

Border Environment Cooperation Commission System Automation Upgrades to the Vail Canal Lateral in Imperial Irrigation District, California

1. General Criteria

1.a Project Type

The project proposed by the Imperial Irrigation District (IID), in Imperial County California includes improvements to the irrigation system. The project consists of replacement of obsolete lateral headings and canal checks with automated flow measurement and control infrastructure for the Vail Canal.

This project belongs to *Water Conservation Sector*, which is within BECC's priorities.

The project sponsor is the Imperial Irrigation District.

1.b Project Category

The project belongs to the category of *Community Environmental Infrastructure Projects – Community-wide Impact*. The project will contribute to reduce water losses and improve irrigation water supply to the users in the Imperial Irrigation District.

1.c Project Location and District Profile

Project Location

The project area is within the boundaries of the Imperial Irrigation District located entirely within Imperial County which is situated in the southeast corner of the state of California. The project location is border in the west by San Diego County, on the north by Riverside, on the east by the Colorado River and on the south the international boundary with Mexico.

The following figure shows the location of the Imperial Irrigation District relative to the aforementioned boundaries.

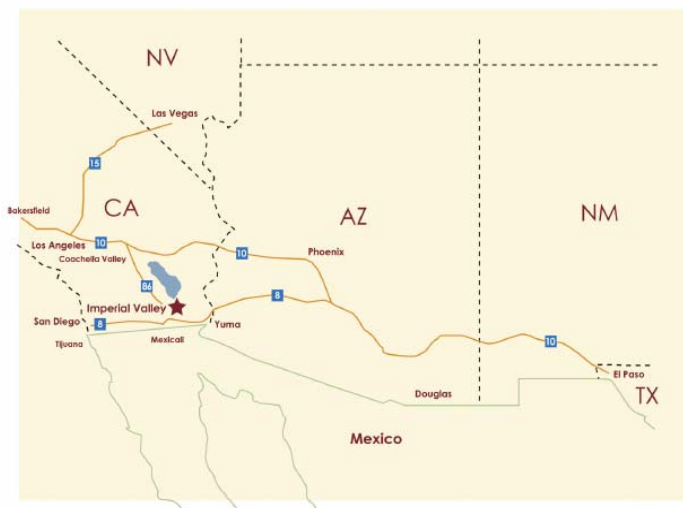


Figure 1. Location of the Imperial Irrigation District in Imperial County, CA.

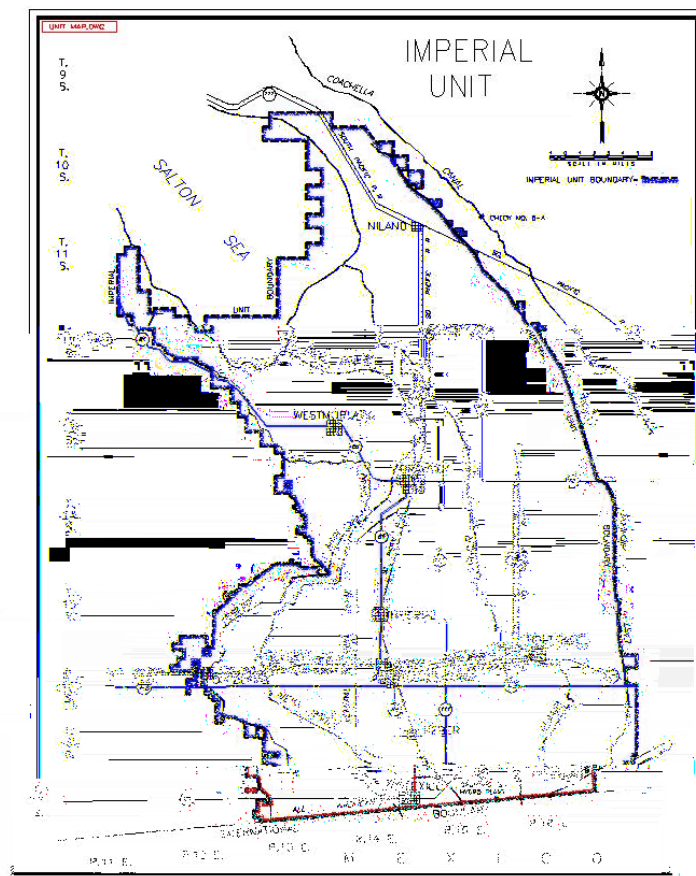
District Profile

The Imperial Irrigation District (IID) is a community owned utility that provides irrigation water and electric power to the southeastern portion of California. The IID’s infrastructure and service area are located adjacent to US-Mexico Border. IID headquarters are located in the City of Imperial, California. The IID delivers raw water to nine cities and agricultural lands located mostly within the Imperial Unit service area. The IID has 6,471 square mile water and electric power service area in Southeastern California located in the Imperial and Coachella Valley’s Region as shown in Figure 1. The IID delivers water through approximately 5,600 delivery gates for irrigation purposes. The IID operates and maintains more than 1475 miles of lateral canals, 230 miles of main canals, the 82-mile long All American Canal, ten reservoirs, and the Imperial Dam with a total capacity of 3,300 acre-feet of water. Approximately 3.1 million acre-feet of Colorado River water is diverted via the American Canal by the IID. The water is delivered to nine cities and approximately 500,000 acres of agricultural land in Imperial Valley.

The Imperial ID manages water deliveries through a complex system of delivery canals, laterals and drains serving over 450,000 acres of some of the most intensively farmed land in the nation. Agricultural drainage water flows into the New and Alamo Rivers and into the Salton Sea, a designated reservoir for irrigation drainage.

The Imperial Irrigation District’s irrigation water service area is divided into four units: Imperial, West Mesa, East Mesa, and Pilot Knob, with a gross acreage of 1,061,637 acres. The irrigation water supply service area, known as the Imperial Unit, has a total area of 694,346 acres. The

Imperial Unit is shown in Figure 2.



The water is distributed through the IID’s irrigation system by three main canals. These three main canals deliver water to lateral canal systems and subsequently to farm turnouts. The IID water distribution system’s total capacity exceeds 3,300,000 acre-feet per year of water. The IID also maintains an extensive drainage system with over 1,406 miles of drainage ditches used to collect surface runoff and subsurface drainage from the approximately 32,227 miles of tile drains.

The projects will not require additional personnel to

Figure 2. Imperial Unit

implement the operation of the improvements.

1.d Legal Authority

The IID was chartered as a political subdivision of the State of California in 1911 under the California Irrigation District Act. As a political subdivision of the State of California, it is a vertically integrated, publicly-owned utility operating under the laws of the State of California (California Water Code §§20500-29978) and governed by an elected five-person Board of Directors. An irrigation district is a limited-purpose district that delivers untreated water for irrigation. Although an irrigation district may provide drainage, it may not treat or deliver water for domestic use or operate sewage facilities. A district may also contract to deliver untreated water to political subdivisions and water supply corporations. Irrigation districts are created by petition and election, or by an act of the legislature, have the authority to issue bonds and levy taxes, and may tax all the property owners in the district to pay for part of the costs of the district with the remaining costs being charged against other water users.

IID allocation of water from the diversion of the Colorado River to the Imperial Dam is based upon water rights obtained pursuant to state law. Furthermore, the diversion of water is also accomplished pursuant to a 1932 water delivery contract with the U.S. Bureau of Reclamation under the Boulder Canyon Act of December 21, 1928. IID senior water rights are part of California's apportionment of Colorado River water under the 1992 Colorado River Compact, the Boulder Canyon Project act, and the U.S. Supreme Court decree in *Arizona v. California*, 373 U.S. 546 (1963). The International Boundary and Water Commission (IBWC) and the United States Bureau of Reclamation are the authority for the allocation of water to the IID. The project does not violate any of the water allocations agreements. The IID will continue to meet all state surface water diversions from the Colorado River in accordance with the agreements in place and the restrictions of the Treaty.

The project falls within the scope of agreements targeted at improving the environment and the quality of life of border residents, which have been signed by Mexico and the United States. The United States and Mexico have signed six major bilateral agreements related to air, water, land protection, and pollution control issues. These include:

- 1889 International Boundary Convention
- 1944 Water Treaty
- 1983 La Paz Agreement, or Border Environment Agreement
- 1990 Integrated Border Environmental Plan (IBEP)
- 1994 North American Free Trade Agreement (NAFTA)
- Border 2012 Program

The project complies with the spirit of all these agreements, and all of them have been considered since the onset of the project.

1.e Project Summary

Project Description

The proposed water conservation project includes improvements to the irrigation system. It consists of the automation of main canal checks and lateral canal headings. The IID operates numerous gated control level and/or flow structures in the main canals. The proposed segment for

a full system automation is the Vail Canal's ten check structures and ten lateral canal headings that would be improved by adding automated components aimed at reducing water losses (spills) caused by inaccurate deliveries and operational imprecision of the control structures.

The replacement gates furnish with Supervisory Control and Data Acquisition (SCADA) communication capabilities can relay information to the water control center for monitoring the flow rate and operating the distribution system. The improvements seek to enhance the accuracy of measurements and record keeping, provide better flow coordination and reliable service including a quick response to emergencies. The IID's experience with automated lateral headings shows that the project implementation would result in a 25% reduction of spill due to the automatic measurement and control. System wide the average spill is equivalent to about 0.5 cfs as a result of obsolete infrastructure, which in turn is equivalent to approximately 912.5 acre-feet per year for the Vail Canal system.

The irrigation system's automation upgrades will minimize water loss as well as improve efficiency of the irrigation system, thereby conserving water and energy. Other benefits related to the project are reduced PM₁₀ emissions due to the elimination of driven miles and vehicles in operation required to monitor the system under the current manual system. The proposed project will be completed in a time frame of three years starting in 2007 and concluding in 2010. The estimated project cost totals \$2, 518,024.

Project Map

The project is located within the Imperial Irrigation District. Figure 3 below shows the location of the Vail Canal Project location relative to the other units within the Irrigation District.

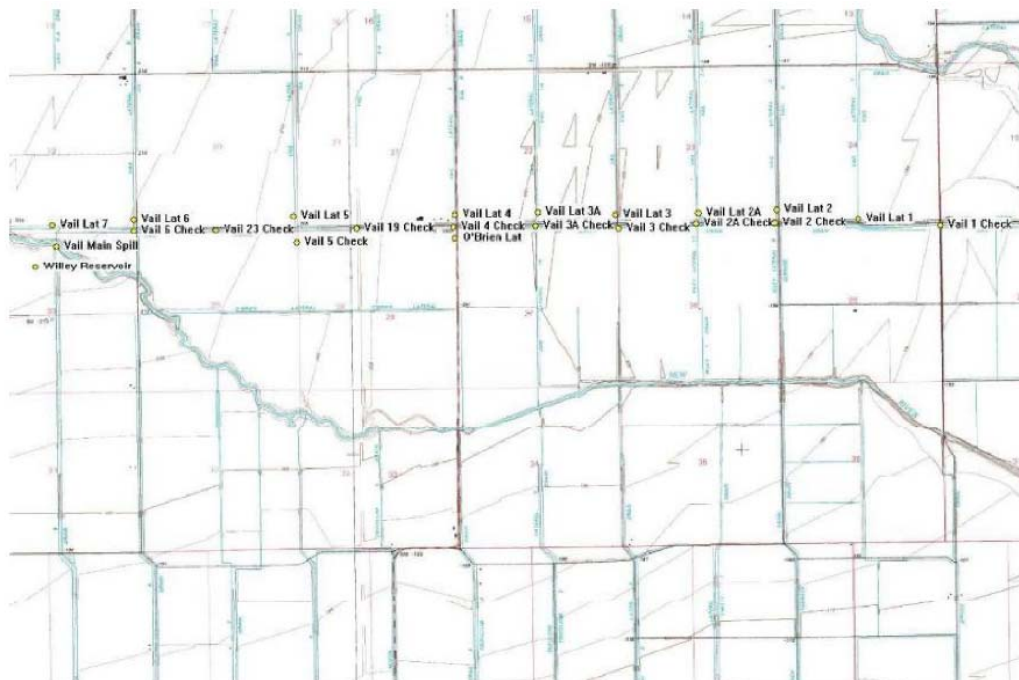


Figure 3. Vail Canal Project Location

Project Justification

Southern California has experienced several years of extended drought and the population is expected to increase twofold within the next decades. The cities in the region will need to locate additional water supplies or purchase agricultural rights. As a result the IID, its partners in conservation and member farms have invested \$613 million dollars over the last 50 years to improve water use efficiency. Previous water conservation measures have included concrete lining of canals and laterals, construction of reservoirs and interceptor canals, implementing canal seepage recovery programs and additional irrigation management measures. Since 1988, the IID has entered into water conservation and transfer agreements with the Metropolitan Water District of Southern California (MWD) and the San Diego County Water Authority (SDCWA). As result of this partnership, the IID developed a Water Conservation Program Report (April 2000), which contains a general description of the project, the water conservation benefits and an alternative analysis based on best-management practices. The IID/SDCWA Transfer Agreement is a long term transaction involving the voluntary conservation by IID of up to 300 KAFY (300 thousand acre-feet per year) and the subsequent transfer of all or portion of the conserved water to SDCWA, to be used within their service area in San Diego County, California. Under certain circumstances, up to 100 KAFY of the water conserved by IID may be transfer to the Coachella Valley Water District (CVWD) and/or the MWD of Southern California. The conserved water will consist of Colorado River water that otherwise would be diverted by IID at Imperial Dam for use within IID's service area.

Conservation methods employed to effect the IID/SDCWA water conservation and transfer agreement may consist of on farm measures implemented by landowners and tenants within the IID's service area; and/or system based measures implemented by the IID and affecting its distribution and drainage facilities (The Project).

The automation project will improve the operation of the distribution system and allow the district to conserve water by avoiding spills due to a better control of the rate of flow and as result meet an increased irrigation demand. All components of this project present an opportunity to increase the district's water supply and reduce energy required to provide the supply of water. Saving lost water from canal seepage and leaking check gates will increase the water supply. The irrigation system's automation upgrades will minimize water loss as well as improve efficiency of the irrigation system, therefore conserving water and energy. The expected water savings from the project over its productive life of 25 years are 22,813 acre-feet. In addition, overall project improvements will reduce the water losses that are amenable to project improvements by 25%.

In conclusion, the implementation of the project is imperative in order to reduce water losses and improve conservation efforts, including the optimization of the system to obtain a higher rate of water use. Overall, the project will benefit the Imperial Valley environmentally and economically given the close relationship between the district and cities.

Important issues for Certification:

The Project falls within the BECC's priority sectors and complies with General Criteria.

Pending issues:

None

2. Human Health and Environment

2.a Compliance with Applicable Environmental Laws and Regulations

In accordance with the National Environmental Policy Act (NEPA) and other applicable statutes, and based on the type of project, an evaluation of the impacts on the affected environment of the proposed system automation upgrades to the Vail Canal Lateral in the Imperial Irrigation District (IID) was conducted. The project will automate ten canal check structures and ten lateral headings on the Vail Main Canal in the IID's lateral heading automation program. The project will upgrade three main irrigation system components: flow measurement, site control, and SCADA/information management. The proposed project was included as part of the water conservation measures proposed in the IID/SDCWA Transfer Agreement. As part of this agreement a Draft EIR/EIS was prepared to provide the environmental analysis required under NEPA and CEQA to issue federal and state approvals for the proposed project which includes IID's System Automation Project for the Vail Canal. The Draft EIR/EIS states that the projects include "improvements by IID to its water delivery system". Relevant state and federal agencies were consulted based on the impacts of the project. This Draft also provided the environmental analysis required by the SWRCB for approval of IID's water conservation measures and transfers and supports issuance of incidental take permits by USFWS under ESA Section 10 and by CDFG under CESA Section 2081 for species covered by the HCP. To comply with ESA and CESA, and to support issuance of the state and federal incidental take authorizations required to implement the proposed project, IID, in consultation with USFWS and CDFG, prepared an HCP to address impacts to species and habitat within the IID area of service. The draft Habitat Conservation Plan (HCP), that covers IID's water conservation and transfer projects as well as routine water related operation and maintenance activities, was adopted by the California State Water Resources Control Board under order WRO 2002-0013. The HCP is being implemented by IID for its California Endangered Species Act (CESA) Incidental Take Permit No. 2081-2003-024-006. Finally, the environmental review of the project and the proposed mitigation measures comply with all environmental and cultural resources laws and regulations. All required permit conditions necessary for the construction and operation of the proposed improvements will be acquired and comply with. The district has the required water rights and is fully compliant with the terms of its water use permit.

2.b Human Health and Environmental Impacts

Human Health Impacts

The proposed project addresses one of the most pressing problems facing the Colorado River, i.e., water shortages due to extended droughts over the years and an increasing water demand due to population growth in California, Nevada and Arizona. This water shortage has created an economic hardship in the region through reduction of crops and subsequent reduced revenue. Water conservation efforts reduce the impact of drought conditions and makes available additional water resources that would otherwise be lost. The future health, social and economic well being of the population in the Imperial County and adjacent San Diego County will be dependent on conservation and maximizing beneficial use of available water to meet domestic, industrial and agricultural needs. The project will provide a more efficient IID water delivery and increases available water for agricultural and urban uses. The purpose of this project is to provide improvements to the water distribution system to reduce water loss and improve

conveyance efficiency. The project addresses water shortages by reducing water losses and providing for more efficient delivery of water, thus enhancing availability of water both domestic and agriculture use.

The human health impacts from this project are all positive due to water conservation leading to additional water available for human consumption and municipal use thus offsetting water shortages due to drought. Through water conservation and more efficient use of the allocated waters for irrigation and municipal use, a growing population of the region can be sustained over a longer period of time without creating health risks due to lack of water. With the implementation of the proposed improvements, the District will conserve 912.5 acre feet per year of water. Water conservation has economic, environmental, and social impacts; therefore, water management must be emphasized in the community's development.

Environmental Impacts

Construction of the proposed water conservation projects will have a direct positive impact through conservation of water, thus making more water available for irrigation and municipal use. The overall cumulative effect will be positive. No environmental risks or associated costs are anticipated in the project area due to the proposed project improvements. The project will not pose any environmental hardships or have any long-terms negative effects on the project area since these improvements will be performed on existing water distribution system areas already impacted with no additional impacts anticipated due to implementation of this project. The project will be constructed entirely within existing canal right-of-way and will not include acquisition of any new land for that purpose. There would be a temporary decrease in air and noise quality due to construction activities associated with replacement of the obsolete check gates and ancillary structures. It is anticipated that there would be no adverse effect to any endangered or threatened species, any migratory bird, or any historic or cultural property. In summary the information collected is sufficient to support the following conclusions:

The proposed project is necessary and will help meet the need for water and energy conservation in the Imperial Valley.

No significant long term air, water, or vegetative impacts are anticipated.

No short or long term wildlife habitat disturbances are anticipated.

No cultural resources will be impacted as a result of the proposed project.

No short or long term detrimental socioeconomic effects are expected as result of the project. In fact the socioeconomic impacts are expected to be positive.

In conclusion and from a regional perspective, the implementation of this water conservation project is expected to have a positive impact from environmental and socioeconomic perspectives and no impact on cultural historic resources.

Transboundary Impacts

Negative Transboundary impacts are not anticipated by the implementation of the water conservation projects.

Formal Environmental Clearance

The impacts on the affected environment of the proposed project were evaluated and consultation with state and federal environmental agencies was carried out based on the minor impacts of the project. The Final EIR/EIS for the water transfer project includes all comments and responses to

the Draft from all the relevant agencies. Other environmental analyses that are related to implementation of the proposed project are also described in the Final EIR/EIS. The IID's environmental assessment for this project and ongoing operation and maintenance activities are included in the IID Water Conservation and Transfer Project Final Environmental Impact Report/Environmental Impact Statement (June 2002) as modified by the Amended and Restated Addendum to EIR/EIS for the IID Water Conservation and Transfer Project (September 2003). As a result of this analysis, no significant impacts were established due to the implementation of the Automation Project.

Important issues for Certification:

The project contributes to mitigate the environmental problem related to scarce water resources.

Pendent issues:

None.

3. Technical Feasibility

3.a Technical Aspects

Project Development Requirements

The proposed water conservation improvements have been described in the Imperial Irrigation District's Water Conservation Program Report, which contains a general description of the project, the water conservation benefits and an alternative analysis based on best-managements practices. Previous water conservation measures have included concrete lining of canals and lateral, construction of reservoirs and interceptor canals, implementing canal seepage recovery programs and additional irrigation management measures. The sponsor, as a result of the IID/SDCWA Water Conservation and Transfer Agreement, developed the MWD/IID Automation Project by which the IID Water Department could plan for the automation of lateral canal headings. Through this project and the subsequent Lateral Heading Automation Program, the Water Department has automated over 60 main canal checks and lateral headings. The proposed project is defined as Phase 5 in the Lateral Heading Automation Program and includes improvement in flow measurement, site control and SCADA/Information management to ten lateral headings and ten check structures of the Vail Canal Lateral. The Project Report and final design were prepared based on the IID's Water Department Guidelines for Water Conservation and Irrigation Improvement Projects as well as standard engineering practices for similar projects. All technology used in the proposed improvements is appropriate based on local experience and for irrigation projects with similar operations and infrastructure. The net amount of water expected to be conserved from this project is a result of reduced operational spill. The estimates were derived using the following criteria:

- 0.5 cfs per lateral operational spill district wide average
- 25% reduction in spill with automatic measurement and control
- 10 laterals headings to be automated

$$0.5 \text{ cfs} \times 0.25 \times 10 \text{ laterals} \times 2 \text{ af/1cfs-day} \times 365 \text{ days} = \mathbf{912.5 \text{ AF per year}}$$

Project improvements will reduce operational spill with an expected net amount of 912.5 acre-feet of water per year.

Appropriate Technology

The project plans and specifications were prepared by the IID Water Department – Water Operations section using technical specifications contained in the “IID's Water Department Guidelines for Water Conservation and Irrigation Improvement Projects – Basic Design Criteria of Irrigation Facilities”. The proposed segment will have full system automation by adding components aimed at reducing water losses (spills) caused by inaccurate deliveries and operational imprecision of the control structures. The upgrades seek to improve the accuracy of measurements and record keeping, provide better flow coordination and reliable service including a quick response to emergencies. The upgrades will include the installation of flow measurement devices, site control, solar charging systems and SCADA/Information management system for ten check structures and ten lateral canal headings. Detailed plans and specifications were developed for the project to be constructed under the fore mention project. The plans provide typical details

of the canal check structures to be upgraded and include information on structure replacement and modifications. Below is a schematic showing the proposed structure to be modified.

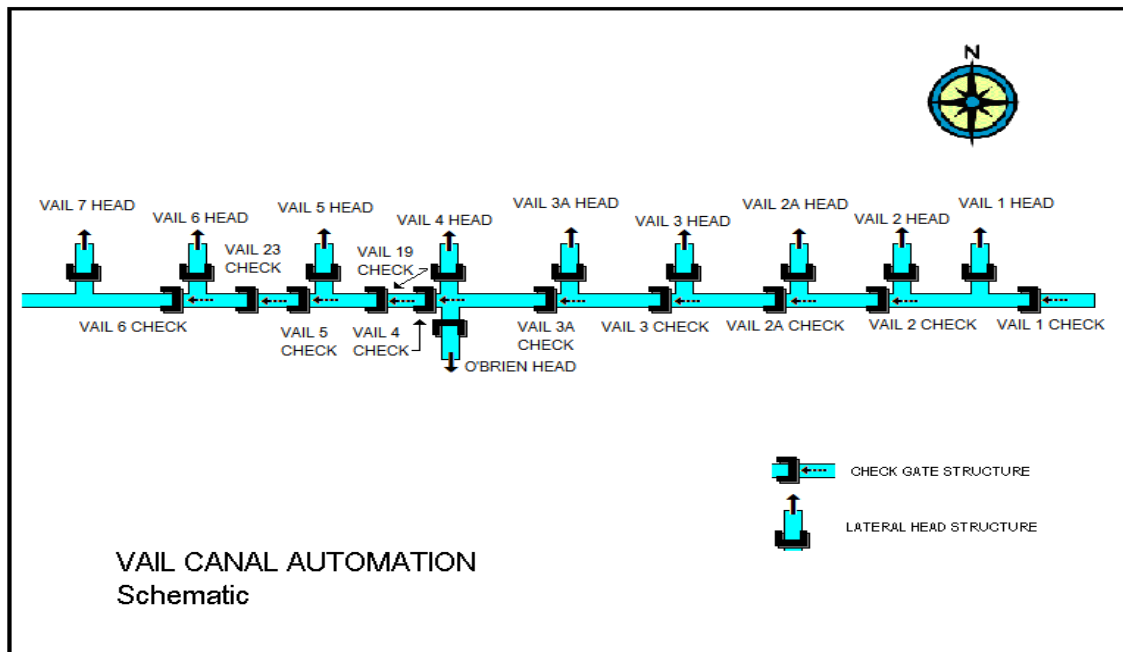


Figure 4. Vail Canal Project Schematic

Alternatives

Standard engineering practice determines, that for most projects, there are various alternatives that the Designer must evaluate to determine the most appropriate project choice. There are usually alternatives to location, methods, the selection of materials, and the selection of process. Obviously, the cost of the various alternatives must be closely evaluated. One process may have an advantage in effectiveness, but that process will likely have a greater initial cost and a greater life cycle cost. The proposed IID project does not allowed itself to an elaborate alternative analysis due to operational issues directly related with the existing irrigation distribution system. The automation of the check structures and gates is an ongoing project within the district and as such a preferred system is desire based in the compatibility with the existing infrastructure. Consequently a detailed cost analysis of various alternatives is not warranted for this project. Accordingly, the alternatives presented do not address issues related with the technical aspects of the project equipment, but rather involved the environmental and health benefits that the implementation would provide as opposed to avoiding the improvements. In effect, economically speaking the project will provide benefits, but such on its own do not warrant the project construction.

Action versus No Action

The alternatives of Action versus No Action should be considered.

No Action

Health and Environmental benefits as described in the Action alternative will not benefit the District's users and population;

The District will lose on irrigation than otherwise would go toward fulfillment of their IID/SDCWA Water Conservation and Transfer Agreement;

Unrecovered irrigation water spills might affect current irrigation needs required to support growth yield of valued crops;

Economically, the District might decline by not fulfilling the Transfer Agreement and probably reducing irrigation water and as a result lower crop productions.

Action

Approximately 912.5 acre-feet of water per year will be recovered by implementing the upgrades;

The management of water delivery is directly enhanced by the project with a more effective use of the irrigation water. An improvement in management efficiency increases the water supply to all sections of the District, and particularly enhanced the required water delivery for crop irrigation by supplying in a timely manner;

The upgrades represent a direct benefit to the District, either by decreasing operational spill resulting in wasted irrigation water or by increased water delivery for higher valued crops. or in direct health benefits to the population by reassigning the savings from the spills for drinking water purposes;

The improvement provide direct health benefits to the population by reassigning the savings from the spills for drinking water purposes;

Additionally, benefits related with the reduction PM₁₀ emissions as a result of the of vehicle driven miles required for the operation of the current manual system;

No environmental risks or associated costs are anticipated in the project area due to the proposed project improvements;

The project will not pose any environmental hardships or have any long-terms negative effects on the project area since these improvements will be performed on existing water distribution system areas already impacted with no additional impacts anticipated due to implementation of this project;

The project will be constructed entirely within existing canal right-of-way and will not include acquisition of any new land for that purpose;

Finally, the project can be scaled to fall within the District's funding capability and existing program phasing due to WCIF-NADB grant flexibility.

In conclusion, the benefits of the action alternative justify the implementation of the project given that the population of Imperial Valley would not be impacted negatively, and if so only temporally during the project construction, and more than likely will be benefited by improving health, environmental and economic conditions as a result.

Land Acquisition and Right-of-Way Requirements

The proposed project is located within the Imperial Irrigation District's jurisdiction and boundaries. In particular the project improvements would be constructed on existing canals and, therefore no land or right-of-way acquisition is required for these projects. Documentation probing the jurisdiction and rightful privileges for the necessary right-of-way were provided to BECC.

Work Tasks and Schedule

The project is to be constructed by the IID district construction department personnel. The IID staff has extensive construction and management experience with the type of construction activity required for the project. The district will use its own equipment and labor to replace and upgrade the existing check structures and gates controls. The entire project will be constructed in three phases over a period of thirty six (36) months and the material will be procured at various phases

of the project. The control structures schedule for replacement/upgrading are within the existing ROW and will be installed in the same location as the existing structure that is being replaced. New structures, gates, gate controls, measurement devices and telemetry system will be constructed or installed in the project. The work will be performed between irrigation cycles in order to avoid affecting crop growth patterns. Below is the proposed construction project schedule.

Table 1. Project Construction Schedule

Imperial Irrigation District Automation of Lateral Control Structure Phase I - III		
Tasks	Start	Finish
Phase I – 7 Locations	08/07	08/08
Construction Package Design/Approval	08/07	12/07
Material Bid Solicitation	01/08	02/08
Material Lead Time	02/08	06/08
Construction (Structure)	07/08	08/08
SCADA/Gate Installation	07/08	08/08
Phase II - 7 Locations	01/08	08/09
Phase III - 6 Locations	03/08	08/10

3.b Management and Operations

Project Management

The IID Water Department- Irrigation and Drainage Services will manage the construction of the proposed automation project. The construction will be performed under the administration of the Construction Management Unit, which is responsible for canal lining, adding pipelines, and all other major repair and additions to the irrigation systems. Most of this work is planned far in advance according to the yearly ‘Cut-Out’ schedule. While some procedures can be done while the canal or drain has water in it, much of the work must be completed during a ‘Cut-Out’ period. The Construction Unit personnel are highly experienced with this type of upgrading construction.

Operation and Maintenance

Organization

The organization of the Imperial Irrigation District is shown in the following chart:

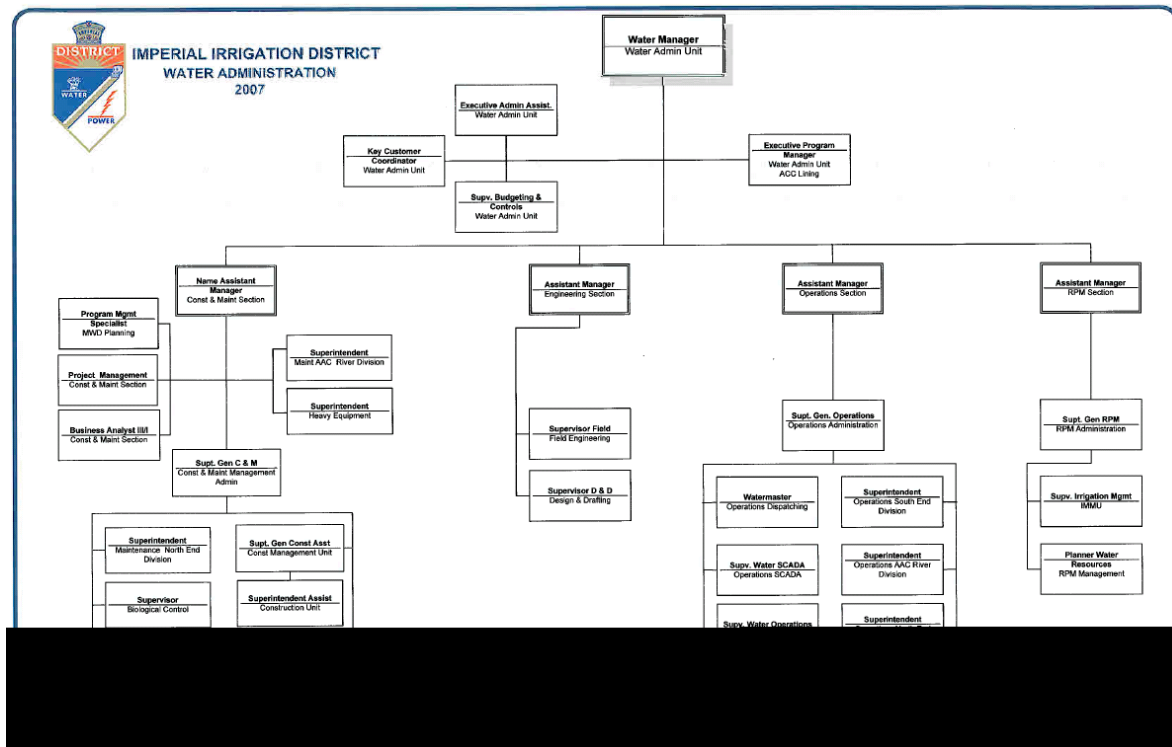


Figure 5. IID Organizational Chart

Operations and Maintenance

Operation and Maintenance is an ongoing task performed by IID. No increase in personnel is anticipated due to the improvements, and similarly no decrease in personnel is expected, though individual workloads may decrease due to the automation upgrades in operation of the system. The operation and maintenance requirements of the improvements to the facilities are performed by the Irrigation Management and Monitoring Unit (IMMU) within the Resources, Planning and Management Section (RPM), and the Construction and Maintenance (C&M) Sections. Both sections are under the Water Department authority. The C&M Section is responsible for the maintenance of all Water Department conveyance facilities. This responsibility consists of oversight and management of the districts irrigation and drainage facilities including installation and maintenance of open channel canals, lateral canals and water delivery structures. The IMMU is in charge of providing water quality, quantity and flow monitoring services and with implementing a variety of support services related to field level water conservation and management projects. The operation of the automated system is carried out through the existing Water Control Center (WCC). The WCC houses all the hardware and software used to regulate automated gates for water delivery as well as collect information need to verify water savings.

The operation and maintenance requirements by the proposed project are basically the same as tasks already performed by the fore mention departments under their normal operations for the existing irrigation and drainage system. The current staff is considered sufficiently capable and experienced to undertake required operation and maintenance of the improved control structures.

An advantage of the centralized operations is that it facilitates continuous 24-hour overview of the system at the canal sites. On site supervision is practically eliminated, although maintenance still is required, it will be reduced compared to a canal system that required constant on site

supervision regarding deliveries and maintenance of the gates and control structures. An operation and maintenance manual will be provided for the Automated Gate Systems by the manufacturer. The staff will perform regular maintenance as established in the Operation & Maintenance manuals for the automated systems and in concurrence with the IID established manuals.

Permits, Licenses, and Other Regulatory Licenses

The design and construction requirements adhere to the District's requirements under the "IID's Water Department Guidelines for Water Conservation and Irrigation Improvement Projects – Basic Design Criteria of Irrigation Facilities".

The IID was chartered as a political subdivision of the State of California in 1911 under the California Irrigation District Act. As a political subdivision of the State of California, it is a vertically integrated, publicly-owned utility operating under the laws of the State of California (California Water Code §§20500-29978) and governed by an elected Board of Directors.

IID allocation of water from the diversion of the Colorado River to the Imperial Dam is based upon water rights obtained pursuant to state law. Additionally, the diversion of water is also accomplished pursuant to a 1932 water delivery contract with the U.S. Bureau of Reclamation under the Boulder Canyon Act of December 21, 1928. IID senior water rights are part of California's apportionment of Colorado River water under the 1992 Colorado River Compact, the Boulder Canyon Project act, and the U.S. Supreme Court decree in *Arizona v. California*, 373 U.S. 546 (1963). The International Boundary and Water Commission (IBWC) and the United States Bureau of Reclamation (USBR) are the authority for the allocation of water to the IID. The project does not violate any of the water allocations agreements. The IID will continue to meet all state surface water diversions from the Colorado River in accordance with the agreements in place and the restrictions of the Treaty.

The proposed project complies with the local and regional conservation and development plans. In particular, the project complies with the "1998 IID/SDCWA Conservation and Transfer Agreement", which recommends water conservation in agricultural activities and water delivery efficiency, in order to reduce regional water supply shortages. In this case, the project particularly addresses agricultural water conservation by means of *off-farm* water use efficiency.

This project was designed and will be constructed according to Bureau of Reclamation standards for irrigation systems. Although a typical design was developed for all control structures, the construction estimates for each of the headings and check structures were the result of each site specific conditions. The fundamental difference is the result of the unique topographic conditions for each site. USBR design standards and criteria were followed and USBR quality control procedures will be applied during construction.

Important issues for Certification:

Final Design complies with accepted standards.

Pending issues:

None

4. Financial Feasibility

4.a Demonstrating Financial Feasibility

Financial Conditions

The North American Development Bank reviewed the financial information presented by the Project Sponsor and determined that the financial structure proposed in the certification report is adequate.

Project Costs, Funding Structure and Other Capital Investment Plans (CIP)

The project will be funded by the Water Conservation Infrastructure Fund and District cash and in-kind contributions. The total cost of the project is estimated at \$2.52 million dollars, including the costs for planning, design and construction.

Item	Amount (Dollars)
Construction	\$2,518,024
TOTAL	\$2, 518,024

The District proposes a financial structure that will allow the implementation of the project, as further indicated:

Financial Source	Amount (Dollars)	%
Imperial Irrigation District Cash	\$1,259,012	50
NADB-WCIF Construction Assistance	\$1,259,012	50
TOTAL	\$2, 518,024	100

Dedicated Revenue Source

The District will not need to modify the current rate model to pay for this project. District funds will come from the Water Department operational funds dedicated to water conservation projects. The funding for the project will be allocated over a three year period and will be included in the departmental budget.

4.b Legal Considerations

The District operates as a political subdivision of the State of California under the California Irrigation District Act. As a political subdivision of the State of California, it is a vertically integrated, publicly-owned utility operating under the laws of the State of California (California Water Code §§20500-29978) and governed by an elected Board of Directors. The project will be managed by the District personnel who have experience operating and administering similar projects.

Important issues for Certification:

The project financial structure was reviewed by NADB and determined project financial feasibility.

Pending issues:

None.

5. Public Participation

5.a Local Steering Committee

The Local Steering Committee was formally installed on September 13, 2007 with the following members: Chairman of the Local Steering Committee: Vince Brooke, Imperial County Farm Bureau & Imperial Irrigation District (IID) Grower; Vice Chairman: Ralph Strahm, Water Conservation Advisory Board & IID Grower; Secretary of the Local Steering Committee: Larry Gilbert, IID Grower and IID Staff Members: David Bradshaw, General Superintendent, Resources, Planning and Management; Vickie Doyle, Assistant Engineer, Resources, Planning and Management; Hector Mendez, General Superintendent, Water Operations; and Frank Ruiz, Senior Project Manager, Construction. The Comprehensive Public Participation Plan developed by the Local Steering Committee was approved by the BECC on October 11, 2007. The Local Steering Committee set to the task of preparing an outreach program, including the benefits resulting from the project, as well as the associated costs and economic impacts for the community.

Public Access to Information

Project information was made available through the Local Steering Committee to the public at large for review. The Local Steering Committee with the support of the IID staff prepared fact sheets and made them available to the general public by distributing them at the local organization presentations, public meeting, and the selected site where the project development information was available.

The locations where copies of the project information on the proposed project were available for public inspection were published in public notices. All volumes of project information were made available at IID offices located at Barioni Street, Imperial, California. The following information was available for public review permanently and at least 30 days prior to the public hearing:

- Public Participation Plan

- Environmental Information Document

- Vail Canal Lateral Automation Project Report

- Fact Sheet with basic technical, environmental, financial and public participation components of the project.

Public Notice

The public meeting notice was advertised in the Imperial Valley Press on October 7, 2007, a minimum of thirty days prior to the meeting, scheduled to be held on November 8, 2007. The public meeting notice was advertised a second time in the Imperial Valley Press on November 4, 2007. The Comprehensive Public Participation Report includes a copy of the published public notice and the affidavit of publication.

Additional Outreach Activities

Information meetings were held with local organizations in anticipation of BECC public meetings. The presentations included the pertinent project information and were made to the following local organizations during their regularly schedule meetings:

Date	Organization	Presenter
September 13, 2007	IID Water Conservation Advisory Board	Hector Mendez
October 8, 2007	Imperial Valley Farm Bureau	David Bradshaw
October 12, 2007	Holtville Rotary	David Bradshaw
November 27, 2007	ASCE/APWA/APA	Hector Mendez

Public Meeting

A public meeting was held on November 8, 2007. The meeting provided the general public with information regarding the environmental, technical and financial aspects of the project. The meeting was held at the IID Headquarters, Water Control Center located at 333 E. Barioni Blvd., Imperial, California. The meeting was attended by Steering Committee, District Personnel, BECC representative, and several users directly impacted by the project. The attendance by the general public was tally at 13 persons in addition to the official representation previously mentioned. At the end of the meeting, surveys were completed demonstrating nearly complete support for the project. The following table summarizes the survey results:

Survey Question	Yes/No/ Undecided
Do you understand the environmental, technical, and financial aspects of the project?	13 Yes
Do you support the projects costs and proposed rates?	12 Yes 1 Undecided

Final Public Participation Report

The sponsor submitted the Final Public Participation Report which demonstrates that the proposed objectives were fully met to BECC's satisfaction.

Post-Certification Public Participation Efforts

The sponsor will comply with all additional requirements as requested by the BECC and NADB regarding post certification activities. Among the activities are reporting on the proposed benefits status one year after the project construction including an assessment against established baseline. The reporting will continue over the life of the project as part of the Operation & Maintenance activities conducted by the District. The reports will be available for public review and will serve as the basis for assessing similar project and related planning activities.

Important issues for Certification:

The project is supported by the community.

Pendent issues:

None.

6. Sustainable Development

6.a Institutional and Human Capacity Building

Actions within the scope of the project that contribute to institutional and human capacity building at the Imperial Irrigation District include the following:

- Improve the necessary irrigation infrastructure (control structure automation)
- Reduction in water losses
- Modernization of the irrigation facilities
- Additional availability of water for domestic use
- Improved quality of life for the end users
- Impact on agricultural production with a possible increase of income

The project will be managed by the District and will be constructed and operated in conformance with federal, state and local requirements. The process for the development of the projects has followed a planning and public participation process that developed alternatives and associated costs, solicited public input, established priorities based on input of the stakeholders and proceeded according to the priorities established in the planning process.

The NADB Water Conservation Infrastructure Fund (WCIF) will complement, with grant funds, the capital investments required by the District for construction of the projects. The use of WCIF grant funds allows the District to fully finance and improve its infrastructure in order to reduce water conveyance losses.

6.b Conformance with Applicable Local, State, and Regional Laws and Regulations and Conservation and Development Plans

The proposed project complies with all local and regional conservation and development plans. In particular, the project complies with the "1998 Imperial Irrigation District/San Diego County Water Authority Conservation and Transfer Agreement", which recommends water conservation and water use and delivery efficiency in agricultural activities, in order to reduce regional water supply shortages. As a result of this agreement, the IID developed a Water Conservation Report (April 2000) which recommends water conservation in agricultural activities by means of *off-farm* water use efficiency that may result in reduced irrigation losses and increased availability of domestic water. In this case, the project particularly addresses agricultural water conservation by automating gate control structures in order to avoid irrigation losses caused by operational spills that result from inadvertently over-charging the canal system, as well as from preventing leaks from gate structures. In addition, the project complies with local conservation efforts already developed by the District and served communities. The Project Report has been prepared in accordance with the based on the IID's Water Department Guidelines for Water Conservation and Irrigation Improvement Projects. Design and construction requirements were developed based on the "IID's Water Department Guidelines for Water Conservation and Irrigation Improvement Projects – Basic Design Criteria of Irrigation Facilities".

The project adheres to the U.S.-Mexico Border 2012 Environmental Program by meeting Goal 1 (Reducing water contamination) and Objective 4 (promoting improve water utility efficiency). One of the program's guiding principles is reducing major risks to public health and conserving and restoring the natural environment.

6.c Natural Resource Conservation

The proposed project was developed with the intent of conserving water. The annual gross diversion from the Colorado River to the IID is approximately 3.1 million ac-ft per year; however, this diversion includes irrigation water and domestic water allotments for the Imperial and Coachella Valleys. As a result of implementing water conservation measures on the agricultural irrigation allotments to the District, the actual water available for human consumption will increase from year to year. According to the Economic Evaluation of the Project for the District, the implementation of the project will allow an estimated water savings of 912.5 acre-feet/year. One acre-foot is equal to 325,900 gallons, enough to sustain the water needs of a family of five for one year. The construction of the proposed project will satisfy existing needs of the District Irrigation users while providing water to its city users, as well as other small rural communities which depend on the Colorado River for their water supply.

The project will not only have an impact on water resources, but it will also contribute by reducing vehicle and PM₁₀ emissions related with the decrease travel for operational activities required for irrigation water delivery.

6.d Community Development

The benefit obtained by the modernization of the irrigation facilities may directly impact agricultural production and may result in an increased income. Also the increased domestic water availability may result in increase development and economic activity, and as result an enhanced quality of life for the residents. Furthermore, an improved quality of life for the community may also have a favorable impact on the development of health, and education of the area.

Important issues for Certification:

The project complies with all sustainable development principles.

Pendent issues:

None.

List of Available Documents

- *Water Conservation Program Report*. Imperial Irrigation District, April 2000.
- *IID Water Conservation and Transfer Project Final Environmental Impact Report/Environmental Impact Statement*. Imperial Irrigation District, June 2002
- *Amended and Restated Addendum to EIR/EIS for the IID Water Conservation and Transfer Project*. Imperial Irrigation District, September 2003.
- *Draft Habitat Conservation Plan*. Imperial Irrigation District, July 2007.
- *Environmental Assessment Summary System Automation Project for the Vail Canal*. Imperial Irrigation District, December 2007.
- *Lateral Heading Automation Program*. Imperial Irrigation District, December 2006.
- *Vail Canal Lateral Automation Project*. Imperial Irrigation District, November 2007.
- *Vail Canal Lateral Automation Project –Comprehensive Public Participation Report*. Imperial Irrigation District, January 2008.