
- **Mitigation Measure PS 5:** Ensure fire protection safety by providing sufficient emergency response coverage to provide five minute or faster response times to emergency calls.
- **Mitigation Measure PS 6:** Ensure community safety by providing sufficient sheriff patrol coverage to provide five minute or faster response times to Priority One emergency calls.
- **Mitigation Measure PS 7:** New development should be evaluated for the extent of impact it may have in relation to the adequacy of the Sheriff's Department to provide adequate patrols necessary to cover the additional population.
- **Mitigation Measure PS 8:** The Sheriff's Department will require Deputies assigned to the Quay Valley community to participate in the community's functions, and actively promote safety by implementing community safety programs.

Transportation

- **Mitigation Measure TRANS 1:** A Transportation Master Plan shall be developed along with subsequent Traffic Impact Analysis to address topics such as critical intersections, roadway safety, multi-modal transportation, and local and regional connectivity.
- **Mitigation Measure TRANS 2:** Coordinate land use planning with planned transportation facilities to make efficient use of the transportation system and reduce total vehicle miles traveled, vehicle emissions, and energy use through improved accessibility to schools, job centers, and commercial services.
- **Mitigation Measure TRANS 3:** Maintain and manage County roadway systems to maintain a minimum Level of Service Standard "D" or better on all major roadways and arterial intersections.

- **Mitigation Measure TRANS 4:** Implement traffic operational improvements such as road widening, signals, and lanes to maximize service and efficiency.
- **Mitigation Measure TRANS 5:** Require new development to pay its fair share of costs for street and traffic improvements based on traffic generated and its impact to traffic levels of service.
- **Mitigation Measure TRANS 6:** Maintain regional County roadway surfaces and drainage along critical interconnecting routes between Cities, Communities, and outlying Cities in neighboring counties.
- **Mitigation Measure TRANS 7:** Project applicant shall work with Caltrans to attain necessary permits to establish proposed project interchanges.

Utilities and Service Systems

The project shall develop a Water Master Plan, a Utilities Master Plan, and a Solid Waste and Recycling Master Plan. These plans will ensure that the project would comply with federal, state, and local statutes and regulations relating to utilities and service systems.

Table A.1 Environmental Mitigation

Aesthetics, Light, and Glare		
Issues/Constraints	Project Design Features	Preliminary Mitigation
According to the California Scenic Highway Mapping System, there are no Officially Designated Scenic Highways in the project vicinity, or in Kings County (Caltrans 2011). The development would introduce new sources of exterior lighting as well as residential and commercial lighting in the area, which currently is an undeveloped rural area with low intensity lighting. The conversion of this land to urban development would alter the visual character of the project area. However, the existing visual conditions in the project area will be evaluated and a Visual Impact Assessment will be prepared prior to development in order to assure that the change in visual character would be compliant with mitigation measures set forth in the Specific Plan. Some of the factors evaluated will include the I-5 visual influence zone, changes that would be introduced by the project, and important views and viewing conditions.	The Quay Valley Specific Plan proposes to include design guidelines and principles that will inform subsequent project-level development applications. The Specific Plan's project boundaries would comply with all applicable design standards set forth in the 2035 Kings County General Plan. These mitigation measures will require the "new town" to contribute to the community's visual character and be compatible with the character of the surrounding area.	Mitigation will include requirements for subsequent Quay Valley developments to be evaluated for compliance with the specific plan guidelines and design criteria. The guidelines and design criteria will ensure that new development embodies the sustainable features and low impact design identified in the PDP, ensuring consistency throughout the development (County of Kings 2010). Refer to Attachment A for a list of preliminary mitigation measures associated with aesthetics, light, and glare for the Quay Valley Project Area and surrounding vicinity.

Agricultural Resources		
Issues/Constraints	Project Design Features	Preliminary Mitigation
The Project Area does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance and would not convert these types of lands to non-agricultural use (Exhibit 1). In addition, portions of the Project Area are under Williamson Act Contracts. The Project Area is not located within the Farmland Security Zone (Exhibit 2).		Refer to Attachment A for a list of preliminary mitigation measures associated with agricultural resources for the Quay Valley Project Area and surrounding vicinity
The introduction of a new town consisting of residential uses can result in conflicts with surrounding agricultural uses. Agriculture areas adjacent and surrounding the Project Area may likely experience diminished value as agricultural uses. The diminished agricultural value from land use conflicts may result from (but not be limited to) the following factors: • Restriction on the use of pesticides, fungicides, and herbicides; • Restrictions on noise, burning, and dust; • Vehicular emissions generated by the new development on adjacent roadways that may impact the health and survival of crops; • Competition for and possible decrease of water supply resulting from new development; • Increase land prices above the land's value for agricultural production; • Increased roadway congestion that may cause safety issues related to moving crops and machinery; • Increased roadway congestion leading to longer transport time of products thereby increasing costs; • Loss of any existing value of food, water, and habitat for certain native animal and plant species; • Vandalism from trespass, crop pilferage, and damage to irrigation and farming equipment	Per the 2008 Agricultural Land Conversion Study, the project design proposes to include adjoining buffers such as walls, streets, specific setbacks, or vegetation.	The project shall be consistent with the County's "Right to Farm Ordinance" adopted in 1996, the EIR will include mitigation requiring that property owners be notified of the fact that they live within an agricultural County and may be subject to agriculture related inconveniences or discomforts (County of Kings 2010).

Air Quality		
Issues/Constraints	Project Design Features	Preliminary Mitigation
In October 29, 2007, Sierra Research, Inc. prepared an Air Quality Impact Assessment of Quay Valley for the previously proposed Specific Plan, which encompassed an approximate 12,500-acre property. This Air Quality Assessment describes air quality impacts associated with the project. During project construction, particulate matter emissions (both PM_{10} and $PM_{2.5}$) are of concern because of the potential to emit fugitive dust during earth-disturbing activities. CO emissions are also of concern during project operation because operational CO hotspots are related to increases in on-road vehicle congestion. The identified impacts include construction and operational activities for the project. These activities will exceed the significance threshold of 10 tons/year of NOx or VOC. These activities will also exceed the local, state, and federal standards for PM10 mass emission thresholds. The cumulative impact of construction and operational emissions from criteria pollutants and greenhouse gasses are considered significant and unavoidable after mitigation (Sierra Research, Inc. 2007). Potential air quality impacts would be evaluated on a programmatic basis in the EIR and mitigation measures would be recommended where necessary.	The Quay Valley Specific Plan, Energy and Carbon Reduction Master Plan, proposes to include a variety of technologies and strategies in order to create a self-sufficient sustainable community and reduce air quality impacts. Some of these proposals include net zero-energy buildings (NZEBs), integrated transportation modes with advanced vehicles, local renewable energy generation, and sustainable living practices (Quay Valley Energy and Carbon Reduction Master Plan). The land plan proposes to incorporate buffers to ensure that residential uses are located an adequate distance from existing and potential sources of hazardous emissions such as I-5, and 500kv and 230 kv power lines. The Specific Plan's project boundaries are proposed to be developed in coordination with the 2035 Kings County General Plan as well as the SJV Blueprint Principles in order to avoid significant air quality impacts. The Specific Plan will consult with KCAG and transit providers during the planning stages of land use and transportation projects to avoid project impacts on long range transit plans and ensure that potential impacts are avoided. The Specific Plan will coordinate with the SJVAPCD in order to demonstrate that air quality impacts do not exceed established SJVAPCD thresholds.	The Air District can request a Voluntary Emission Reduction Agreement (VERA) in order to require offsetting ROG, NOx, and PM10 to zero, for criteria pollutants. Minimize air quality and potential climate change impacts through project review, evaluation, and conditions of approval when planning the location and design of land uses and transportation systems needed to accommodate expected County population growth (County of Kings 2010). The EIR will identify and include the current SJVAPCD construction best practices to ensure that particulate emissions are reduced to the maximum extent feasible (County of Kings 2010). Refer to Attachment A for a list of preliminary mitigation measures associated with air quality for the Quay Valley Project Area and surrounding vicinity.

Biological Resources		
Issues/Constraints	Project Design Features	Preliminary Mitigation
A review of the California Natural Diversity Database has indicated that several listed or otherwise sensitive plant and animal species may occur in the proposed Project area. The Specific Plan boundaries contain approximately 7,300 acres of primarily agricultural land, land with a scattering of Valley Saltbush Scrub, Valley Sink Scrub and seasonal wetlands along the eastern margins, which provides suitable habitat to support a number of special status species. These species include the San Joaquin kit fox, blunt-nosed leopard lizard, Nelson's antelope ground squirrel, and the San Joaquin woolly threads (Exhibit 3). The Specific Plan boundaries are also traversed by a number of natural and manmade water bodies, which contain riparian habitat and jurisdictional features (Exhibit 4). In addition, given the size of the Specific Plan boundaries, wildlife movement corridors are also present.	The Specific Plan proposes to be designed in accordance with USFWS/CDFW recommendations in order to identify and minimize impacts for important kit fox movement areas, incorporating design elements to facilitate kit fox movement, reducing vehicular mortality, and compensation. These requirements will focus on preconstruction, surveys, education training, and monitoring to avoid potential impacts (USFWS 2011). The Specific Plan proposes to be designed in accordance with CDFW recommendations in order to identify conservation of habitat and minimize on-site avoidance impacts for the blunt-nosed leopard lizard (CDFW 2015). The Specific Plan proposes to be designed in accordance with USFWS/CDFW recommendations in order to identify and minimize impacts for important Tipton kangaroo rat movement areas, incorporating design elements to facilitate Tipton kangaroo rat movement, reducing vehicular mortality, and compensation (CDFG 2013). The Specific Plan proposes to be designed in accordance with USFWS/CDFW recommendations in order to identify and minimize impacts for important wooly threads through onsite avoidance, conservation, and/or compensation.	The project applicant will coordinate with agencies in order to establish any surveys or permits required. Refer to Attachment A for a list of preliminary mitigation measures associated with biological resources for the Quay Valley Project Area and surrounding vicinity.

	The Specific Plan proposes to be designed in accordance with USFWS/CDFW recommendations in order to identify and minimize impacts for important wooly threads through onsite avoidance, conservation, and/or compensation. The Specific Plan proposes to be designed in accordance with USFWS/CDFW recommendations to require early consultation for surveys in order to identify and minimize impacts for important vernal pool tadpole shrimp through onsite avoidance, conservation, and/or compensation (USFWS 1996). The Specific Plan proposes to be designed in accordance with USFWS/CDFW recommendations to require early consultation for surveys in order to identify and minimize impacts for important vernal pool fairy shrimp through onsite avoidance, conservation, and/or compensation (USFWS 1996). The Specific Plan proposes to be designed in accordance with CDFW recommendations in order to identify and minimize impacts for important nelson antelope squirrel (USFWS 1996).	

Cultural Resources		
Issues/Constraints	Project Design Features	Preliminary Mitigation
The project area is near the Tulare Lake bed, which is considered an archaeologically sensitive region (Exhibit 5). The project area lies within the homeland of the Southern Valley Yokuts. The Yokuts people, who include northern valley and foothill groups, collectively inhabited the San Joaquin Valley as well as the eastern foothills of the Sierra Nevada from the Fresno River southward to the Kern River (Applied EarthWorks, Inc. 2007). A previously documented Cultural Resources Sensitivity Analysis prepared for the specific plan area and a recent site visit in March 2015 indicate that potential for archaeological, cultural, and historic resources exist within the boundaries of the specific plan area.	The project team has already initiated coordination with the local native American representative.	Coordinate with the local native American representative to define which areas of the site will require monitoring during construction. Mitigation will be developed in consultation with the local native American representative and will include requirements for monitoring and direction for action to be taken if resources are encountered during construction. Refer to Attachment A for a list of preliminary mitigation measures associated with cultural resources for the Quay Valley Project Area and surrounding vicinity.
Geology and Soils		
Issues/Constraints	Project Design Features	Preliminary Mitigation
Within the project area, fault rupture, ground shaking, landsliding, erosion, unstable geologic units, and expansive soils, would not be issues of substantial concern. However, liquefaction potential (sudden loss of shear strength in a saturated non-cohesive soil) would be low to moderate within the Project Area vicinity.	The proposed project design would be informed by a geotechnical investigation prepared Krazan & Associates, 2006, which identified a low to moderate potential for liquefaction and included recommendations for foundation design to address these site specific conditions. The report also identifies methods to address buried structures associated with the prior use of the site (utility lines, wells, canals, septic systems, etc). Additionally, the proposed project would abide by the guidelines of the Kings County Multi-Hazard Mitigation Plan.	All recommendations from the geotechnical report (Krazan & Associates 2006, and any related updates and/or addenda) will be incorporated into the EIR as mitigation measures. Refer to Attachment A for a list of preliminary mitigation measures associated with geology and soils for the Quay Valley Project Area and surrounding vicinity.

Greenhouse Gas Emissions		
Issues/Constraints	Project Design Features	Preliminary Mitigation
The project will include numerous combustion sources resulting in GHG emissions. The overwhelmingly dominant source of GHG emissions is the combustion of gasoline and Diesel fuel in vehicles throughout the project. Other sources of GHGs include the combustion of natural gas in home and commercial heating systems, combustion of gasoline in landscaping equipment, and other miscellaneous combustion sources typically resulting from residential, commercial, and industrial land uses.	The Project is proposed to be designed in accordance with an Energy and Carbon Reduction Master Plan that achieves a reduction of more than 29 percent compared to business as usual. The Project also proposes to include a plan for Net Zero Energy Buildings that ensures buildings integrate photovoltaics which would reduce fossil fuels and emission of ozone depleting gases and would achieve 20 percent beyond Title 24 requirements. The Specific Plan proposes to be developed in coordination with the SJVAPCD, KCAG or California Air Resources Board (ARB). The greenhouse gas/climate change impact analysis will require the project does not exceed these thresholds (Sierra Research, Inc. 2007). The Transportation Master Plan would propose to minimize impacts to greenhouse gas emissions by documenting how the plan will reduce vehicle miles traveled when compared to a traditional development plan.	The project includes the highest level of design and self mitigation, and it is not anticipated that further mitigation will be required. Refer to Attachment A for a list of preliminary mitigation measures associated with greenhouse gas emissions for the Quay Valley Project Area and surrounding vicinity.

Hazards and Hazardous Materials		
Issues/Constraints	Project Design Features	Preliminary Mitigation
In July 19, 2007, Rincon Consultants, Inc. prepared a Phase I Environmental Site Assessment for the previously proposed Specific Plan, which encompassed an approximate 12,500-acre property. The Phase I ESA found recognized environmental conditions (REC) associated with the property. The identified REC's included the presence of stained soil observed beneath one of the fuel above ground storage tanks (AST), the presence of 8 former oil wells on site, and the presence of a crude oil pipeline on the southwestern portion of the site (Exhibit 6). Two out of the eight identified oil wells are located within the current Specific Plan boundaries (Phase I Environmental Site Assessment 2007).	The Community Services District would be proposed to carry out the goals and objectives of the Kings County Multi-Jurisdictional Multi-Hazard Mitigation Plan, and therefore, the project plans will implement county policies in the provision of public safety and information regarding hazards.. Site preparation will include the implementation of the recommendations from the Phase I Environmental Site Assessment, in order to conform with the 2035 Kings County General Plan.	Recommendations from the Phase I Environmental Site Assessment will be incorporated into the EIR as mitigation measures. Refer to Attachment A for a list of preliminary mitigation measures associated with hazards and hazardous materials for the Quay Valley Project Area and surrounding vicinity.
Hydrology and Water Quality		
Issues/Constraints	Project Design Features	Preliminary Mitigation
Preliminary studies by the applicant indicate that the eastern portion of the Project Area bordering the Tulare Lake bed are within the 100-year flood plain (Exhibit 7 and Exhibit 8) (Pacific Advanced Civil Engineering, Inc. 2008).	The applicant is preparing a Detailed Flood Study based on FEMA publication 265, Managing Floodplain Development in Approximate Zone A Areas. The study would propose to include the design of improvements to the levee system and other flood protection measures. The applicant will submit documentation in support of a Conditional Letter of Map Revision (CLOMR) for review and approval by FEMA to formally recognize the removal of the site from the 100 year flood zone. The project would propose to implement a sustainable reclamation system to achieve 90 percent recycled water. This system would capture stormwater runoff and non-potable water to be stored in on-site reservoirs. Stored water would then be reintroduced into the system through irrigation and soil percolation. This process	The preliminary mitigation strategy is to complete the Flood Study and submit it for review and approval. Mitigation will require that the CLOMR be issued prior to final map recordation. Refer to Attachment A for a list of preliminary mitigation measures associated with hydrology and water quality for the Quay Valley Project Area and surrounding vicinity.

	would allow for recharge of the groundwater aquifers and aid in achieving the project's water conservation and reclamation goals.	
Land Use and Planning		
Issues/Constraints	**Project Design Features**	**Preliminary Mitigation**
The site is currently designated as AG-40 General Agriculture by the Kings County General Plan and AG-40 Agricultural by the County Zoning code. The Project Area is also located within the Tulare Lake Basin and watershed as well as a 100-year flood zone in the southeast corner of the project boundary. In addition, none of the Project Area is within Farmland Security Zones; however, portions are currently under Williamson Act Contracts. 1,967 acres are in the process of non-renewal under the Williamson Act (County of Kings 2010). The Specific Plan boundaries are traversed by three high-voltage power lines and a natural gas pipeline. In addition, because the Specific Plan boundaries contain approximately 7,000 acres of agricultural land, hazardous materials and vessels associated with agricultural operations may be present (e.g., pesticides, aboveground storage tanks, etc.) (Phase I Environmental Site Assessment 2007).	The plan for Quay Valley proposes to include the development of approximately 26,000 new residential dwelling units, for approximately 75,000 people. The proposed project would implement a wide variety of land uses. Some of these include commercial, industrial, highway commercial, university research park, hospital, mixed use, village center, low, medium, and medium high residential density, parks, and agriculture production (Exhibit 9). Implementation of the Specific Plan proposes to create new general plan and zoning designations for the plan area that are appropriate for the types of land uses proposed. The specific plan is based on sustainable principles including the use of alternative energy sources to reduce the use of conventional power, alternative transportation to reduce the use of vehicles and associated emissions, and the recycling and reuse of water to ensure that the impact of the 70,000+ new residents is reduced to the greatest extent possible. In addition, the current Land Use Plan places 250 feet of open space and agricultural buffers on each side of I-5 and between other intense land uses such as industrial and entertainment, and residential. Per the 2008 Agricultural Land Conversion Study, the project design would include adjoining buffers such as walls, streets, specific setbacks, or vegetation.	As discussed in previous sections, the Specific Plan will include mitigation to ensure the EIR will also be consistent with the 2035 Kings County General Plan in order to reduce potential impacts to the extent feasible. Refer to Attachment A for a list of preliminary mitigation measures associated with land use and planning for the Quay Valley Project Area and surrounding vicinity.

	The PDP includes appropriate setbacks from high voltage power lines, and also includes adjoining buffers to ensure that conflicts will not be created between existing agricultural activities on surrounding properties and new residents.	
Mineral Resources		
Issues/Constraints	Project Design Features	Preliminary Mitigation
Division of Oil, Gas & Geothermal Resources records indicate that two oil wells were drilled on the Project Area. Reportedly, both of the oil wells were dry holes and were abandoned and plugged. Additionally, the Project Area would have seven, 20 acre parcels, designated as Mineral Resources Preserve. These land designations would allow for future physical access to mineral resources such as oil and natural gas. The seven parcels would be located along the southeastern border of the Project Area and surrounded by mainly low density residential developments. The possible active oil extraction activities on Mineral Resource Preserve parcels could cause potential land use conflicts and hazards to surrounding residential areas.	The seven mineral resource preserves would each be comprised of 10 fenced acres containing potential oil well sites, surrounded by a buffer zone of 10 acres of community open space.	Pursuant to the recommendations of the Phase 1 Environmental Site Assessment, prepared by Rincon Consultants, Inc., in 2007, the two wells will be re-evaluated to confirm location of the sump areas, to reconfirm soil testing, and re-abandon the wells, if necessary. Future extraction plans would be regulated by the Department of Oil and Gas (DOG). Refer to Attachment A for a list of preliminary mitigation measures associated with mineral resources for the Quay Valley Project Area and surrounding vicinity.
Noise		
Issues/Constraints	Project Design Features	Preliminary Mitigation
Land uses in the vicinity of the project area consist predominantly of agricultural uses. Two rural residential land uses are located approximately 4.2 miles from the project area west of Interstate 5. Paramount Farming Company's West Valley Ranch, which includes onsite housing, is located approximately 6 miles southwest of the project area, adjacent to and south of Twisselman Road.	Because of the incorporation of setbacks and buffers, future residents of Quay Valley would not be adversely affected from existing noise sources such as Interstate 5. The Noise Element within the 2035 Kings County General Plan contains standards and policies designed to protect individuals from the unwanted effects of exposure to excessive noise.	The EIR will include a noise analysis prepared in accordance with the County's "Requirements for Acoustical Analyses Prepared in Kings County" (Table N-9) for capacity enhancing roadways or rail projects, or the construction of new roadways or railways.

<table>
<tr>
<td>Based on previous measurements conducted and analyzed in the Noise & Groundborne Vibration Impact Assessment, the average daytime noise levels (in dBA Leq) in the project area generally range from the mid 50s to upper 70s dBA, dependent primarily on distance from Interstate 5 (I-5) (Noise & Groundborne Vibration Impact Assessment 2008).</td>
<td>The Specific Plan proposes to be developed in coordination with the County's "Noise Standards for New Uses Affected by Transportation Noise Sources" (Table N-7) and would apply appropriate noise mitigation measures to those affected by traffic or railroad noise sources in order to reduce projected noise levels to a state of compliance with this standard.

The Specific Plan proposes to be developed in coordination with the County Noise Element standards associated with construction activities (County of Kings 2010).</td>
<td>If the proposed project will result in a significant noise level increase as defined below, or the project would cause noise levels to exceed the County's noise standards (Table N-7), noise mitigation measures will be considered to reduce traffic and/or rail noise levels to a level consistent with those standards.

A significant increase is defined as follows:
<table>
<tr><th>Pre-Project Noise Environment (Ldn)</th><th>Significant Increase</th></tr>
<tr><td>Less than 60 dB</td><td>5+ dB</td></tr>
<tr><td>60 - 65 dB</td><td>3+ dB</td></tr>
<tr><td>Greater than 65 dB</td><td>1.5+ dB</td></tr>
</table>
This policy requires only that noise mitigation measures be considered in cases where the significance thresholds described above would be exceeded.

Refer to Attachment A for a list of preliminary mitigation measures associated with noise for the Quay Valley Project Area and surrounding vicinity.</td>
</tr>
<tr><td colspan="3">Population and Housing</td></tr>
<tr><td>Issues/Constraints</td><td>Project Design Features</td><td>Preliminary Mitigation</td></tr>
<tr>
<td>The project is anticipated to support up to 75,000 people, and includes the development of up to 26,000 new residential dwelling units</td>
<td>The project design would propose to include a mix of commercial, retail, and office uses to provide a balance of jobs and housing.

The proposed increase in housing is within the growth projections identified in the General Plan.</td>
<td>In accordance with the County's Housing Element, the project will implement an "Affordable Housing Strategy," which would price a significant number of dwelling</td>
</tr>
</table>

		units to allow for low and moderate income households to meet Kings County's Affordable Housing Criteria (County of Kings 2010). Refer to Attachment A for a list of preliminary mitigation measures associated with population and housing for the Quay Valley Project Area and surrounding vicinity.
Public Services		
Issues/Constraints	Project Design Features	Preliminary Mitigation
The Quay Valley Project Area contains uncultivated agricultural land and proposed as a "new town" of approximately 7,300 acres with an anticipated population of 75,000 people. The Quay Valley Community Services District (QVCSD) will provide the fire protection, first-responder emergency medical services, and police protection services to Quay Valley. For school facilities, the Quay Valley Specific Plan area is within the jurisdiction of the Reef-Sunset School District. However, the applicant proposes to de-annex the Specific Plan Area from the Reef-Sunset School District and reorganize the territory to create a new Charter School district to serve Quay Valley. Public recreation facilities and library services will also be constructed to meet the needs of the "new town". Development of public facilities will be required to meet mitigation measures outlined in the Community Services District (CSD). Mitigation measures will be incorporated in order to reduce any significant environmental impacts to a less than significant level.	The project design would propose to include a mix of roads, public transportation, local government facilities, health service facilities and hospitals, utilities, water supply, sewage treatment and disposal, drainage, parks, and schools. The applicant will submit a public facilities master plan and assure compliance with the 2035 Kings County General Plan. The public facilities master plan proposes to analyze for the potential of the project to draw adjacent development into its service provision area through the growth-inducing impacts of the new community.	The developer shall construct all facilities and pay all fees identified in the plans prior to the County issuing certificates of occupancy. Refer to Attachment A for a list of preliminary mitigation measures associated with public services for the Quay Valley Project Area and surrounding vicinity.

Recreation		
Issues/Constraints	Project Design Features	Preliminary Mitigation
The Quay Valley project is proposed as a "new town" and includes development of parks, open space areas, and recreational facilities. The project is anticipated to support an ultimate population of 75,000 people. Each village will consist of a cluster of residential and commercial uses, and oriented around local recreational facilities such as community parks, a lake, sports field, and/or open space.	The project design proposes to include recreational facilities as well as neighborhood public parks. These design guidelines will be described in the public facilities master plan and will be in compliance with the 2035 Kings County General Plan.	The proposed project would be compliant with the mitigation measures incorporated into the CSD in order to reduce any significant environmental impacts to a less than significant level. Refer to Attachment A for a list of preliminary mitigation measures associated with recreation for the Quay Valley Project Area and surrounding vicinity.
Transportation/Traffic		
Issues/Constraints	Project Design Features	Preliminary Mitigation
New roadway systems would be constructed to accommodate the addition of up to 75,000 people and accompanying amenities of a "new town." The project's circulation system goal would be to promote a balance of opportunities for mobility within and throughout the community by incorporating vehicular, bicycle, pedestrian, and future transit provisions, to support and encourage a multi-modal transportation system within Quay Valley.	The Specific Plan proposes to include a Transportation Master Plan that provides adequate capacity to avoid congestion impacts on site.	Require new development to pay its fair share of costs for street and traffic improvements based on traffic generated and its impact to traffic levels of service. Maintain regional County roadway surfaces and drainage along critical interconnecting routes between Cities, Communities, and outlying Cities in neighboring Counties.
	The project applicant has initiated coordination with Caltrans for the required design of the proposed interchanges, and environmental clearance of the interchanges under NEPA.	Project applicant shall work with Caltrans to attain necessary permits to establish proposed project interchanges.

		Refer to Attachment A for a list of preliminary mitigation measures associated with transportation and traffic for the Quay Valley Project Area and surrounding vicinity.
Utilities and Service Systems		
Issues/Constraints	Project Design Features	Preliminary Mitigation
The project is anticipated to support up to 75,000 people and accompanying amenities of a "new town." Currently, a water source for the proposed project has not been identified.	The project shall develop a Water Master Plan. This plan proposes to ensure that the project would comply with federal, state, and local statutes and regulations relating to utilities and service systems. The applicant has initiated coordination with PG&E to address potential relocation of existing lines and appropriate setbacks and use of areas over and adjacent to such lines.	The project applicant will demonstrate sufficient sources of water for project initiation and operation. The applicant shall continue coordination with utility providers to ensure that proposed relocation and/or undergrounding is
		accomplished in accordance with applicable regulations and without interruption of service. Refer to Attachment A for a list of preliminary mitigation measures associated with utilities and service systems for the Quay Valley Project Area and surrounding vicinity.

Cumulative impacts		
Issues/Constraints	Project Design Features	Preliminary Mitigation
The 2035 Kings County General Plan EIR evaluated build out across the County according to the General Plan's planned land use designations. The EIR identified several impacts associated with buildout that would be significant and unavoidable even after mitigation, wildlife movement corridors, and impacts related to fragmentation of habitat for sensitive species. Other impacts were found to be less than significant after the imposition of mitigation. The Quay Valley Project would contribute to the significant and unavoidable biological impacts identified in the General Plan EIR. Furthermore, because the project proposes changes to the sites underlying land use classification, the development of project may result in impacts that were not considered as part of the buildout of the County contemplated by the General Plan EIR.	The project is being designed in accordance with General Plan policies and mitigation identified in the General Plan EIR, ensuring the maximum level of self-mitigation at the project level. It is anticipated that cumulative impacts would occur in the areas of biological resources and transportation.	While analysis has yet to be completed to confirm the level of cumulative impacts, it is anticipated that such impacts would occur in the areas of biological resources and transportation. Anticipated mitigation for cumulative transportation impacts includes roadway and transportation improvements to ensure that project impacts in conjunction with other planned development would maintain level of service D and would include fair share contributions for the construction of improvements to address the future cumulative condition. Anticipated mitigation for cumulative biological impacts could include avoidance, conservation, acquisition of habitat, and/or payment to an appropriate agency to purchase, improve, or protect such habitat.

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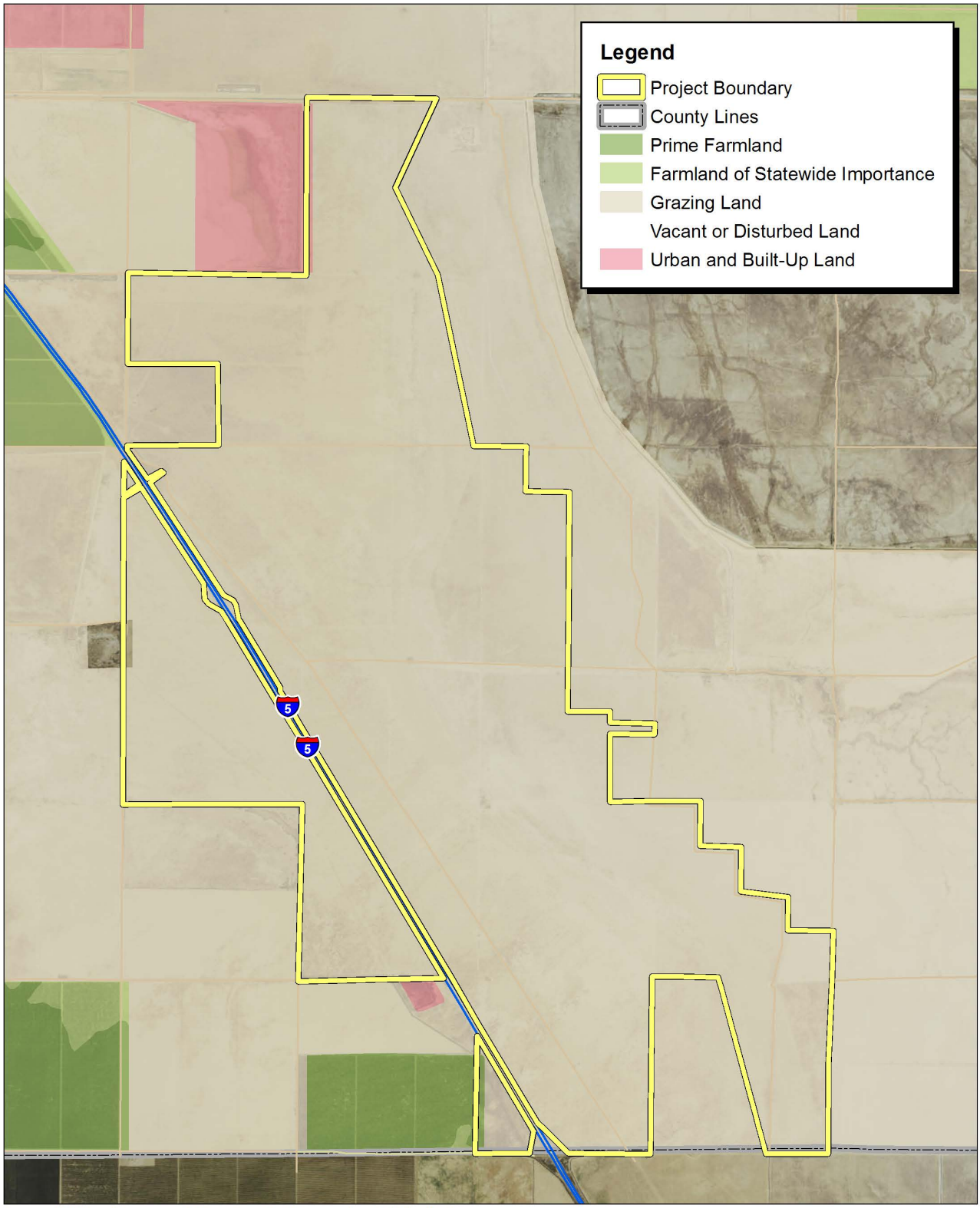

Source: ESRI Aerial Imagery. CA Department of Conservation FMMP, 2012.

FirstCarbon® SOLUTIONS

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Exhibit 1
Important Farmland Map

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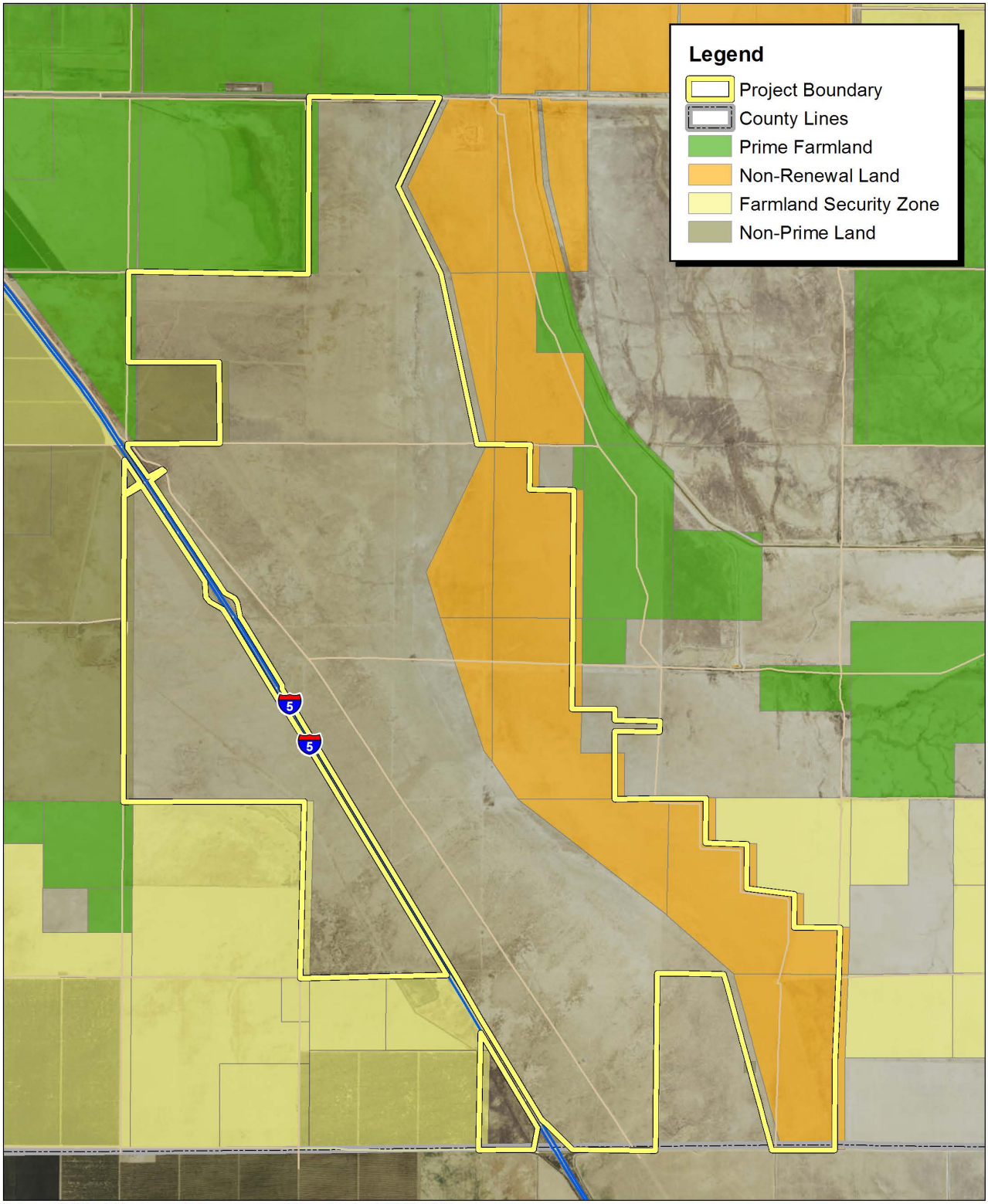
GROW LAND AND WATER LLC • QUAY VALLEY
ENVIRONMENTAL RECONNAISSANCE REPORT



Source: ESRI Aerial Imagery. CA Department of Conservation FMMP, 2012.

FirstCarbon® SOLUTIONS

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Exhibit 2
Williamson Act Lands

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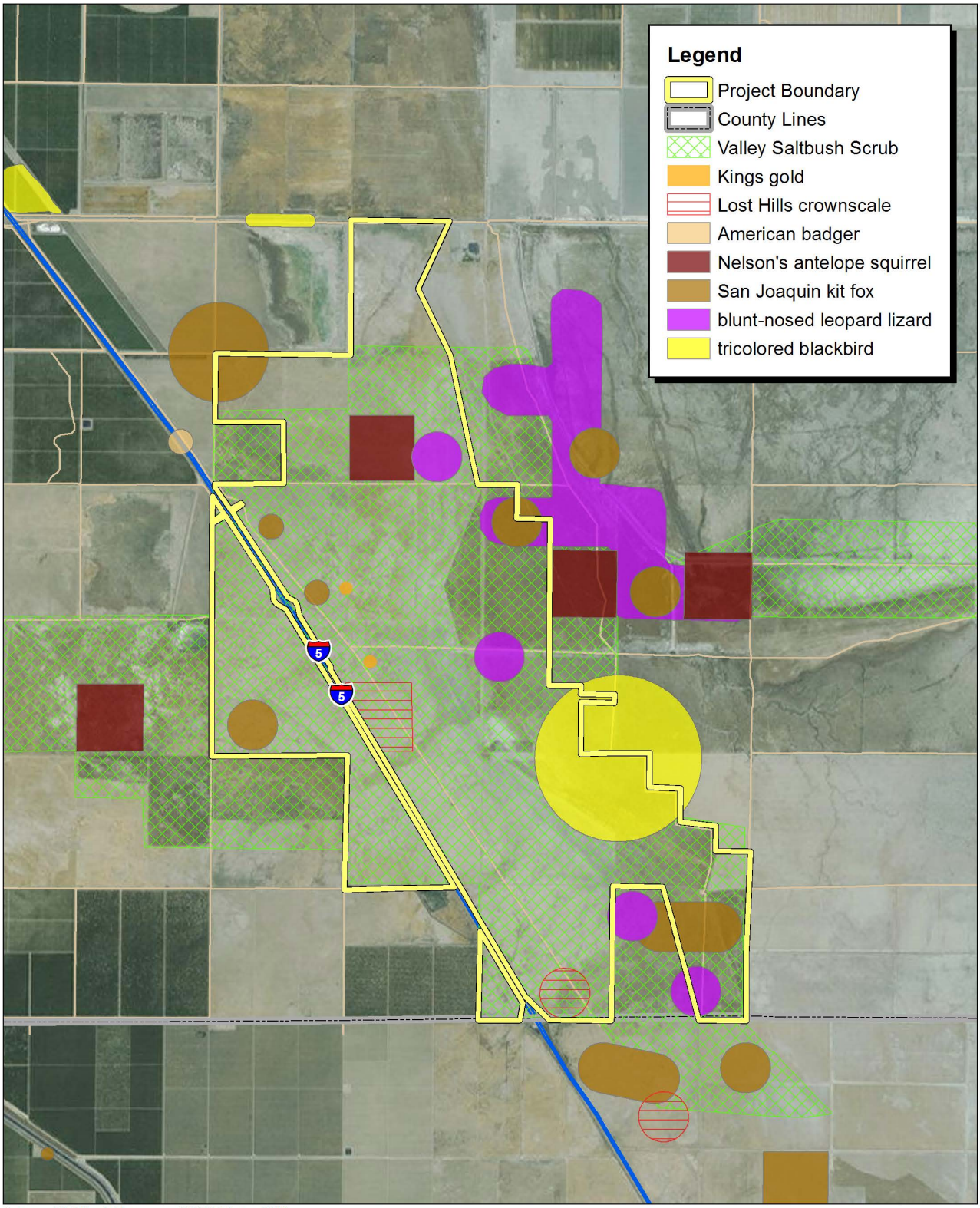
GROW LAND AND WATER LLC • QUAY VALLEY
ENVIRONMENTAL RECONNAISSANCE REPORT



Source: ESRI Aerial Imagery. CNDDB Data, 2015

FirstCarbon SOLUTIONS

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Exhibit 3
Special-Status Species Map

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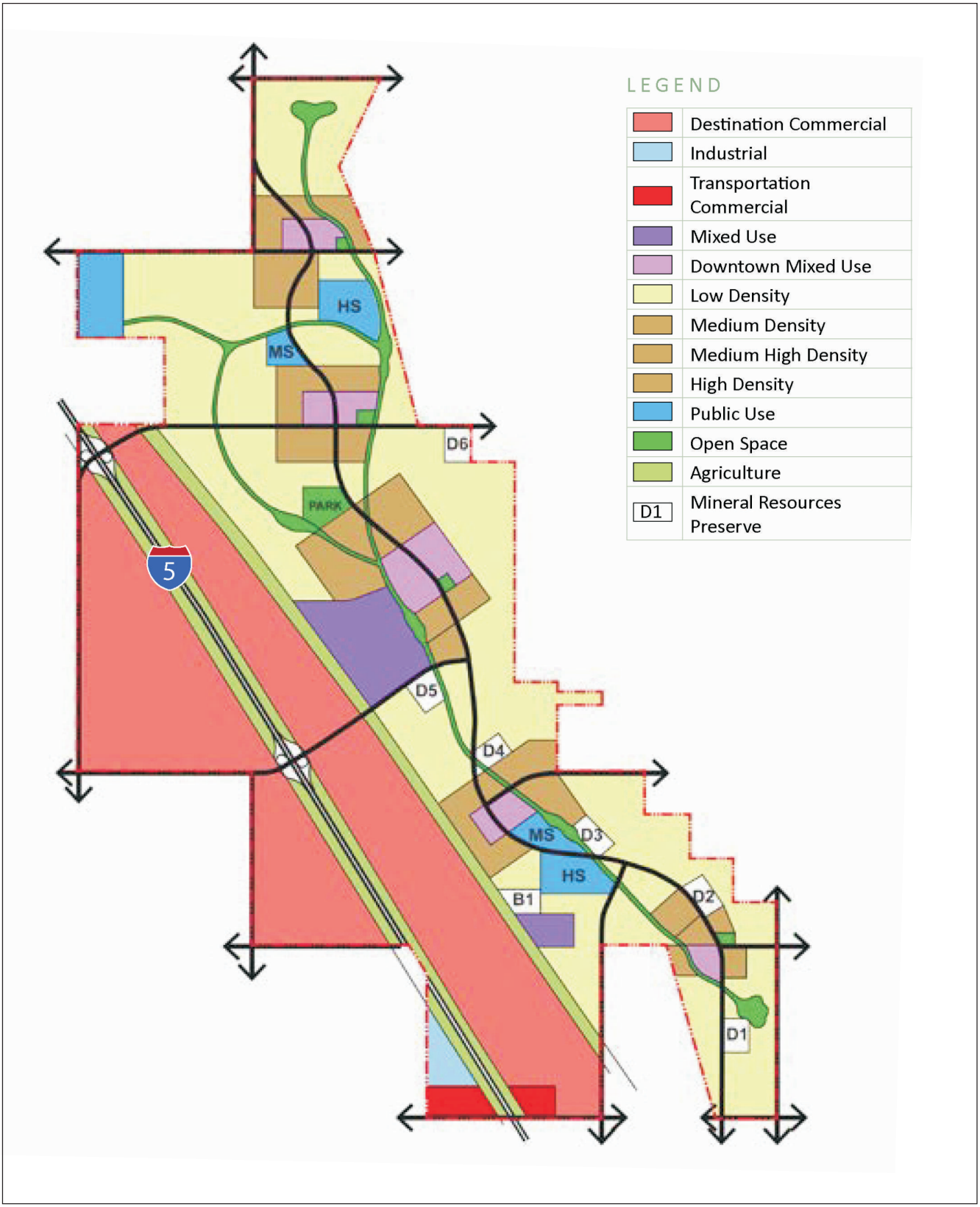
GROW LAND AND WATER LLC • QUAY VALLEY
ENVIRONMENTAL RECONNAISSANCE REPORT



Source: The Galloway Group, 2015

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Exhibit 9
Land Use Map

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GROW LAND AND WATER LLC • QUAY VALLEY
ENVIRONMENTAL RECONNAISSANCE REPORT

APPENDIX B:

LEGAL DESCRIPTION

SOUTHERN AREA PLAT 42

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF KINGS, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

GROW Holdings, LLC Parcels:

PARCEL 1:

The North half and the Southeast quarter of Section 9, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the official plat thereof.

EXCEPTING THEREFROM all of the minerals and mineral ores of every kind and character now known to exist or hereinafter discovered upon, within or underlying the hereinafter described property or that may be produced therefrom, including, without limiting the generality of the foregoing, all oil, natural gas and hydrocarbon substances, geothermal steam, brines and minerals in solution, and sand, gravel and aggregates, and products derived therefrom, by Deed to Bravo Oil Company, a Corporation, dated December 27, 1965, recorded December 29, 1965 in Book 883 Page 116 of Official Records, Document No. 16704.

ALSO EXCEPTING all rights, title and interest in and to all water allocations obtained or derived from the Dudley Ridge Water District, as reserved by Victory Farming Inc., a California Corporation, by Grant Deed dated January 17, 1997, recorded January 31, 1997 of Official Records, as Document No. 9701946.

APN: 048-260-005

PARCEL 2:

Lots 1 through 6, the Southwest quarter of the Northwest quarter, the West half of the Southwest quarter; and the Southeast quarter of the Southwest quarter of Section 3, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the official plat thereof.

EXCEPTING THEREFROM all of the minerals and mineral ores of every kind and character now known to exist or hereinafter discovered upon, within or underlying the hereinafter described property or that may be produced therefrom, including, without limiting the

generality of the foregoing, all oil, natural gas and hydrocarbon substances, geothermal steam, brines and minerals in solution, and sand, gravel and aggregates, and products derived therefrom, as conveyed to Bravo Oil Company, a Corporation, by Deed dated December 27, 1965, recorded December 29, 1965 in Book 883 Page 116 of Official Records, Document No. 16704.

APN: 048-270-001

PARCEL 3:

All of Section 10, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the official plat thereof.

EXCEPTING THEREFROM Government Lots 5, 6, 7 and 8.

ALSO EXCEPTING THEREFROM all mineral rights of every kind and nature, water and water wells, building sites and all other rights as set forth in the Deed from San Francisco and Fresno Land Company, a Corporation to Zapata-McCarthy Farms, Inc., a Delaware Corporation, recorded November 22, 1972 in Book 999 Page 339 of Official Records, as Document No. 16273.

APN: 048-270-012

PARCEL 4:

The Northwest quarter of the Southeast quarter and the South half of the North half of the Northeast quarter of the Southeast quarter of Section 23, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the official plat thereof.

APN: 048-280-017

PARCEL 5:

Lot 1 of Section 23, Township 24 South, Range 20 East, Mount Diablo Base and Meridian.

EXCEPTING THEREFROM all of the minerals and mineral ores of every kind and character now known to exist or hereinafter discovered upon, within or underlying the hereinafter described property or that may be produced therefrom, including, without limiting the generality of the foregoing, all oil, natural gas and hydrocarbon substances, geothermal steam, brines and minerals in solution, and sand, gravel and aggregates, and products derived therefrom, by Deed to Bravo Oil Company, a Corporation, dated December 27,

1965, recorded December 29, 1965 in Book 883 Page 116 of Official Records, Document No. 16704.

APN: 048-280-023

PARCEL 6:

The West half of Section 15, Township 24 South, Range 20 East, Mount Diablo Base and Meridian.

EXCEPTING THEREFROM all of the minerals and mineral ores of every kind and character now known to exist or hereinafter discovered upon, within or underlying the hereinafter described property or that may be produced therefrom, including, without limiting the generality of the foregoing, all oil, natural gas and hydrocarbon substances, geothermal steam, brines and minerals in solution, and sand, gravel and aggregates, and products derived therefrom, by Deed to Bravo Oil Company, a Corporation, dated December 27, 1965, recorded December 29, 1965 in Book 883 Page 116 of Official Records, Document No. 16704.

APN: 048-280-026

PARCEL 7:

The Northwest quarter of the Northeast quarter of Lots 1 through 4 of Section 15, Township 24 South, Range 20 East, Mount Diablo Base and Meridian.

EXCEPTING THEREFROM all of the minerals and mineral ores of every kind and character now known to exist or hereinafter discovered upon, within or underlying the hereinafter described property or that may be produced therefrom, including, without limiting the generality of the foregoing, all oil, natural gas and hydrocarbon substances, geothermal steam, brines and minerals in solution, and sand, gravel and aggregates, and products derived therefrom, by Deed to Bravo Oil Company, a Corporation, dated December 27, 1965, recorded December 29, 1965 in Book 883 Page 116 of Official Records, Document No. 16704.

APN: 048-280-027

PARCEL 8:

Government Lots 1, 2, 3 and 4 and the West half and the West half of the Southeast quarter of Section 22, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to United States Government Township

Plat approved October 14, 1884.

EXCEPTING THEREFROM that portion conveyed to the State of California by Deed recorded July 14, 1966 in Book 892 Page 813 of Official Records, Kings County, as Document No. 10078, described as follows:

That portion of Section 22, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, as follows:

Beginning at a point in the West line of said Section, said point bears South 0° 23' 39" West,

3167.99 feet from the Northwest corner of said Section, said Northwest corner being Coordinates Y = 182 978.58 feet and X = 1 760 753.74 feet;

Thence (1), along said West line, South 0° 23' 39" West, 401.01 feet;

Thence (2), along a line parallel with and 104 feet Southwesterly, measured at right angles from the centerline of the Department of Public Works Survey from the Kern County line to the Fresno County line, Road VI-Kin-238-A (now 06-Kin-5), South 30° 51' 00" East, 1975.39 feet to the South line of said Section;

Thence (3), along said South line, South 89° 46' 54" East, 242.83 feet;

Thence (4), along a line parallel with and 104 feet Northeasterly, measured at right angles from said centerline, North 30° 51' 00' West, 2,443.56 feet to the point of beginning.

ALSO EXCEPTING THEREFROM any and all mineral rights, regardless of character, whether fugacious or non-fugacious, organic or inorganic, whether created by grant or reservation, regardless of form, whether a fee or lesser interest, mineral royalty or leasehold, absolute or fractional, corporeal or incorporeal, including express or implied appurtenant surface rights, owned by claimant in any real property situated in the County of Kings, State of California, by Deed dated July 28, 1992, recorded September 16, 1992 as Document No. 9217406 of Official Records.

APN: 048-280-028 and 48-280-029

PARCEL 9:

An undivided 50% interest in and to the following described property:

The Southeast quarter of the Southeast quarter of the Northeast quarter of Section 21, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the Official Plat thereof.

EXCEPTING THEREFROM that portion as conveyed to the State of California by Deed

recorded May 26, 1966 in Book 890 Page 648 of Official Records, as Document No. 7815.

APN: 048-300-006

PARCEL 10:

The Southwest quarter of Section 21, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the official plat thereof.

EXCEPTING THEREFROM all minerals, oil, gas and other hydrocarbons lying in or under the above described property from the surface down to infinity as reserved by Monica M. Sobo, a widow in Grant Deed recorded October 10, 1991 as Document No. 9115670 of Official Records.

APN: 048-300-007

PARCEL 11:

The South half of the Northwest quarter of Section 21, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the official plat thereof.

APN: 048-300-008

PARCEL 12:

The North half of the Northwest quarter of Section 21, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the official plat thereof.

EXCEPTING THEREFROM all of the minerals and mineral ores of every kind and character now known to exist or hereinafter discovered upon, within or underlying the hereinafter described property or that may be produced therefrom, including, without limiting the generality of the foregoing, all oil, natural gas and hydrocarbon substances, geothermal steam, brines and minerals in solution, and sand, gravel and aggregates, and products derived therefrom, by Deed to Bravo Oil Company, a Corporation, dated December 27, 1965, recorded December 29, 1965 in Book 883 Page 116 of Official Records, Document No. 16704.

APN: 048-300-009

PARCEL 13:

All of Section 16, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the official plat thereof.

EXCEPTING THEREFROM an undivided one-fourth interest in and to all minerals, gas, oil and other hydrocarbon substances in and under said land, as conveyed to O. J. Woodward, by Deed dated

November 15, 1948 and recorded December 22, 1948 in Book 414 Page 339 of Official Records, as Document No. 9075.

ALSO EXCEPTING THEREFROM an undivided three-fourths interest in and to all oil, gas and other hydrocarbons and minerals now or at any time hereafter situate therein and thereunder, as excepted and reserved by Portals Corporation, a California Corporation, in its Deed to Raymond R. Feasel, a married man, recorded August 20, 1957 in Book 688 Page 160 of Official Records, as Document No. 7847.

EXCEPTING THEREFROM that portion conveyed to the State of California by Deed executed by Security First National Bank, a National Banking Association, as Executor of the Estate of Dow E. Biswell, deceased; recorded February 15, 1966 in Book 885 Page 320 of Official Records, as Document No. 2098.

EXCEPTING THEREFROM that portion conveyed to the State of California by Deed executed by Security Pacific National Bank, as Trustee under the Will of Dow E. Biswell, deceased, recorded April 17, 1970 in Book 952 Page 704 of Official Records, as Document No. 5312.

APN: 048-300-018; 048-300-019 and 048-300-020

PARCEL 14:

The East half of Section 21, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the official plat thereof.

EXCEPTING THEREFROM the Southeast quarter of the Southeast quarter of the Northeast quarter thereof.

ALSO EXCEPTING THEREFROM that portion as conveyed to the State of California by deed recorded January 23, 1967 in Book 900 Page 258 of Official Records, as Document No. 787.

ALSO EXCEPTING THEREFROM that portion as conveyed to the State of California by Deed recorded April 7, 1970 in Book 952 Page 268 of Official Records, as Document No. 4804.

APN: 048-300-021 and 048-300-022

PARCEL 15:

That portion of the Southeast quarter of Section 21, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, described as follows:

Beginning at the Northeast corner of the Southeast quarter of said Section, said Northeast corner bears South 0° 23' 39" West, 2,630.53 feet from the Northeast corner of said Section, last said Northeast corner being at Coordinates Y = 182978.58 feet and X = 1760753.74 feet;

Thence (1), along the East line of said Section South 0° 23' 39" West 537.46 feet;

Thence (2), along a line parallel with and 104 feet Northeasterly, measured at right angles from the centerline of the Department of Public Works Survey from the Kern County line to the Fresno County line, Road VI-Kin-238-A (now 06-Kin-5), North 30° 51' 00" West, 628.32 feet to the North line of the Southeast quarter of said Section;

Thence (3), along said North line South 89° 39' 15" East, 325.90 feet to the point of beginning.

EXCEPTING THEREFROM all oil, oil rights, minerals, mineral rights, natural gas, natural gas rights and other hydrocarbons by whatsoever name known that may be within or under the parcel of land hereinabove described, without, however, the right to drill, mine, explore and operate through the surface or the upper 100 feet of the subsurface of the land hereinabove described or otherwise in such manner as to endanger the safety of any highway that may be constructed on said land, as excepted in the Deed to the State of California, recorded January 23, 1967 in Book 900 at Page 258 of Official Records, Kings County Records.

APN: 048-300-024

PARCEL 16:

Lot 1 of Section 25, Township 24 South, Range 20 East, Mount Diablo Base and Meridian.

EXCEPTING THEREFROM all of the minerals and mineral ores of every kind and character now known to exist or hereinafter discovered upon, within or underlying the hereinafter described property or that may be produced therefrom, including, without limiting the generality of the foregoing, all oil, natural gas and hydrocarbon substances, geothermal steam, brines and minerals in solution, and sand, gravel and aggregates, and products derived therefrom, by Deed to Bravo Oil Company, a Corporation, dated December 27, 1965, recorded December 29, 1965 in Book 883 Page 116 of Official Records, Document No. 16704.

APN: 048-370-006

PARCEL 17:

That portion of Section 34, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, lying Northeasterly of the following described Parcel:

That portion of said Section 34 conveyed to the State of California by James H. Barnes and Phyllis S. Barnes, husband and wife, recorded June 8, 1966 in Book 891 Page 220 of Official Records of Kings County, as Document No. 8363, and being more particularly described as follows:

Beginning at a point in the East line of said Section 34, said point bears South 00° 53' 42" West,

1842.70 feet from the Northeast corner of said Section 34, said Northeast corner being at Coordinates Y = 172,503.01 feet and X = 1, 765,983.86 feet; thence (1), along a line parallel with and 104 feet Southwesterly, measured at right angles from the centerline of the Department of Public Works Survey from the Kern County line to the Fresno County line, Road VI-Kin-238-A (now 06-Kin-5), North 30° 51' 00" West, 2135.42 feet to the North line of said Section 34; thence (2), along said North line, North 89° 31' 53" East, 241.11 feet; thence (3), along a line parallel with and 104 feet Northeasterly, measured at right angles, from said centerline, South 30° 51' 00" East, 1677.29 feet to said East line; thence (4), along said East line, South 00° 53' 42" West, 395.33 feet to the Point of Beginning.

EXCEPTING THEREFROM unto Thomas R. Derby, as his separate property, Mariquita Derby Brey, Eleanor Derby Ross, Eve Derby Stockton and Ann Derby Tipton, individually and as Trustees, fifty (50%) percent of all oil, gas, asphaltum and other minerals within or underlying said land without surface or access rights, per Deed to James H. Barnes and Phyllis S. Barnes, recorded April 30, 1964 in Book 852 Page 934 of Official Records.

ALSO EXCEPTING THEREFROM an undivided 25% of all oil, gas, asphaltum and other minerals within or underlying said land, as reserved by Phyllis Helen Barnes, et al, in Deed dated January 29, 1971 to Southdown-McCarthy Farms, Inc., a California Corporation, recorded May 7, 1971 in Book 969 Page 981 of Official Records, as Document No. 6215.

ALSO EXCEPTING THEREFROM any mineral interest as conveyed in that certain Deed from Jennie B. Paolerico, as Successor Trustee of the James B. Griffin Living Trust dated February 9, 1967 to Dorothy L. Donworth, Marilyn J. Smith, Jennie B. Paolerico and Richard K. Griffin dated March 21, 1974 and recorded March 22, 1974 in Book 1026 Page 479 of Official Records, as Document No. 4113.

APN: 048-370-15

PARCEL 18:

All of Section 27, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, according to the official plat thereof.

EXCEPTING THEREFROM that portion as conveyed to the State of California by Deed recorded February 7, 1967 in Book 900 Page 917 of Official Records as Document No. 1573.

ALSO EXCEPTING THEREFROM all of the minerals and mineral ores of every kind and character now known to exist or hereafter discovered upon, within or underlying the hereinbefore described property or that may be produced therefrom including, without limiting the generality of the foregoing, all oil, natural gas and hydrocarbon substances, geothermal steam, brines and minerals in solution, and sand, gravel and aggregates, and products derived therefrom as conveyed in that certain Deed recorded by Southern Pacific Land Company, a Corporation, to Bravo Oil Company, a Corporation, recorded December 29, 1965 in Book 883 Page 116 of Official Records, Document No. 16704.

APN: 048-370-016 and 017

PARCEL 19:

All of Section 35, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the official plat thereof.

EXCEPTING THEREFROM all of the minerals and mineral ores of every kind and character now known to exist or hereinafter discovered upon, within or underlying the hereinafter described property or that may be produced therefrom, including, without limiting the generality of the foregoing, all oil, natural gas and hydrocarbon substances, geothermal steam, brines and minerals in solution, and sand, gravel and aggregates, and products derived therefrom, by Deed to Bravo Oil Company, a Corporation of the State of Texas, dated December 27, 1965, recorded December 29, 1965 in Book 883 Page 116 of Official Records, Document No. 16704.

ALSO EXCEPTING THEREFROM, that portion as conveyed to the State of California, by Deed dated October 14, 1966, recorded February 7, 1967 in Book 900 Page 892 of Official Records,

Document No. 1568.

ALSO EXCEPTING THEREFROM, any portion of said land within the boundaries of Kern County.

APN: 048-370-018 & 019

Barnes Parcel

PARCEL 20:

Government Lots 1, 2, 3, and 4; the Southwest quarter; Southwest quarter of Northwest

quarter and the South half of the Southeast quarter of Section 26 and all of Section 34, all in Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the official plat thereof approved October 14, 1884.

EXCEPTING THEREFROM 50% of all oil, gas asphaltum and other minerals within or underlying said land without surface or access rights, as excepted and reserved unto the Grantors in that certain Deed from Thomas R. Derby, et al, to James H. Barnes, et al, dated March 5, 1964 and recorded April 30, 1964 in Book 852, Page 934 of Official Records, as Document No. 6247.

APN: 048-370-002

Dudley Parcels

PARCEL 21:

Lots 5, 6, 7 and 8 of Section 15, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the Official Plat thereof.

APN: 048-280-002

PARCEL 22:

The West half of Section 14, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the Official Plat thereof.

EXCEPTING THEREFROM the Northeast quarter of the Northwest quarter of said Section 14, as conveyed by Deed executed by Dudley Ridge Oil Co., Ltd., a Corporation to Helen B. Dudley, as her sole and separate property, recorded August 4, 1936, in Book 152 Page of Official Records, as Document No. 4190, Kings County Records.

APN: 048-280-003

PARCEL 23:

The Southwest quarter of the Southeast quarter and the West half of Section 23, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the Official Plat thereof.

EXCEPTING THEREFROM Lot 1 situated in the West half of said Section 14.

APN: 048-280-022

PARCEL 24:

Lots 5, 6 and 7 of Section 22, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the Official Plat thereof.

APN: 048-280-025

PARCEL 25:

The North half of the Northeast quarter; the Southeast quarter of the Northeast and Lots 5, 6 and 7 of Section 26, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the Official Plat thereof.

APN: 048-370-003

PARCEL 26:

The Northwest quarter of the Northwest quarter; the South half of the Northwest quarter; the Northwest quarter of the Southeast quarter; the South half of the Southeast quarter; the Northeast quarter of the Southwest quarter and Lots 2 and 3 of Section 25, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the Official Plat thereof.

APN: 048-370-004

PARCEL 27:

The East half of the East half; the Northwest quarter of the Northeast quarter and Lots 5, 6, 7 and 8 of Section 36, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the County of Kings, State of California, according to the Official Plat thereof.

APN: 048-370-007

Kimmel Parcel

PARCEL 28:

The Southeast quarter of Section 16, Township 24 South, Range 20 East, Mount Diablo Base and Meridian. Beginning at the southeasterly corner of the land described in the deed to the state of California, recorded February 15, 1966 in Book 885 at page 320, Kings County Official Records.

EXCEPTING THEREFROM all oil, gas, other hydrocarbon substances and minerals of any kind or character, in, on, or thereunder, as reserved and/or conveyed in documents of record.

APN: 048-300-025

Tong Parcel

PARCEL 29:

The South half of Section 16, Township 24 South, Range 20 East, Mount Diablo Base and Meridian, in the unincorporated Area, County of Kings, State of California, according to the official plat thereof.

EXCEPTING THEREFROM an undivided one-fourth interest in and to all minerals, gas, oil and other hydrocarbon substances in and under said land, as conveyed to O. J. Woodward, by Deed dated November 15, 1948 and recorded December 22, 1948 in Book 414 Page 339 of Official Records, as Document No.9075

ALSO EXCEPTING THEREFROM an undivided three-fourths interest in and to all oil, gas, and other hydrocarbons and minerals now or at any time hereafter situate therein and thereunder, as excepted and reserved by Portals Corporation, a California Corporation, in its Deed to Raymond R. Feasei, a married man, recorded August 20, 1957 in Book 688 Page 160 of Official Records, as Document No. 7847.

APN: 048-300-026

Brandt Parcels

PARCEL 30:

The North half of the North half of the Southwest quarter of the Northwest quarter of

Section 36, Township 24 South, Range 20 East, M.D.B. & M. in the County of Kings, State of California , According to the Official Plat thereof.

Together with non-exclusive easement for ingress, egress and public utility purposes over the Westerly 30 feet of the South half of the North half of the Southwest quarter of the Northwest quarter and over the Westerly 30 feet of the Southwest quarter of the Southwest quarter of the Northwest quarter of Said Section 36.

APN: 048-380-072

PARCEL 31:

The North half of the Southwest of the Southwest quarter of the Northwest quarter of Section 36, Township 24 South, Range 20 East, M.D.B. & M. in the County of Kings, State of California , According to the Official Plat thereof.

Together with non-exclusive easement for ingress, egress and public utility purposes over the Westerly 30 feet of the North half of the Southwest quarter of the Northwest quarter and over the Westerly 30 feet of the Southwest Half of the Southwest quarter of the Southwest quarter of Said Section 36.

APN: 048-380-073

Cussen Parcels

PARCEL 32:

The South 7.59 acres of Lot 38 of Assessor's Map #19, in the West one-half (1/2) of the Southeast quarter of the Northwest quarter of Section 36, Township 24 South, Ranch 20 East, Mount Diablo Base & Meridian, in the County of Kings, State of California , According to the Official Plat thereof.

APN: 048-380-026

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APPENDIX C:

C.1SCHOOL DISTRICT REORGANIZATION

Quay Valley project area is in the Reef-Sunset School District. the Master Developer of Quay Valley envisions the establishment of a New School District (NSD) under the Charter School System Act of California (Education Code Section 47600 et. seq.). This requires de-annexation from the Reef-Sunset School District. A primary goal of this PDP is the provision of an advanced learning environment for children residing in Quay Valley, which is planned to be accomplished through the establishment of a Charter School System. The following summary explains the detailed process for reorganization and navigation of the approval to reorganize into a new School District. A summary is also provided covering the Process for the Formation of a Charter School System under the California Education code.

This summary was originally generated by the law firm of Lozano Smith at the request of John Stankovich, the previous Superintendent of Schools of Kings County and is copied verbatim in parts below. Specific references to California Education codes are provided.

C.1.1 Reorganization Process

A general overview of the process to reorganize the project area into a new school district is included below. The discussion of the reorganization procedures is limited to those that appear to be most applicable to this situation and is a summary only. The discussion does not consider every possible issue.

Project Application and County Committee Proceedings

The reorganization petition would be filed with the Kings County Superintendent of Schools (Superintendent) in one of the following two ways:

- The owner(s) of uninhabited territory may file a reorganization petition, if the owner has either filed a tentative subdivision map or an application for any "project." (Ed. Code § 35700(c).) "Uninhabited" territory is territory in which fewer than twelve persons are registered to vote at least fifty-four days before the reorganization petition is filed. (Ed. Code § 35517.)
- A majority of the members of the governing boards of the affected school districts may file the reorganization petition. (Ed. Code § 35700(d).)

Here, this would constitute a majority of the District board members signing the reorganization petition.

- Under either of these types of petitions, because the result would be the "division of

the territory of an existing school district into two or more separate school districts," the County Committee will only recommend approval or denial, with the final decision to be made by the State Board of Education (State Board). (Ed. Code §§ 35706 & 35707.)

Within 30 days of receipt of a petition, the Superintendent must determine the sufficiency of the petition and, if the petition is sufficient, transmit the petition simultaneously to the County Committee on School District Reorganization ("County Committee") and the State Board. (Ed. Code § 35704.)

Pursuant to Education Code section 35700.5, before initiating proceedings to consider the reorganization plan, the County Committee must provide written notice of the proposed reorganization to the local agency formation commission (LAFCO) for the affected area.

Within 60 days of receipt of a valid petition, the County Committee must hold at least one public hearing in each affected school district. (Ed. Code § 35705.) The County Committee may add appropriate provisions to the petition. (Ed. Code § 35705.5(a).) At least 10 days before the hearing, the County Committee must give notice of the hearing, and must make a description of the petition, along with the following specified information, available to the public:

- The rights of the employees in the affected districts to continued employment.
- The revenue limit per unit of average daily attendance for each affected district and the effect of the petition, if approved, on such revenue limit.
- Whether the districts involved will be governed, in part, by provisions of a city charter and, if so, in what way.
- Whether the governing boards of any proposed new district will have five or seven members.
- A description of the territory or districts in which the election, if any, will be held.
- Where the proposal is to create two or more districts, whether the proposal will be voted on as a single proposition.
- Whether the governing board of any new district will have trustee areas and, if so, whether the trustees will be elected by only the voters of that trustee area or by the voters of the entire district.
- A description of how the property, obligations, and bonded indebtedness of existing districts will be divided.
- A description of when the first governing board of any new district will be elected and how the terms of office for each new trustee will be determined. (Ed. Code § 35705.5(b))

Within 120 days from the first public hearing, the County Committee must recommend approval or disapproval of a petition for the division of the territory into two or more separate districts. A computation of the revenue limit per average daily attendance for the proposed new district must be included in the recommendation. (Ed. Code §§ 35735 & 35735.1.) The California Department of Education (CDE) District Organization Handbook ("Handbook") recommends that the County Committee make available to the public its analysis of the Criteria, defined below, at least 10 days before its meeting to recommend approval or disapproval of the petition. (Handbook, pg. 64.)

Prior to making its recommendation, the County Committee may have to take appropriate analysis to comply with the California Environmental Quality Act (CEQA).

The County Committee must "expeditiously" transmit the petition and its recommendation to the State Board. The County Committee shall also report the following to the State Board:

- Whether the reorganization would "adversely affect" the school district organization of the county.
- Whether the reorganization fulfills the following criteria set forth in Education Code Section 35753 ("Criteria"):
    - » The reorganized districts will be adequate in terms of number of pupils enrolled. "Adequate" enrollment is defined as at least 901 students. (Cal. Code Regs., tit. 5, § 18573, subd. (a)(1)(A).)
    - » The districts are each organized on the basis of a substantial community identity.
    - » The proposal will result in an equitable division of property and facilities of the original district or districts.
    - » The reorganization of the districts will preserve each affected district's ability to educate students in an integrated environment and will not promote racial or ethnic discrimination or segregation.
    - » Any increase in costs to the state as a result of the proposed reorganization will be insignificant and otherwise incidental to the reorganization.
    - » The proposed reorganization will continue to promote sound education performance and will not significantly disrupt the educational programs in the districts affected by the proposed reorganization.
    - » Any increase in school facilities costs as a result of the proposed reorganization will be insignificant and otherwise incidental to the reorganization.
    - » The proposed reorganization is primarily designed for purposes other than to significantly increase property values.
    - » The proposed reorganization will continue to promote sound fiscal management

and not cause a substantial negative effect on the fiscal status of the proposed district or any existing district affected by the proposed reorganization.

» Any other criteria as the State Board may, by regulation, prescribe.

State Board Proceedings

The State Board shall approve or disapprove the formation of a new school district. (Ed. Code § 35754.) If the State Board approves the formation, it may amend or include in the petition any appropriate provisions that can be in plans and recommendations for reorganization listed in Education Code 35730, et seq. (Id.) The State Board has no time limit in which to set its own hearing on the petition. (Ed. Code § 35752.)

The State Board may approve the petition if (1) it determines that the Criteria are met, or (2) if the State Board determines that it is not practical or possible to apply the Criteria literally, and that the circumstances provide an "exceptional" situation sufficient to justify approval of the proposals. (Ed. Code § 35753.)

Elections

If the State Board approves the reorganization, it shall give the Superintendent notice of the approval. (Ed. Code § 35755.)

Within 35 days of receiving the State Board notification, the Superintendent shall call an election to be conducted at the next election in the territory of the districts as determined by the State Board. (Ed. Code § 35756.)

The Superintendent shall prepare the following information for the election:

- A statement of official information and statistics relating to the proposed reorganization which at least include (I) the plans and recommendations, (2) the revenue limit per pupil, (3) the rate of growth, (4) the expected enrollment, and (5) the expected support from the State. (Ed. Code § 35757.)
- A statement setting forth arguments for and against the recommendations, not to exceed 500 words. (Ed. Code § 35758.)

The Superintendent shall notice the Superintendent of Public Instruction, the board of supervisors, and the board for each affected school district of the number of votes for and against the reorganization. (Ed. Code § 35763.) If a majority of the votes are in favor of reorganization, the proposal carries. (Ed. Code § 35764.)

After the board of supervisors receives a proper certificate of election, or other proper evidence, that the voters have approved the reorganization, the board of supervisors shall make an order to create the school district and to establish the boundaries of the districts. The order shall be entered in the county's record of school districts. (Ed. Code § 35765.)

Lapsation

We note that even if the District is reorganized as described above, there is a possibility that the new unified school district could lapse either from lack of students or lack of facilities.

Education Code section 35780, subdivision (c), states that a school district may be lapsed when there are not school facilities or sites on which to maintain any school in the district. Furthermore, a newly organized school district that has been unable to provide necessary instructional facilities to all the students in the district after five years from the date of reorganization shall either lapse or shall revert to its original status. (Ed. Code § 35780(b).

Finally, any school district that has been organized for more than three years and (1) the number of registered electors in the district is less than six, or (2) the average daily attendance for grades 1-8 is less than six, or (3) the ADA for grades 9-12 is less than eleven, shall lapse (except that any unified district which operates at least one high school may be able to defer the lapsation for up to three years) (Ed. Code § 35780(a).).

C.1.2 Findings per Education Code Section 35753

The State Board of Education may approve proposals for the reorganization of districts, if the board has determined, with respect to the proposal and the resulting districts, that all of the following conditions are substantially met:

1. The reorganized districts will be adequate in terms of number of pupils enrolled.

Response: At build-out Quay Valley in envisioned to have a student population of 15,706. This consists of 9,638 elementary school students, 2,291 middle school students, and 3,777 high school students.

2. The districts are each organized on the basis of a substantial community identity.

Response: Quay Valley is planned as a New Community that at build-out is envisioned to have a projected population of between 75,000 to 80,000 residents. Its schools are planned to be Charter Schools which have demonstrated the ability to provide a high quality education as detailed in CCSA's Fourth Annual Report on Charter School Performance and Accountability – 2014, published by California Charter Schools Association (CCSA). That study provides evidence of the performance levels of California Charter Schools compared to Traditional California Schools.

Quay Valley schools would focus on Charter School educational goals to provide the highest level of education possible. Using a rigorous, relevant, and attainable educational program based on California content standards, QVCS could integrate the following best practices into their educational program:

- *An international focus:* Students in the 21st century are faced with the challenge of learning in an increasingly interdependent world where knowledge is constantly

developing and evolving. Exploring the world's cultures can give students a positive attitude toward learning and greater understanding of diverse cultures, both in the U.S. and abroad.

- *Project Based Learning:* QVCS's curriculum could convey the California content standards through project learning experiences that engage students' interests as they discover underlying concepts and develop deep understanding of subject matter. These powerful learning experiences can foster self-motivation and self-directedness, as students discover and develop their uniqueness while striving to reach their full potential.
- *Individualized Learning Plans (ILP) for all students:* Each year, students and teachers could create a student-specific ILP to guide that student's instruction. The primary goal of the ILP is to ensure that each child would be treated as an individual and therefore would be working toward attainable goals appropriate to his individual development.
- *Multiage groupings:* Multi-age classroom environments with two or more grades allow students flexibility to progress at their own pace along a continuum of learning. Multiple-year relationships between teacher and student provide for deeper knowledge of students' needs to guide instructional decisions and familiarity with the social and emotional health of a student.

3. The proposal will result in an equitable division of property and facilities of the original district or districts.

Response: Quay Valley is an unpopulated area and no Reef-Sunset School District property exists in Quay Valley to divide.

4. The reorganization of the districts will preserve each affected district's ability to educate students in an integrated environment and will not promote racial or ethnic discrimination or segregation.

Response: Under the QVCS, any student that is a resident of California shall be allowed to attend the schools regardless of racial or ethnic background. Segregation shall not exist in the QVCS.

5. Any increase in costs to the state as a result of the proposed reorganization will be insignificant and otherwise incidental to the reorganization.

Response: Since Quay Valley is a new community, the facilities and operational costs should be the same.

6. The proposed reorganization will continue to promote sound education performance and will not significantly disrupt the educational programs in the districts affected by the proposed reorganization.

Response: At the present time, there is no student population in Quay Valley and none

attending the Reef-Sunset School District, therefore, the reorganization should not impact the Reef-Sunset educational program.

7. Any increase in school facilities costs as a result of the proposed reorganization will be insignificant and otherwise incidental to the reorganization.

Response: Since Quay Valley is a new community, the facilities costs should be the same whether it is part of the Reef-Sunset School District or organized under the California Charter School System.

8. The proposed reorganization is primarily designed for purposes other than to significantly increase property values.

Response: The proposed reorganization is to promote an advanced educational environment for Quay Valley K-12 students. QVCS's goal is to empower students to become conscientious, compassionate, and responsible citizens of the world, which could inspire them to become creative thinkers and leaders, with a lifelong love of learning. This could be accomplished through individualized instruction, active learning methods, and opportunities for project based learning.

9. The proposed reorganization will continue to promote sound fiscal management and not cause a substantial negative effect on the fiscal status of the proposed district or any existing district affected by the proposed reorganization.

Response: The Reef-Sunset School District is currently not educating any Quay Valley students, nor are they contributing any funding or other resources toward the Quay Valley Specific Plan area. The Quay Valley facilities and operational financing shall be separate from the Reef-Sunset School District.

C.2 ALL CHARTER SCHOOL DISTRICT

Education code Section 47606 allows for the formation of an All Charter School District. See Section 2.1 below for the legal process established by the California Department of Education for evaluating petitions for All-Charter School Districts. The California Department of Education has authorized several All-Charter School Districts, including one that is in Kings County (Pioneer Union Elementary School District – Hanford, CA). Other than the Pioneer Union Elementary School District, there are eight additional Charter Schools in Kings County of which four are in Hanford.

C.2.1 Goals and Operating Procedures for Charter Schools

The specific goals and operating procedures for a Carter School are detailed in the agreement (the Charter) between the authorizing entity and the school's organizers.

Charter status frees the school from many of the state statutes and regulations that apply to school districts. It is the intent of the California Legislature under state law that charter schools operate independently from the existing school district structure as a method to accomplish all of the following:

- Improve pupil learning.
- Increase learning opportunities for all pupils, with special emphasis on expanded learning experiences for pupils who are identified as academically low achieving.
- Encourage the use of different and innovative teaching methods.
- Create new professional opportunities for teachers, including the opportunity to be responsible for the learning program at the school site.
- Provide parents and pupils with expanded choices in the types of educational opportunities that are available within the public school system.
- Hold the schools established under this part accountable for meeting measurable pupil outcomes, and provide the schools with a method to change from rule-based to performance-based accountability systems.
- Provide vigorous competition within the public school system to stimulate continual improvements in all public schools.

C.2.2 Adopted Process for Reviewing Districtwide Charter Petitions and Evaluating all Charter Districts

The Superintendent of Public Instruction ("SPI") and the SBE have joint responsibilities regarding the approval of districtwide charter petitions. This proposal describes the process that will be used to review an application for All-Charter District status. It also specifies the responsibilities of the SPI and the SBE in the ongoing oversight of all- charter districts.

Review of Districtwide Charter Petitions

The authority for the SPI and the SBE to approve a petition for an all-charter district, and the requirements for submitting the petition for approval are found in Education Code Section 47606. Basically, there are three requirements:

1. Fifty percent of the teachers within the school district must sign the charter petition.

2. The petition must specify the alternative attendance arrangements for pupils residing within the school district who choose not to attend charter schools.

3. The petition must contain all the requirements set forth in subdivisions (b), (c), (d), (e), and (f) of Section 47605. (Note: All petitions for the establishment of charter schools must

meet these requirements.)

Once the California Department of Education (CDE) receives a petition to form an all-charter district, staff will review the petition to ensure that it addresses the three requirements. Particular attention will be paid to those elements in subdivisions (b), (c), (d), (e), and (f) of Section 47605 which relate to the proposed education program. Specifically, the proposal will be reviewed to determine how all pupils of the district will be asked to demonstrate that they have attained the skills, knowledge, and attitudes specified as goals in the district's educational program. Staff also will focus on how the proposal addresses the requirement that charter schools meet all statewide standards and conduct the pupil assessments required by Section 47605(e)(1) (relating to the Standardized Testing and Reporting Program) and any other statewide standards authorized in statute or pupil assessments applicable to pupils in non-charter public schools. The CDE will also ask the county superintendent to comment on the fiscal health of the proposed district. After the initial review has been completed, the CDE will work cooperatively with the district to complete any areas of the proposal that appear inadequate.

C.2.3 CCSA's Fourth Annual Report on Charter School Performance and Accountability

Portrait of the Movement: Five Year Retrospective - A Charter Sector Growing in Numbers and Strength report, released in August 2014, reviews charter school performance across California and presses the case for improved accountability. Portrait of the Movement, first published in February 2011, introduced a performance framework that includes the Similar Students Measure (SSM), a tool developed by CCSA and vetted by an advisory panel of external research and accountability experts

This report is a story about what has happened over the past five years, why it has happened, and what we can do to keep things moving in a positive direction. It is a story of collective response, as we see that the strengthening that has happened in California's charter schools has not come from any one type of school, but has been driven by nearly every category of school improving its overall performance. It is also a story of collective courage, as it involves leaders from many different kinds of charter schools from across California coming together to create minimum performance expectations and enforcement provisions which undoubtedly helped move the overall sector in a positive direction. And, it is a story of hope: that it is in fact possible to improve performance across a sector as vast as California's. Moreover, the positive trends highlighted in this report appear likely to continue and perhaps accelerate in the years to come if we maintain our collective commitment to improve charter school performance.

Key Findings

Over the past five years, California has reduced by approximately one third the percentage of charter schools performing in the bottom tenth, and has held nearly constant the large percentage of charters in the top tenth.

Students at charter schools serving low-income populations are far more likely than their traditional public school counterparts to be educated in a school that is among the top five or ten percent of all public schools statewide. More than half of the students (52%) attending charters that serve a majority of high poverty population attend charter schools that are in the top quartile of all public schools statewide (vs. only 26% of similar students attending traditional public schools).

More than a quarter of all English learners, African-American, and Latino charter students attend charter schools that are among the most outperforming public schools in California. In fact, students at charter schools serving a majority of historically disadvantaged students are likely to be among the most outperforming schools in the state (three times more likely to be in the top tenth percentile and five-to-six times more likely to be in the top fifth percentile).

Almost 40% of Charter Management Organization (CMO) schools (97 of 259) are among the most outperforming public schools (top tenth) in California. CMO schools are also less likely than other types of charter schools or traditional public schools to be among the most underperforming (only 7% in the bottom 10th).

A large number of successful, small CMOs have appeared in California that are driving growth, and the performance of these CMOs has improved from already strong outperformance five years ago.

Classroom-based charter schools are outperforming, a trend that has been consistently documented in each Portrait of the Movement report.

Historically, CCSA has documented that non-classroom-based schools tend to perform less well on the Similar Students Measure (see side bar for more information) performance spectrum. However, over the past five years CCSA has seen an encouraging shift. Non-classroom-based charters have improved from a "reverse J" five years ago to a strengthening U-shape today. Furthermore, CCSA sees big decreases in the bottom tenth (from 27% to 19%) and increases in the top tenth (from 13% to 19%).

Conversion charter schools as a whole are relatively evenly distributed across the spectrum of performance. When autonomous conversions are isolated, you see that almost 50% of these schools (23 of 51 schools) are in the top quartile of the distribution.

CCSA has played a role in accelerating progress in the California charter school movement by pursuing an assertive academic accountability and school support agenda.

APPENDIX D: WATER DEMAND & SUPPLY TABLES

The following support documentation relates to Section 6.2, *Water Supply and Demand:*

- Total residential demand (including recycled water for common area irrigation) is 8,292 AFY equating to 286 gpd/du or 0.320 AFY/du (25,908 dwelling units).
- Low Density Residential only demand is 5,108 AFY, which equates to 357 gpd/du or 0.400 AFY/du (12,758 dwelling units).
- 6,934 AF total potable residential water use equates to 239 gpd/du or 0.268 AFY/du.
- DWR's Guidebook for Implementation of SB 610 & 221 (Water Supply Assessments), indicates equivalent demand for residential development is 0.3 to 0.5 AFY/du.
- Residential Interior (inside the home) use is 4.29 MGD or 4,804 AFY, based on 50 gpd/capita or 166 gpd/du (85,781 estimated population at 3.31 people per du).
- Irvine Ranch Water District Service Area Residential End Use Study shows Average Indoor Water Use = 45 gpd/capita (2008); Western Resources Advocates Study shows State-of the Art Home = 30 gpd/capita (IRWD Indoor Allocation Studies Attachment).
- Typical indoor use per existing single family home = 69.3 gdp/capita. By installing more efficient fixtures, ect. can reduce demand to 45.2 gdd/capita (AWWA attachment).

IRWD Values from 2010 UWMP for Comparison

- Single family use for 2010 was 26,130 AF serving 81,689 dwelling units, which equates to 286 gpd/du.
- Multi-family use for 2010 was 5,590 serving 2,606 meters. UWMP states apartments and some condominiums average 15-20 dwelling units per meter, so using conservative value of 15 du/meter gives 39,090 multi-family units, which equates to 128 gpd/du.
- Using the IRWD total residential use for single and mulit-family units, we get 31,720 AF serving 120,779 dwelling units which equates to an average district-wide residential use of 234 gpd/du vs. Quay Valley projection of 226 gpd/du.
- Non-residential demands and common area irrigation demands are based on similar water demand factors from IRWD's water resources master plan.
- Therefore, overall residential and non-residential water demands, including wastewater projections (interior water demands) are easily achievable with appropriate level of conservativeness, and not overly aggressive.

The following tables D.1 - D.6 provide support data for Table 6.5, *Estimated Average Annual Water Demand*, Table 6.6, *Water Demand Summary, and Table 6.7, Water Supply Summary*.

Table D.1 Water Demand Summary

Demand	MGD	AFY			
Potable Water Demand	10.23	11,458			
Wastewater Generation	7.43	8,327	3,131		
Recycled Water Production (90% WW)	6.69	7,494			
Recycled Irrigation Water Demand	5.96	6,676			
Non-Treated Water Demand	-0.73	-818			
Total Project Water Demand	16.19	18,134			
Total Demand per Dwelling Unit		0.70	AF/DU		
Max Day Potable Water Demand (1.6 PF)	16.4	MGD			
Water Treatment Plant	25.3	cfs	10 ac including Admin Office		
Treated Water Storage Requirement					
Fire Flow (5,000 gpm for 6 hours)	1.8	MG			
Operational (35% max day)	5.7				
Emergency (2 max days)	32.7				
Total	40.3	MG			
One 10 acre wastewater treatment plant site					
One 15 acre wastewater treatment plant site, including operations and maintenance yard					
	Supply = Demand			**Supply =**	
Total Imported Water Demand	10,640	AFY		17,442	AFY
3 Year Demand	31,920	AFY		31,920	AFY
SWP 3-year drought delivery appx. 28%	8,937	AFY		15,698	AFY
Banked Water Requirement	22,982	AFY		16,221	AFY
Single Dry Supply	1,395				
Needed from Storage	9,244				

Table D.2 Destination Entertainment Water Demand Table

	Acres	Net Acres[1]	Building (sq. ft.)	Hotel Rooms	Inside Water (WW) Factor[2]	Inside Water (WW) Flow (MGD)	Local Outside Water Factor[2]	Local Outside Water Demand (MGD)	Common Area Irrigation Irrigation (%)	Common Area Irrigation Factor[3]	Common Area Irrigation Demand[4] (MGD)
Area 1											
Serengeti Hotel	20	18.0		1,000	150	0.150			25%	2,500	0.011
Animal Park	220	197.9							80%	2,500	0.396
Masai Village	10	9.0							80%	2,500	0.018
Californian Winery Resort and Spa	99	89.1		300	150	0.045			70%	2,500	0.156
	349	314									
Area 2											
Destination Retail Phase 1	125	102.3	1,000,000		200	0.200			20%	2,000	0.041
Destination Retail Phase 2	70	57.3	1,000,000		200	0.200			20%	2,000	0.023
Conference Center	15	12.3		600	150	0.090			20%	2,000	0.005
Museum Row, Art Colony, Gardens	53	43.4							40%	2,500	0.043
Lake and Amphitheatre	40	32.7							30%	3,000	0.029
	303	248									
Area 3											
Waterpark	50	45.0						0.135	60%	5,000	
Adventure Sports Hotel	20	18.0		1,000	150	0.150			25%	2,000	0.009
Adventure Sports Park	150										
Whitewater Kayaking	60	54.0						0.108	40%	5,000	
Big Wave Surf Pool	20	18.0						0.081	90%	5,000	
Wakeboarding Lake	30	27.0						0.108	80%	5,000	
Volleyball, Rock Climbing, etc.	40	36.0							20%	2,000	0.014
RD&E	25	22.5							20%	2,000	0.009
Festival Grounds	70	63.0							20%	2,000	0.025
RV Park and Campgrounds	20	18.0							25%	2,500	0.011
Bear Grylls Survival Camp	30	27.0							25%	2,000	0.014
Select Service Hotels	20	18.0		600	125	0.075			20%	2,000	0.007
WonderWall	150	135.1							20%	2,000	0.054
Funy Farm	80	72.1							20%	2,000	0.029
Parking	100	90.1							5%	2,000	0.009
Other	10	9.0							20%	2,000	0.004
Reservoir (water demand included in Table 1)	50										
	775	653									
Area 4											
Sports Complex	200	183.1							40%	4,500	0.330
Farmers Market	10	9.2							20%	2,000	0.004
Other	263	240.8							20%	2,000	0.096
	473	433									
Entertainment/Destination Visitors			10,000,000		20	0.548					
Total Entertainment/Destination						**1.458**		**0.432**			**1.337**

1) Exludes acreage for Freeway Ag Buffer shown in Open Space/Parks Section of Demand Summary Table
2) Inside Water Demand Factor is gallons per thousand square feet for Non-residential except for hotels where factor is gpd/hotel room
3) Common Area Irrigation Demand Factor is gallons per acre per day times area Irrigation percentage shown in that column.
4) Demand for shaded cells in Common Area Demand are included in Local Outside Demand as they may have to be potable water since they would involve body contact. These demands are primarily evaporative losses with some minor irrigation.

Table D.3 Monthly Average Reference Evapotranspiration by ETO Zone

Zone 16 Monthly Average Reference Evapotranspiration by Eto Zone (inches/month)												
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1.55	2.52	4.03	5.70	7.75	8.70	9.30	8.37	6.30	4.34	2.40	1.55	62.51
	Conversions:											
	gpd/acre	AFY/acre	in./year									
	400	0.4	5.4									
	2,000	2.2	26.9									
	2,500	2.8	33.6									
	3,000	3.4	40.3									
	3,500	3.9	47.0									
	4,000	4.5	53.8									
	4,500	5.0	60.5									
	5,000	5.6	67.2									

Table D.4 Monthly Effluent Water Supply

Month	Days	% Annual Attendence	Visitors			gpd/ Visitor	Effluent Supply (mgd)
			Seasonal	Constant	Difference		
Jan	31	5%	500,000	833,333	-333,333	20	-0.22
Feb	28	5%	500,000	833,333	-333,333	20	-0.24
Mar	31	6%	600,000	833,333	-233,333	20	-0.15
Apr	30	6%	600,000	833,333	-233,333	20	-0.16
May	31	6%	600,000	833,333	-233,333	20	-0.15
Jun	30	12%	1,200,000	833,333	366,667	20	0.24
Jul	31	15%	1,500,000	833,333	666,667	20	0.43
Aug	31	15%	1,500,000	833,333	666,667	20	0.43
Sep	30	13%	1,300,000	833,333	466,667	20	0.31
Oct	31	6%	600,000	833,333	-233,333	20	-0.15
Nov	30	5%	500,000	833,333	-333,333	20	-0.22
Dec	31	6%	600,000	833,333	-233,333	20	-0.15
Total	**365**	**100%**	**10,000,000**	**10,000,000**	-0		

Peak Day Increase 0.43 MGD

Table D.5 Irrigation Demand and Effluent Supply

Month	Irrigation % of Total	Irrigation Demand		Effluent Supply		Balance	
		mgd	AF/mo	mgd	AF/mo	mgd	AF/mo
Jan	2.5%	1.77	166	6.476	604	4.70	439
Feb	4.0%	2.88	269	6.453	602	3.57	333
Mar	6.4%	4.61	430	6.541	610	1.93	180
Apr	9.1%	6.52	609	6.536	610	0.01	1
May	12.4%	8.87	828	6.541	610	-2.33	-217
Jun	13.9%	9.96	929	6.936	647	-3.02	-282
Jul	14.9%	10.64	993	7.122	665	-3.52	-329
Aug	13.4%	9.58	894	7.122	665	-2.46	-229
Sep	10.1%	7.21	673	7.003	654	-0.21	-19
Oct	6.9%	4.97	464	6.541	610	1.57	147
Nov	3.8%	2.75	256	6.469	604	3.72	347
Dec	2.5%	1.77	166	6.541	610	4.77	445
Total	**100.0%**	**5.96**	**6,676**	**6.691**	**7,493**	**0.73**	**817**

Cumulative water required from Plant & Storage (Apr - Sept)	1,075 AF	350 MG
Storage required to store excess recycled water (Oct - Mar)	1,892 AF	616 MG
Non-potable imported or captured stormwater req'd (difference)	-817 AF	-266 MG

Table D.6 Land Use and Water Demand Table - Entire Project Build-out

Land Use Designation	Acres	Density (DU/ac)	Dwelling Units	FAR	Building (Sq. Ft.)	Persons/ DU	Inside Water (WW) Factor[1]	Inside Water (WW) Flow (MGD)	Local Outside Water Factor[2]	Local Outside Water Demand (MGD)	Common Area Irrigation Irrigation (%)	Common Area Irrigation Factor[3]	Common Area Irrigation Demand (MGD)
Residential													
LD - Low Density	2,126.0	5	12,758		NA	3.5	50	2.23	120	1.53	15%	2,500	0.80
MD - Medium Density	462.0	10	4,620		NA	3.2	50	0.74	60	0.28	20%	2,500	0.23
MHD - Medium High Density	251.0	15	3,771		NA	3.2	50	0.60	25	0.09	20%	2,000	0.10
HD - High Density	68.0	25	1,703		NA	3.0	50	0.26	0	0.00	20%	2,000	0.03
Downtown Mixed Use	100.0	25	2,050		NA	3.0	50	0.31	0	0.00	20%	2,000	0.04
Mixed Use	40.0	25	1,006		NA	3.0	50	0.15	0	0.00	20%	2,000	0.02
Totals - Residential	**3,047.0**		**25,908**					**4.29**		**1.90**			**1.21**
Schools													
16 Elementary Schools (K-6)	192.0		9,638				10	0.10			33%	3,500	0.22
2 Middle Schools (7-8)	44.0		2,291				10	0.02			25%	3,500	0.04
2 High Schools (9-12)	100.0		3,777				15	0.06			25%	3,500	0.09
Totals - Schools[4]	**336.0**		**15,706**					**0.18**		**0.00**			**0.35**
OpSp/Parks/Waterway/Ag. Prod/Ag													
AP - Agricultural Production	100.0				NA						75%	3,500	0.263
AP - Solar	106.8				NA						75%	400	0.032
AB - Agricultural Buffer	250.2				NA						100%	3,500	0.876
W - Waterways/Linear Parks	228.1				NA						90%	3,500	0.719
Urban Parks	25.0				NA						75%	3,000	0.056
NHRP - Neighborhood Parks	149.9				NA						75%	3,000	0.337
Natural Open Space/Greenways	0.0				NA						50%	3,000	0.000
NOS - Powerline Buffer	60.0				NA						50%	2,500	0.075
Floodwater Storage	0.0				NA						10%	2,500	0.000
Mineral Resource Preserve - Mine Extr.	70.0				NA						100%	2,000	0.140
Mineral Resource Preserve - Solar	70.0				NA						100%	400	0.028
Totals OS/Parks/etc.	**1,060.0**												**2.53**
Non-Residential													
URP - University Research Park:													
University Campus/Office	80.0			0.40	1,393,920		80	0.11			20%	3,000	0.048
Research Park Retail	10.0			0.20	87,120		200	0.02			20%	3,000	0.006
Sub-Total Univ. Research Park	90.0				1,481,040			0.13					0.05
H - Hospital													
Medical Center	30.0			0.40	522,720		200	0.10			20%	3,000	0.02
Commercial/Industrial													
IND/T - Industrial/Transportation:													
HC - Highway Commercial Genl.	67.1			0.20	584,575		200	0.12			20%	3,000	0.040
IND/T - Industrial/Transportation	354.3			0.40	6,173,323		100	0.62			20%	3,000	0.213
Sub-Total Commercial/Industrial	421.4				6,757,898			0.73					0.25
ENT - Destination Enter./Retail:													
(See Attached Detailed Breakdown)													
Sub-Total - Destination Enter./Retail	1,652.0							1.46		0.43			1.34
Village Center:													
Local Commercial/Retail (4)	40.0			0.30	522,720		150	0.08			20%	2,500	0.020
Village Center Office (4)	60.0			0.40	1,045,440		80	0.08			20%	2,500	0.030
Sub-Total - Village Center	100.0				1,568,160			0.16					0.05
Mixed Use - Non-Residential:													
Mixed Use (MU-1) - Retail	21.4			0.20	186,219		150	0.03			20%	2,500	0.011
Mixed Use (MU-1) - Office	51.3			0.40	893,851		80	0.07			20%	2,500	0.026
Mixed Use (MU-2) - Retail	34.8			0.20	302,829		150	0.05			20%	2,500	0.017
Mixed Use (MU-2) - Office	121.7			0.40	2,119,804		80	0.17			20%	2,500	0.061
Sub-Total - Mixed Use	229.2				3,502,703			0.31					0.11
Town Center - Non-Residential:													
Town Center Commercial	20.3			0.30	265,280		150	0.04			20%	2,500	0.010
Town Center Office	20.1			0.40	350,222		80	0.03			20%	2,500	0.010
Sub-Total Town Center	40.4				615,503			0.07					0.02
Public Facilities													
Freeway Interchanges	33.3				NA						10%	2,000	0.007
Water Treatment	6.0				NA						5%	2,000	0.001
Sewer Treatment/Recycled Storage[4]	45.0				NA						10%	2,000	0.009
Resv - Raw Water Reservoir	128.0				NA				4,500	0.46	5%	2,000	0.013
Sub-Total - Public Facilities	212.3				3,502,703			0.00		0.46			0.03
Totals Non-Residential	**2,775.3**				**14,448,024**			**2.97**		**0.89**			**1.88**
Totals	**6,687**		**25,908**		**14,448,024**			**7.43**		**2.80**			**5.96**

1) Inside Water Demand Factor is gallons per capita per day for Residential and gallons per thousand square feet for Non-residential except for Schools where factor is gpd/student.
2) Local Outside Water Demand Factor is gallons per dwelling unit for Residential and is assumed to be potable water. Reservoir factor is gpd/gross acre based on evaporation loss with 80% of acreage being water surface. Local outside potable water use for all other land uses are considered negligible and primarily irrigated with recycled or untreated water.
3) Common Area Irrigation Demand Factor is gallons per acre per day times area Irrigation percentage shown in that column. Factor for Waterways is for evaporation, not irrigation.
4) School and Sewer Treatment/Recycled Water Storage acreage is not considered in Totals as it is considered to be included in overall Residential acreage.

Total Residential Potable Demand	6.19	MGD	6,934	AFY	0.268 AFY/DU
Total Residential Demand	7.40	MGD	8,292	AFY	0.320 AFY/DU
Population	85,781				
Total Resid. gallons/capita/day	86.3				
Total Low Density Residential	4.56	MGD	5,108	AFY	0.400 AFY/DU
Total Project Water Demand	16.2	MGD	18,134	AFY	0.700 AFY/DU