8. INFRASTRUCTURE PLAN

This section provides planning information for infrastructure at the Imperial Center.

TRAFFIC CIRCULATION

Heber Road will be the main entrance to the project. Traffic can either enter off State Route Highway 111 onto Heber by a right hand turn for traffic heading north on State Route Highway 111 or a left hand turn for traffic heading south. The section of Yourman Road that runs along the west side boundary of the project will be closed to public use. This section of Yourman Road will be realigned to bi-sect the project from the north and exit the project in its southeastern corner. Yourman Road north of the project will remain open. It can serve as an alternate ingress and egress route to or from the project via Abatti Road.

Based on field observations, it is recommended that Heber Road be widened to six lanes prior to final build out to provide the necessary capacity at the Highway 111 intersection and the project driveways. The developer shall pay the fair share of warranted signals as per consultant's findings. (See traffic study prepared by Dahl Robbins & Associates - Volume Two, Appendix B, with an updated Traffic Study prepared by Linscott, Law & Greenspan)

Figure 8 -A
SR 111 looking southbound proximate to the Imperial Center Specific Plan site

1. Primary Entrance

The primary entrance to Imperial Center will be by way of Highway 111 and Heber Road.

Site Access

Imperial Center's main access will be from Heber Road. Vehicles can either make a left hand turn off of Highway 111 for those heading south or a right hand turn off of Highway 111 for those heading north. Those vehicles traveling west along Heber Road would make a right hand turn. The section of Yourman Road to the west of the project will be closed to public traffic. Yourman Road will be re-aligned to enter the development from the South on the Southeast side of the property. This alignment will result in the development of a Hotel, convenience store/gas station and stand alone retail pads and respective parking to the west of the new alignment and the main development consisting of an Auction Center, Warehouse, Outlet Center, Food Court and Cinema to the east of the new alignment. Secondary access can be made by way of Abatti Road where it meets with Yourman Road which will still remain open to the north of the project.

On-site Improvements

See Traffic Report (Appendix B) & Chapter 11, Environmental Issues & Mitigation.

2. Site Access Streets

According to the County of Imperial Public Road Standards, Primary Arterials should have a minimum 126 feet of Right-of-Way (R/W).

Minor Arterials should have a minimum R/W of 102 feet. Major Collector Roads should have a minimum R/W of 84 feet. Minor Collectors should have a minimum R/W of 70 feet. Local Streets should have a minimum R/W of 60 feet.

Off-site Improvements

See Traffic Report (Appendix B) & Chapter 11, Environmental Issues & Mitigation.

3. Heber Road

It is recommended that Heber Road be widened to five lanes prior to Phase D (2010-15) development from Abatti Road on the west to the east edge of the project. This will provide the necessary capacity at the Highway 111 intersection and the project driveways.

4. Jasper Road and Highway 111

A traffic signal will likely be warranted at Highway 111 and Jasper Road intersection with the addition of Phase A traffic. Though this phase adds little traffic to this intersection, the intersection is currently operating at poor levels of service. This project will add an additional 1,084 trips to this intersection at build-out.

Currently, the Jasper Road is closed going East from 111. This is a temporary closer and will be reopened as CALTRANS installs traffic signals to the intersection. This improvement will help mitigate some of the traffic impacts caused by the Imperial Center.

5. McCabe Road & Highway 111

A traffic signal will likely be warranted at the Highway 111 and McCabe Road intersection at project build-out. This intersection is currently operating at poor levels of service for eastbound and westbound traffic. This project will add an additional 630 trips to this intersection at build-out. It is also recommended that McCabe Road be marked with two lanes approaching the intersection, a left turn lane and a combined through/right turn lane.

Currently, the McCabe Road is closed going West from 111. This is a temporary closer and will be reopened as CALTRANS installs traffic signals to the intersection. This improvement will help mitigate some of the traffic impacts caused by the Imperial Center.

6. Yourman Road and Heber Road

In addition to the previously described improvements to Heber Road, a traffic signal will be needed at this intersection with the addition of Phase D (2010-15) traffic. The Level of Service calculations show a northbound Level of Service of D in 2006, but if the roadway is realigned as proposed, this will not be the case. It will be important to coordinate this signal with the signal on Highway 111 so that backups do not occur along Heber Road.

The design of all intersections and roadways shall be accordance with Cal Trans Standard Drawings, Imperial County Public Works guidelines, and the latest editions of the MUTCD and AASHTO Green Book.

PUBLIC SERVICES

Sewer & Water

Currently, the Heber Public Utility District (HPUD) is not able to provide future water service to the Imperial Center Specific Plan Area. Although, it is currently in the process of upgrading its water plant. With this new capacity, HPUD will be able to offer both sewer and water services to the Imperial Center.

The Imperial Center will have three different alternatives to pursue to provide the development within the specific plan area sewer and water services. These alternatives are all feasible. Which alternative the developers of Imperial Center will select will depend on developer goals.

Alternative One

1. Sewer

The sanitary sewer improvements proposed for Alternative One are to include a local collection system consisting of gravity flow lines located in the streets of the proposed Imperial Center Subdivision. A 12" gravity flow line is to run along the west side of the project site to provide service to the areas south of the project site as they are developed.

An on-site (self-serving) treatment facility will be provided. The facility is to be purchased and owned by the landowner (with HPUD approval). The landowner will pay for maintenance; however, HPUD will operate the on-site facility.

This alternative includes a combination of gravity flow lines, pumping stations and force main lines. A 12" gravity flow line is to run along the west side of the project site to

provide service to the areas south of the project site as they are developed.

a. Type of Facility Needed

The following information was assessed to address sewer treatment facilities for the Imperial Center. The following information is based on treatment for up to 75,000 Gallons/Day:

i. 10,000 S.F. Building

ii. Sand/Rock Filter

iii. Estimated installation cost is $8.50/Gal treated = $637.500

iv. Add ozonation to effluent that will meet disinfection criteria of title 22 reclaimed water for irrigation - add $1.50/Gal for this upgrade

v. Effluent Quality = 2 mg/l BODs & suspended solids

iv. Power Consumption 55 to 60 KWH/Day (about $4.50/day)

b. Location

Lot 3 of the project area will be the temporary location of the sewer facility.

c. Sewage Discharge

i. It is assumed that 80 percent of the water supplied to a connection is sent to the sewer systems. Based on that assumption, the sewer flow for

such areas will be approximately 40 gallons per person per day, while peak flow is 2 times the average flow, therefore:

ii. Average Flow: (40 p/ac x 40 gd/p) /(24hrs x 60 min) = 1.11 gpm/ac.

iii. Peak Flow: 1.11 gpm/ac x 2 = 2.22 gpm/ac.

iv. Sewer discharge required for the 77.64-acre parcel is 2.22 gpm/ac x 77.64 = 172.36 gpm.

d. Temporary Septic and Leech Field

i. As permitted by Imperial County Department of Health Services, sewage treatment can be scaled down by using temporary septic tank and leach field systems installed at the temporary wastewater treatment plant site as well as the lift station site in the western basin. Such a system shall not be installed after the infrastructure from HPUD is extended to the project site or the packaged plant system is constructed. All septic tank and leach field systems will be installed in with approval from and in accordance to the County of Imperial Environmental Services Department.

ii. Each septic system will be sized to handle approximately 25 thousand GPD. Once one or both of these temporary systems

reach their capacity, transition into a packaged plant or first phase pond-based wastewater treatment system will be implemented at the permanent treatment plant site thus terminating the use of both of the temporary facilities. Collection and conveyance pipelines will be installed concurrently with the initial backbone roads and as more fully described in the appropriate final engineering improvement plans.

2. Water & Water Facilities Plan

Alternative One provides for a plan to accommodate the Imperial Center water demands. This alternative calls for the Imperial Center Specific Plan area to be annexed into the Heber Public Utility District service area.

The water plant will be located in Lot 3 in the northern section of the project. It will be located adjacent to the sewer plant. The water plant will be located an appropriate distance from the sewer plant as determined by the Heber Public Utility District and State of California. The following is a summary of the plan to construct and operate a water plant within the Imperial Center Specific Plan Area:

- Total area of the water facility will be approximately four acres.
- Water Plant building (50' x 40').
- Potable Water Tank Storage (600,000 gallons)

- The water plant will contain two water ponds with a total volume of 874,528 gallons.

- Peak fire capacity = 2,000 gallons per minute for a four (4) hour duration plus domestic.

- Potable Water Pumps: 2,000 Gallons per Minute @ 80 psi

- Raw Water Irrigation Pumps: 200 Gallons per Minute @ 60 psi

The minimum and maximum potable water use for the project is estimated to be 100,000 gallons per day (gpd) and 200,000 gpd respectively, irrigation water is an additional 37,5000 and 70,000 gpd respectively. For planning purposes 200,000 was assumed to be the average day water demand for the project. This estimate represents the high side of water usage should be reevaluated as development proceeds to determine if some facilities proposed could be reduced in size. Table 8-1 provides the water use factors used to estimate project flows.

Table 8-1 **Water Use Factors**		
LAND USE	**MINIMUM**	**MAXIMUM**
Potable	1250 GPD/AC	2500 GPD/AC
Irrigation	500 gpd/ac	1000 gpd/ac

Peaking factors of 2 and 4 were used to estimate maximum day and peak hour demands respectively.

The water distribution system was sized to provide a 2,000 gpm fire flow under maximum day demands with a residual pressure of no less than 20 psi or no more than 10 psi pressure drop anywhere in the system under peak hour demands, whichever is greater.

Water storage, treatment and pumping facilities will all be located on on-site. The source of water for the project will be Imperial Irrigation district's All American Canal. Storage for the project will be kept in a potable water tank and raw water reservoir, then the All American Canal. The potable water reservoir will hold two average day's storage plus fire flow requirements. The raw water reservoir will hold seven and a half days storage requirement.

Water will flow by gravity to the raw water reservoir and will be pump to the water treatment plan when needed. The treatment plant is proposed to be a package system, consisting of modular units, where each unit contains a rapid mix tank, flocculation tank, settling basin and a filter. The modular unit concept will allow the treatment plant to be constructed incrementally, as needed.

Once water passes through the treatment plant, it will flow by gravity to the treated water storage tank. A potable water booster pump station will pump water from the treated storage tank to the water distribution system.

The distribution system will have a 12 inch diameter pipe looped within the project which will allow the project to be phased while still maintaining the infrastructure necessary to provide fire flow.

Design and operations of the water treatment facilities, storage reservoirs, and distribution systems will conform to guidelines from the following:

- California Department of Health Services

- County Department of Health Services Environmental Health
- Air Pollution Control District
- Department of Water Resources Division of Safety of Dams
- Insurance Services Office
- National Fire Protection Code

Water facilities discussed in this plan are preliminary and may be re-evaluated as development proceeds. Additional water facility options may be proposed and approved as part of the tentative mapping process. For example, smaller pipes may be used if originally anticipated water demands are less than anticipated.

Exhibit 1 provides a graphical detail of the proposed Alternative One.

Reclaimed Water Imperial Center

In an effort to conserve water at the Center, this Alternative will use reclaimed water for all landscaping on site. Standards shall meet County requirements. As an alternative, the Imperial Center management may wish to undertake landscaping irrigation with nearby agricultural water.

Alternative Two

HPUD would provide both water and sewer services to HPUD in Alternative Two. Alternative Two proposes to extend single project specific sewer and water lines to the Imperial Center project. This alternative would include upgrading the capacity of HPUD's water plant.

As stated above, this alternative would have a single project specific eight inch water line

extended from an existing point of connection to Imperial Center. Likewise, a 12 inch force main sewer line will be extended from an existing point of connection to Imperial Center. Two pump stations, one for both sewer and water, would be utilized in this alternative. It would not include a looped infrastructure water lines.

Alternative Two would provide water to the Imperial Center during peak hours using water that will be stored in a 800,000 gallon water tank. This tank will be located in Lot 3 on the tentative map. HPUD would replenish the tank during off-peak hours. Fire pressure and water availability would be sufficient to satisfy all fire protection needs.

Alternative Two is estimated to cost $2.3 million for infrastructure improvements. HPUD has stated that they intend to upgrade their water treatment plant. These improvements may be financed by a variety of mechanisms. Community Facility Districts (CFD's) or developer fees with reimbursement agreements may be used to finance these improvements.

The demand for water from the Imperial Center will increase in Alternative Two from Alternative One because the Imperial Center will not be able to use recycled water for irrigation purposes. For this reason, water demand for irrigation purposes will increase by 40,186 gallons per day.

Exhibit 2 provides a graphical detail of the proposed Alternative Two.

Alternative Three

HPUD would provide both sewer and water services to Imperial Center in Alternative Three. The proposed infrastructure would include improvements that are included, as a full-buildout, in the Heber Public Utility District Service Area Plan.

The HPUD would upgrade its water plant capacity under this alternative. This alternative would also include a looped water infrastructure system.

Alternative Three is estimated to cost $2.4 million for infrastructure improvements. HPUD has stated that they intend to upgrade its infrastructure. These improvements may be financed by a variety of mechanisms. Community Facility Districts (CFD's) or developer fees with reimbursement agreements may be used to finance these improvements.

Like Alternative Two, the demand for water from the Imperial Center will increase in Alternative Two from Alternative One because the Imperial Center will not be able to use recycled water for irrigation purposes. For this reason, water demand for irrigation purposes will increase by 40,186 gallons per day.

Exhibit 3 provides a graphical detail of the proposed Alternative Three.

Table 8-2 Engineers Estimate for Potable Water Demand for Imperial Center								
Facility	**Area**	**Occupancy ft^2/ Person**	**People/Unit**	**Gallons/day per capita**	**Average Gallons/day**	**Usage Hours**	**Peak Flow Factor**	**Peak Gallons/min**
Information Exhibit Rest Rooms	15,000 ft^2	30	500	10	5,000	6	3	42
Wholesale Outlet Mall Restrooms, Interior Landscaping, Food Service Facilities	460,000 ft^2	30	15,333	3	46,000	10	2	153
Multiplex Cinema Restrooms, Food Service	83,000 ft^2	14	5,929	3	17,786	6	3	148
Hotel 200 Rooms Rooms, Laundry, Interior Landscape, Janitorial Services, Banquet Services	135,000 ft^2	200	675	52	35,000	11	3	159
Hotel/Plaza Restaurant Restrooms, Kitchen	10,000 ft^2	15	667	30	20,000	12	3	83
Plaza Auction Court Restrooms, Janitorial	95,000 ft^2	30	3,167	9	28,5000	6	3	238
Convenience Market/Gas Restroom, Kitchen, Food Service	37,000 ft^2	30	1,233	6	7,400	12	2	21
Retail Pads (eleven) Restrooms, Kitchens	55,000 ft^2	30	1833.33	10	18,333	12	2	51
Total of all Above			29,337		**178,019**			895

Water Assessment and Availability

This section of the Specific Plan will address the availability of potable water to service the proposed development. The County of Imperial has conducted a Water Assessment to satisfy the conditions of Senate Bill 610. This section of the Specific Plan will provide a summary of this assessment.

As discussed above in Alternative One, this Specific Plan calls for the potential construction of a water plant to treat the raw water that is supplied to this development. The Imperial Irrigation District would supply raw water to the water plant that the Heber Public Utility District will operate.

Alternative Two and Three propose that the Imperial Center receive treated water from HPUD. HPUD has recently received a written contract that will ensure that it will receive raw water for its urban uses into the future. The contract is included as an exhibit in the County's Water Assessment.

The 2000 Imperial Irrigation District Urban Water Management Plan is included in this document as an appendix. The document analyzes the both historical and projected water use within Imperial Valley and its surrounding service area. The Urban Water Management Plan states:

"For the purposes of this report and compliance with the Urban Water Planning Act, three years were selected to estimate a minimum annual water supply. The selected three years are 2001, 2002, and 2003. If during the years 2001, 2002, and 2003 there were a minimum water volume supply from the

Colorado River, it would be 3.1 million acre-feet according to a voluntary self imposed cap proposed in the QSA.

Under a worst case water supply scenario the Imperial Irrigation District is confident that urban water users (which comprise less than two percent of its annual water deliveries) can be assured delivery of their required water supply. Due to its present perfected water rights and the relatively small water demand of non-agricultural water users, the Imperial Irrigation District would not reduce or cut back urban water deliveries even in years of reduced deliveries. Since its inception in 1911, the Imperial Irrigation District has never been denied the right to divert the amount of water it has requested for agricultural purposes and other beneficial uses."

The Plan states that even under the "multiple reduced demand years" where water is restricted, urban water deliveries will not be reduced. The most recent "multiple reduced demand years" were 1991-1993. Table 8-4, from the Urban Water Management Plan, illustrates that even during these years, water supply was significantly greater than water demand.

Table 8-3
Imperial Irrigation District
Annual Water Supply Reliability

			Multiple Reduced Demand Water Years		
	Average/Normal Water Year (1995)	**Single Reduced Demand Water Year (1992)**	**Year 1 (1991)**	**Year 2 (1992)**	**Year 3 (1993)**
Water Use	3,070,582	2,572,659	2,898,963	2,572,659	2,772,148
Water Supply	3,373,233	3,463,992	3,375,173	3,463,992	3,457,909
Unit of Measure is Acre-Feet					

As stated in Table 8-3 above, the expected water consumption of the Specific Plan Area is 178,019 average gallons/day. This water usage is well below the Specific Plan Areas approximate historical water usage, as provided by IID.

It is the intention of this Specific Plan and the County of Imperial's Water Assessment to provide assurance that this development will have water available for its needs. The amount of water that IID has available for consumption by new urban development, as detailed in the Urban Water Management Plan, and the ability of the water plant operator to contract for this water sufficiently demonstrates the availability of water for this development.

STORM DRAIN

Proposed Drainage System

The County will require drainage facilities to be installed as development proceeds. Drainage facilities within the study area will include the following:

- Street improvements will include curb and gutter to convey surface flows in an orderly and easily maintained manner.

- Catch basins and underground storm drains will be installed to convey flows as the street capacities are exceeded.

- Detention basin(s) will be constructed to control the developed run off, help mitigate downstream drainage problems, and replenish ground water supplies.

The County Public Works Department will determine the materials, standards and specifications for the proposed drainage system.

Storm Water Retention

The primary storm water retention basin will be completed prior to 40% of the complex being issued any occupancy permits. Temporary basins will be constructed to accommodate the needs for the early phases of construction activity. The primary storm water retention basin will also serve as park and open space area for the community. The size of basins will be determined at the subdivision process. Storm water retention shall be the responsibility of a property owners' association.

EXISTING PUBLIC SERVICES

This section reviews the existing public services, such as police, fire, medical and solid waste services that currently exist.

1. Police Protection

This site being in the unincorporated portions of Imperial County is dependent on police protection from the Imperial County Sheriffs Department. In extreme emergency or as a back up to the Sheriff other law enforcement divisions do provide an "as needed" service. This includes the City of Calexico, and the Highway Patrol, etc.

2. Fire Protection

Fire protection for this area is provided by the Imperial County Fire Department, whose secondary station is located in the town site of Heber.

3. Medical Services

Medical (emergency) services for this site are currently provided by an independent ambulance provider in conjunction with two hospitals. The El Centro Regional Medical Center and the Brawley Pioneers Hospital are the two primary care facilities.

There are also a number of private physician offices and urgent care centers available within the City of Calexico and the City of El Centro.

4. Solid Waste Disposal

Solid waste to this project site is currently not required as no on site uses exist that would demand such service. Currently residents within the Town site of Heber are offered two options to dispose of their solid waste. For a land use fee, residents can put their solid waste at the curb for pick up by Environmental Services whose site is located at Dogwood and Robinson Road or they can use the Imperial County Landfill.

5. Property Owners' Association

An Association of Property Owners shall be formed in order to ensure that the requirements and standards of this Specific Plan shall be implemented and in order to provide and maintain common signage, parking, walkways and landscaping. This Association of Property Owners shall be established as a deed restriction for each subdivided property within this project.

EXISTING PUBLIC UTILITIES

This section discusses the existing public facilities at the site such as electricity, phone, and other public utilities that are located on the project area.

1. Electricity

The Imperial Irrigation District currently supplies most of Imperial County, with the exception of the northeastern portion with electrical energy.

As there are no significant improvements on this site at this time, no service has been provided, however the Imperial Irrigation District's facilities encroach through the site.

2. Gas

There is no natural gas system available to the site at this time as the nearest location of a natural gas main is located at State Highway 111 and Chick Road.

3. Telecommunications

Telecommunications are provided by a variety of suppliers in this County, including but not limited to Pac Bell. However at this time while the site would have access to such a service, there is no service being provided to this particular site.

SCHOOLS

The Imperial Center Specific Plan is located within the Heber School District, which provides elementary, middle and high school education for students in grades K-8. Central Union High School District in El Centro provides for 9-12 education.

The Imperial Center Specific Plan applies specifically to the area stated in this plan. In the event that the Imperial Center Specific Plan does not address specific policy or regulatory information, then the County's zoning, subdivision and other local ordinances shall apply.

The following table summaries the existing site.

Table 8-4
Summary of Existing Facilities

	Existing Facility	Location	Type of Service / ID	Classification
1.	Land Use	Project area	A-2	Agriculture
2.	Overlay Zone	Project area	Urban Area	Heber Specific Plan Area
3.	Other designations	Project area	Utility	Heber Utility Service Area
4.	Arbatti Road	East of Hwy 111	N/a	Local County Road
5.	Yourman Road	Between Arbatti Road and Heber Road	LOS A to B	Local County Road
6.	Heber Road	East of Hwy 111	LOS C to D	Minor Arterial
7.	State Highway 86	West of the project area	LOS C	State Highway
8.	State Highway 111	South of Arbatti Road and north of Heber Road	N/a	4-lane State Highway
9.	Interstate 8	3 miles north	N/a	Federal Highway
10	Airport	Calexico	N/a	N/a
11	Transit	None	N/a	Bus Route
12	Bicycle	None	N/a	N/a
13	Pedestrian	None	N/a	N/a
14	Sewer	None	N/a	N/a
15	Water	Yes	Agricultural	Irrigation
16	Drainage	Adler Drain	Agricultural runoff	Open earth channel

Table 8-4
Summary of Existing Facilities

	Existing Facility	Location	Type of Service / ID	Classification
17	Geology	Entire project area	N/a	SaltonTrough
18	Soils	Entire project area	N/a	Holtville Soil
19	Biology	Entire project area	N/a	To be determined
20	Parks and Recreation	Project area	N/a	N/a
21	Police	Project area	Police	N/a
22	Fire Protection	Project area	Fire protection	N/a
23	Medical Services	Project area	Medical	N/a
24	Solid waste	None	N/a	
25	Electricity	Easement	Electrical	N/a
26	Gas	N/a	N/a	N/a
27	Telecomm-unications	N/a	N/a	N/a
28	School	N/a	N/a	N/a

Table 8-5
Proposed Right-of-Way (R/W)

	Existing Facility	Existing R/W	Proposed R/W	Proposed Classification
1.	Abatti Road	60 Feet	84 Feet	Major Collector
2.	Yourman Road	60 Feet	84 Feet	Major Collector
3.	Heber Road	84 Feet	126 Feet	Prime Arterial

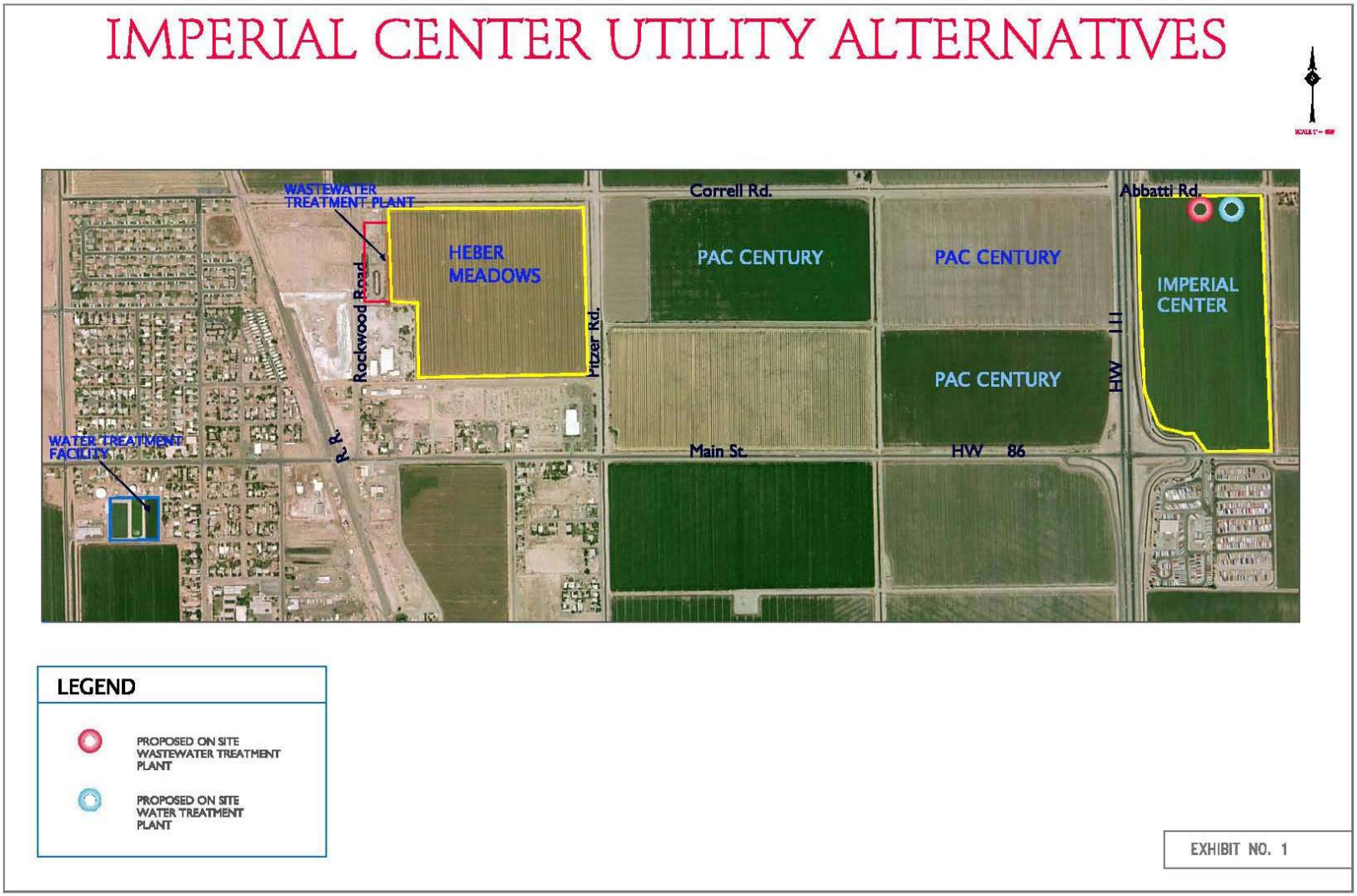

Figure 8-B – Sewer & Water System Plan – Alternative One

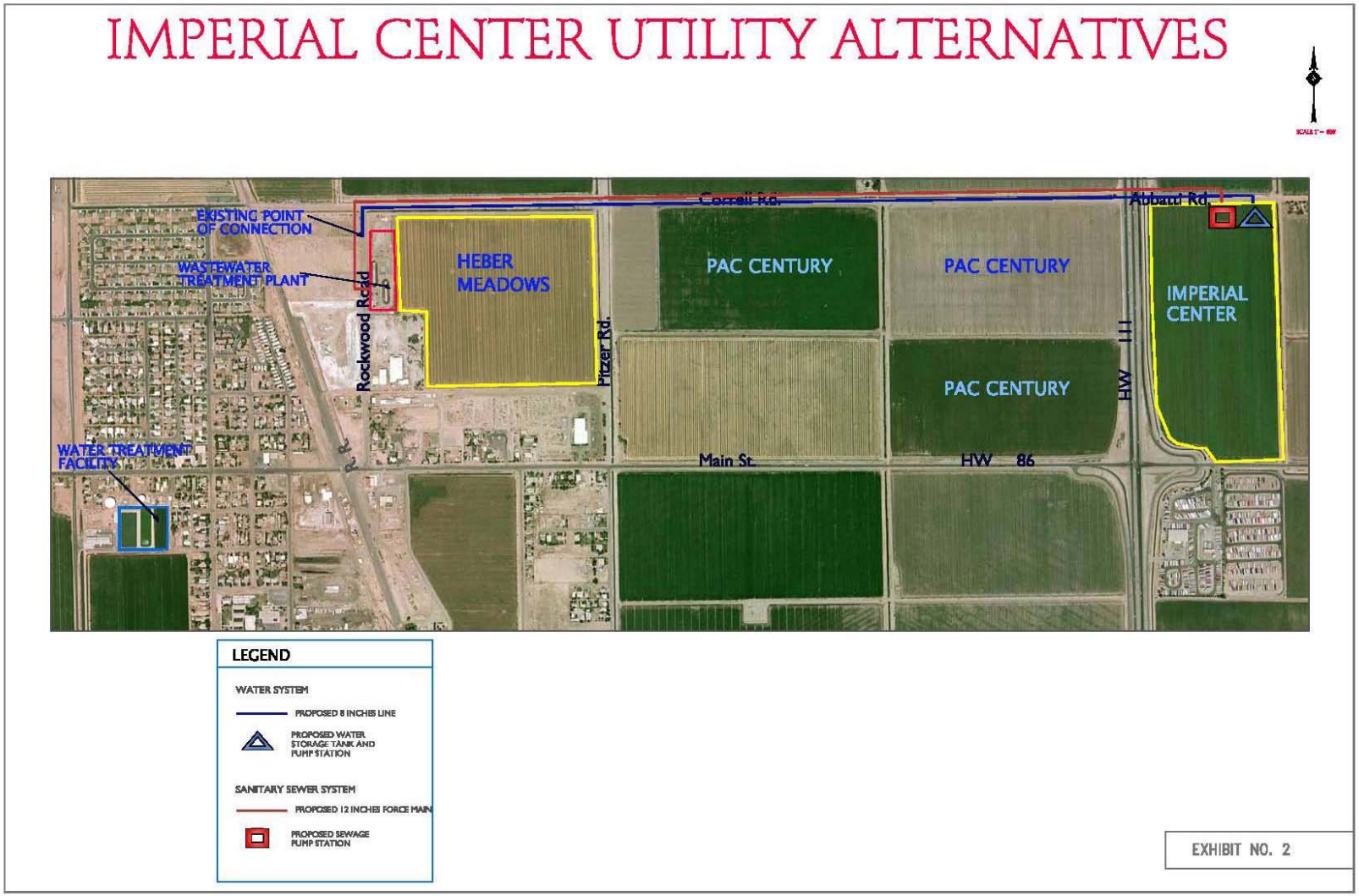

Figure 8-C – Sewer & Water System – Alternative Two

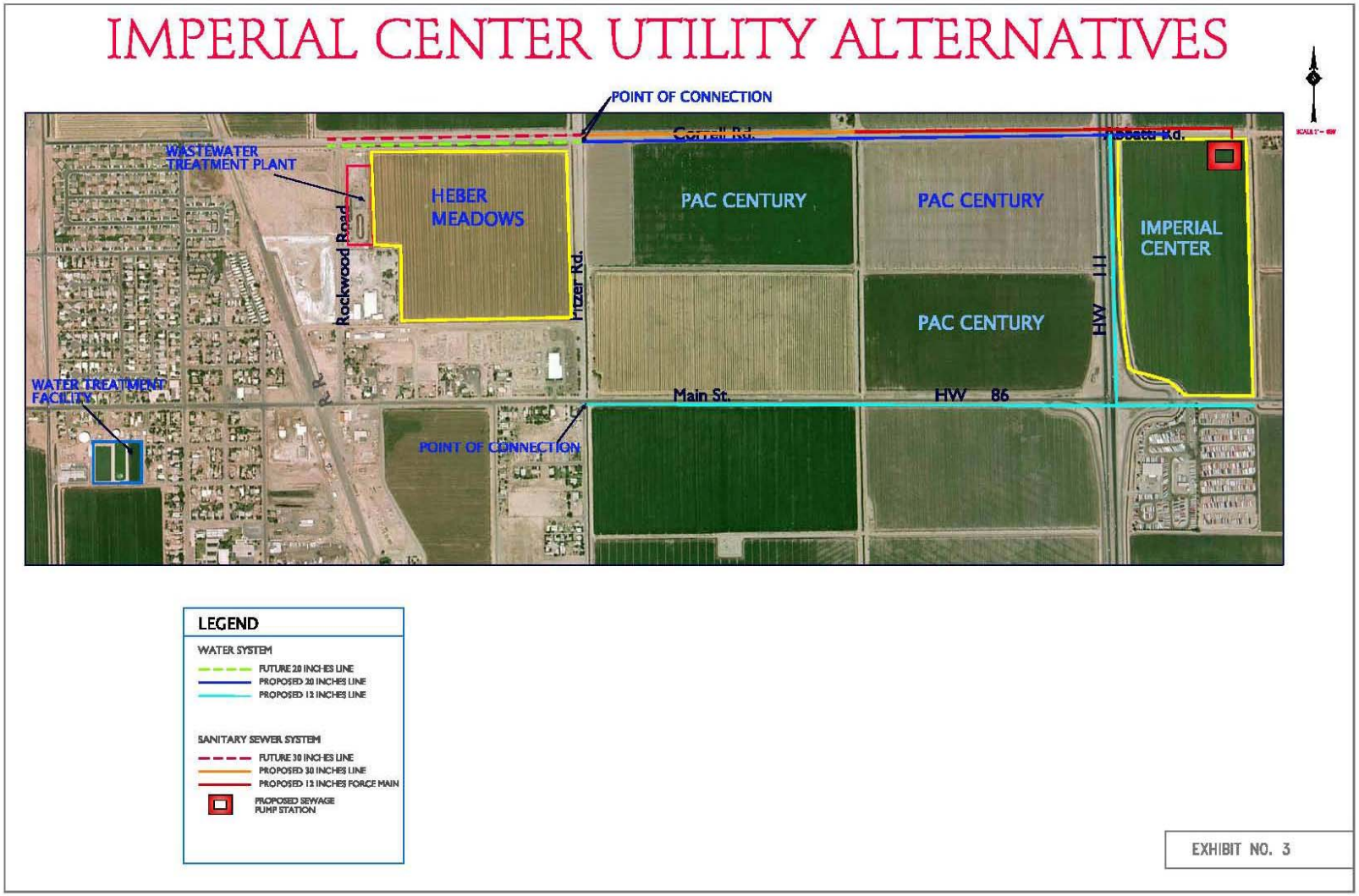

Figure 8-D – Sewer & Water System – Alternative Three