




Annual Monitoring Report for the Mitigation Monitoring Program



FINAL

November 2001

Los Angeles  Department of Water and Power



MWH
MONTGOMERY WATSON HARZA

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LIST OF ACRONYMS

CFS	Cubic Feet per Second
E/M	Enhancement/Mitigation
EIR	Environmental Impact Report
ICWD	Inyo County Water Department
IMACA	Inyo Mono Advocates for Community Action
LADWP	Los Angeles Department of Water and Power
LORP	Lower Owens River Project
MOU	Memorandum of Understanding
SAIC	Science Applications International Corporation

Executive Summary

Executive Summary

This Annual Monitoring Report has been prepared in cooperation with the Los Angeles Department of Water and Power (LADWP) to summarize the status of projects in the Owens Valley per the Mitigation Monitoring Program (1991). The Board of Water and Power Commissioners adopted this monitoring program in 1991 as part of the Environmental Impact Report on *Water from the Owens Valley to Supply the Second Los Angeles Aqueduct* (EIR).

Water management projects, subsequently termed Enhancement and Mitigation (E/M) projects, were jointly agreed upon by the County of Inyo and the City of Los Angeles prior to preparing the EIR. The purpose of these projects was to supply water to various locations in the Owens Valley for recreation and mitigation of environmental effects related to increased water exports from the Owens Valley resulting from the Second Los Angeles Aqueduct.

Ultimately, the E/M projects along with several other environmental projects were identified as mitigation for impacts described in the EIR and noted subsequently in the Mitigation Monitoring Program. The Mitigation Monitoring Program requires that an annual report be submitted to the Los Angeles Board of Water and Power Commissioners.

The EIR and Mitigation Monitoring Program identify 26 significant impacts and certain mitigation efforts to reduce these impacts to less than significant. The first 13 impacts were the result of operations during the period 1970 to 1990. Some of these impacts have multiple E/M Projects associated with them. There are a total of 36 individual mitigation projects that either have been or are being implemented to mitigate for these impacts. The remainder of the impacts 14 through 26 are associated with the period 1990 – onward. For the most part, these impacts have not yet occurred; therefore, projects to mitigate these future impacts have not yet been implemented.

E/M projects associated with Impact Nos. 1-13 of the Mitigation Monitoring Program, including current water allotments, are summarized in **Table ES-1**.

Table ES-1
Summary of Mitigation Monitoring Program Project Water Requirements

Mitigation Monitoring Program Project	Chapter/ Figure Number	Impact No. (MMP, 1991)	Current Water Allotment (acre- feet/year)	Year Started
Steward Ranch	1-2	1	NA	1990
Salt Cedar Eradication Control Program	Valley	2	NA	1997
Independence Woodlot	1-4	3	200	1987
Independence Springfield	1-4	3, 13	1,485	1988
Independence East Side Regreening	1-4	3	NA	NYI
Shepherd Creek Alfalfa Field	1-4	3, 13	990	1986
Shepherd Creek Potential	1-4	3	NA	NA
Big Pine Northeast Regreening	1-2	3	NA	NYI
80-Acre Revegetation Project	1-3	3	NA	1998
300-Acre Revegetation Project Near Five Bridges	1-1	4	NA	1988
60-Acre Revegetation Project in the Symmes-Shepherd Wellfield	1-4	5	NA	1998
Fish Springs Fish Hatchery	1-2	6	NA	1949
Blackrock Springs Fish Hatchery	1-3	6	NA	1949
One-Acre Pond Adjacent to Well W349AQ	1-3	6	NA	1983
Hines Spring	1-3	6	NA	NYI
Little Blackrock Springs	1-3	6	NA	1970's
Reinhackle Spring	1-4	6	NA	See notes
Lower Owens River Project (See Note LORP)	1-6	6, 8, 11, 12	13,000	1986
Lone Pine East Side Regreening	1-5	7	50	1990
Lone Pine West Side Regreening	1-5	7	32	1990
Lone Pine Woodlot	1-5	7	120	1987
Richards Field	1-5	7	860	1987
Van Norman Field	1-5	7	480	1987
Independence Pasturelands/Native Pastures	1-4	7, 13	1,825	1987
120-Acre Revegetation Project Near Bishop	1-1	7	NA	1998
Irrigated Lands in Owens Valley including Cartago and Olancho	Valley	7	56,041	1982
Farmer's Pond	1-1	9	NA	1970's
McNally Ponds and Native Pasturelands	1-1	9	2,400	1986
Laws/Poleta Native Pasturelands	1-1	9	660	1988
Laws Historical Museum Pasturelands	1-1	9	95	1990
140-Acre Revegetation Project Near Laws	1-1	9	NA	1998
Big Pine Ditch or Alternate Project	1-2	10	NA	NYI
160-Acre Revegetation Project Near Big Pine	1-2	10	NA	1998
20-Acre Revegetation Project Near Big Pine	1-2	10	NA	NYI
Klondike Lake	1-2	12	2,500	1986
40-Acre Revegetation Project East of Independence (part of Independence Springfield)	1-4	13	NA	NYI

Notes:

NA – Not applicable or not available

NYI – Not yet implemented

There is no start date associated with the Reinhackle Spring project. Rather, the site has been managed conservatively over time.

LORP – The E/M project was implemented in 1986 with a total water allocation of 18,000 acre-feet this allotment was reduced to 13,000 acre-feet in the early 1990's as result of drought conditions and the increasing deficit in the amount of E/M water pumped compared to E/M water supplied. The larger compensatory mitigation project is scheduled for implementation in 2003 and extends from the Independence area to the Owens Lake Delta.

Montgomery Watson Harza in conjunction with Los Angeles Department Of Water and Power (LADWP) staff have gathered information on each of the projects identified in the Mitigation Monitoring Program. In addition, photo points were established at many of the project sites to document site conditions and progress of mitigation efforts. The following types of information are presented in this report for the mitigation projects:

- Project Description,
- Site Location Map,
- Goals and Strategy,
- Water Allotment and Source,
- Estimate of Completion
- Acres Mitigated,
- CEQA Compliance,
- Annual Water Use,
- Future Project Plans, and
- Problems.

SUMMARY OF PROJECTS

To summarize, there are thirty-six projects identified as mitigation for the thirteen impacts identified from 1970 to 1990. These projects can be broken down into 3 categories as to degree of implementation.

Fully Implemented

Twenty-two of these projects have been completely implemented and are being monitored.

Partially Implemented

Nine of these projects have been partial implemented as follows:

- Eight Revegetation Sites - The revegetation projects are in various states of implementation. Currently the majority of the sites have been fenced and baseline vegetation transects have been completed. Portions of two of the sites are being used as an experiment to evaluate different methods of revegetation that can be implemented economically on a large scale. Science Applications International Corporation is conducting this work. Knowledge gained from this work will be used to implement the remaining revegetation efforts.
- Laws Historic Museum Pasturelands - The Laws Museum pastureland has been partially implemented, but due to the difficulties with irrigating these pastures and health problems with the lessee it has not been fully implemented. LADWP will be working with the lessee to fully implement this project.

Not Implemented

There are five projects that have not been implemented and they consist of the following:

- Big Pine and Independence Regreening Projects - Both of these projects lack a reliable water supply and have been the topic of reconsideration by the communities as to the form of mitigation that should be provided. LADWP staff will be performing a comprehensive evaluation of these two projects and will provide recommendations as to how and when these projects will be implemented.
- Hines Springs Project – This project was also identified in the 1997 *Memorandum of Understanding Between the City of Los Angeles Department of Water and Power, the County of Inyo, the California Department of Fish and Game, the California State Lands Commission, the Sierra Club, and the Owens Valley Committee* (MOU) as an area that should be considered for mitigation above what was called for in the EIR. Ecosystems Science Inc. has conducted an evaluation of this site and made recommendations to the MOU parties. Upon agreement by the MOU parties on the scope of this project, the appropriate environmental documentation will be prepared and the project implemented.
- Big Pine Ditch Project - The viability of this project is dependent on the development of a replacement supply of water west of Big Pine. At the present time a replacement well for the Big Pine domestic water supply is being installed. This replacement well will be evaluated to determine if there is additional capacity that can be used for this project.
- Lower Owens River Project – The smaller E/M project was implemented in 1986. The environmental documentation and design for the larger scale compensatory mitigation project, noted in the MOU, are underway and scheduled to be implemented in 2003.

WATER USE AND SUPPLY SUMMARY

Per Section X of the 1991 *Agreement between the County of Inyo and the City of Los Angeles and its Department of Water and Power on a Long Term Groundwater Management Plan for Owens Valley and Inyo County* (Agreement), E/M projects are to be supplied by E/M wells as needed. In 1991, due to inadequate E/M well water supply (wells in OFF status), LADWP began supplementing the E/M project water use shortfalls from E/M wells with the Los Angeles Aqueduct supply. This supplementation was done with the understanding that the supplement would be a small amount of water; however upon comparing E/M well production and actual E/M project water use for Runoff Years 1985 through 2000 the cumulative shortfall of E/M well production since 1985 is approximately 93,040 acre-feet. To make up for this shortfall LADWP has provided this amount of water from the Los Angeles Aqueduct to supplement E/M well production and associated E/M project water use since Runoff Year 1985. LADWP never anticipated that the shortfall would amount to over 90,000 acre-feet of water in approximately 15 years. Additional details on this imbalance are provided on page 1-14 of Section 1 and in Table 1-2 of the main report.

Section 1

Introduction

Section 1

Introduction

This Annual Monitoring Report has been prepared for the Los Angeles Department of Water and Power (LADWP) to summarize the status of projects in the Owens Valley per the *Mitigation Monitoring Program* (1991), which is provided as **Appendix A**.

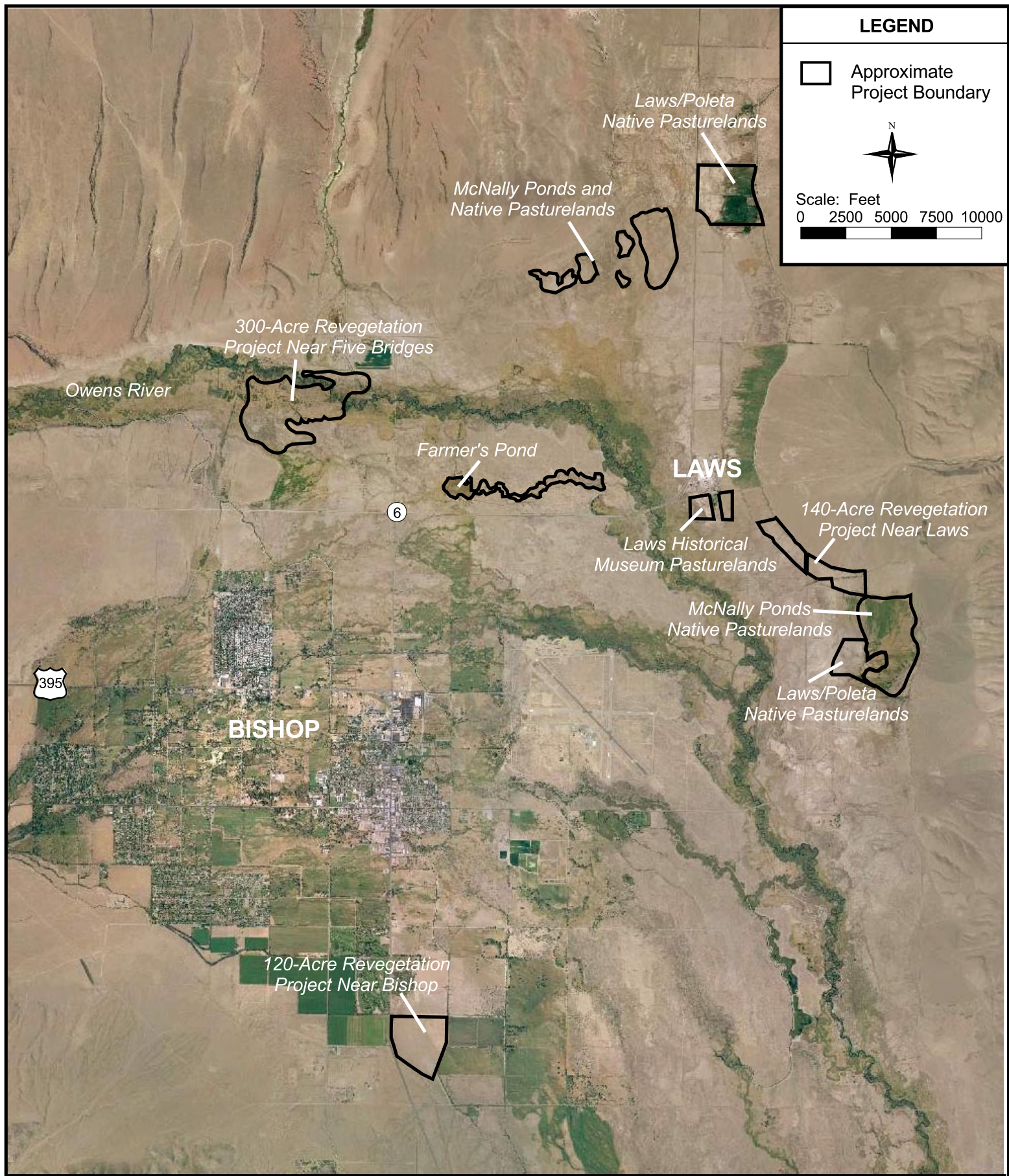
Water management projects, subsequently termed E/M projects, were discussed in Section VI of the Owens Valley Water Management Report prepared by the County of Inyo (December 1981). In this report, Inyo County's desire for LADWP to supply water to various locations in the Owens Valley for recreation and mitigation of environmental effects related to water export were documented.

Subsequently, E/M projects were identified in Section 11.0 of the Stipulation and Order Case No. 12908 (Stipulation and Order, 1985). Per the 1985 Stipulation and Order, a preliminary list of E/M projects was developed for evaluation and implementation.

Ultimately, E/M projects designed to mitigate impacts were identified and described in the *Environmental Impact Report on Water from the Owens Valley to Supply the Second Los Angeles Aqueduct* (EIR, 1991) and noted subsequently in the *Mitigation Monitoring Program* (1991). The Mitigation Monitoring Program requires that an annual report be submitted to the Los Angeles Board of Water and Power Commissioners.

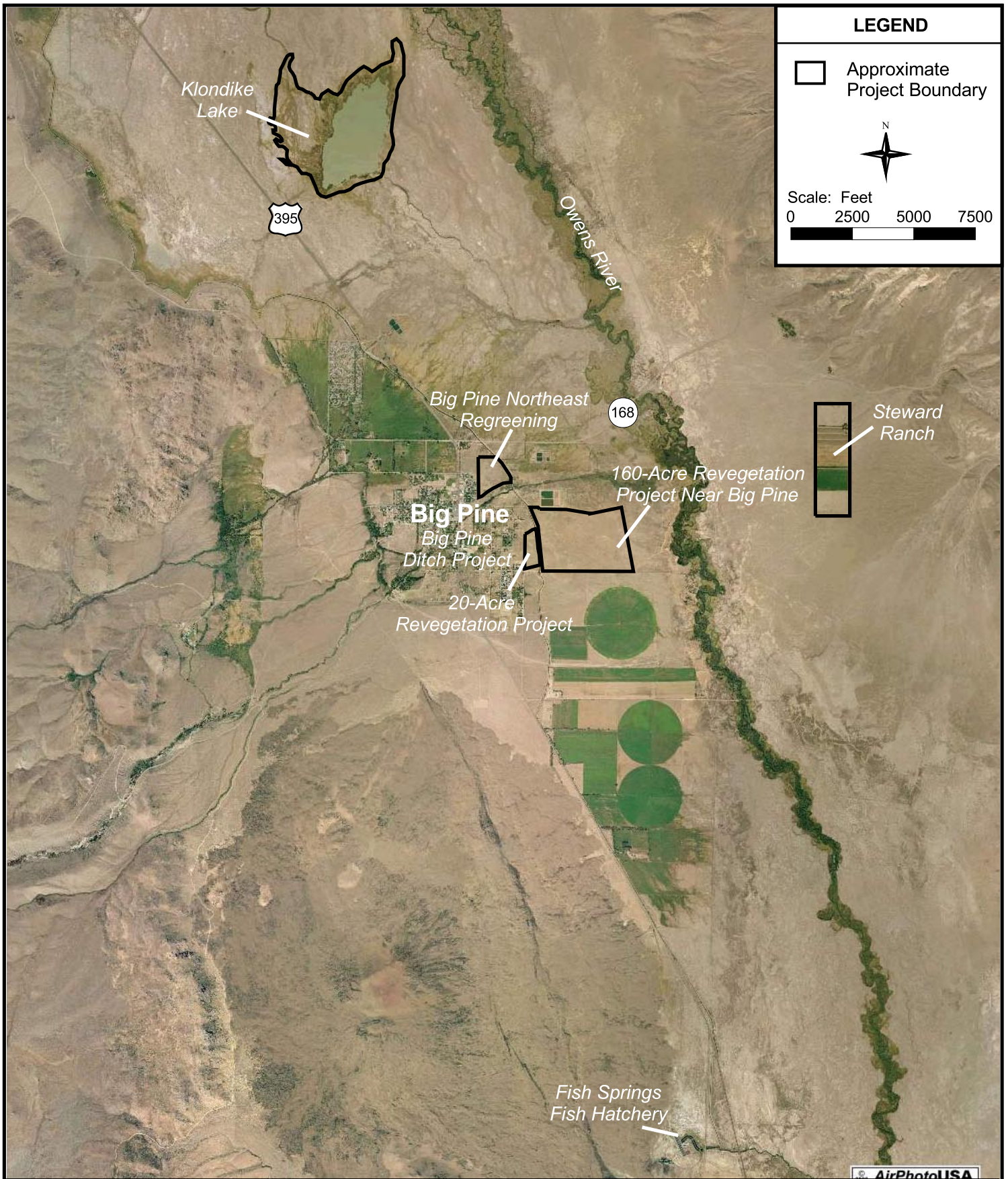
The EIR and Mitigation Monitoring Program identify 26 significant impacts and certain mitigation efforts to reduce these impacts to less than significant. Impact Nos. 1-13 were identified for the period of 1970 to 1990. There are a host of individual projects that have been implemented to mitigate these impacts. Impact Nos. 14-26 are associated with the period 1990 – onward. For the most part, these impacts have not yet occurred; therefore, projects to mitigate these future impacts have not yet been implemented.

The focus of this report is on the individual projects throughout the Owens Valley. Vicinity maps showing the locations of the projects discussed in this report and identified in the EIR (1991) and Mitigation Monitoring Program (1991) are presented in **Figure 1-1** through **Figure 1-6**. In general, these projects are irrigation, recreation, fish and wildlife projects, of which the purpose is to enhance the Owens Valley environment and/or to lessen/mitigate adverse environmental changes in the Owens Valley that might be attributable to past water management practices (EIR, 1991).



ANNUAL MONITORING REPORT

VICINITY MAP SHOWING THE LOCATION OF E/M PROJECTS IN THE LAWS/BISHOP AREA

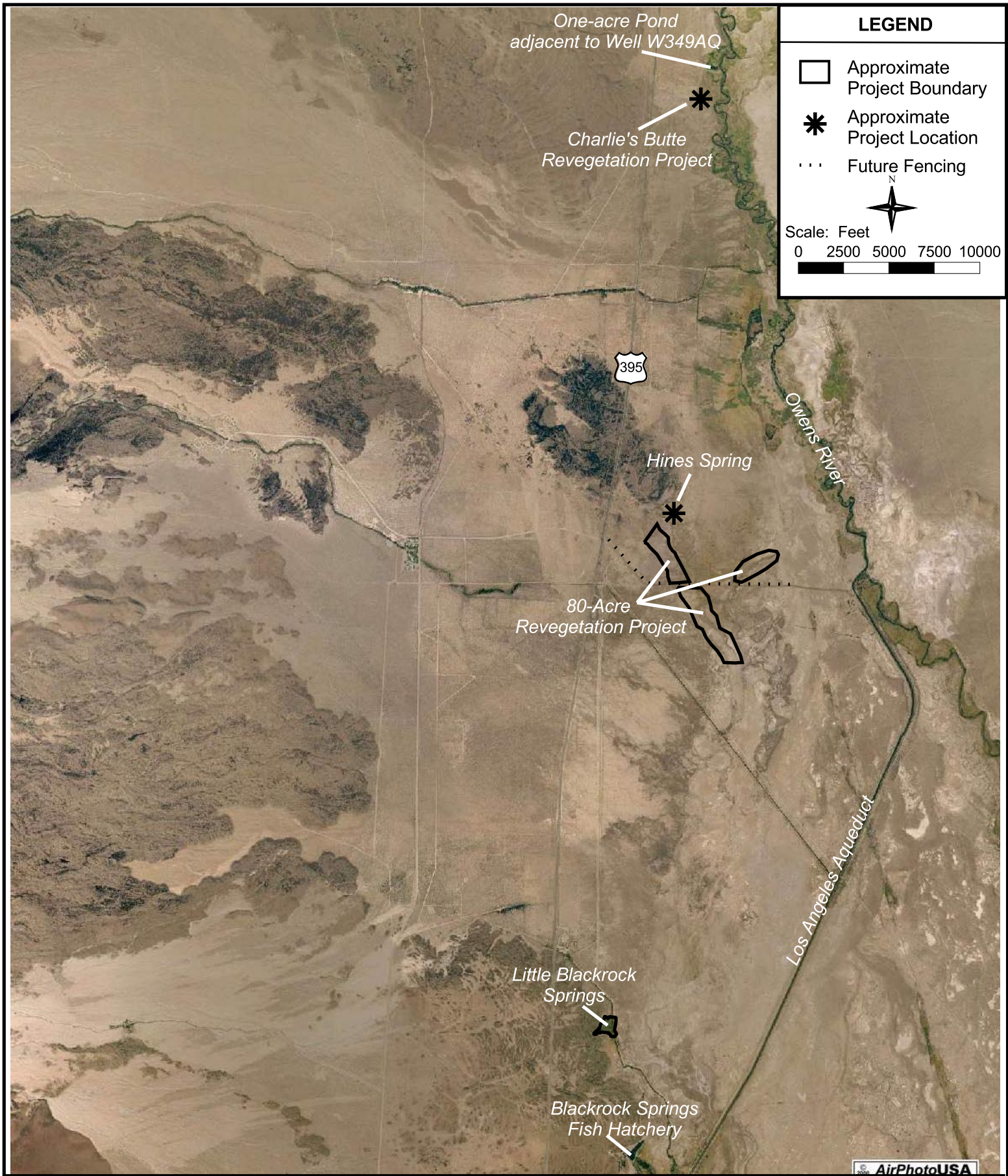


ANNUAL MONITORING REPORT

VICINITY MAP SHOWING THE LOCATION OF E/M PROJECTS IN THE BIG PINE AREA

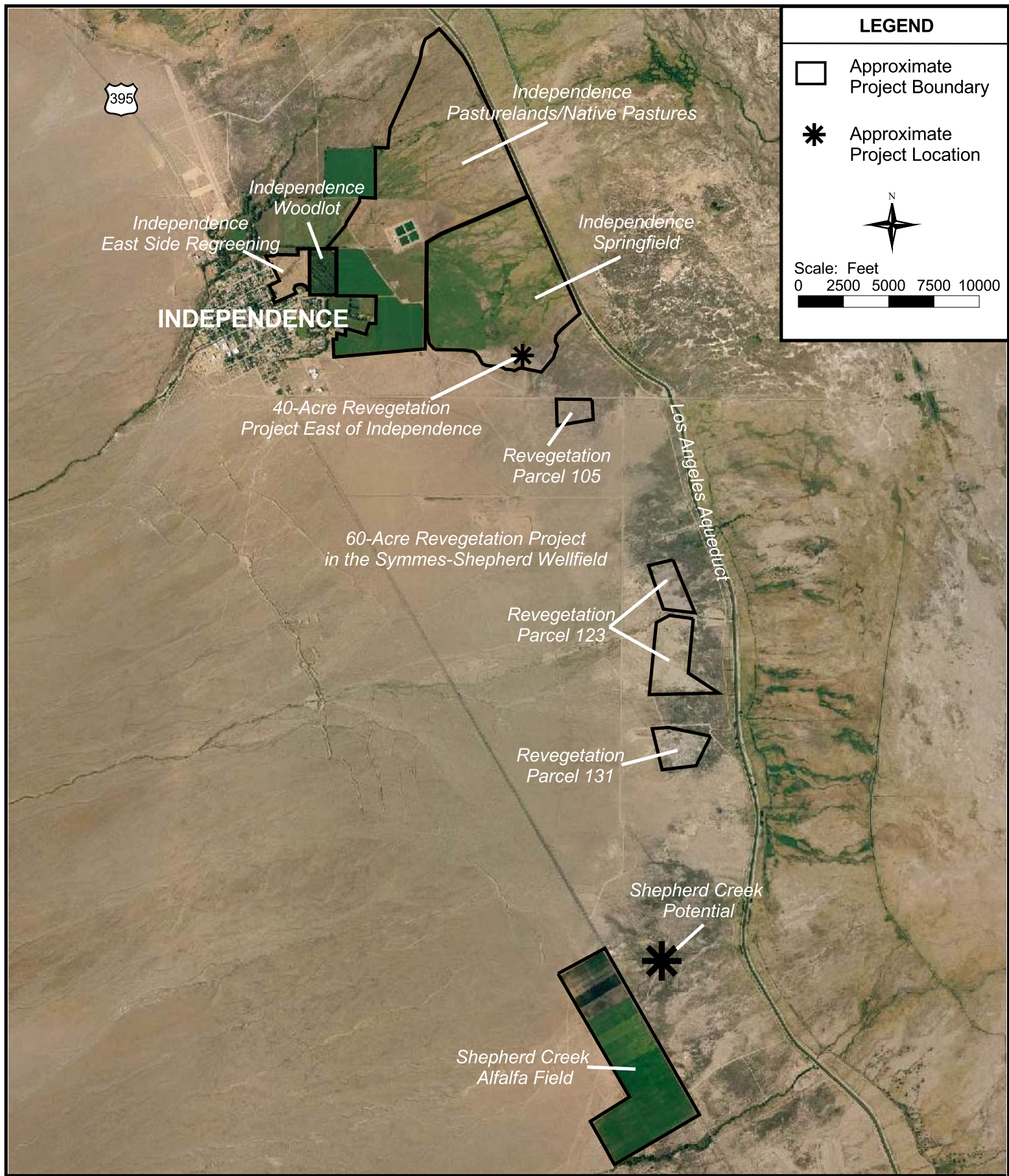
DATE: DECEMBER 2001

FIGURE 1-2



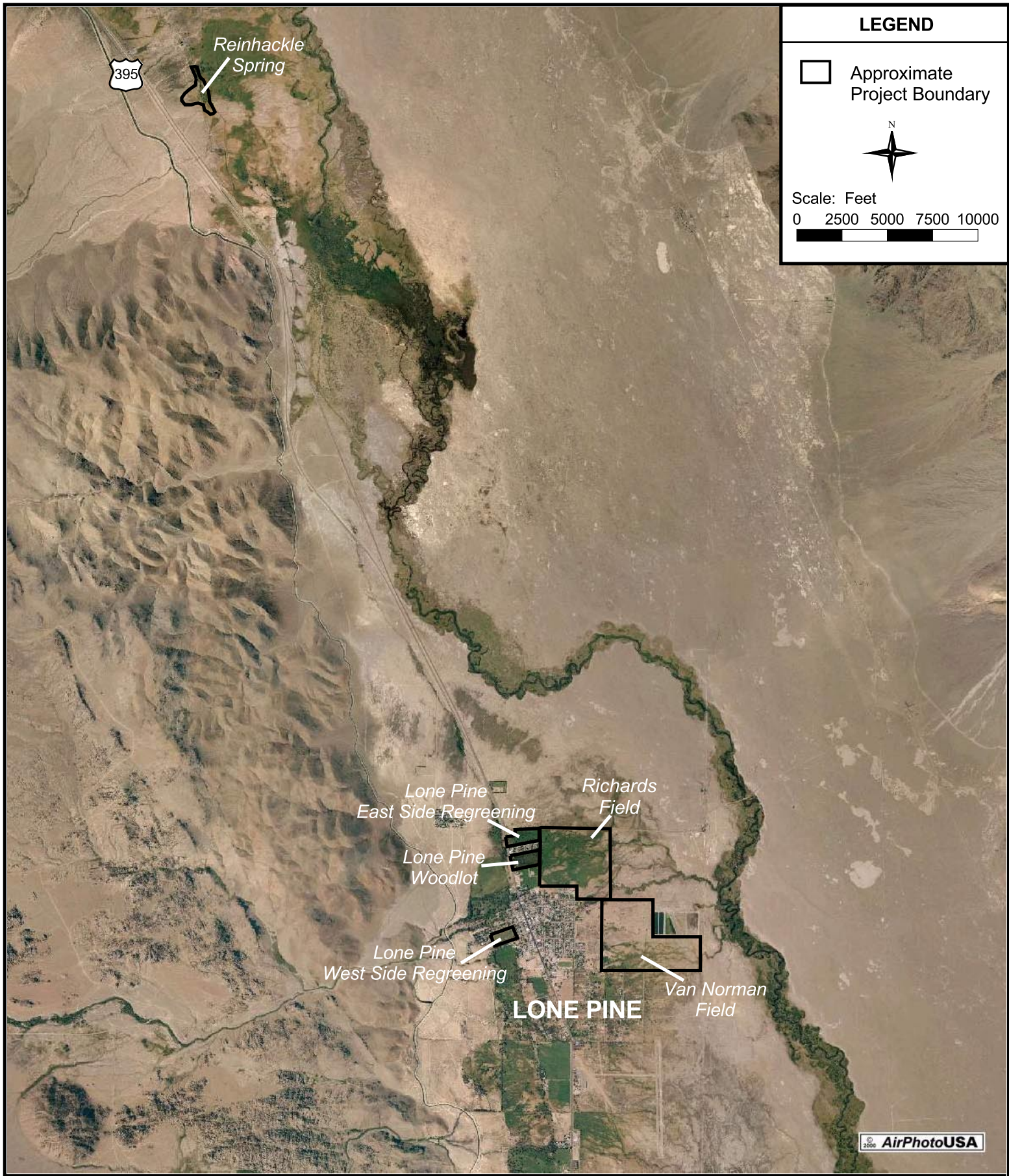
ANNUAL MONITORING REPORT

VICINITY MAP SHOWING THE LOCATION OF E/M PROJECTS IN THE BLACKROCK AREA



ANNUAL MONITORING REPORT

VICINITY MAP SHOWING THE LOCATION OF E/M PROJECTS IN THE INDEPENDENCE AREA

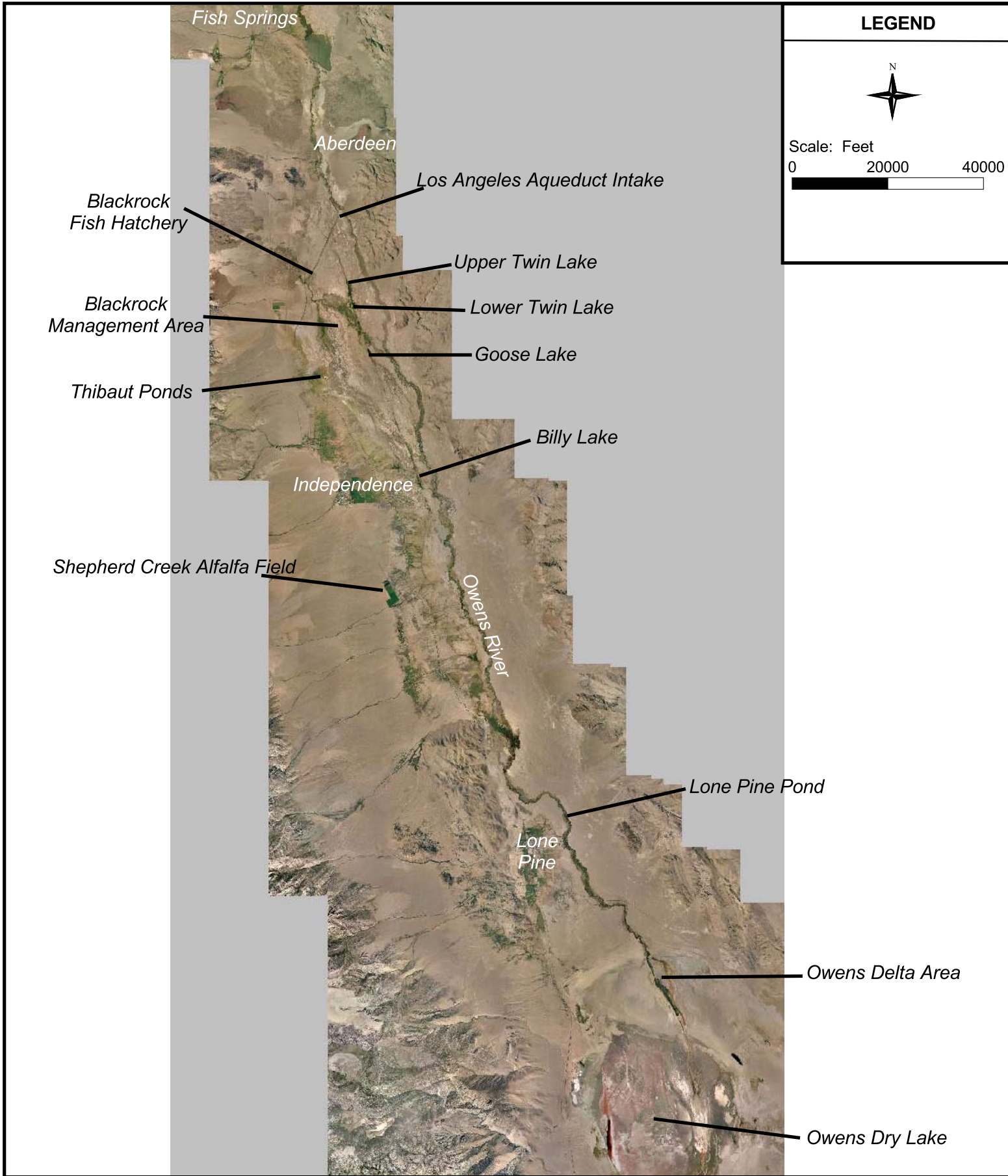


ANNUAL MONITORING REPORT

VICINITY MAP SHOWING THE LOCATION OF E/M PROJECTS IN THE LONE PINE AREA

DATE: DECEMBER 2001

FIGURE 1-5



ANNUAL MONITORING REPORT

VICINITY MAP FOR THE

LOWER OWENS RIVER PROJECT

Section X of the Agreement between the County of Inyo and the City of Los Angeles and its Department of Water and Power on a Long-Term Groundwater Management Plan for Owens Valley and Inyo County, hereby termed Inyo/LA Water Agreement (1991), provides that all E/M projects implemented between 1984 and 1990 will continue unless the Standing Committee agrees to modify or discontinue a project. Periodic evaluations of the projects can be made by the Technical Group. Inyo County Water Department (ICWD) performed the most recent evaluation and the results of the evaluation are summarized in a memorandum dated May 17, 1996. The purpose of this report is to present an evaluation of projects from 1997 when the Third District Court of Appeals discharged the writ and the Agreement went into effect to present.

E/M projects in the context of the Mitigation Monitoring Program (1991) are summarized in **Table 1-1**.

Table 1-1
Summary of E/M Projects per the Mitigation Monitoring Program (1991)

Impact (MMP, 1991)	Mitigation (MMP, 1991)	E/M Projects	Status/Comments
1. Pumping in Big Pine area lowered water in wells on Steward Ranch resulting in adverse economic effect.	1. The Ranch owner has been fully compensated on an annual basis for reduced alfalfa production and for future costs of re-establishing any lost alfalfa. The DWP has made an offer to permanently mitigate the groundwater levels and adjust power costs (see discussion on Pages 9-74 to 9-77 of the Draft EIR).	Steward Ranch	The mitigation efforts are complete, with the exception of pumping cost mitigation. The LADWP currently compensates the property owner for the added power costs of pumping water from a greater depth than that which existed historically.
2. Water spreading in area of dikes east of Independence fostered conditions favorable to the spread of saltcedar (Tamarisk).	2. A saltcedar eradication and control program will be implemented as described in Chapter 5, Pages 5-23 and 5-24, of the Draft EIR.	Salt Cedar Eradication Control Program	ICWD is conducting this program and estimates that the project is 10 percent complete. Eradication of Owens River Saltcedar populations from Tinemaha Reservoir to Goose Lake has been achieved. Meanwhile, eradication of outlying Saltcedar populations throughout Owens Valley is ongoing. As of 2001, about 1,500 acres have been mitigated and approximately \$850,000 has been provided to ICWD per the Inyo/LA Water Agreement (1991).
3. Groundwater pumping has caused water table fluctuations leading to die-off of approximately 655 acres of groundwater dependent vegetation.	3a. Approximately 317 acres near Independence have been revegetated as part of the Independence Springfield and Woodlot E/M Projects.	3a. Independence Springfield	280 acres have been mitigated through direct irrigation and subsurface irrigation flow. 40 acres have been designated as the 40-Acre Revegetation Project East of Independence.
		3a. Independence Woodlot	Project implementation for the Independence Woodlot is complete. The 20-acre woodlot continues to provide fuel wood and green vegetation, while mitigating blowing dust.
	3b. Approximately 198 acres have been revegetated with alfalfa under the Shepherd Creek E/M Project.	3b. Shepherd Creek Alfalfa Field	The Shepherd Creek Alfalfa Field project is 100 percent complete. Two hundred acres have been mitigated and developed as alfalfa fields.
	3c. Shepherd Creek Project may be expanded to 60 acres on opposite side of U.S. Highway 395 if native vegetation does not naturally increase in density.	3c. Shepherd Creek Potential	The project site appears to be revegetating naturally and will continue to be monitored to assess the natural revegetation of the area.
	3d. Revegetation projects will be initiated on 30 acres near Independence and on 30 acres near Big Pine under Town Regreening E/M Projects.	3d. Independence East Side Regreening	This 30-acre mitigation project has not yet been implemented. Three options (irrigation, revegetation, and construction of a sports complex) are being considered for this area.
		3d. Big Pine Northeast Regreening	The water source for this project hinges on the outcome of the Big Pine Ditch Project. Until that project proceeds, implementation of this regreening project cannot occur.
	3e. An additional 80 acres will be revegetated at sites to be determined by DWP and Inyo County Water Department.	3e. 80-Acre Revegetation Project	This project has been initiated and is ongoing. At the Charlie's Butte site, 100 Alkali Sacaton plants have been planted. One site on Intake Rd. site is fenced and was treated with a controlled burn.
4. Approximately 300 acres of vegetation near Five Bridges impacted by operation of 2 E/M wells.	4. Water has been spread over affected area since 1988. DWP and Inyo County have developed a revegetation plan.	300-Acre Revegetation Project Near Five Bridges	The project site has a current weed control plan that must be maintained and completed before restoration efforts continue. The ICWD Revegetation Plan (1999) estimates that 80 percent of the project site has been mitigated.
5. Pumping has impacted approximately 60 acres of vegetation in Symmes-Shepherd wellfield.	5. A revegetation program will be implemented.	60-Acre Revegetation Project in the Symmes-Shepherd Wellfield	The project is ongoing and included in the ICWD Revegetation Plan (1999). All three parcels have been fenced.

Table 1-1
Summary of E/M Projects per the Mitigation Monitoring Program (1991)

Impact (MMP, 1991)	Mitigation (MMP, 1991)	E/M Projects	Status/Comments
6. Pumping has reduced flows and impacted vegetation at Fish Springs, Big and Little Seeley Springs, Hines Springs, Big and Little Blackrock Springs, and Reinhackle Spring.	6a. Fish hatcheries serve as mitigation by producing fish for all of Inyo County at Fish Springs and Big Blackrock Springs.	6a. Fish Springs Fish Hatchery	This project is complete and water will continue to be supplied annually to the hatchery by three wells: Well W330AQ, W332AQ, and Well W409AQ. (Note: Well W409AQ acts as a backup well.)
		6a. Blackrock Fish Hatchery	This project is complete and water will continue to be supplied annually to the hatchery. Water is supplied primarily from Well W351AQ, but Well W356AQ is also used to supply water to the hatchery.
	6b. Water discharged from Well No. 349 at Big and Little Seeley Springs provides a pond for birds and maintains riparian vegetation.	6b. One-Acre Pond Adjacent to Well W349AQ	Project implementation is complete. Water pumped from Well W349AQ will continue to be used to supply the pond.
	6c. Water will be provided to 1 or 2 acres of ponds at Hines Spring as a research project to re-establish aquatic habitat and riparian and marshland habitats.	6c. Hines Spring	The MOU (1997) parties review of the alternatives for the 1,600 acre-feet/year of water must be completed to allow the project to proceed.
	6d. DWP will continue to supply water from Division Creek to former pond site at Little Blackrock Spring.	6d. Little Blackrock Springs	Project implementation is complete, and management of the project continues as in previous years. Water is supplied to the project from a diversion of the Division Creek/Goodale Bypass Ditch.
	6e. Groundwater pumping in Georges Creek area will be managed to avoid any reduction in flows at Reinhackle Springs.	6e. Reinhackle Spring	Project design is complete, and spring flow monitoring is ongoing. Groundwater pumping will be managed to avoid reduced flow at Reinhackle Spring to the degree that decreases or changes occur to riparian vegetation.
	6f. Lower Owens River Project provides mitigation of compensatory nature for springs that do not receive on-site mitigation. Note: For further discussion, see Pages 10-59 through 10-62 of the Draft EIR. A more detailed discussion of the Lower Owens River Project is found in Appendix C-2, Pages C2-1 to C2-3, Volume III, of the Final EIR.	6f. Lower Owens River Project	Finalization of the EIR/EIS is anticipated by November 2002 with initial releases to the river occurring by approximately 2003. Activities such as installation of gauging stations, removal of beaver dams, modification of spillgates, and land management changes are anticipated to begin by Spring 2003.
7. Approximately 1,080 acres of abandoned agricultural land have not successfully revegetated and have become a source of blowing dust.	7a. Approximately 942 acres have been revegetated by E/M projects implemented by DWP and Inyo County since 1985. These projects are described in Chapter 5 of the Draft EIR, and Appendix E-4, Pages E-17 through E-25, Volume II, of the Draft EIR.	7a. Lone Pine Woodlot	The project implementation is complete, and the site continues to be operated and irrigated. The project is 12-acres and provides fuel wood.
		7a. Richards Field	The project implementation is complete, and the irrigation and management practice will continue as they exist today. 160 acres are irrigated as part of the Richards Field project.
		7a. Van Norman Field	Project implementation is complete, and the project will continue as currently managed. The Van Norman Field project consists of 160 acres of irrigated pasture.
		7a. Independence Pasturelands/Native Pastures	Project implementation is complete, and project management and irrigation will continue as currently managed. Water distribution methods should be evaluated to improve uniform distribution of water.
	7b. Approximately 18 acres near Lone Pine have been converted to irrigated pasture under the Lone Pine Regreening E/M Project. These areas are described in Chapter 5 of the Draft EIR.	7b. Lone Pine East Side Regreening	The project implementation is complete, and the site will continue as currently managed. The project is comprised of 11 acres.
		7b. Lone Pine West Side Regreening	The project implementation is complete, and the site will continue as currently managed. All eight acres of the project site have been mitigated.
	7c. Near Bishop, 120 acres will be revegetated with native vegetation (not irrigated pasture) by a process to be determined by the DWP and Inyo County. These lands are shown on Figures 10-8A through 10-8L, on Pages 10-34 through 10-45 of the Draft EIR.	7c. 120-Acre Revegetation Project Near Bishop	The project is initiated and ongoing with site fencing in place. There is potential to create a native plant seed farm on this site.
	7d. Irrigation will continue on lands at Olancha and Cartago that have been irrigated since 1981-1982.	7d. Irrigated Lands in Owens Valley including Cartago and Olancha	The project is completed and irrigation is ongoing. Water for irrigated lands in the Owens Valley come from a variety of wells, streams, ditches, canals, and the Owens River.

Table 1-1
Summary of E/M Projects per the Mitigation Monitoring Program (1991)

Impact (MMP, 1991)	Mitigation (MMP, 1991)	E/M Projects	Status/Comments
8. Meadow and riparian vegetation maintained by tailwater from formerly irrigated lands have been impacted.	8. These lands will be mitigated in the form of compensatory mitigation of meadow vegetation by the Lower Owens River Project.	Lower Owens River Project	Finalization of the EIR/EIS is anticipated by November 2002 with initial releases to the river occurring by approximately 2003. Activities such as installation of gauging stations, removal of beaver dams, modification of spillgates, and land management changes are anticipated to begin by Spring 2003.
9. Adverse vegetation change has occurred in the Laws area due to a combination of abandoned agriculture, groundwater pumping, water spreading, grazing, and drought.	9a. Approximately 140 acres will be revegetated in the Laws area. Locations are shown on Figures 10-8A and 10-8B, on Pages 10-34 and 10-35 of the Draft EIR.	9a. 140-Acre Revegetation Project Near Laws	Project implementation has been initiated and is ongoing with site fencing in place. Ten acres of the project site revegetation effort is being conducted by SAIC. The SAIC project is evaluating irrigated revegetation methodologies. Revegetation test plots will begin in 2001.
	9b. The Farmer's Pond, an environmental project developed by the DWP in the 1970's, will continue. In addition, DWP and Inyo County have implemented the Laws Museum, Laws-Poleta Pastureland, and McNally Ponds E/M Projects, totalling approximately 541 acres of pastureland (see project location maps in Appendix E-4, Volume II, of the Draft EIR).	9b. Farmer's Pond	Farmer's Pond was developed by the Los Angeles Department of Water and Power in the 1970s and consists of filling one pond during the waterfowl-hunting season.
		9b. McNally Ponds and Native Pasturelands	The project implementation is complete and the project continues to function under current management systems. This project has enhanced and mitigated 300 acres.
		9b. Laws/Poleta Native Pasturelands	The implementation of the project is complete, and the project continues to be irrigated. This project has mitigated 220 acres.
		9b. Laws Historical Museum Pasturelands	The pasture east of the museum has in the past been irrigated, whereas the pasture west of the museum has never been irrigated. Diversion structures have been installed in the east pasture, and irrigation was intermittent during the 1992 to 1998 period.
10. Water management practices have had adverse impact on vegetation in a portion of the Big Pine Wellfield.	9c. Groundwater pumping has been reduced in the area where it is suspected to have impacted vegetation. If impacts are confirmed, they will be mitigated under the Agreement.		
	10a. Approximately 160 acres near Big Pine will be revegetated (see location maps 10-8E through 10-8G, on Pages 10-38 to 10-40 in the Draft EIR).	10a. 160-Acre Revegetation Project Near Big Pine	The project implementation is in progress with 209 acres enclosed within a fence and test plot seeding scheduled for the winter of 2001. The future project plan is to evaluate the test plots after five years and later expand the most promising revegetation methods to a larger scale.
	10b. Approximately 30 acres will be revegetated with irrigated pasture northeast of Big Pine, and the Big Pine Ditch Project described on Page 5-23 of the Draft EIR will be implemented. The area will also be mitigated by the Valley-wide mitigation under the Agreement.	10b. Big Pine Ditch	The public has expressed an interest in several alternative uses for the water slated for the Big Pine Ditch system. However, it is anticipated that water supply to the new ditch system will commence in April 2002. At present, the exact routes of the proposed ditch are under development.
	10c. Approximately 20 acres east of Big Pine, which are not part of an E/M project, will be evaluated as a potential E/M project. This area is shown on Figure 10-8E, on Page 10-38 of the Draft EIR.	10c. 20-Acre Revegetation Project	The project has not yet been implemented. The site is being considered for irrigation, but if permanent irrigation proves infeasible, then the goal of the project will be to revegetate the site with species found in surrounding areas. The live cover goal for the site is 17 percent and should include ten perennial species.
11. Loss and reduction of marsh habitat in the Thibaut/Sawmill area has occurred due to surface water diversion and pumping.	11. Mitigation will be, in part, in the form of compensatory mitigation by the Lower Owens River Project. Portions of this area are mitigated directly. Changes due to pumping during drought will be mitigated under the Agreement.	Lower Owens River Project	Finalization of the EIR/EIS is anticipated by November 2002 with initial releases to the river occurring by approximately 2003. Activities such as installation of gauging stations, removal of beaver dams, modification of spillgates, and land management changes are anticipated to begin by Spring 2003.

Table 1-1
Summary of E/M Projects per the Mitigation Monitoring Program (1991)

Impact (MMP, 1991)	Mitigation (MMP, 1991)	E/M Projects	Status/Comments
12. Vegetation changes described in Chapter 10 of the Draft EIR are presumed to have had significant adverse impacts on certain wildlife species entirely dependent upon the impacted habitat.	12. Water management to create wet habitats will be used as mitigation (e.g., Lower Owens River Project, Klondike Lake E/M Project, other irrigation and/or revegetation projects previously described).	Lower Owens River Project	Finalization of the EIR/EIS is anticipated by November 2002 with initial releases to the river occurring by approximately 2003. Activities such as installation of gauging stations, removal of beaver dams, modification of spillgates, and land management changes are anticipated to begin by Spring 2003.
		Klondike Lake	The Klondike Lake Project is complete. Given present-day waste and litter concerns, it is suggested that the issue of improvements, such as signage, trash cans, restroom facilities and so forth, be revisited and reevaluated.
13. Pumping during the period of 1970-1990 has caused impacts on air quality due to vegetation losses.	13a. Approximately 730 acres have been revegetated as native pasture or alfalfa as part of the Independence Pasturelands and Springfield E/M Projects.	13a. Independence Springfield	280 acres have been mitigated through direct irrigation and subsurface irrigation flow. 40 acres have been designated as the 40-Acre Revegetation Project East of Independence.
		13a. Independence Pasturelands/Native Pastures	Project implementation is complete, and project management and irrigation will continue as currently managed. Water distribution methods should be evaluated to improve uniform distribution of water.
		13a. 80-Acre Revegetation Project	This project has been initiated and is ongoing. At the Charlie's Butte site, 100 Alkali Sacaton plants have been planted. One site on Intake Rd. site is fenced and was treated with a controlled burn.
	13b. Approximately 200 acres have been converted to alfalfa under the Shepherd Creek E/M Project.	13b. Shepherd Creek Alfalfa Field	The Shepherd Creek Alfalfa Field project is 100 percent complete. Two hundred acres have been mitigated and developed as alfalfa fields.
	13c. Approximately 40 acres east of Independence remain barren and will be revegetated with native pasture.	13c. 40-Acre Revegetation Project East of Independence (Part of Independence Springfield)	This project has not yet been implemented. Prior to project implementation, the project site should be evaluated to identify the best revegetation method given the site topography.
14. Increased pumping could result in elevated PM levels due to vegetation loss.	14. See mitigation #13 above. Also, the Agreement itself serves as mitigation to prevent future vegetation losses.	Impact Numbers 14-26 may occur from the period of 1990 onward. There are no projects associated with these impacts.	
15. Abandoned lands which were previously irrigated have resulted in adverse impacts to air quality.	15. As previously discussed, approximately 1,240 acres have been revegetated with native pasture or alfalfa.		
16. Air quality could be adversely affected by construction of recharge facilities.	16. All disturbed areas would be wetted during construction to minimize generation of fugitive dust.		
17. Construction of recharge areas could disturb subsurface archaeological sites.	17a. Any new sites would be surveyed for cultural resources prior to work on culverts, ditches, or trenches. Significance of any site will be determined through the use of subsurface testing as appropriate. 17b. DWP will comply with all provisions of the Archaeological and Historic Preservation Act of 1974 by evaluating and implementing mitigation measures as warranted, as well as complying with provisions of 36 CRF 800.11 for eligible property for the National Register.		
18. New wells in Big Pine area would lower water table and impact local private wells.	18. Monitoring will be conducted as provided in the Agreement and Green Book. Any adverse impacts will be mitigated as described in the Agreement and in Section 4 of the Green Book.		

Table 1-1
Summary of E/M Projects per the Mitigation Monitoring Program (1991)

Impact (MMP, 1991)	Mitigation (MMP, 1991)	E/M Projects	Status/Comments
19. Operation of two new wells in Laws area could cause flows in artesian wells to stop or diminish with associated impact to vegetation.	19. Wells will be monitored as described above. Groundwater pumping will be managed to avoid reduction in flows from artesian wells. If flows are affected, water will be supplied to avoid impacts to vegetation.		
20. Pumping of Big Pine Well BP-1 may impact Type D vegetation along the fault zone west of Big Pine.	20. As provided in the Agreement and the Green Book, existing and new monitoring sites would be utilized to monitor vegetation, water levels, and soil water. Groundwater pumping would be managed to avoid significant decreases and changes in vegetation.		
21. New wells in the Independence-Symmes-Bairs area may reduce or eliminate the flow from Reinhackle Spring and impact the vegetation dependent upon flow from the spring.	21. If it is projected that a decrease or change in vegetation dependent upon flow from Reinhackle Spring will result if flow from the spring stops or is reduced, DWP will reduce pumping to the degree necessary to restore the flow to avoid such decreases or changes, or provide water to avoid such decreases or changes.		
22. The construction of new recharge facilities could result in vegetation decrease.	22. Provisions of the Agreement will be met.		
23. Air quality could be adversely affected by the construction and maintainence of new wells.	23. All areas disturbed during construction of the new wells would be wetted during construction to minimize generation of fugitive dust.		
24. Construction of 15 new wells could disturb subsurface archaeological resources, with possible significant impact.	24a. Construction activity at the LP-1, BP-1, and BP-2 sites will be monitored. If subsurface prehistoric archaeological resource evidence is found, excavation or other construction activity in the area will cease and an archaeological consultant would be retained to evaluate findings in accordance with standard practice and applicable regulations. Data/artifact recover, if deemed appropriate, would be conducted during the period when construction activities are on hold. 24b. An appropriate representative of Native American Indian groups and the County Coroner would be informed and consulted if remains are discovered, as required by State Law.		
25. Increased pumping on the Bishop Cone could affect the rate of discharge from flowing wells.	25. Changes in flow rates from flowing wells will be monitored along with vegetation dependent upon flows from such wells. Groundwater pumping will be managed to avoid significant decreases or changes in vegetation dependent upon water from flowing wells. Water will be provided if necessary to avoid such decreases and changes in vegetation if flows from such wells are diminished due to groundwater pumping.		
26. Increased pumping on the Bishop Cone could adversely affect vegetation due to lowered water levels or reduced flows from flowing wells.	26. As provided in the Agreement, existing and new monitoring sites would be utilized to monitor vegetation, water levels, and soil water. Groundwater pumping would be managed to avoid significant decrease and change to vegetation and other significant effects on the environment.		

Table 1-2 compares E/M well production against actual E/M project water use for Runoff Years 1985 through 2000. Comparison of these two figures allows for quantification of the yearly imbalance and cumulative imbalance between them. As shown in this table, the City of Los Angeles has provided over 93,040 acre-feet of source water to supplement E/M well production and associated E/M project water use since Runoff Year 1985, and this supplement is derived from the Los Angeles Aqueduct supply.

Table 1-2
Summary of Annual E/M Well Production and Project Water Use

Runoff Year	E/M Well Production (acre-feet)	E/M Project Water Use (acre-feet)	E/M Water Use Imbalance in acre-feet Over/ (Under)	Cumulative E/M Pumping vs. E/M Project Water Use Imbalance in acre-feet Over/ (Under)
1985	0	109	(109)	(109)
1986	0	12,696	*	(109))
1987	29,510	29,360	150	41
1988	29,431	30,872	(1,441)	(1,400)
1989	22,563	23,830	(1,267)	(2,667)
1990	18,087	17,948	139	(2,528)
1991	15,790	20,517	(4,727)	(7,255)
1992	13,765	18,357	(4,592)	(11,847)
1993	8,991	19,310	(10,319)	(22,166))
1994	11,010	20,812	(9,802)	(31,968)
1995	12,572	22,914	(10,342)	(42,310)
1996	16,923	23,949	(7,026)	(49,336))
1997	14,154	21,500	(7,346)	(56,682)
1998	4,221	19,672	*	(56,682)
1999	4,333	24,450	(20,117)	(76,799)
2000	6,339	22,580	(16,241)	(93,040)
*excess surface water was available		TOTALS:	(93,040)	(93,040)

Per Section X of the Inyo/LA Water Agreement (1991), E/M projects are to be supplied by E/M wells as needed. LADWP began supplementing the E/M project water use shortfalls from E/M wells with the Los Angeles Aqueduct supply. This supplementation was done with the understanding that the supplement would be a small amount of water, and LADWP never anticipated that the shortfall would amount to over 90,000 acre-feet of water in approximately 15 years.

In this report, the following types of information are provided by E/M project as applicable and available:

- Project Description,
- Site Location Map,
- Goals and Strategy,
- Water Allotment and Source,
- Estimate of Completion,
- Acres Mitigated,
- CEQA Compliance,
- Annual Water Use,
- Future Project Plans, and
- Problems.

This report is organized into the following sections:

Section 1 – Introduction
Section 2 – Impact No. 1
Section 3 – Impact No. 2
Section 4 – Impact No. 3
Section 5 – Impact No. 4
Section 6 – Impact No. 5
Section 7 – Impact No. 6
Section 8 – Impact No. 7
Section 9 – Impact No. 8
Section 10 – Impact No. 9
Section 11 – Impact No. 10
Section 12 – Impact No. 11
Section 13 – Impact No. 12
Section 14 – Impact No. 13
Section 15 – Impact Nos. 14-26
Section 16 – References.

Section 2

Section 2

Impact No. 1

DISCUSSION OF IMPACT NO. 1

Historic groundwater pumping in the Big Pine area lowered the water table in wells on the Steward Ranch (**Figure 2-1**) east of Big Pine resulting in adverse economic effect (Mitigation Monitoring Program , 1991). One of the ranch wells became inoperable resulting in less agricultural production on the ranch; therefore, the Los Angeles Department of Water and Power (LADWP) mitigated the loss of alfalfa production (Mitigation Monitoring Program, 1991).

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STEWARD RANCH PROJECT

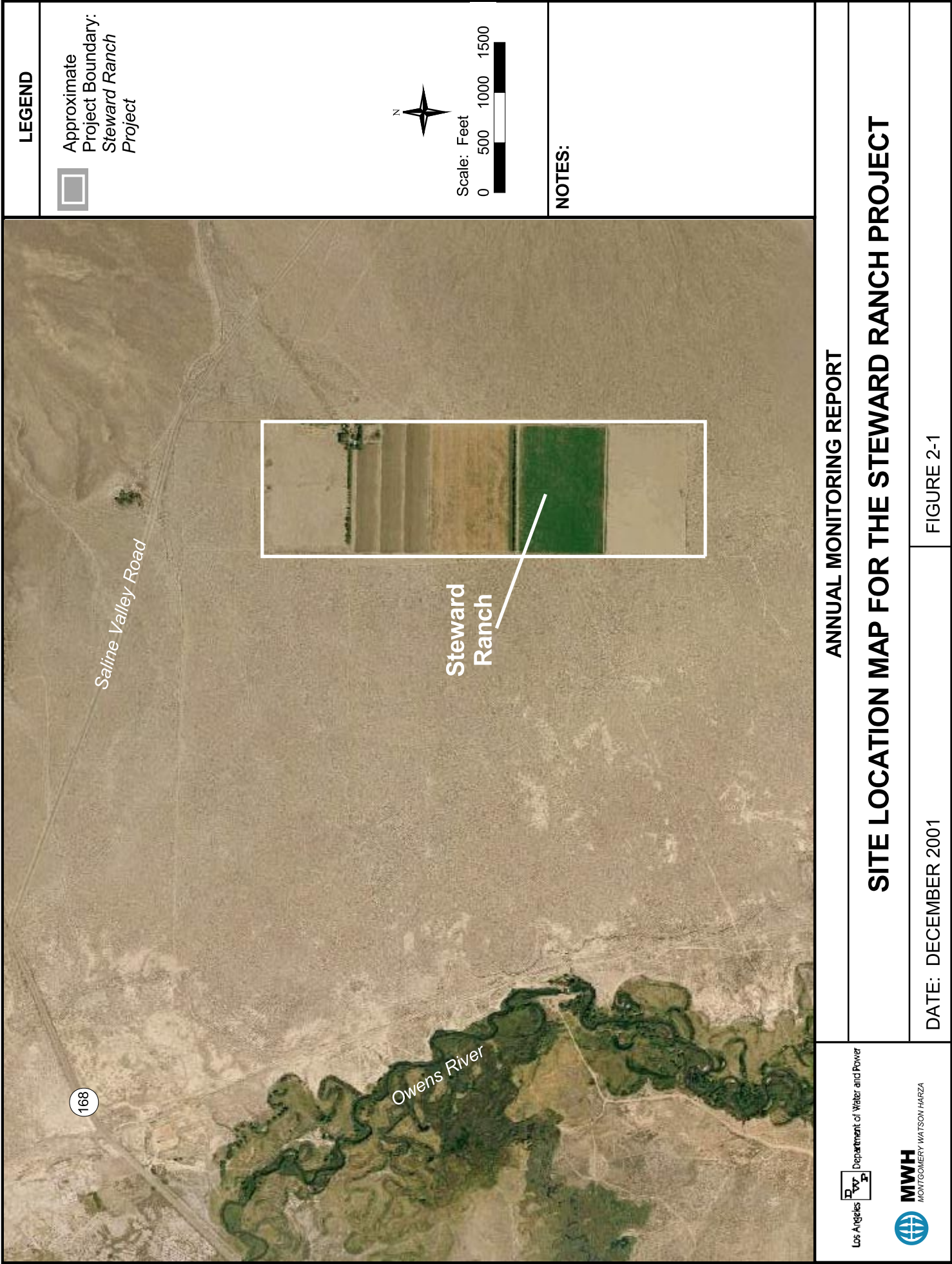
Project Description

The Steward Ranch project consists of the following mitigation efforts:

- The ranch owners were compensated fully on an annual basis for reduced alfalfa production and for future costs of re-establishing lost alfalfa,
- LADWP lowered the pump in the domestic well at no cost to the property owner,
- A new agricultural well was drilled for the ranch, and
- LADWP provides on-going compensation for additional groundwater pumping costs.

Estimate of Completion

The mitigation efforts presented above are complete, with the exception of pumping cost mitigation. The LADWP currently compensates the property owner for the added power costs of pumping water from a greater depth than that which existed historically. For example, deeper water levels at the Steward Ranch are a result of groundwater pumping by LADWP; therefore, the LADWP pays the owner for the portion of the power bill that is a result of pumping from a greater depth. The owner is no longer compensated for production per Section III. G. of the Inyo/LA Water Agreement (1991), but does continue to receive compensation for added pumping costs.



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Saline Valley Road

Owens River

Steward Ranch

Section 3

Section 3

Impact No. 2

DISCUSSION OF IMPACT NO. 2

Water spreading in the area of dikes east of Independence fostered conditions favorable to the spread of Saltcedar (Mitigation Monitoring Program, 1991). Saltcedar (*Tamarix ramosissima*) is a non-native invasive plant. It can colonize in moist areas that have been disturbed by any number of natural and/or anthropogenic activities, such as water spreading activities. Once established, Saltcedar is difficult to control, often spreading and recruiting rapidly in new areas. This recruitment and displacement of native vegetation stands allows Saltcedar to become a monoculture over time. There are currently over 15,000 acres of Saltcedar in Owens Valley (Figure 3-1).

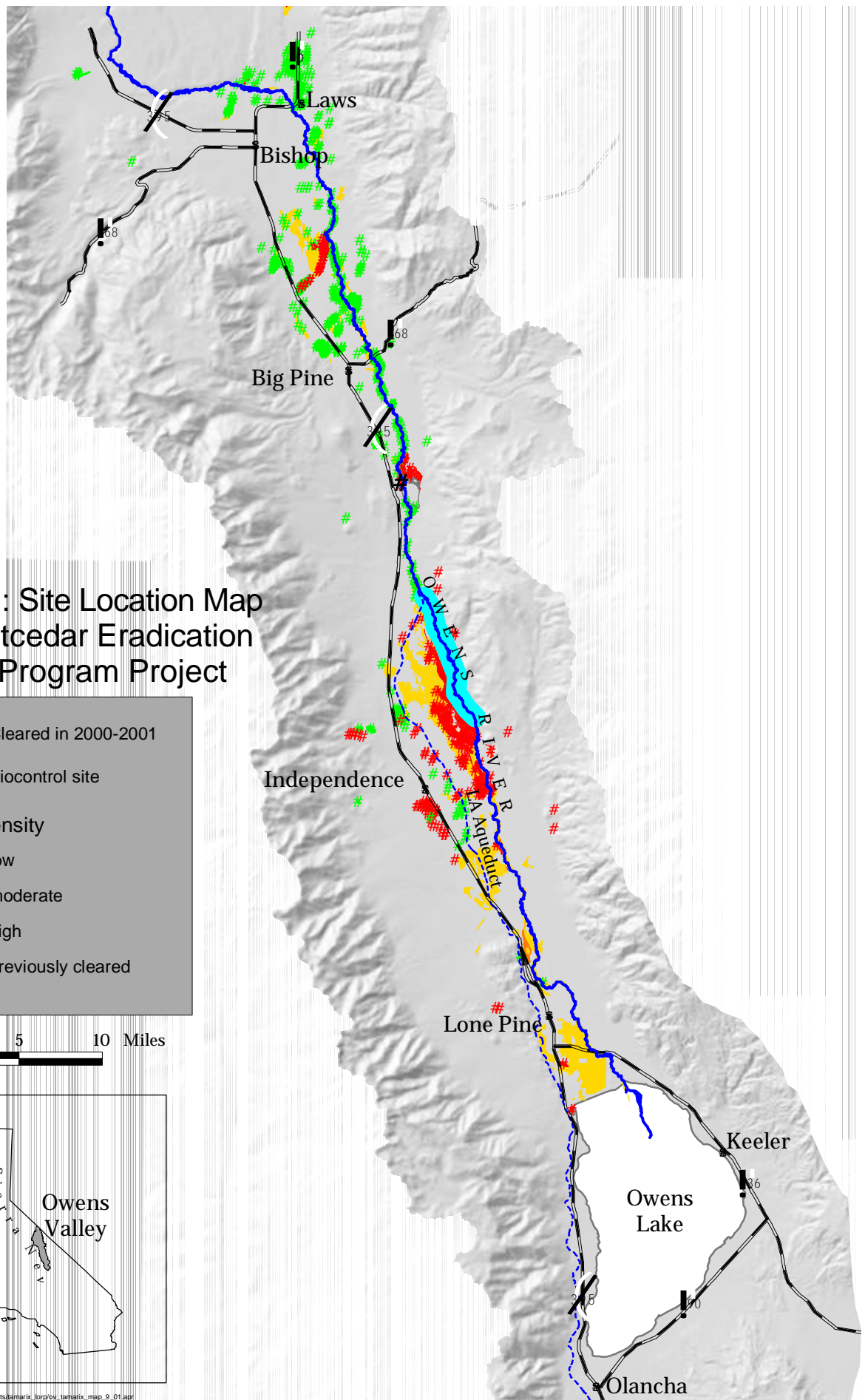
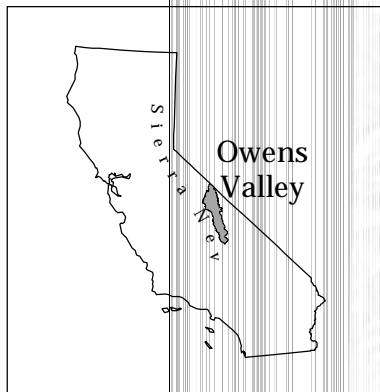
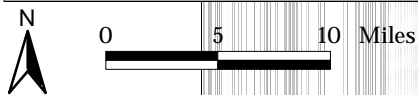
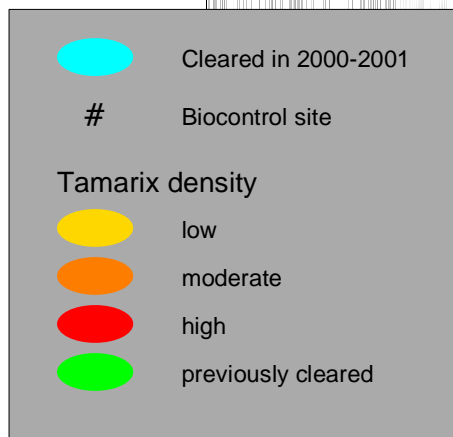
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SALT CEDAR ERADICATION CONTROL PROGRAM

Project Description

The Saltcedar Eradication Control Program is a project that was identified by Inyo County Water Department (ICWD) and is financially supported by the Los Angeles Department of Water and Power (LADWP). Field crews with chainsaws and backpack herbicide sprayers are used to clear Saltcedar in the Owens Valley. As part of the Lower Owens River Project (LORP), about one quarter (15 miles) of the Lower Owens River Channel has been cleared of this non-native invasive plant by the Saltcedar Eradication Control program. The program includes annual monitoring, follow-up treatments, and GIS mapping of Saltcedar by ICWD field crews. LADWP committed \$350,000 in 1997 for the first year of the project and \$200,000 for the second (1998) and third (1999) years of the project as specified by Section XIV. A. of the Inyo/LA Water Agreement (1991). After the third year (1999), an annual maintenance and control effort payment of \$50,000 has been paid to the ICWD by LADWP. However, there is a stipulation for evaluation of the consumer price index and corresponding annual adjustments to the \$50,000 annual payment. As of 2001, approximately \$850,000 has been provided to ICWD per the Inyo/LA Water Agreement (1991). In addition, LADWP is working with ICWD in the application for grants to further the Saltcedar control effort in the Owens Valley.

Figure 3-1: Site Location Map for the Saltcedar Eradication Control Program Project



Goals and Strategy

The initial program focused on removing Saltcedar from high-density areas with the following priority for control:

- Lower Owens River Channel,
- Tinemaha Reservoir and Owens Valley north of Tinemaha,
- Perennial stream, canals, and ditches,
- Springs and seeps,
- High water table meadows,
- Spreading areas that normally receive water, and
- Spreading areas that only receive water in high runoff years.

While this priority list was noted in the EIR, the priority changed in response to changes in state of the art weed management strategies. The Technical Group agreed to change the first priority to outlying satellite populations before attacking the main population along the Lower Owens River Channel.

Estimate of Completion

Inyo County Water Department estimates that the project is 10 percent complete, and where completed, the program has been very effective.

Eradication of Owens River Saltcedar populations from Tinemaha Reservoir to Goose Lake has been achieved. Meanwhile, eradication of outlying Saltcedar populations throughout Owens Valley is ongoing.

Acres Mitigated

To date, approximately 1,500 acres have been mitigated.

CEQA Compliance

This project was implemented under a CEQA negative declaration. ICWD has identified the Blackrock Waterfowl Area as a new priority for Saltcedar control.

Future Project Plans

There are two future project plan components. First, future plans call for eradication of Saltcedar populations in and adjacent to the main river channel, oxbows, floodplains, and immediate tributary sites from the Lower Owens River channel to the Owens Lake Delta area. The work would require 8-10 field crew personnel working full-time during the fall-winter field season. Second, control of Saltcedar, in and around the central Owens Valley spreading basins/Blackrock Waterfowl Area, through a combination of cut/stump, mechanical, fire, and habitat management techniques is needed.

Problems

The initial three-year funding commitment from LADWP appears to be less than required to complete the program. In some areas, slash management from the abundance of cut and stock-piled Saltcedar may require LADWP, ICWD, and California Department of Forestry cooperation to initiate a winter burn program. Access for fire suppression vehicles and the intensity of the fire that results from burning these slash piles have created problems in the past. These two issues could limit the applicability of this method for slash pile reduction. Another option to control slash piles is to use wood chipping.

Section 4

Section 4

Impact No. 3

DISCUSSION OF IMPACT NO. 3

Historic groundwater pumping has caused water table fluctuations contributing to the die-off of approximately 655 acres of groundwater-dependent vegetation (Mitigation Monitoring Program, 1991). Subsequently, groundwater pumping during the period of 1970 - 1990 is associated with negative impacts on air quality because of vegetation losses. The loss of vegetation can result in bare ground that is susceptible to winds, which can create blowing dust (Mitigation Monitoring Program, 1991).

The following projects were identified to mitigate this impact:

- Independence Woodlot,
- Independence Springfield,
- Independence East Side Regreening,
- Shepherd Creek Alfalfa Field,
- Shepherd Creek Potential,
- Big Pine Northeast Regreening, and
- Revegetation Projects.



INDEPENDENCE WOODLOT

Project Description

Approximately 20 acres of trees were planted for the Independence Woodlot project. **Figure 4-1** shows the location of the project site and photo point location. **Figure 4-2** provides a photograph taken at the site's photo point. The original planting rate was about 680 trees per acre, and trees are thinned as they mature.

Goals and Strategy

The Independence Woodlot project goal was to establish a fuel wood lot on a sparsely vegetated area, near the town of Independence. The purpose of the woodlot was to supply fuel wood to needy individuals and to mitigate blowing dust in the Independence area. Inyo Mono Advocates for Community Action (IMACA), a local community service group, is responsible for the maintenance, harvesting, and distribution of fuel wood for the woodlot.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE INDEPENDENCE WOODLOT PROJECT	
DATE: DECEMBER 2001	FIGURE 4-1

Figure 4-2
Photo Point Independence Woodlot 1 (iwl1, bearing = 50°)



Water Allotment and Source

The original water allotment for the Independence Woodlot was estimated to be 220 acre-feet per year (acre-feet/year). Water for this project is pumped from Wells W65AQ and W383EM.

Estimate of Completion

Project implementation for the Independence Woodlot is complete. The woodlot continues to provide fuel wood and green vegetation, while mitigating blowing dust.

Acres Mitigated

The Independence Woodlot occupies 20 acres.

Annual Water Use

Annual water use at the Independence Woodlot project is summarized in **Table 4-1**. This table indicates variability in water use since 1992, and this variability is attributable to management of the woodlot. From 1992-1994, a private contractor did an excellent job managing the project and its associated water use. In 1995, the private contractor retired, and water use applied to the project site was minimal. Subsequently, a private individual volunteer oversaw water use at the woodlot in 1996. Most recently, from 1997 to present, IMACA has been responsible for the woodlot's management, harvesting, and distribution.

Table 4-1
Annual Water Use by Runoff Year for the Independence Woodlot

Year	Acre-feet
1992	171
1993	249
1994	249
1995	95
1996	287
1997	147
1998	93
1999	175
2000	182

INDEPENDENCE SPRINGFIELD

Project Description

The Independence Springfield project site (**Figure 4-3**) occupies about 317 acres, with 260 acres of the project irrigated. Photo point locations are shown on **Figure 4-3** and pictures taken at these locations are presented in **Figure 4-4** through **Figure 4-7**. Parts of the site are directly irrigated by surface water or have been revegetated through sub irrigation to native species. Forty acres remain to be revegetated on the south end of the project site. This tract has been designated as a 40-acre revegetation project, further discussed in Section 14 of this report under Impact No. 13.

Goals and Strategy

Initial goals of the Independence Springfield project included establishing native perennial vegetation where none existed, reducing blowing dust, and enhancing grazing.

Water Allotment and Source

The estimated original water allotment was 1,500 acre-feet/year. Wells W60AQ, W65AQ, W383EM, and W384EM are used as water sources for this project.

Estimate of Completion

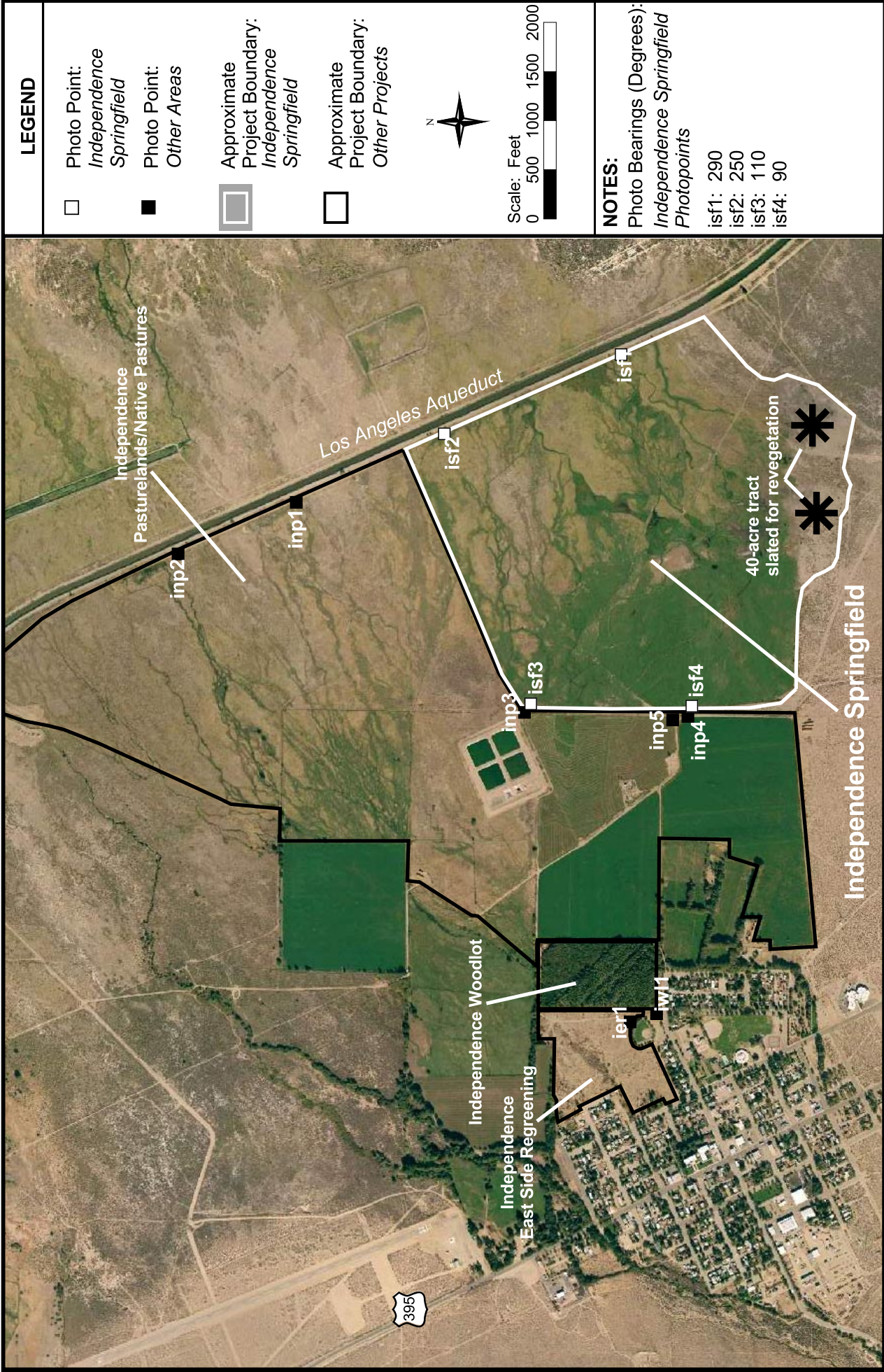
The Independence Springfield project is considered complete, with the exception of 40 acres on the south side of the project area. These 40 acres have been designated as the 40-Acre Revegetation Project East of Independence discussed in Section 14 of this report.

Acres Mitigated

About 260 acres have been mitigated through irrigation. As discussed previously, 40 acres remain to be revegetated. Approximately 20 acres do not receive direct surface flow irrigation, but have been revegetated as a result of subsurface irrigation flow.

CEQA Compliance

This project was implemented under a CEQA negative declaration.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE INDEPENDENCE SPRINGFIELD PROJECT	
DATE: DECEMBER 2001	FIGURE 4-3

Figure 4-4
Photo Point Independence Springfield 1 (isf1, bearing = 290°)



Figure 4-5
Photo Point Independence Springfield 2 (isf2, bearing = 250°)



Figure 4-6
Photo Point Independence Springfield 3 (isf3, bearing = 110°)



Figure 4-7
Photo Point Independence Springfield 4 (isf4, bearing = 90°)



Annual Water Use

Annual water use for the Independence Springfield project is summarized in **Table 4-2** below.

Table 4-2
Annual Water Use by Runoff Year for the Independence Springfield Project

Year	Acre-feet
1992	1,677
1993	1,600
1994	1,687
1995	1,798
1996	2,167
1997	1,415
1998	1,150
1999	973
2000	1,255

Problems

Nearly 100 percent of the site receives surface irrigation, however, the southern portion (40-acres) of the site has diverse topography that prevents surface distribution of flood irrigation water.

INDEPENDENCE EAST SIDE REGREENING

Project Description

The Independence East Side Regreening project (**Figure 4-8**) consists of a 30-acre revegetation site in Independence. The photo point location for this site is shown on **Figure 4-8** and presented as **Figure 4-9**.

The EIR (1991) states that the site will be irrigated pasture; however, the Inyo County Water Department (ICWD) Revegetation Plan (Yamashita, 1999) states that a plan for native revegetation has been developed. Most recently, citizens of the Independence community have expressed an interest in having a sports complex, consisting of baseball diamonds and soccer fields, at this location rather than a revegetation site.

Goals and Strategy

The original project strategy for irrigated pasture called for a new well to provide water to the project site via flood irrigation. Project goals included:

- Property enhancement, and
- Mitigation of the impacts resulting from abandonment of the property.

If the site is revegetated with native species per the ICWD Revegetation Plan (Yamashita, 1999), then this plan requires the following:

- Elimination of disturbances by fencing the site,
- Contacting local organization that may be interested in volunteering to assist project, such as planting and maintenance, and
- Monitoring the site.

If recruitment of desirable species is observed, then protection without additional input will continue. However, if protection does not produce native revegetation, then alternative plans for the site will be required.

Estimate of Completion

This 30-acre mitigation project has not yet been implemented. The initial project description called for irrigated pastures, where as the ICWD Revegetation Plan (Yamashita, 1999) noted that revegetation may consist of native plant communities. Most recently, citizens have requested that a sports complex be constructed in lieu of revegetation. All requests are under consideration, and until resolution on the site plan is reached, the project will not be implemented.



<p>ANNUAL MONITORING REPORT</p>	
<p>SITE LOCATION MAP FOR THE</p>	
<p>INDEPENDENCE EAST SIDE REGREENING PROJECT</p>	
<p>DATE: DECEMBER 2001</p>	<p>FIGURE 4-8</p>

Figure 4-9
Photo Point Independence East Side Regreening 1 (ier1, bearing = 320°)



CEQA Compliance

This project will be implemented under a CEQA negative declaration.

Problems

Independence Creek was identified as an alternate water supply for the project; however, water cannot be diverted from Independence Creek as a result of the topography. Subsequent discussions have identified two other potential sources: the Independence town water system or a new sole-source supply well.

SHEPHERD CREEK ALFALFA FIELD

Project Description

In order to mitigate both air quality and vegetation impacts, 200 acres of land have been converted to alfalfa under the Shepherd Creek Alfalfa Field project. The project location and photo points are shown on **Figure 4-10** and photo point pictures are presented in **Figure 4-11** through **Figure 4-13**.

Goals and Strategy

The goal of the Shepherd Creek Alfalfa Field project was to revegetate abandoned croplands with alfalfa to mitigate blowing dust that would shut down Highway 395. Secondary goals were to enhance scenery and minimize soil wind erosion. The site is fenced and windbreak trees have been established. Furthermore, the site was leveled for planting and prior to seeding, a sprinkler irrigation system was installed.

Water Allotment and Source

The original estimate for water use was 825 acre-feet/year. Water from Well W402EM and Shepherd Creek are used as water sources for this project.

Estimate of Completion

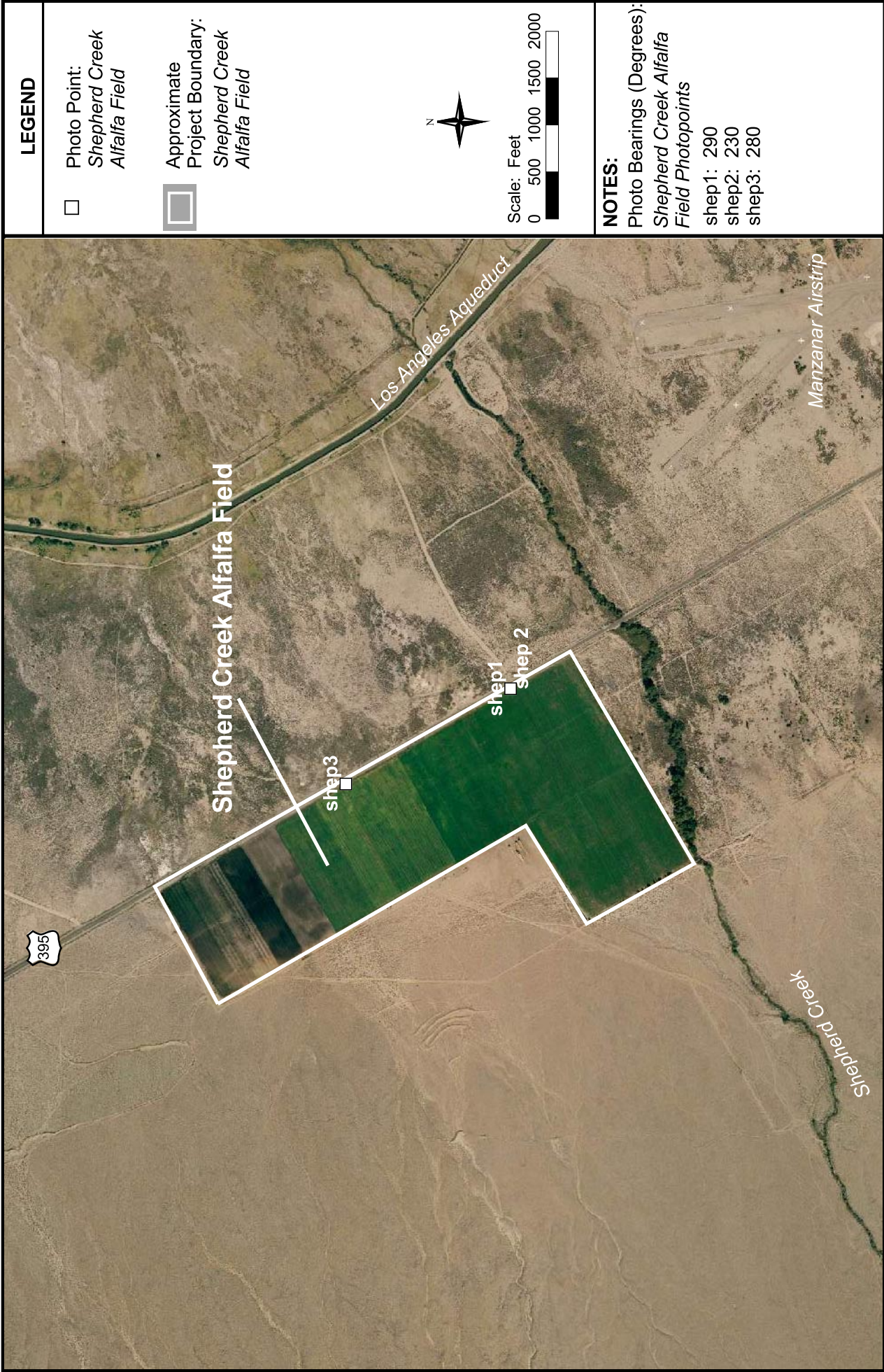
The Shepherd Creek Alfalfa Field project is 100 percent complete.

Acres Mitigated

Two hundred acres have been mitigated and developed as alfalfa fields.

CEQA Compliance

This project was implemented under a CEQA negative declaration issued in 1985.



<div> <div> </div> <div> </div> </div>		<div> <div> <div>ANNUAL MONITORING REPORT</div> <div>SITE LOCATION MAP FOR THE</div> <div>SHEPHERD CREEK ALFALFA FIELD PROJECT</div> </div> </div>	
DATE: DECEMBER 2001	FIGURE 4-10		

Figure 4-11
Photo Point Shepherd Creek Alfalfa Field 1 (shep1, bearing = 290°)



Figure 4-12
Photo Point Shepherd Creek Alfalfa Field 2 (shep2, bearing = 230°)



Figure 4-13
Photo Point Shepherd Creek Alfalfa Field 3 (shep3, bearing = 280°)



Annual Water Use

Annual water use for the Shepherd Creek Alfalfa project is summarized in **Table 4-3**.

Table 4-3
Annual Water Use by Runoff Year for the Shepherd Creek Alfalfa Project

Year	Acre-feet
1992	968
1993	895
1994	901
1995	826
1996	1,009
1997	868
1998	980
1999	1,071
2000	1,114

SHEPHERD CREEK POTENTIAL

Project Description

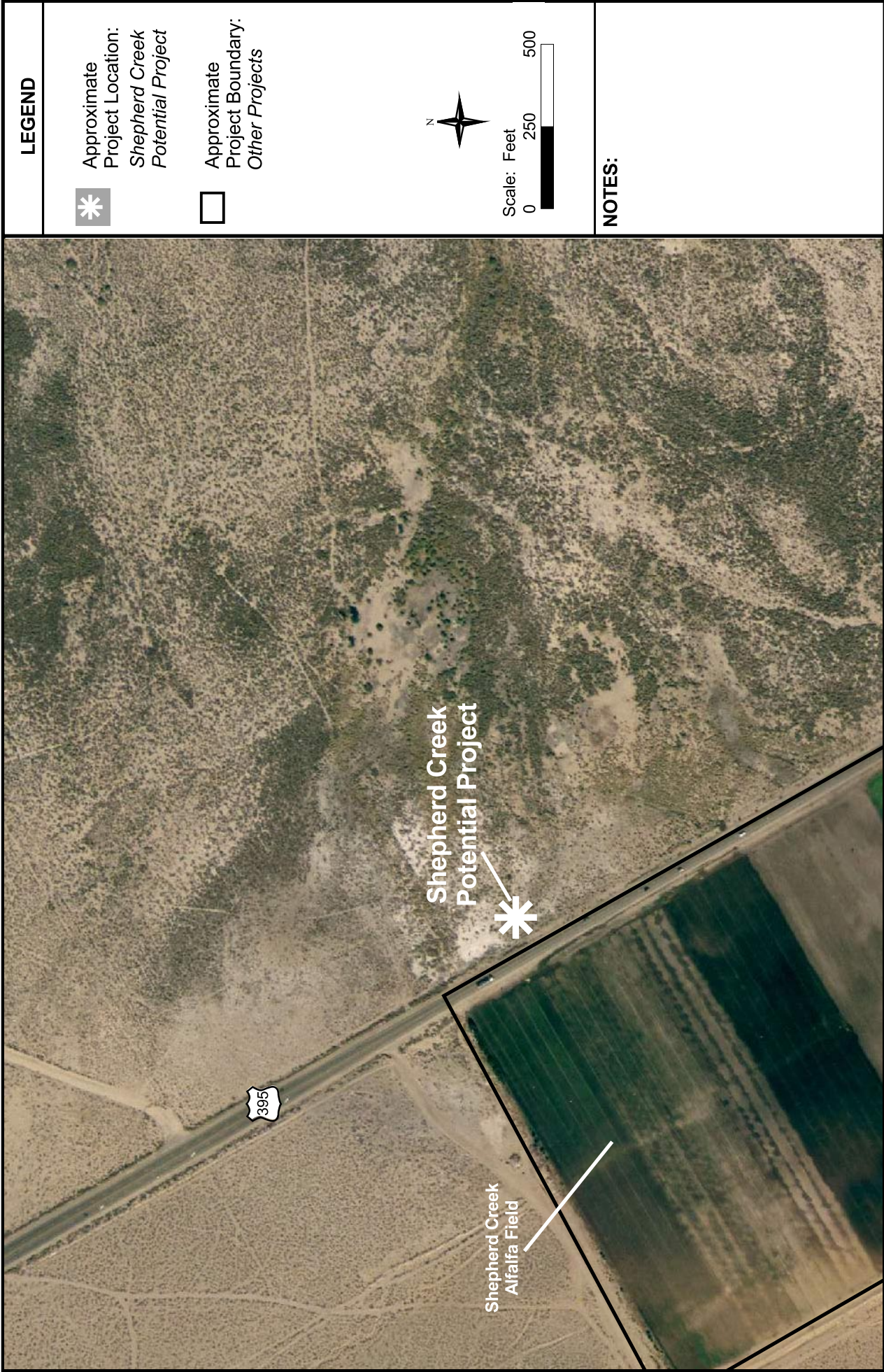
Should native vegetation recruitment not occur on the approximately 60-acre Shepherd Creek Potential site east of the Shepherd Creek Alfalfa Field project (**Figure 4-14**) then a revegetation program would be required and the project would become an expansion of the Shepherd Creek Alfalfa Field project. However, at this point it appears that recruitment is occurring as demonstrated by two photo aerial photographs taken 10 years apart in 1990 and 2000 (**Figure 4-15**). These photographs indicate that the site is revegetating naturally.

Goals and Strategy

The goal of the project is to have the site revegetate with species found in the surrounding area on the same soil type. If perennial vegetation does not naturally revegetate the site then the area will become an expansion of the Shepherd Creek Alfalfa Field project.

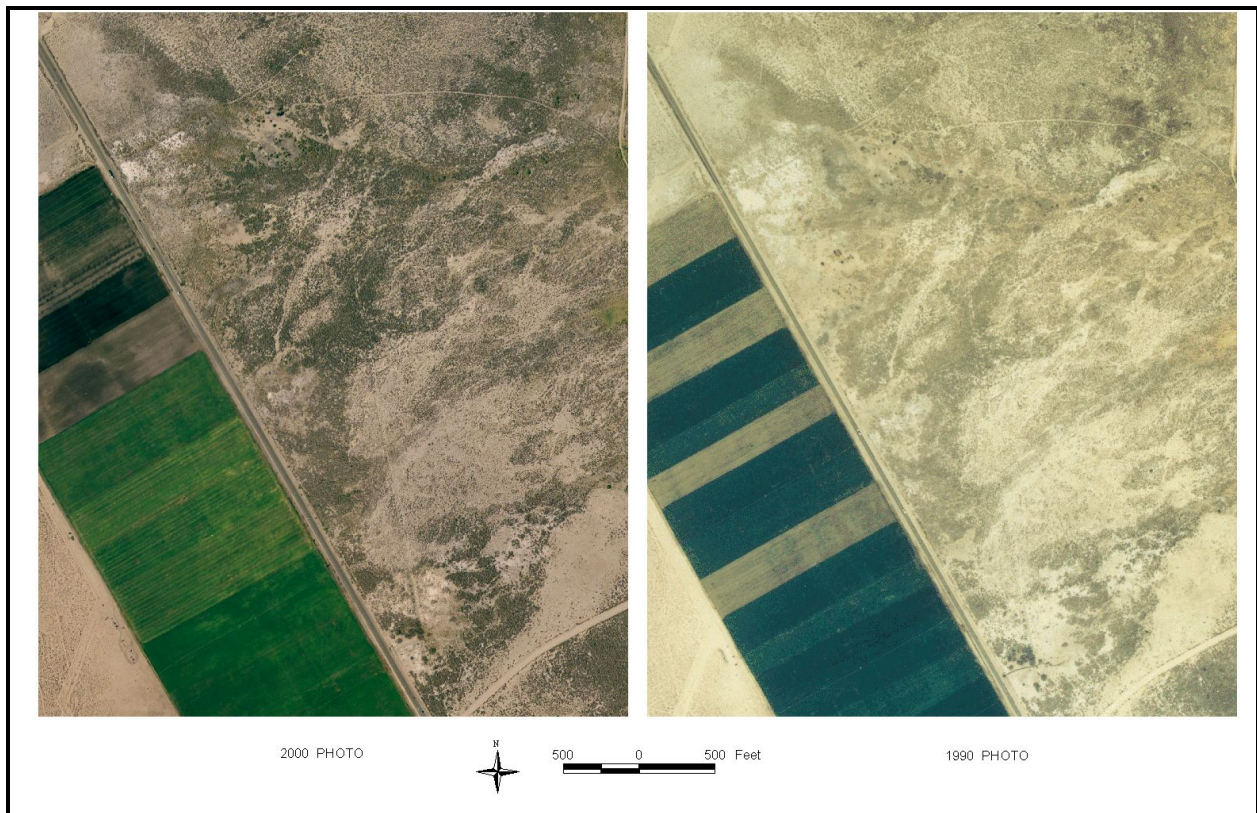
Future Project Plans

The project site will continue to be monitored to assess the natural revegetation of the area.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE SHEPHERD CREEK POTENTIAL PROJECT	
DATE: DECEMBER 2001	FIGURE 4-14

Figure 4-15
1990 Photo Point for Shepherd Creek Potential Project



BIG PINE NORTHEAST REGREENING

Project Description

Under the original plan for the Big Pine Northeast Regreening project, whose location is shown on **Figure 4-16**, approximately 30 acres was to be revegetated with irrigated pasture. This project has not yet been implemented. Photo points are presented as **Figure 4-17** through **Figure 4-19**. More recent plans for the site consist of either native species revegetation or a sports complex.

Goals and Strategy

The project was designed to enhance aesthetics in the Big Pine area through native pastures. Community interest groups have expressed an interest in developing a sports complex community park in this area in lieu of a revegetation project.

Water Allotment and Source

Water for the project is anticipated to come from Big Pine Creek via the proposed Big Pine Ditch, or Baker Creek through the proposed Mendenhall Park Ditch, or a combination of both systems. Wells W378 EM, W379EM, and W389 EM could also provide water to the site. The original estimate for water use was 150 acre-feet/year. The project site will be flood irrigated.

Estimate of Completion

The project has not yet been implemented.

CEQA Compliance

The project will be implemented under a CEQA categorical exemption.

Problems

The water source for this project hinges on the outcome of the Big Pine Ditch Project; therefore, until that project moves beyond its conceptual phase, identification of a water source for the Big Pine Northeast Regreening Project cannot be made.

Future Plans

Inyo County Water Department indicated that the project site should be fenced as an initial component to the ICWD Revegetation Plan (Yamashita, 1999), and subsequently monitored for native species recruitment. If recruitment occurs, then no other inputs will be required. If recruitment does not occur, then additional revegetation plans will need to be developed.



ANNUAL MONITORING REPORT

SITE LOCATION MAP FOR THE

BIG PINE NORTHEAST REGREENING PROJECT

DATE: DECEMBER 2001

FIGURE 4-16

Figure 4-17
Photo Point Big Pine Northeast Regreening 1 (bpne1, bearing = 235°)



Figure 4-18
Photo Point Big Pine Northeast Regreening 2 (bpne2, bearing = 0°)



Figure 4-19
Photo Point Big Pine Northeast Regreening 3 (bpne3, bearing = 200°)



80-ACRE REVEGETATION PROJECT

Project Description

The 80-acre revegetation project consists of one site at Charlie's Butte and two sites, Blackrock 16E and Hines Spring S, on Intake Road (**Figure 4-20**), as specified in the ICWD Revegetation Plan (Yamashita, 1999). The Charlie's Butte revegetation project (Tinemaha 54) has been fully implemented. Fencing and transects have been established at Blackrock 16E. In addition, a controlled burn and herbicide have been applied to Blackrock 16E to control weedy species.

Goals and Strategy

The goal for the Charlie's Butte/Tinemaha 54 site is to restore vegetation to the conditions that existed prior to the impact. Live vegetation cover should be 33 percent with a composition of at least three species, primarily Alkali Sacaton. Other appropriate species are Rubber Rabbitbrush, Nevada Saltbrush, Black Greasewood, and Indian Paintbrush.

Goals for Hines Spring S are dependent upon the Hines Spring mitigation project presented in Section 7 of this report, and are therefore still pending.

The Blackrock 16E project goals are to rehabilitate the site to alkali meadow conditions similar to those in the surrounding five-mile radius area. The vegetation cover goal is 34 percent.

Estimate of Completion

The revegetation project has been initiated and is ongoing. At the Charlie's Butte revegetation site, about 100 Alkali Sacaton plants have been planted and are drip irrigated from Well W349AQ. Of the two other sites on Intake Road, one is fenced and was treated with a controlled burn.

Future Plans

Monitoring for plant recruitment and weed control will continue for these projects. Upon completion of the revegetation pilot project, the most cost effective revegetation plan will be identified and implemented.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE 80-ACRE REVEGETATION PROJECT SHOWING THE LOCATION OF CHARLIE'S BUTTE REVEGETATION SITE	
DATE: DECEMBER 2001	FIGURE 4-20a



<p>ANNUAL MONITORING REPORT</p>	
<p>SITE LOCATION MAP FOR THE 80-ACRE REVEGETATION PROJECT</p>	
<p>SHOWING LOCATION OF TWO SITES ON INTAKE ROAD</p>	
<p>DATE: DECEMBER 2001</p>	<p>FIGURE 4-20b</p>

Section 5

Section 5

Impact No. 4

DISCUSSION OF IMPACT NO. 4

Approximately 300 acres of vegetation was impacted by operation of two E/M wells during 1988 in the Five Bridges area (Mitigation Monitoring Program, 1991).

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300-ACRE REVEGETATION PROJECT NEAR FIVE BRIDGES

Project Description

Surface water has been spread through existing meanders over the 300-acre revegetation project site since 1988 **Figure 5-1**. The Los Angeles Department of Water and Power (LADWP), with assistance from Ecosystems Sciences, subsequently developed a revegetation plan for the area (Yamashita, 1999). By 1990, revegetation of native species had occurred on about 80 percent of the affected area.

Goals and Strategy

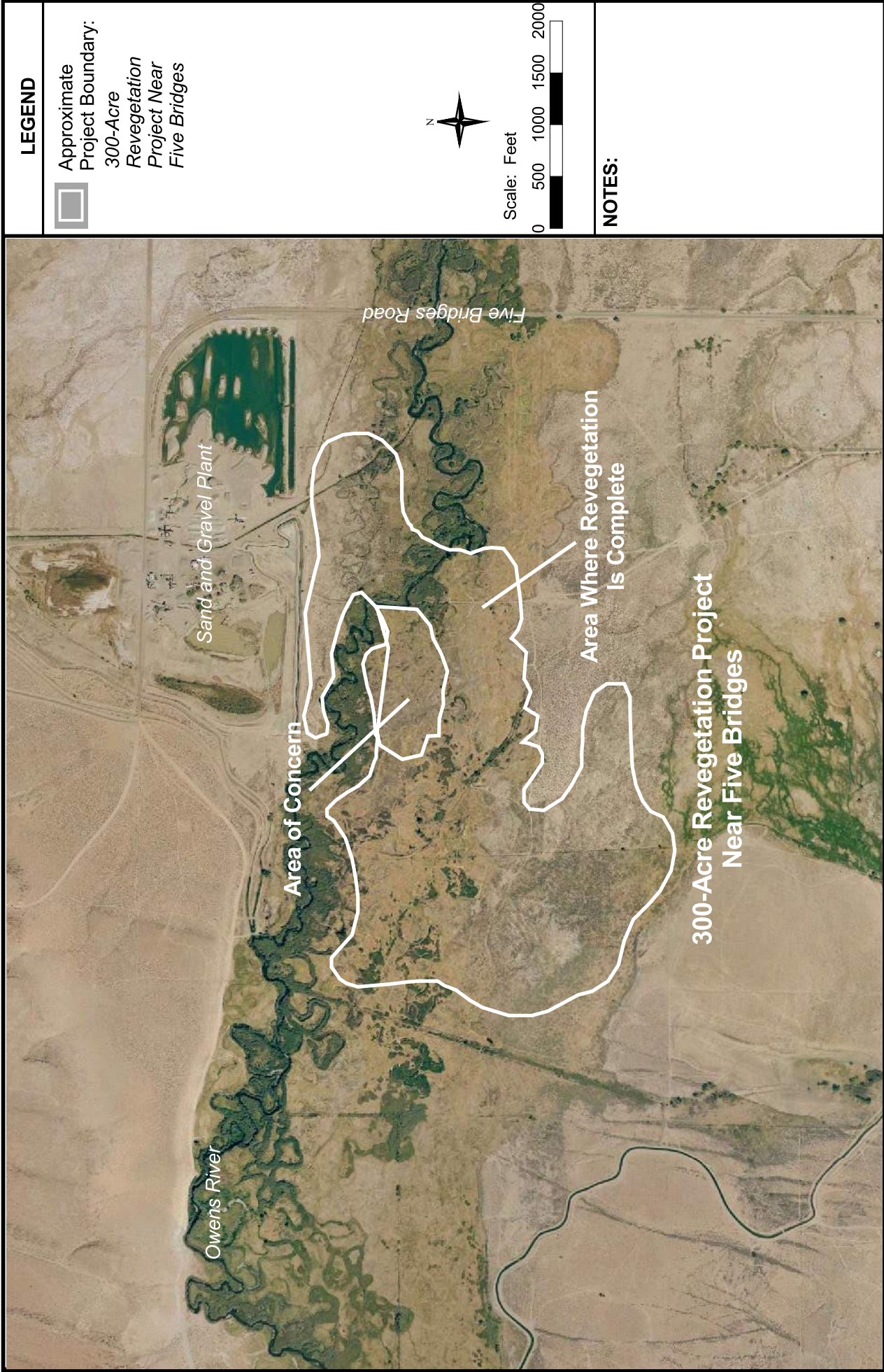
The primary goal for the site as identified in the ICWD Revegetation Plan (Yamashita, 1999) is to restore the vegetation community complex with similar species composition and cover that exists at local similar sites.

Water Source

Water for the project is delivered from Bishop Creek Canal Diversions 2, 4, and 6, and the Bishop Creek Canal conveys water to the site from the Owens River. Once at the site, water moves across the site through existing meanders. Water use for 2000 and 2001 (see section below titled "Water Use by Year") was to mitigate disturbance through enhancement of revegetation. The release of water should coincide with willow seeding; therefore, the timing of water releases will vary from year to year, as was determined by Ecosystem Sciences.

Estimate of Completion

The project site has a current weed control plan that must be maintained and completed before restoration efforts continue. The ICWD Revegetation Plan (Yamashita, 1999) estimates that 80 percent of the project site has been mitigated. Meanwhile, riparian areas have been fenced.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE	
300-ACRE REVEGETATION PROJECT NEAR FIVE BRIDGES	
DATE: DECEMBER 2001	FIGURE 5-1

Annual Water Use

Annual water use for 2000 for the 300-acre revegetation project near five bridges is 171 acre-feet.

Future Project Plans

Future project plans include:

- Irrigate the area using releases from Bishop Creek Canal,
- Seed small burn areas,
- Maintain groundwater levels taking their natural variability into account,
- Develop a 10-year grazing plan,
- Eliminate the removal or burning of dead willows, and
- Monitor the site.

Section 6

Section 6

Impact No. 5

DISCUSSION OF IMPACT NO. 5

Groundwater pumping has impacted about 60 acres of vegetation in the Symmes-Shepherd Wellfield (Mitigation Monitoring Program, 1991).

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60-ACRE REVEGETATION PROJECT IN THE SYMMES-SHEPHERD WELLFIELD

Project Description

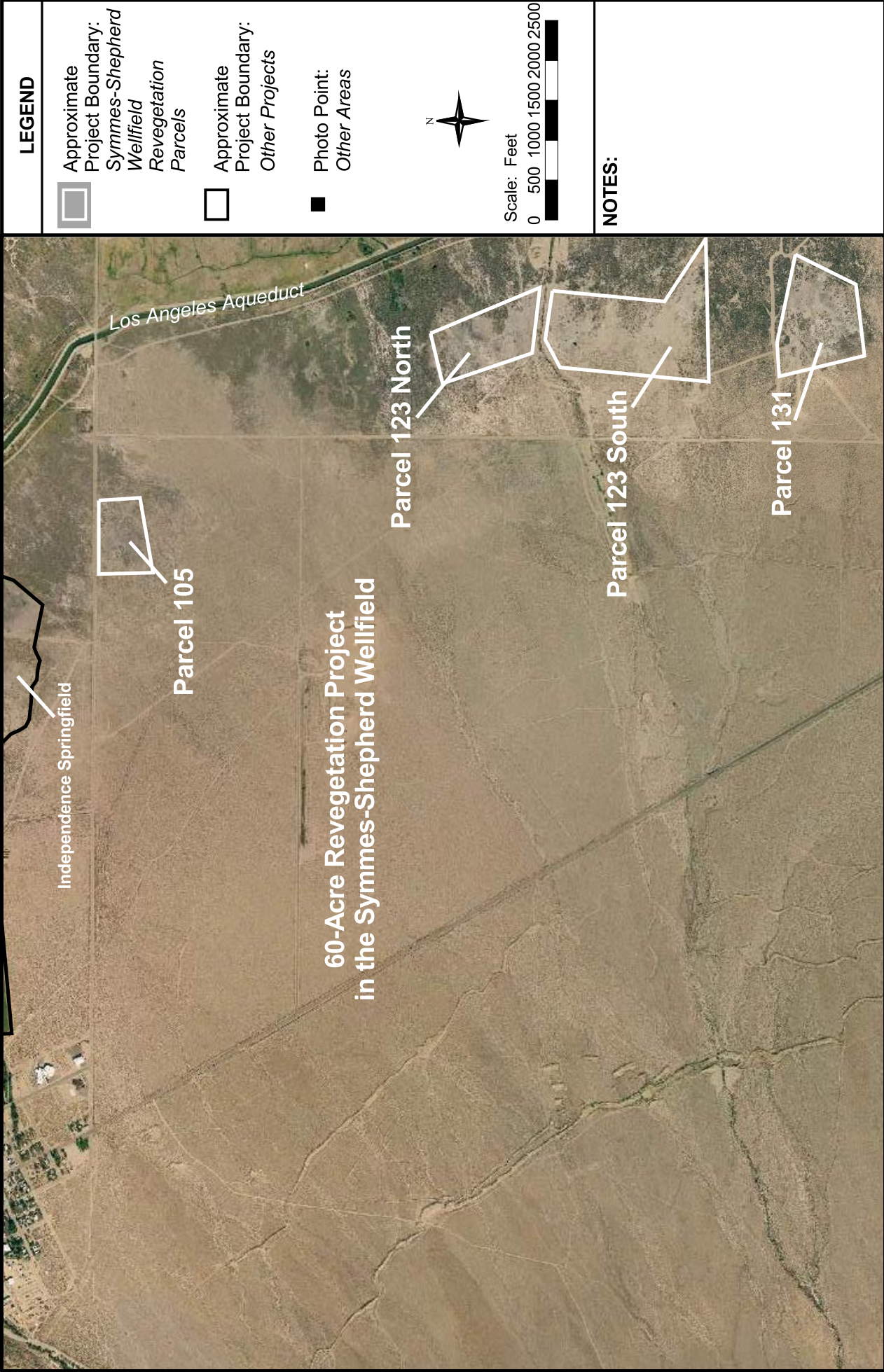
A 60-acre revegetation project in the Symmes-Shepherd Wellfield will occur in an area east of the town of Independence (**Figure 6-1**). However, the area delineated in the EIR (1991) did not include a revegetation area to the south of Symmes Creek; therefore, the actual project acreage is 122.5 acres. Revegetation will be with native species replicating the species that were impacted by groundwater pumping. The revegetation project consists of three parcels: Independence 105, Independence 131, and Independence 123.

Goals and Strategy

The goal of the project is to revegetate the three parcels with species mapped in the surrounding areas, having a live vegetation cover of 17 percent composed of four perennial species.

Estimate of Completion

The project is ongoing and included in the Inyo County Water Department (ICWD) Revegetation Plan (Yamashita, 1999). One area of this project is part of a trial revegetation program being performed by the consulting firm Science Applications International Corporation (SAIC). All three parcels have been fenced.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR	
60-ACRE REVEGETATION PROJECT IN THE SYMMES-SHEPHERD WELLFIELD	
DATE: DECEMBER 2001	FIGURE 6-1

Future Project Plans

Future plans for parcel Independence 105 are to continue with monitoring of the area per the ICWD Revegetation Plan (Yamashita, 1999). Future plans for parcels Independence 123 and Independence 131 are to begin revegetation test plots in 2001, continue with site monitoring, and expand revegetation based on successful test plots in 2007 (Yamashita, 1999). Upon completion of the revegetation pilot project, the most cost effective revegetation plan will be identified and implemented.

Section 7

Section 7

Impact No. 6

DISCUSSION OF IMPACT NO. 6

Historic groundwater pumping has reduced flows and impacted vegetation at the following springs:

- Fish Springs,
- Big and Little Seeley Springs,
- Hines Spring,
- Big and Little Blackrock Springs, and
- Reinhackle Spring (Mitigation Monitoring Program, 1991).

The following projects mitigate these impacts:

- Fish Springs Fish Hatchery Project,
- Blackrock Springs Fish Hatchery Project,
- One-Acre Pond Adjacent to Well W349AQ,
- Hines Spring Project,
- Little Blackrock Springs Project,
- Reinhackle Spring Project, and
- Lower Owens River Project (Mitigation Monitoring Program, 1991).

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FISH SPRINGS FISH HATCHERY

Project Description

Historic groundwater pumping reduced the flows and impacted vegetation at Fish Springs. The Fish Springs Fish Hatchery project (**Figure 7-1**) serves as mitigation of a compensatory nature by producing fish for stocking purposes throughout Inyo County.

Water Allotment and Source

Three wells, Well W330AQ, Well W332AQ, and Well W409AQ, are used to supply water to the Fish Spring Fish Hatchery. Well W409AQ acts as a backup well.



<p>ANNUAL MONITORING REPORT</p>	
<p>SITE LOCATION MAP FOR THE</p>	
<p>FISH SPRINGS FISH HATCHERY PROJECT</p>	
<p>DATE: DECEMBER 2001</p>	<p>FIGURE 7-1</p>

Estimate of Completion

This project is complete and water will continue to be supplied annually to the hatchery.

Annual Water Use

Annual water use for the Fish Springs Fish Hatchery is summarized in **Table 7-1**. There has not been any water supplied to the project from Well W409AQ.

Table 7-1
Annual Water Use by Runoff Year for the Fish Springs Fish Hatchery Project

Well W332AQ		Well W330AQ		Wells W330AQ & W332AQ Combined
Year	Acre-feet	Year	Acre-feet	Total Acre-feet
1990	11,051	1990	7,631	18,682
1991	12,015	1991	8,413	20,428
1992	11,747	1992	8,010	19,757
1993	11,848	1993	7,730	19,578
1994	11,804	1994	7,376	19,180
1995	11,702	1995	6,678	18,380
1996	11,990	1996	8,512	20,502
1997	12,935	1997	7,831	20,766
1998	13,261	1998	7,775	21,036
1999	9,943	1999	7,858	17,801
2000	13,252	2000	7,862	21,114

Future Project Plans

The project will continue to be supplied with water for the fish hatchery.

BLACKROCK SPRINGS FISH HATCHERY

Project Description

Groundwater pumping has reduced the flows and impacted vegetation at Blackrock Springs. The Blackrock Springs Fish Hatchery (**Figure 7-2**), serves as mitigation of compensatory nature by producing fish for stocking purposes throughout Inyo County.

Water Source

Blackrock Springs Fish Hatchery is supplied with water primarily from Well W351AQ, but Well W356AQ is also used to supply water to the hatchery.

Estimate of Completion

This project is complete and water will continue to be supplied annually to the hatchery.

Annual Water Use

Annual water use for the Blackrock Springs Fish Hatchery is summarized below in **Table 7-2**.

Table 7-2
Annual Water Use by Runoff Year for the Blackrock Springs Fish Hatchery

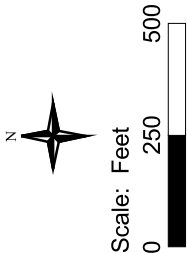
Well W356AQ		Well W351AQ		Wells W351AQ and W356AQ Combined
Year	Acre-feet	Year	Acre-feet	Total Acre-feet
1990	187	1990	12,403	12,590
1991	26	1991	12,485	12,511
1992	37	1992	12,454	12,491
1993	15	1993	12,625	12,640
1994	7	1994	12,572	12,579
1995	2,024	1995	9,488	11,512
1996	30	1996	13,048	13,078
1997	26	1997	12,698	12,724
1998	2	1998	12,426	12,428
1999	5	1999	12,520	12,525
2000	32	2000	12,286	12,318

Future Project Plans

The project plan is to continue to supply water to the fish hatchery.



LEGEND



NOTES:

ANNUAL MONITORING REPORT

SITE LOCATION MAP FOR THE
BLACKROCK SPRINGS FISH HATCHERY PROJECT

DATE: DECEMBER 2001

FIGURE 7-2

ONE-ACRE POND ADJACENT TO WELL W349AQ**Project Description**

Water discharged from Well W349AQ near Big and Little Seeley Springs (**Figure 7-3**), provides water for a one-acre pond for birds and maintains riparian vegetation. Water passes through the pond to the Owens River, and riparian vegetation has been established at the pond site.

Goals and Strategy

The goal of this project is to establish riparian vegetation and habitat around the pond created from pumping Well W349AQ. In turn, the pond provides a temporary resting place for waterfowl and shorebirds.

Water Source

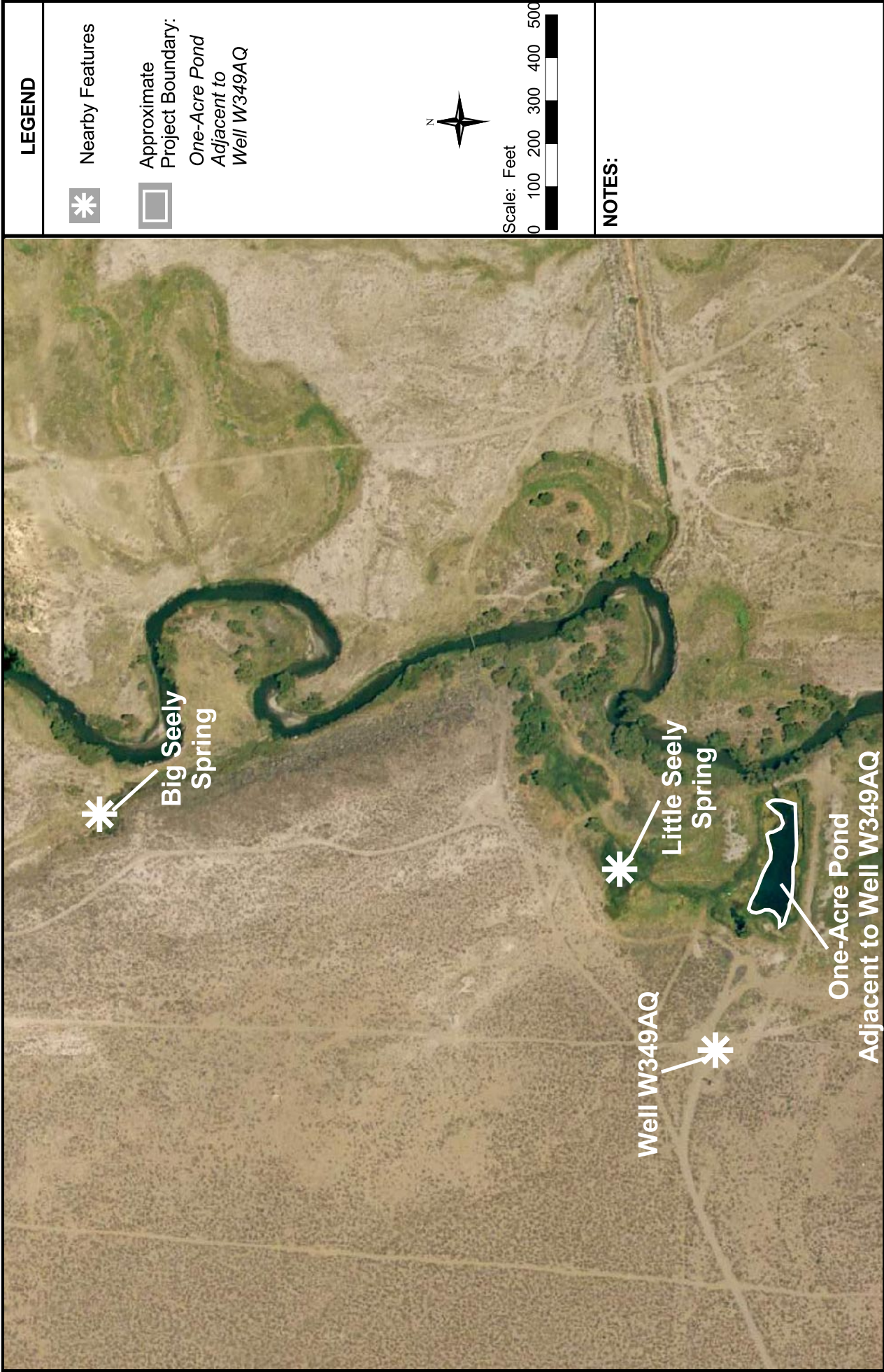
Water pumped from Well W349AQ is used to supply the pond. When pumping for pond supply, the LADWP normally runs the pump on a timer for one hour per day, which equates roughly to 40-45 acre-feet per month.

Estimate of Completion

Project implementation is complete, and the project continues to function as described above.

Future Project Plans

The project will continue to be operated as in previous years.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE	
ONE-ACRE POND ADJACENT TO WELL W349AQ	
DATE: DECEMBER 2001	FIGURE 7-3

HINES SPRING PROJECT

Project Description

Groundwater pumping has reduced the flow and impacted vegetation at Hines Spring. As a result, the Hines Spring vent and its surroundings will receive on-site mitigation. Water from an existing, but unused, LADWP well will be provided to either approximately 1-2 acres of ponded water or riparian vegetation at Hines Spring (**Figure 7-4**). The Hines Spring project will serve as a research project on how to re-establish a damaged aquatic habitat and surrounding riparian marshland habitat. Riparian trees and a selection of riparian herbaceous species will be planted on the banks. The Hines Spring area will be fenced (EIR, 1991).

Goals and Strategy

Project Objectives are as follows, “*The Memorandum of Understanding (MOU, 1997) specifies several general objectives by referring to the 1991 EIR. A total of 1,600 acre feet/year will be supplied by LADWP for (1) the implementation of the on-site mitigation measure at Hines Spring identified in the 1991 EIR, and if possible, (2) the implementation of on-site and/or off-site mitigation that is in addition to the mitigation measures identified in the 1991 EIR. On-site measures are preferred to off-site measures*” (Ecosystems Science Technical Memorandum No. 22, 2000).

The on-site goal of the project is to create one to two acres of ponds or riparian vegetation. The goal is not to restore the site to pre-disturbance conditions, but to provide the resources and conditions that will allow the site to redevelop and thrive under the new set of environmental and ecological pressures and constraints. Once water requirements have been determined for Hines Spring, then any remaining water from the 1,600 acre-feet/year allotment will be used for on-site or off-site mitigation (or a combination of both) at Fish Springs, Big and Little Blackrock Springs, Big and Little Seely Springs, east Diaz Lake, Calvert Slough, and Warren Lake. The feasibility and the relative environmental benefits of each project will be determined, thereby allowing the best use of the remaining water allocation to be identified.

Water Allotment and Source

Well number W355AQ is located in the Taboose-Aberdeen Wellfield and may be the source of water for the project. Water requirements for the project are still to be determined by Ecosystem Sciences. Historic flows from the well have been in the 1-4 cubic feet per second (cfs) range. Concern exists over the ability of the current well to provide sufficient water to meet the mitigation requirements for Hines Spring. Ecosystem Sciences (2000) suggested that a new higher producing well, or the creation of a pipeline from the Aberdeen Ditch to Hines Spring, would greatly enhance the ability to meet mitigation requirements for the site.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE HINES SPRING PROJECT	
DATE: DECEMBER 2001	FIGURE 7-4

Estimate of Completion

Ecosystem Sciences has completed Technical Memorandum No. 22 (Ecosystem Science, 2000) discussing the Hines Spring project. That memorandum has been submitted to the MOU (1997) parties for consideration. The parties have stated that they desire to obtain additional information and will provide their suggested alternatives for the Hines Spring project and any remaining water. Ecosystem Sciences will identify the potential best uses for the remaining water allocation.

There has been no modification to the Hines Spring project from what was described in the EIR (1991), but once the final use for all 1,600 acre-feet/year of water has been determined there will be additional site-specific mitigation that was not described in the EIR (1991).

Acres Mitigated

The number of total acres mitigated cannot be determined until the project plan is finalized.

Annual Water Use

Annual water use is yet to be determined.

Future Plans

Until the final project plan is developed, the future mitigation plans remain undetermined, other than the fact that 1,600 acre-feet/year of water will be supplied for mitigation. Potential mitigation sites are noted above.

Problems

In order to ensure the success of the Hines Spring project, Ecosystems Sciences has determined three issues that need to be resolved. First, providing adequate and reliable water to the project is of foremost importance. Second, changes in land management, such as grazing, may be required. Third, weed management will also be required during the initial phases of the project.

LITTLE BLACKROCK SPRINGS PROJECT

Project Description

LADWP provides supply water from a diversion off the Division Creek/Goodale Bypass Ditch to feed a former pond that was supplied by water from Little Blackrock Springs (**Figure 7-5**). Marsh vegetation at the site is maintained, and the project area is fenced to exclude livestock grazing.

Goals and Strategy

The goal of the project, through use of the Division Creek diversion, is to maintain marsh vegetation at the site.

Water Source

Water is supplied to the project from a diversion off the Division Creek/Goodale Bypass Ditch.

Estimate of Completion

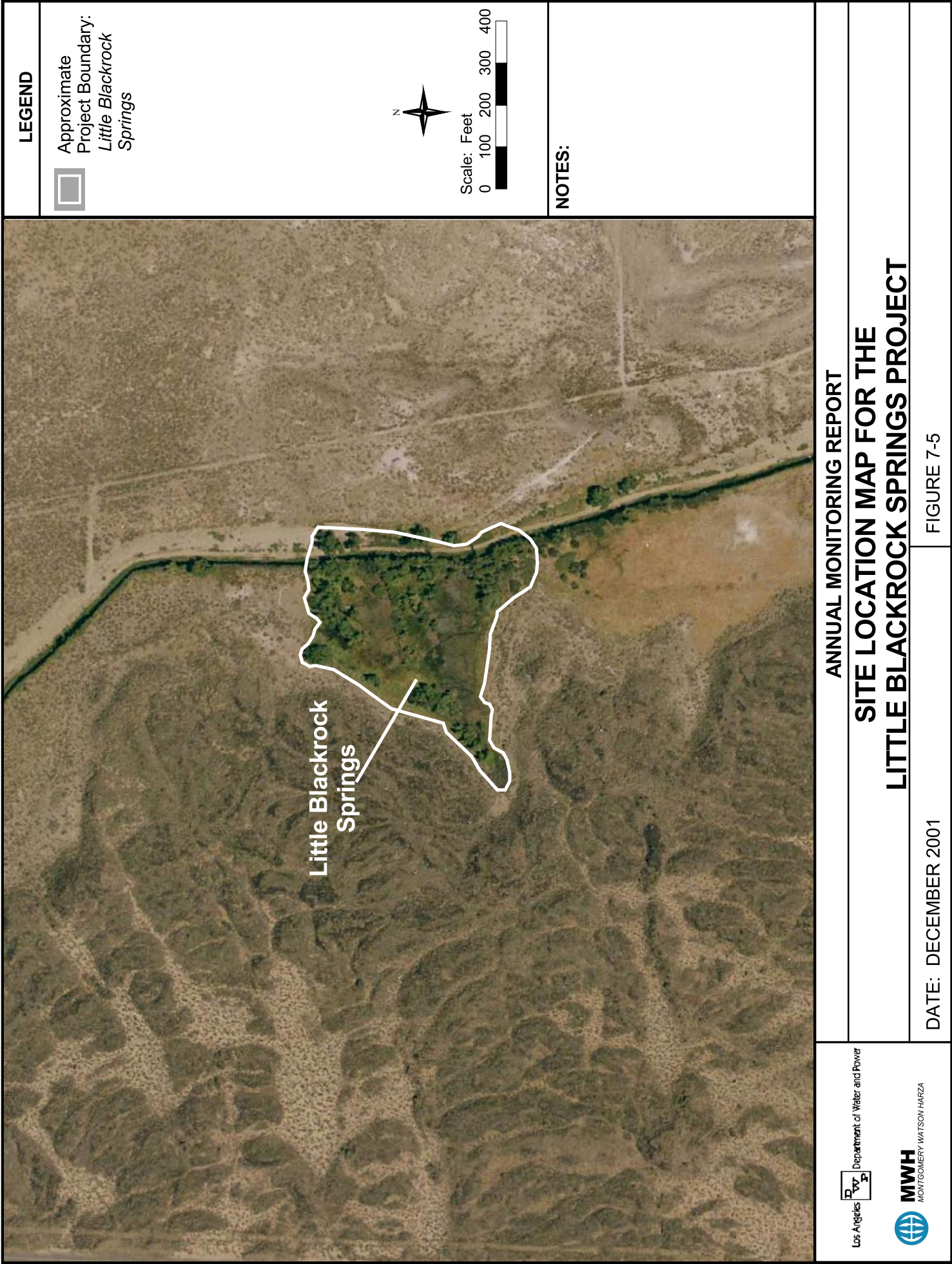
Project implementation is complete, and management of the project continues as in previous years.

Annual Water Use

The Goodale Bypass Ditch normally runs all year at less than 1 cubic feet per second (cfs), which equates to about 700 acre-feet/year.

Future Project Plans

The project plan is to continue to operate as currently managed and described above.



REINHACKLE SPRING PROJECT

Project Description

During the 1980s, it was determined that groundwater pumping was affecting the spring flow. At that time, pumping of some wells in the area was discontinued and flow at Reinhackle Spring increased. Groundwater pumping in the Georges Creek area is managed to avoid any reduction in flow at Reinhackle Spring (**Figure 7-6**).

Goals and Strategy

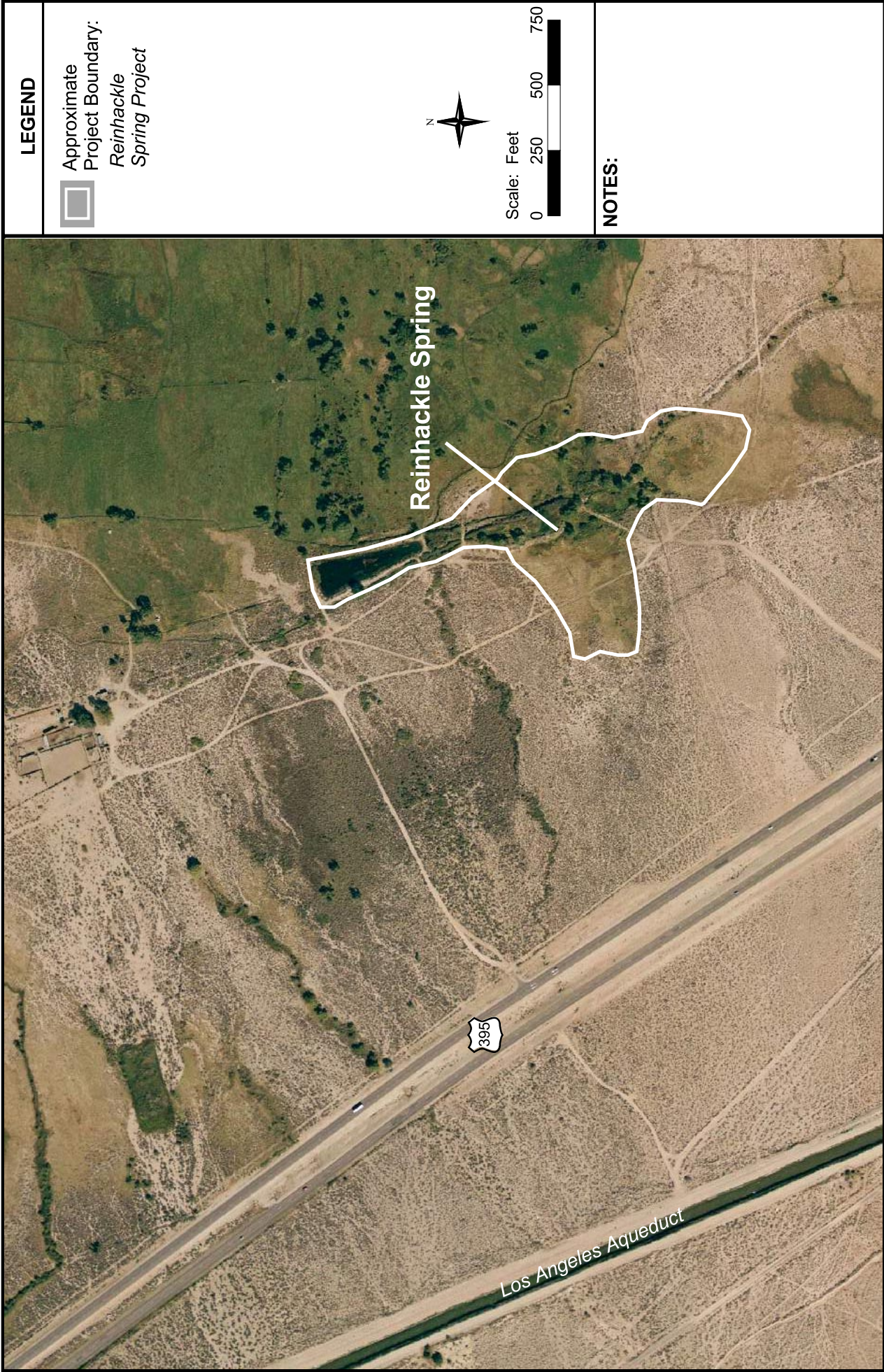
The purpose of the project is to monitor and maintain spring flow.

Estimate of Completion

Project design is complete, and spring flow monitoring is ongoing.

Future Project Plans

Groundwater pumping will be managed to avoid reduced flow at Reinhackle Spring to the degree that decreases or changes occur to riparian vegetation. If spring flow reductions are noted and attributable to groundwater pumping, LADWP will supply surface water to avoid such changes.



LEGEND

- Approximate Project Boundary:
- Reinhackle Spring Project



Scale: Feet
0 250 500 750

NOTES:

ANNUAL MONITORING REPORT

SITE LOCATION MAP FOR THE REINHACKLE SPRING PROJECT

DATE: DECEMBER 2001

FIGURE 7-6

LOWER OWENS RIVER PROJECT

Project Description

Implementation of a Lower Owens River Project (LORP) showing its four major components (Owens River, Delta, Blackrock waterfowl area, and Off-river lakes and ponds) is presented in **Figure 7-7**. The LORP is one of the commitments made by LADWP as part of the Inyo/LA Water Agreement, Section XII (1991). This environmental enhancement project serves as compensatory mitigation for the negative environmental effects of groundwater pumping conducted by LADWP from 1970 to 1990; the specific impacts of which were difficult to quantify. Specific elements of the LORP are further described in a 1997 Memorandum of Understanding (MOU) signed by LADWP, Inyo County, California Department of Fish and Game, State Lands Commission, Sierra Club, and Owens Valley Committee.

The LORP includes rewatering the Lower Owens River below the Los Angeles Aqueduct intake, and the enhancement of several environmental features along and near the river. Habitats will be created and enhanced through water and land management techniques including the creation of off-river wetlands. A continuous flow will be maintained from the intake structure to a new pump station to be located near the river delta at Owens Lake. The pump station will then lift flows back to the Los Angeles Aqueduct or Owens Lake. Specified baseflows (approximately 40 cfs) as well as higher seasonal flows (up to approximately 200 cfs) are intended to approximate natural river hydrology. The purpose is to initiate natural hydrologic and biologic processes that will sustain habitats over time with minimal intervention being necessary.

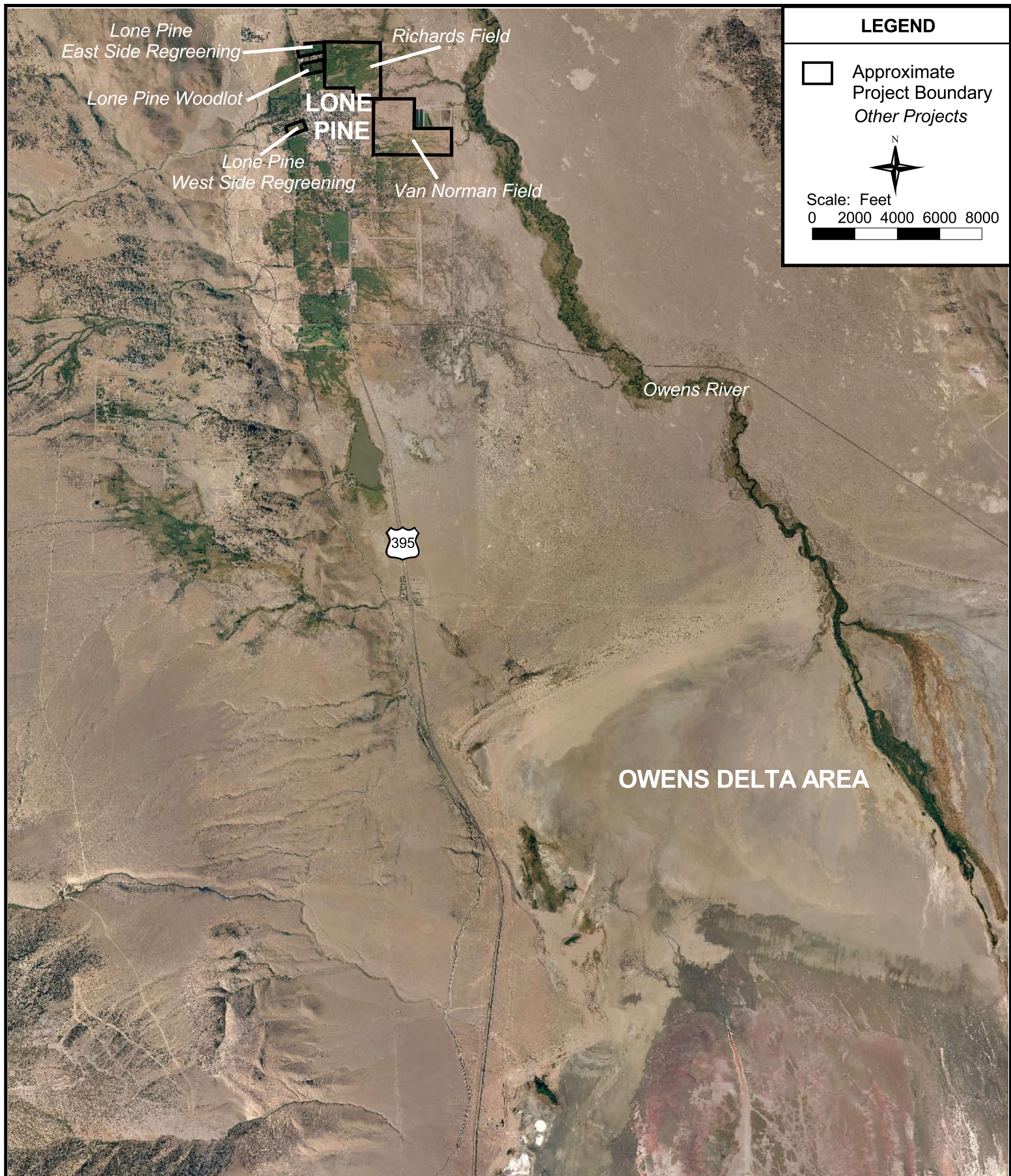
The LORP consists of four major elements:

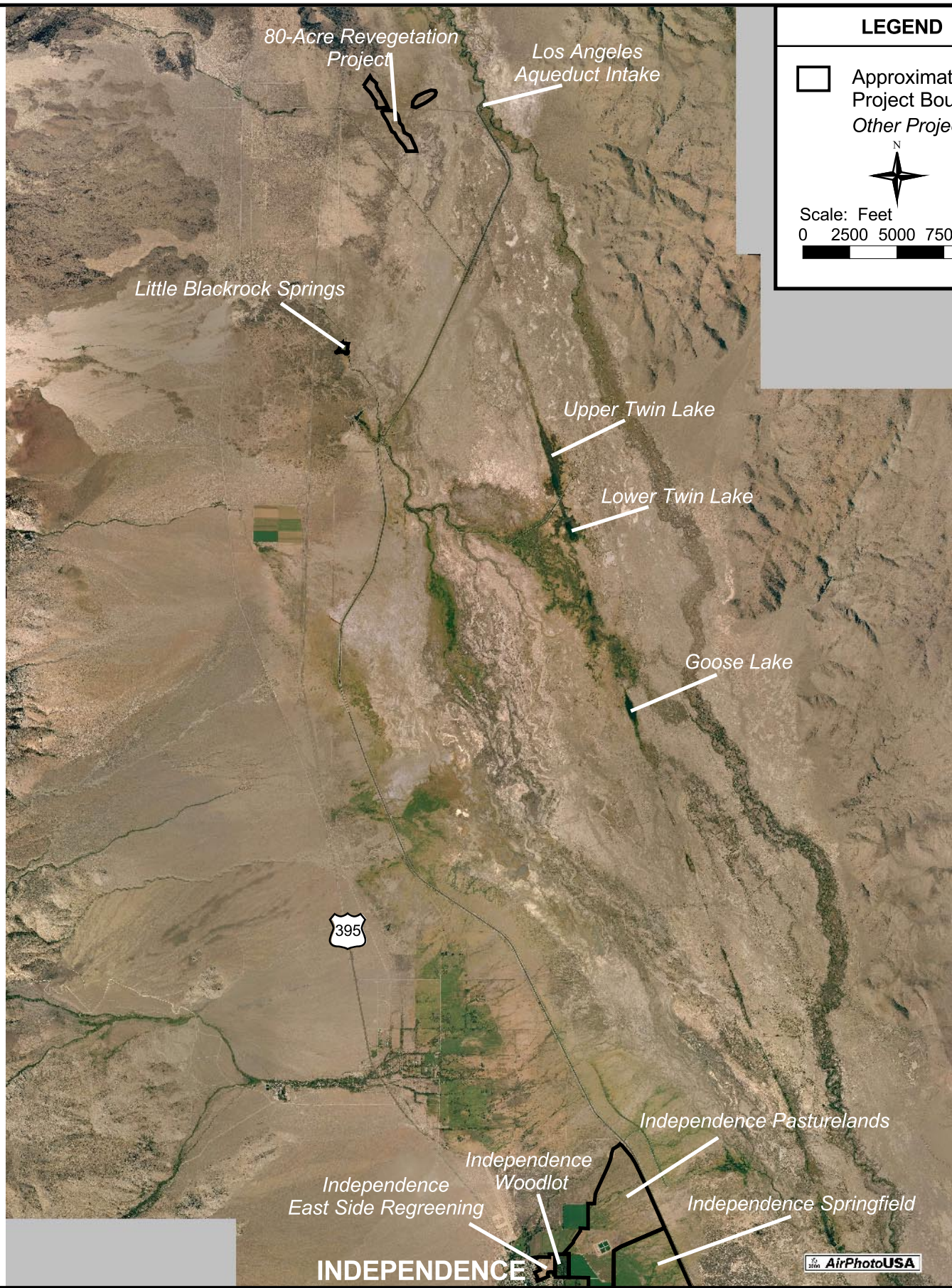
- Owens River,
- Delta,
- Blackrock Waterfowl area, and
- Off-river lakes and ponds.

Full development and implementation of the LORP project is in addition to the water releases into the river channel that were initiated in 1986 as discussed in Appendix C-2 of the EIR (1991) and summarized below in under “Annual Water Use.”

Water Allotment and Source

Under the LORP, water will be introduced to the river from the existing river intake structure located at the Los Angeles Aqueduct Intake. Initially, additional water could be released to the river through several of the existing spillgates along the Los Angeles Aqueduct if water quality conditions present problems or approximately 40 cfs is not maintained, recognizing losing and gaining reaches may cause minor flow fluctuations. These may include the Blackrock, Independence, Locust, Georges, and Alabama spillgates.



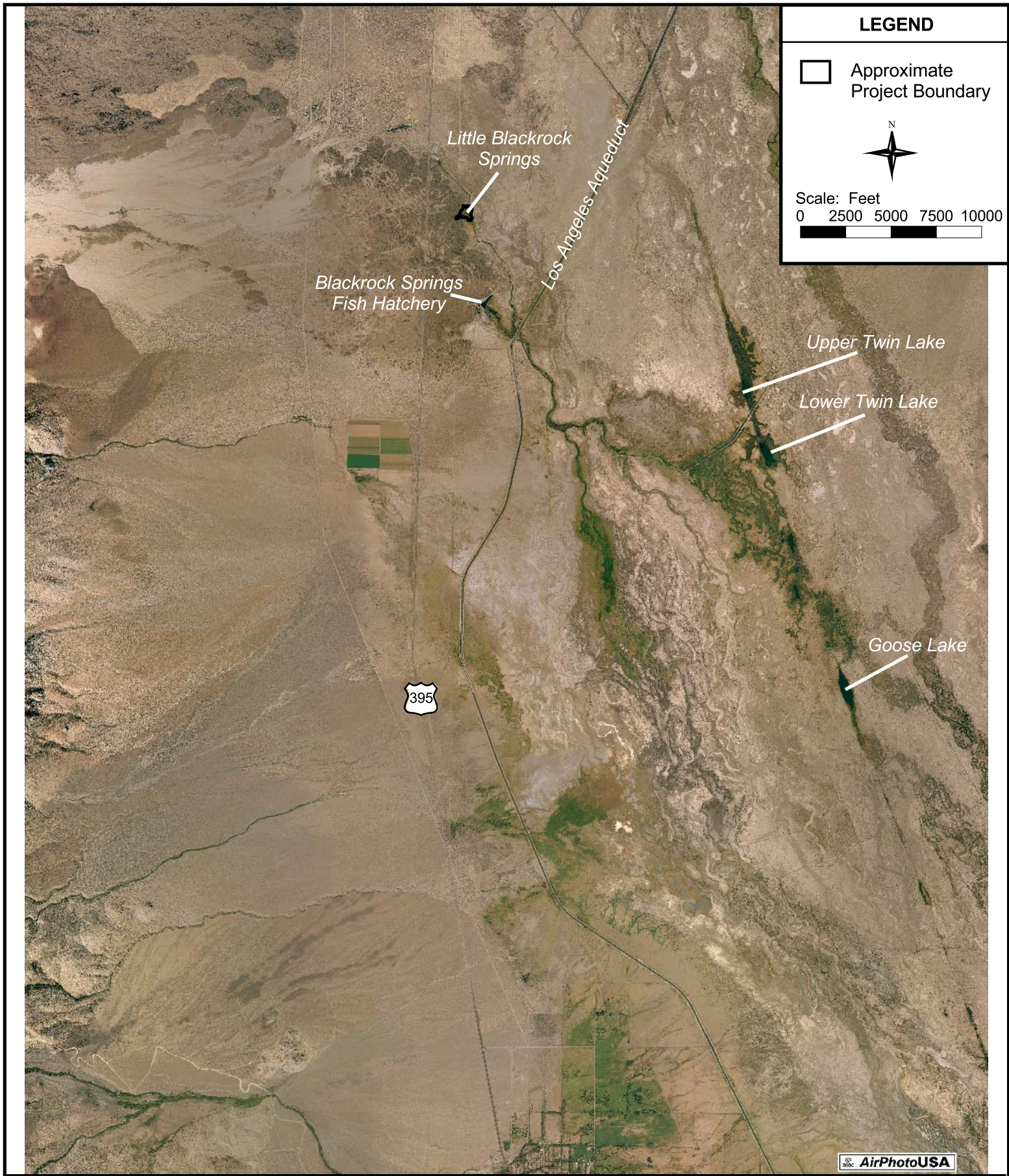


ANNUAL MONITORING REPORT

SITE LOCATION MAP FOR THE LOWER OWENS RIVER PROJECT SHOWING THE OFF SITE RIVER AND PONDS AREA

DATE: DECEMBER 2001

FIGURE 7-7b



ANNUAL MONITORING REPORT

SITE LOCATION MAP FOR THE LOWER OWENS RIVER PROJECT SHOWING THE BLACKROCK MANAGEMENT AREA

DATE: DECEMBER 2001

FIGURE 7-7c

Estimate of Completion

Per the terms of the 1997 Memorandum of Understanding (MOU, 1997), an EIR for the LORP was to be completed by June 2000 and flows in the river would be up to 40 cubic feet per second (cfs) by June 2003. However, as a result of controversy concerning the capacity of the proposed pump station and unanticipated complications in preparing the Draft EIR, the release of the EIR/EIS for public review has been delayed. Additional modeling and data requests were required to answer pending questions and agency reviews outside the Department contributed to delays. The current (December 2001) schedule prepared by the environmental documentation consultants (URS Corporation) anticipates finalization of the EIR/EIS by November 2002 with initial releases to the river occurring by approximately 2003. Other activities such as installation of gauging stations, removal of beaver dams, modification of spillgates, and land management changes are anticipated to begin by approximately Spring 2003.

Annual Water Use

Annual water use for the LORP releases since 1986 discussed in Appendix C-2 of the EIR (1991) is summarized in **Table 7-3**.

Table 7-3
Annual Water Use by Runoff Year for the Lower Owens River Project

Year	Acre-feet
1986	11,806
1987	15,542
1988	13,856
1989	8,832
1990	8,657
1991	10,251
1992	9,128
1993	5,710
1994	11,112
1995	11,812
1996	12,078
1997	13,762
1998	10,450
1999	15,340
2000	13,750

Future Project Plans

The draft LORP Plan (Ecosystem Sciences, 1999) represents a summary of the 19 technical memoranda prepared to describe various aspects of the LORP project. This draft plan is currently being revised after receiving comments from the MOU parties. The Final EIR will address the revised plan as it represents the actual project proposal. This plan may be revised if monitoring determines the need for adaptive management changes. It is intended to be a dynamic working document allowing flexibility to achieve MOU goals.

Section 8

Section 8

Impact No. 7

DISCUSSION OF IMPACT NO. 7

The revegetation of approximately 1,080 acres of formerly irrigated lands has been unsuccessful to date (Mitigation Monitoring Program, 1991). Consequently, these lands have become a source of blowing dust. The following projects were developed to mitigate this impact:

- Lone Pine East Side Regreening Project,
- Lone Pine West Side Regreening Project,
- Lone Pine Woodlot,
- Richards Field,
- Van Norman Field,
- Independence Pasturelands/Native Pastures,
- 120-Acre Revegetation Project Near Bishop, and
- Irrigated Lands in Owens Valley including Lands in Cartago and Olancho (Mitigation Monitoring Program, 1991).

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LONE PINE EAST SIDE REGREENING PROJECT

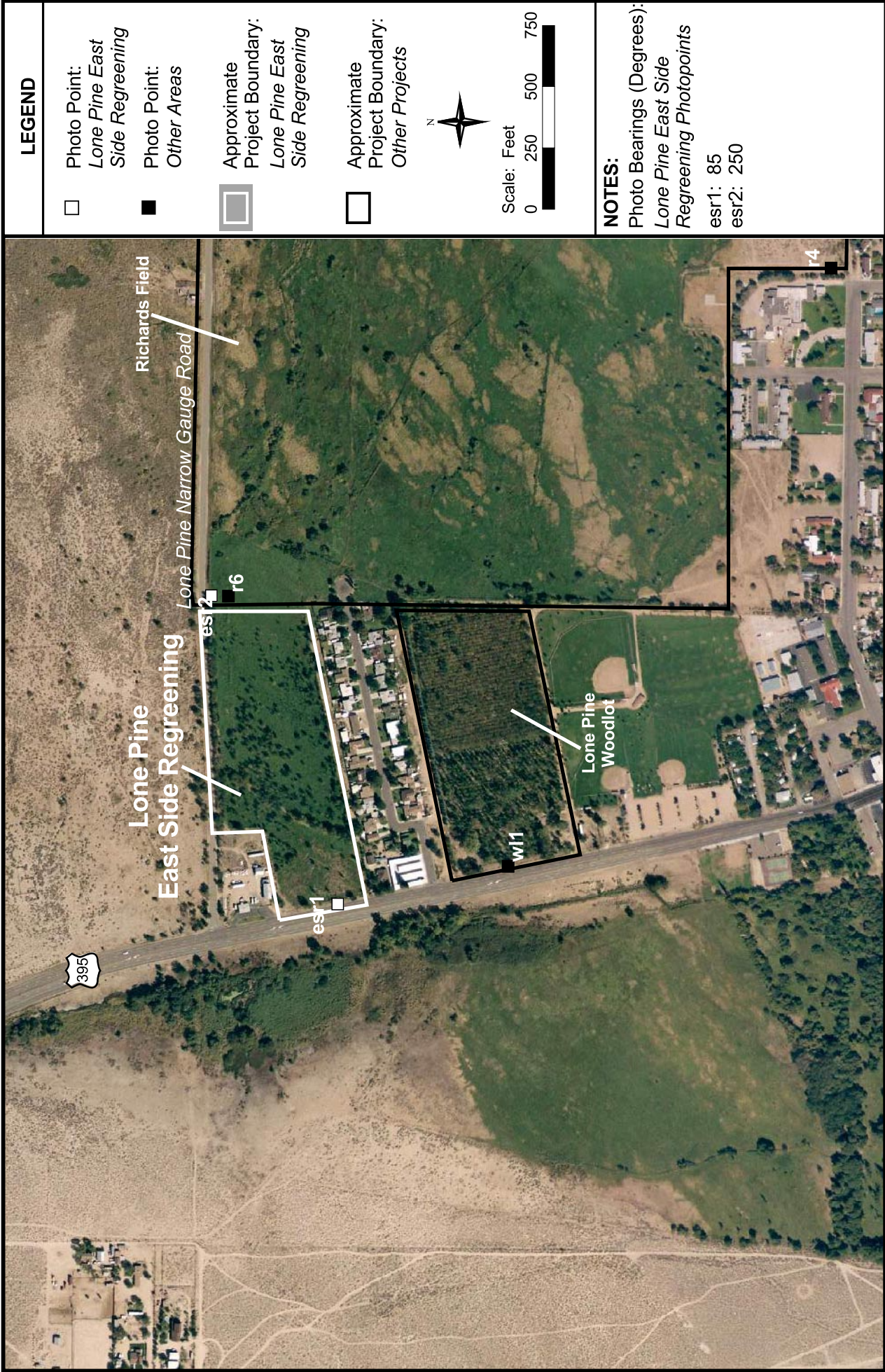
The eleven-acre Lone Pine East Side Regreening project (**Figure 8-1**) is an irrigated pasture. The site is located east of Highway 395 immediately to the north of the town Lone Pine. Photo point locations are shown on **Figure 8-1** and pictures from these points are presented in **Figure 8-2** through **Figure 8-3**.

Goals and Strategy

The project goals are to enhance the aesthetics and to regreen abandoned agricultural lands in the Lone Pine area. To accomplish this, the project site is flood irrigated.

Water Allotment and Source

The original estimate for water use was 55 acre-feet/year. Lone Pine Creek and the Los Angeles Aqueduct serve as the two water sources for this project.



 H:\LADWP\Owens Valley\IEM_Proj\apn\Figures.apr	ANNUAL MONITORING REPORT	
	SITE LOCATION MAP FOR THE LONE PINE EAST SIDE REGREENING PROJECT	
	DATE: DECEMBER 2001	FIGURE 8-1

Figure 8-2
Photo Point Lone Pine East Side Regreening 1 (esr1, bearing = 85°)



Figure 8-3
Photo Point Lone Pine East Side Regreening 2 (esr2, bearing = 250°)



Estimate of Completion

The project implementation is complete, and the site will continue as currently managed.

Acres Mitigated

The project is comprised of 11 acres.

CEQA Compliance

This project was implemented with exemption from CEQA requirements.

Annual Water Use

Annual water use for the Lone Pine East Side Regreening project is summarized in **Table 8-1**.

Table 8-1
Annual Water Use by Runoff Year for the Lone Pine East Side Regreening Project

Year	Acre-feet
1992	91
1993	158
1994	81
1995	136
1996	90
1997	135
1998	0
1999	28
2000	0

Future Project Plans

Future project plans are to continue the project as currently managed and irrigated.

LONE PINE WEST SIDE REGREENING PROJECT**Project Description**

The Lone Pine West Side Regreening Project consists of approximately eight acres of irrigated pasture. The site is located along the Whitney Portal Road (**Figure 8-4**). The photo point location and picture for the site is presented in **Figure 8-4** and **Figure 8-5**, respectively.

Goals and Strategy

The goal of the project is to enhance the aesthetics of abandoned pastureland in Lone Pine through sprinkler irrigation.

Water Allotment and Source

The original estimate for water allotment was 40 acre-feet/year. Lone Pine Creek serves as the sole water source for this project.

Estimate of Completion

The project implementation is complete, and the site will continue as currently managed.

Total Acres Mitigated

All eight acres of the project site have been mitigated.

CEQA Compliance

The project was implemented with exemption from CEQA requirements.



<p>ANNUAL MONITORING REPORT</p>	
<p>SITE LOCATION MAP FOR THE</p>	
<p>LONE PINE WEST SIDE REGREENING PROJECT</p>	
<p>DATE: DECEMBER 2001</p>	<p>FIGURE 8-4</p>

Figure 8-5
Photo Point Lone Pine West Side Regreening 1 (lpw1, bearing = 290°)



Annual Water Use

Annual water use for the Lone Pine West Side Regreening Project is summarized in **Table 8-2**.

Table 8-2
Annual Water Use by Runoff Year for the Lone Pine West Side Regreening Project

Year	Acre-feet
1992	34
1993	34
1994	31
1995	41
1996	26
1997	26
1998	31
1999	35
2000	33

Future Project Plans

There are no project changes anticipated.

LONE PINE WOODLOT

Project Description

More than 12 acres of trees have been planted at the Lone Pine Woodlot (**Figure 8-6** and **Figure 8-7**) to supply fuel wood for needy individuals in the local community. The original project design called for 35 acres of trees; however the number of acres was later reduced to 12 and the remaining area was developed into a sports complex for the town of Lone Pine. The woodlot is furrow irrigated. In 1998, Inyo Mono Advocates for Community Action (IMACA) assumed responsibility for maintenance, harvesting, and distribution of fuel wood for the woodlot.

Goals and Strategy

The Lone Pine Woodlot project goal was to establish a fuel woodlot on a 12-acre sparsely vegetated area with 680 trees per acre, near the town of Lone Pine. The purpose of the woodlot was to supply fuel wood to needy individuals and to mitigate blowing dust in the Lone Pine area, and the project is achieving these goals. Inyo Mono Advocates for Community Action (IMACA), a local community service group, is responsible for the maintenance, harvesting, and distribution of fuel wood for the woodlot.

Water Allotment and Source

The original water allotment was 220 acre-feet/year. Water for this project comes from Lone Pine Creek and the Los Angeles Aqueduct.

Estimate of Completion

The project implementation is complete, and the site continues to be operated and irrigated.



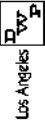

<div>  <div> <div>Los Angeles</div> <div>Department of Water and Power</div> </div> </div> <div>  <div> <div>MWH</div> <div>MONTGOMERY WATSON HARZA</div> </div> </div>		<div> <div>ANNUAL MONITORING REPORT</div> <div>SITE LOCATION MAP FOR THE LONE PINE WOODLOT</div> </div>	
DATE: DECEMBER 2001		FIGURE 8-6	

Figure 8-7
Photo Point Lone Pine Woodlot 1(wl1, bearing = 80°)



Annual Water Use

Annual water use for the Lone Pine Woodlot is summarized in **Table 8-3**. This table indicates variability in water use since 1992, and this variability is attributable to management of the woodlot. From 1992-1994, a private contractor did an excellent job managing the project and its associated water use. In 1995, the private contractor retired, and water use applied to the project site was minimal. Subsequently, a private individual volunteer oversaw water use at the woodlot in 1996. Most recently, from 1997 to present, IMACA has been responsible for the woodlot's management, harvesting, and distribution.

Table 8-3
Annual Water Use by Runoff Year for the Lone Pine Woodlot

Year	Acre-feet
1992	217
1993	229
1994	225
1995	170
1996	180
1997	150
1998	108
1999	73
2000	187

Future Project Plans

No future changes to the project are anticipated and the project will continue to operate.

RICHARDS FIELD

Project Description

One hundred sixty acres are irrigated as part of the Richards Field project (**Figure 8-8**). Photo point locations are also shown on this figure and photographs are provided in **Figure 8-9** through **Figure 8-13**. Over 100 acres receive direct surface water irrigation, and the other portions of the site are influenced by subsurface soil moisture as a result of irrigation.

Goals and Strategy

Prior to project implementation, the site contained abandoned agricultural lands and native vegetation stands that were revegetating slowly. The purpose of the project and associated irrigation was intended to expedite the revegetation process.

Water Allotment and Source

The original water allotment was 320 acre-feet/year. By 1988, it was realized that 320 acre-feet/year was inadequate for the project the allocation was raised to 480 acre-feet/year. Lone Pine Creek and the Los Angeles Aqueduct supply water to the project.

Estimate of Completion

The project implementation is complete, and the irrigation and management practice will continue as they exist today.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE RICHARDS FIELD PROJECT	
DATE: DECEMBER 2001	FIGURE 8-8

Figure 8-9
Photo Point Richards Field 2 (r2, bearing = 310°)



Figure 8-10
Photo Point Richards Field 3 (r3, bearing = 280°)



Figure 8-11
Photo Point Richards Field 4 (r4, bearing = 55°)



Figure 8-12
Photo Point Richards Field 5 (r5, bearing = 200°)



Figure 8-13
Photo Point Richards Field 6 (r6, bearing = 150°)



Annual Water Use

Annual water use for Richards Field includes water supplied to the Lone Pine Riparian Park as summarized in **Table 8-4**.

Table 8-4
Annual Water Use by Runoff Year for Richards Field and Lone Pine Riparian Park

Year	Acre-feet
1992	1,004
1993	1,371
1994	1,038
1995	1,604
1996	1,461
1997	1,054
1998	1,080
1999	1,237
2000	1,101

Notes: Flows to the Lone Pine Riparian Park vary from 1 to 1.5 cubic feet per second (cfs) in the winter time (90 acre-feet/month) to 5 cfs in the summer (150 acre-feet/month). Once the lessee calls for irrigation water in the spring, the flow is maintained throughout the irrigation season for aesthetic purposes.

Future Project Plans

No alterations to the project are anticipated in the future.

VAN NORMAN FIELD

Project Description

The Van Norman Field project (**Figure 8-14**) consists of 160 acres of irrigated pasture. Photo point locations are shown on **Figure 8-14**, and photographs are presented in **Figure 8-15** through **Figure 8-19**. About 40 acres of the site receive direct surface irrigation water. Much of the remaining portion of the project site is influenced by subsurface flow from surface irrigation. Furthermore, tailwater from the site flows east off the project boundary and irrigates additional acreage off-site.

Goals and Strategy

Prior to project implementation, the site contained abandoned agricultural lands and native vegetation stands that were revegetating slowly. The purpose of irrigation was to expedite the revegetation process.

Water Allotment and Source

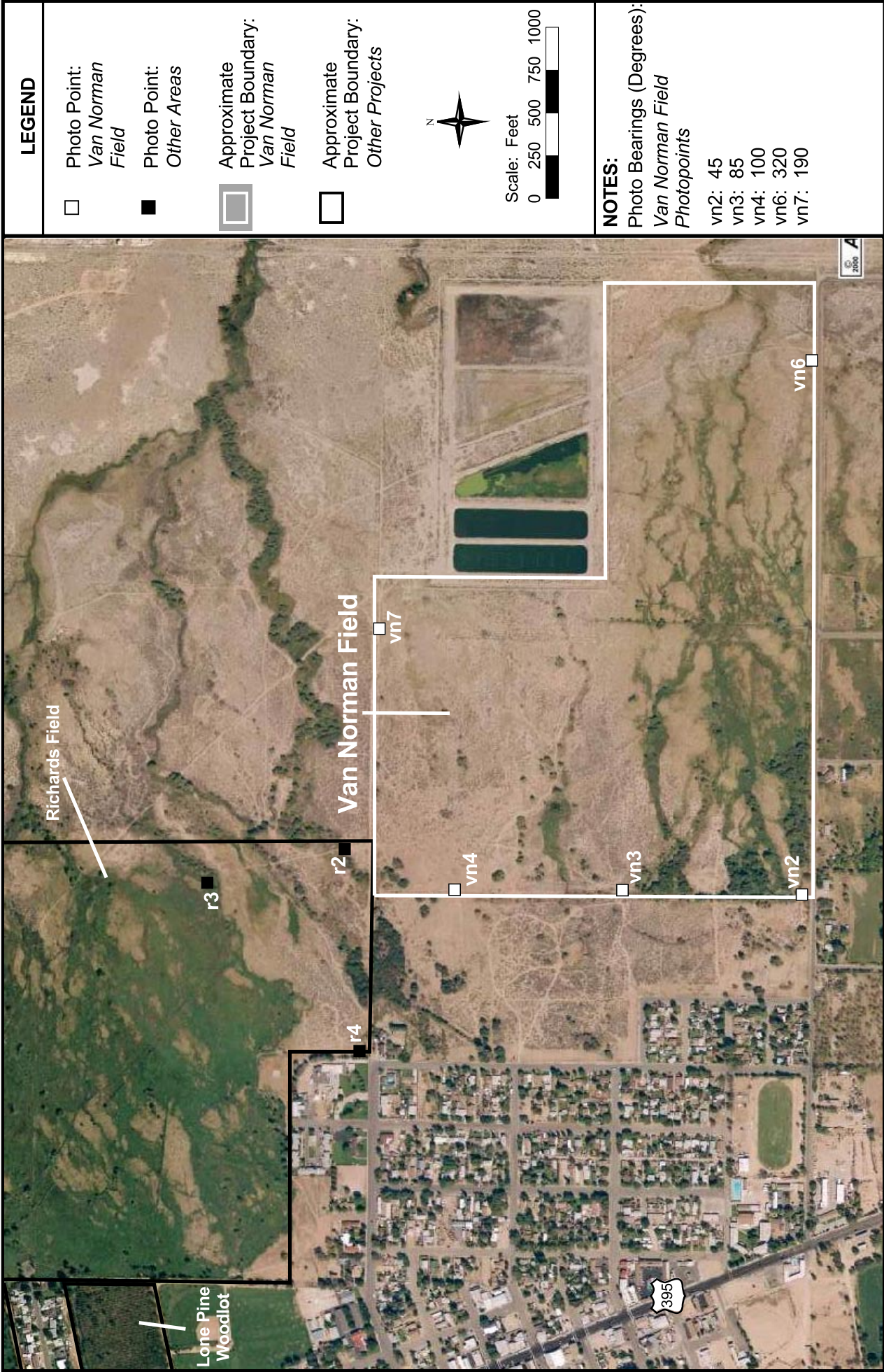
The original water allotment was 320 acre-feet/year. By 1988, it was realized that 320 acre-feet/year was inadequate for the project, and the allocation was raised to 480 acre-feet/year. Well W390EM supplies water to the Van Norman project.

Estimate of Completion

Project implementation is complete, and the project will continue as currently managed.

CEQA Compliance

This project was implemented under a CEQA negative declaration.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE VAN NORMAN FIELD PROJECT	
DATE: DECEMBER 2001	FIGURE 8-14

Figure 8-15
Photo Point Van Norman 2 (vn2, bearing = 45°)



Figure 8-16
Photo Point Van Norman 3 (vn3, bearing = 85°)



Figure 8-17
Photo Point Van Norman 4 (vn4, bearing = 100°)



Figure 8-18
Photo Point Van Norman 6 (vn6, bearing = 320°)



Figure 8-19
Photo Point Van Norman 7 (vn7, bearing = 190°)



Annual Water Use

Annual water use for the Van Norman Field project is summarized in **Table 8-5**.

Table 8-5
Annual Water Use by Runoff Year for the Van Norman Field Project

Year	Acre-feet
1992	332
1993	360
1994	318
1995	212
1996	234
1997	267
1998	233
1999	287
2000	308

Future Project Plans

No changes to the project are anticipated in the future.

Problems

Much of the Van Norman Field does not receive its intended irrigation water because the existing topography is not suitable for irrigation. Parts of the field are too high for water to be diverted from the irrigation ditch, whereas on other parts of the field, water can only flow into low-lying areas. East of the Van Norman Field, water flows into low-lying areas toward the Owens River, thereby creating narrow irrigated areas. Discussions have occurred between ICWD and LADWP regarding this site and its suitability for the intended irrigation plans.

INDEPENDENCE PASTURELANDS/NATIVE PASTURES

Project Description

The initial project concept for the Independence Pasturelands/Native Pastures project (**Figure 8-20**) involved 610 acres of irrigated native vegetation and pastures. The acreage was reduced downward from 610 acres to 470 acres due to issues related to lease boundaries, vegetation, and other surface features. These lands have been transformed into either irrigated pastures or revegetated with native species from subsurface flows and flood irrigation. Photo point locations are shown on **Figure 8-20**, and photographs are provided in **Figure 8-21** through **Figure 8-25**.

Goals and Strategy

The goal of the project was to revegetate abandoned cropland that was removed from irrigation in 1964. The project original strategy called for 350 acres to be irrigated native vegetation and 260 acres to be new irrigated pasture.

Water Allotment and Source

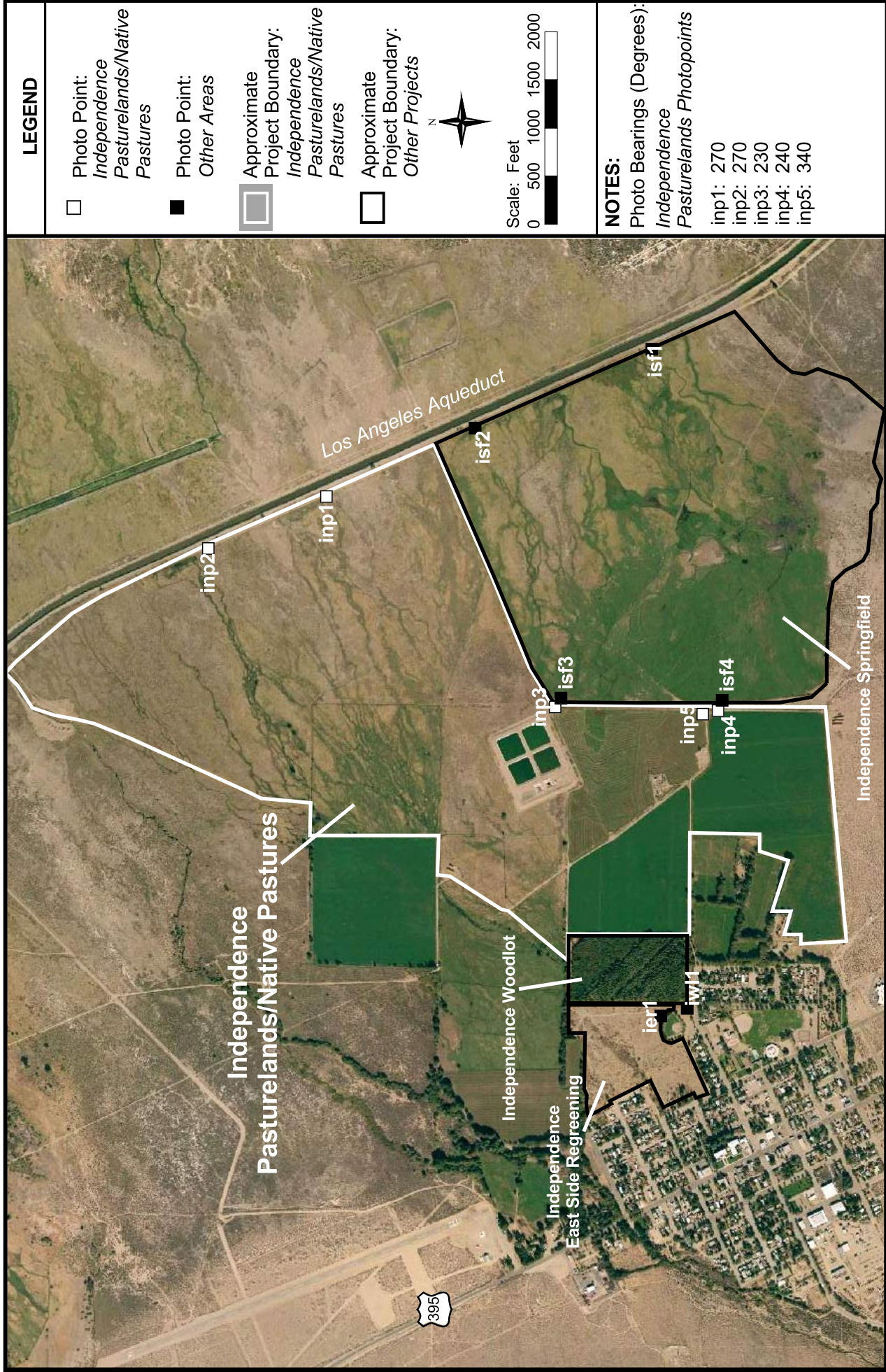
The original water allotment for the 610 acres was 1,825 acre-feet/year, and the current allotment is 1,493 acre-feet/year for the actual 470-acre project. Water for this project comes from wells W383AQ, W384AQ, W61AQ, and W65AQ.

Estimate of Completion

Project implementation is complete, and project management and irrigation will continue as currently managed.

CEQA Compliance

This project was implemented under a CEQA negative declaration.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE	
INDEPENDENCE PASTURELANDS/NATIVE PASTURES PROJECT	
DATE: DECEMBER 2001	FIGURE 8-20

Figure 8-21
Photo Point Independence Pasturelands/Native Pastures 1 (inp1, bearing = 270°)



Figure 8-22
Photo Point Independence Pasturelands/Native Pastures 2 (inp2, bearing = 270°)



Figure 8-23
Photo Point Independence Pasturelands/Native Pastures (inp3, bearing = 230°)



Figure 8-24
Photo Point Independence Pasturelands/Native Pastures (inp4, bearing = 240°)



Figure 8-25
Photo Point Independence Pasturelands/Native Pastures (inp5, bearing = 340°)



Annual Water Use

Annual water use for the project is summarized in **Table 8-6**.

Table 8-6
Annual Water Use by Runoff Year for the Independence Pasturelands/Native Pastures Project

Year	Acre-feet
1992	1,303
1993	1,385
1994	1,393
1995	1,690
1996	1,413
1997	1,347
1998	1,321
1999	1,441
2000	1,641

Future Project Plans

No project changes are anticipated in the future.

Problems

The central and eastern portions of the project site have undulating topography that prevents uniform distribution of irrigation water.

120-ACRE REVEGETATION PROJECT NEAR BISHOP**Project Description**

A 120-acre site south of Bishop has been identified for future revegetation (**Figure 8-1**).

Goals and Strategy

Goals for the project include revegetation with species found in the surrounding area representing the Great Basin Mixed Shrub community. The live vegetation cover goal is 15 percent.

Estimate of Complete/Project Effectiveness/Completed and Ongoing Activities

The project is initiated and ongoing with site fencing in place. There is potential to create a native plant seed farm on this site.

Future Project Plans

The project site is fenced and monitored to evaluate natural revegetation success. If no natural vegetation recruitment occurs by 2004, then revegetation test plots will be established to determine the best revegetation methodology. After five years (2009), the most successful species and methods derived from the test plots will be established on a larger scale.



ANNUAL MONITORING REPORT

SITE LOCATION MAP FOR THE

120-ACRE REVEGETATION PROJECT NEAR BISHOP

DATE: DECEMBER 2001

FIGURE 8-26

IRRIGATED LANDS IN OWENS VALLEY INCLUDING LANDS IN CARTAGO AND OLANCHA**Project Description**

Irrigated lands in Owens Valley (including irrigated lands in the Olancho-Cartago area) in existence during the 1981-82 runoff year, or lands that have been irrigated since that time, will continue to be irrigated into the future. During extremely dry years, reductions in irrigation may be implemented if agreed upon in advance by LADWP and ICWD.

Goals and Strategy

The project goal is to maintain existing irrigated lands.

Water Allotment and Source

Water for irrigated lands in the Owens Valley come from a variety of wells, streams, ditches, canals, and the Owens River.

Estimate of Completion

The project is completed and irrigation is ongoing.

Annual Water Use

Annual water use for irrigated lands in Owens Valley, including lands in Cartago and Olancho are summarized in **Table 8-7**. Water use for other E/M projects is not included in this table.

Table 8-7
Annual Water Use by Runoff Year for Irrigated Lands in Owens Valley, Including Lands in Cartago and Olancho

Year	Acre-feet
1991	46,315
1992	39,501
1993	37,131
1994	47,781
1995	37,784
1996	57,721
1997	46,267
1998	47,013
1999	45,445
2000	49,308
2001	49,327

Notes: 1) Water use excludes totals for all other E/M projects

Future Project Plans

No plans exist to change the quantity of LADWP irrigated lands.

Section 9

Section 9

Impact No. 8

DISCUSSION OF IMPACT NO. 8

Meadow and riparian vegetation maintained by tailwater from formerly irrigated lands have been impacted. These lands will be mitigated in the form of compensatory mitigation of meadow vegetation via the Lower Owens River Project (LORP) (Mitigation Monitoring Program, 1991). LORP was previously discussed in Section 7 of this report.

Section 10

Section 10

Impact No. 9

DISCUSSION OF IMPACT NO. 9

A combination of agriculture abandonment, groundwater pumping, water spreading, grazing, and drought had an adverse impact on vegetation in the Laws area (Mitigation Monitoring Program, 1991). The following projects were designed to mitigate this impact:

- Farmer's Pond,
- McNally Ponds and Native Pasturelands,
- Laws/Poleta Native Pasturelands,
- Laws Historical Museum Pasturelands, and
- 140-Acre Revegetation Project near Laws (Mitigation Monitoring Program, 1991).

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FARMER'S POND

Project Description

Farmer's Pond was developed by the Los Angeles Department of Water and Power (LADWP) in the 1970s (**Figure 10-1**), and consists of filling one pond during the waterfowl-hunting season. Water is released to Farmer's Pond usually on October 15 with flows of 3-5 cubic feet per second (cfs) to fill the ponds. Once the ponds are filled, the flow is maintained at 1-1.5 cfs through January 1. LADWP has also used the pond to spread excess runoff water for groundwater recharge. Photo point locations are shown on **Figure 10-1** and photographs are presented in **Figure 10-2** through **Figure 10-5**.

Water Allotment and Source

Bishop Creek Canal Diversion No. 5b supplies water to the Farmer's Pond Project.

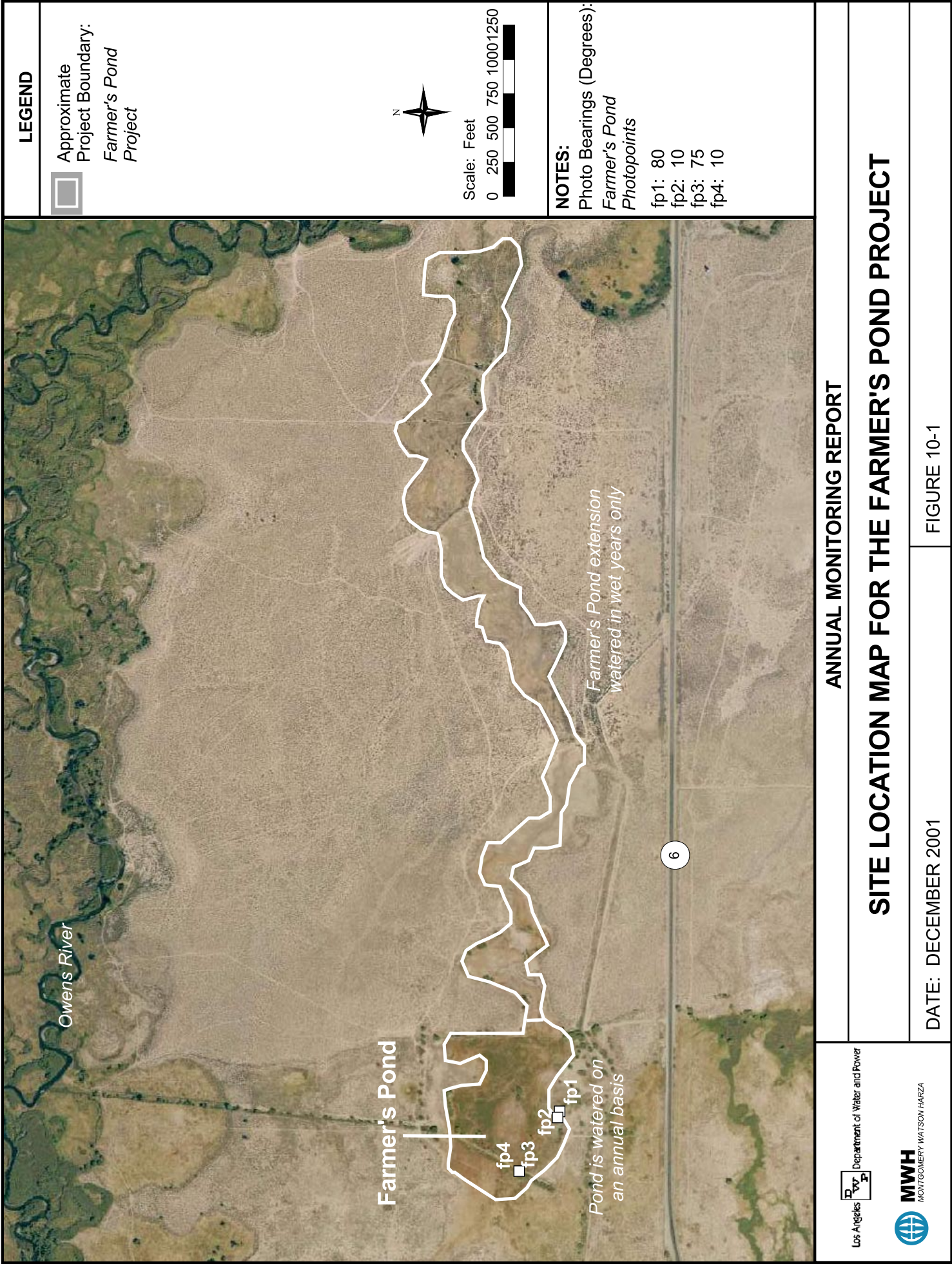


Figure 10-2
Photo Point Farmer's Pond 1 (fp1, bearing = 80°)



Figure 10-3
Photo Point Farmer's Pond 2 (fp2, bearing = 10°)



Figure 10-4
Photo Point Farmer's Pond 3 (fp3, bearing = 75°)



Figure 10-5
Photo Point Farmer's Pond 4 (fp4, bearing = 10°)



Annual Water Use

Annual water use for the Farmer's Pond project is summarized in **Table 10-1**. Water is released to Farmer's Pond usually on October 15 with flows of 3-5 cfs to fill the ponds. Once the ponds are filled, the flow is maintained at 1-1.5 cfs through January 1.

Table 10-1
Annual Water Use by Runoff Year for the Farmer's Pond Project

Year	Acre-feet
1990	525
1991	671
1992	560
1993	595
1994	663
1995	1,972
1996	585
1997	455
1998	1,672
1999	676
2000	403

MCNALLY PONDS AND NATIVE PASTURELANDS

Project Description

Two sites constitute the McNally Ponds and Native Pasturelands project and their locations are shown on **Figure 10-6**. The first site is situated west of Highway 6 and covers an area of 100 acres. This site is a combination of native irrigated pasturelands and ponds. The second site is located east Laws and covers an area of 200 acres. This site is a combination of native pasturelands influenced by surface and subsurface water as a result of irrigation. Photographs taken at photo points locations shown on **Figure 10-6a** are presented in **Figure 10-7** to **Figure 10-18**, whereas photographs taken at photo point locations shown on **Figure 10-6b** are presented in **Figure 10-19** to **Figure 10-21**.

Goals and Strategy

The project goals are to:

- Provide a seasonal water supply to existing ephemeral ponds in the Laws area,
- Create waterfowl habitat,
- Enhance existing vegetation, and
- Increase livestock grazing capacities.



<div> <div> </div> <div> </div> </div>		<div> <div> <div>ANNUAL MONITORING REPORT</div> <div>SITE LOCATION MAP FOR THE</div> <div>MCNALLY PONDS AND NATIVE PASTURELANDS PROJECT</div> </div> </div>	
DATE: DECEMBER 2001	FIGURE 10-6a		

Figure 10-7

Photo Point McNally Ponds and Native Pasturelands 1 (mp1, bearing = 180°)



Figure 10-8

Photo Point McNally Ponds and Native Pasturelands 2 (mp2, bearing = 350°)



Figure 10-9
Photo Point McNally Ponds and Native Pasturelands (mp3, bearing = 190°)



Figure 10-10
Photo Point McNally Ponds and Native Pasturelands (mp3, bearing = 0°)



Figure 10-11
Photo Point McNally Ponds and Native Pasturelands 4 (mp4, bearing = 90°)

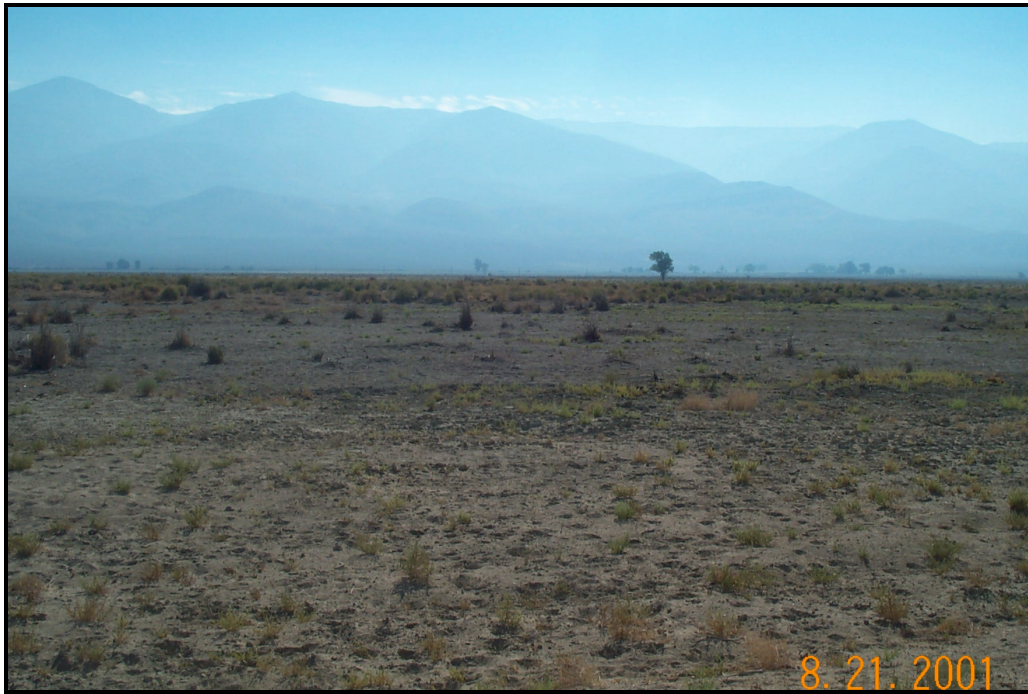


Figure 10-12
Photo Point McNally Ponds and Native Pasturelands (mp4, bearing = 145°)



Figure 10-13
Photo Point McNally Ponds and Native Pasturelands (mp5, bearing = 15°)



Figure 10-14
Photo Point McNally Ponds and Native Pasturelands (mp5, bearing = 300°)



Figure 10-15
Photo Point McNally Ponds and Native Pasturelands (mp5, bearing = 230°)



Figure 10-16
Photo Point McNally Ponds and Native Pasturelands (mp6, bearing = 20°)



Figure 10-17

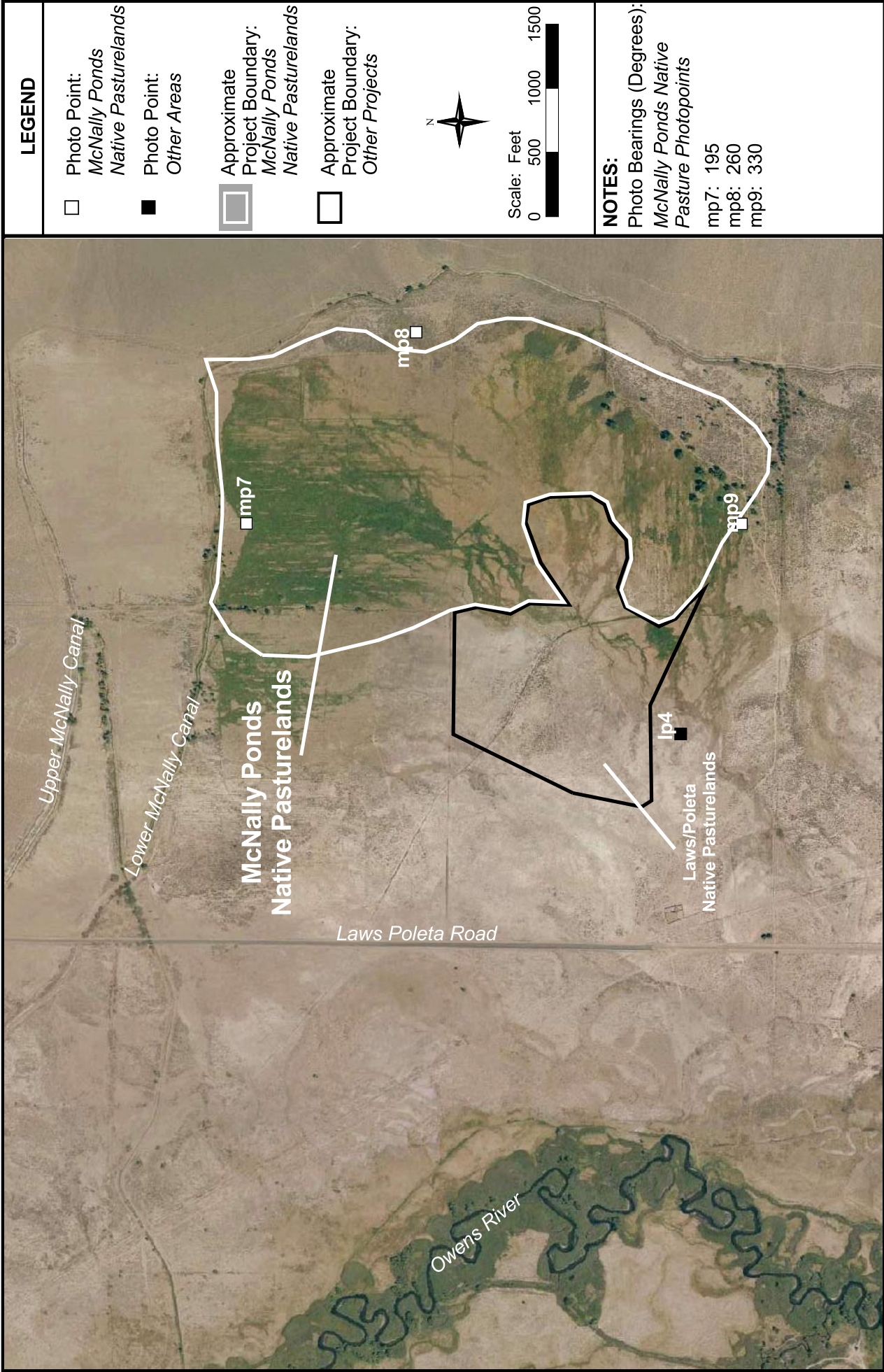
Photo Point McNally Ponds and Native Pasturelands (mp6, bearing = 345°)



Figure 10-18

Photo Point McNally Ponds and Native Pasturelands (mp6, bearing = 275°)





ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE	
McNALLY PONDS AND NATIVE PASTURELANDS PROJECT	
DATE: DECEMBER 2001	FIGURE 10-6b

Figure 10-19
Photo Point McNally Ponds and Native Pasturelands (mp7, bearing = 195°)



Figure 10-20
Photo Point McNally Ponds and Native Pasturelands (mp8, bearing = 260°)



Figure 10-21
Photo Point McNally Ponds and Native Pasturelands (mp9, bearing = 330°)



Water Allotment and Source

The original estimated allotment for annual water use, including conveyance losses, was 4,000 acre-feet/year. Water for the McNally Ponds and Native Pasturelands is provided by the Upper and Lower McNally Canals that convey water from the Owens River, or Wells W236AQ, W239AQ, W240AQ, W241AQ, W243AQ, W244AQ, W245AQ, W247AQ, W248AQ, W249AQ, W365AQ, W376EM, W377EM, W387EM, W388EM, W398AQ, and W399AQ.

Estimate of Completion

The project implementation is complete and the project continues to function under current management systems.

CEQA Compliance

This project was implemented under a CEQA negative declaration.

Annual Water Use

It is not possible to differentiate the McNally Ponds and Native Pasturelands Project water use from the 60 acres of the Law/Poleta Native Pasturelands Project (presented next) water use since both are supplied by the same water source. Annual water use for these two projects is shown in **Table 10-2**.

Table 10-2
Annual Water Use by Runoff Year for the McNally Ponds and Native Pasturelands and 60 Acres of the Laws/Poleta Native Pasturelands Projects

Year	McNally Ponds Native Pasture (200 ac.), Laws-Poleta Native Pasture (60 ac.)	McNally Ponds	McNally Canal Conveyance Loss	Total
	Acre-feet	Acre-feet	Acre-feet	Acre-feet
1992	695	0	292	987
1993	1,306	1,507	180	2,993
1994	683	371	76	1,130
1995	543	813	356	1,712
1996	745	747	160	1,652
1997	822	56	305	1,183
1998	460	545	236	1,241
1999	598	0	896	1,494
2000	908	0	0	908

The Inyo/LA Water Agreement (1991) in Section IV.A. recognizes that successive dry years could result in insufficient water to meet all needs. The Inyo/LA Water Agreement (1991) provides for reasonable reductions in irrigation supply during periods of dry year water shortages for enhancement/mitigation projects if such a program is approved by the Inyo County Board of Supervisors and the Los Angeles Department of Water and Power, acting through the Standing Committee.

The original goal of the McNally Ponds project was to provide a seasonal water supply to the ponds. Due to the monitoring site for upstream wells being in soil water deficit status, the Drought Recovery Policy (1992), and the loss of E/M well supply for the project, the amount of water needed for this project exceeded the amount of water available. This imbalance resulted in a change to the McNally Ponds and Native Pasturelands project. The McNally Ponds and Native Pasturelands water use was reduced starting in 1991. The decision to reduce this water use was agreed to by Inyo County and Los Angeles. The practice since 1991 for the McNally Pasturelands was to provide water from specific upstream wells (when the associated monitoring site was in on status) in years when water is not diverted from the Owens River into the McNally Canals and to provide water for the McNally Ponds only in years when water is diverted into the McNally Canals from the Owens River.

Future Project Plans

There are no plans to alter the project from its current existence and operation. Water will continue to be supplied to the project.

Problems

On the McNally native revegetation site west of Highway 6, irrigation water can only flow into low-lying areas. In order to achieve uniform surface water distribution, the site would require extensive land leveling. Likewise, on the McNally native revegetation site east of Laws, irrigation water flows into low-lying areas. It is difficult, if not impossible, for higher areas to receive water. However, subsurface flows do irrigate portions of the project.

LAWS/POLETA NATIVE PASTURELANDS**Project Description**

Two sites make up the Laws/Poleta Native Pasturelands Project. One site, east of Highway 6 and north of Laws, consists of 160 acres (**Figure 10-22**). The second site, located east of Laws, consists of 60 acres. Both sites receive a combination of direct surface irrigation and subsurface water from irrigation. Photo points are presented in **Figure 10-23** through **Figure 10-28** and photo point locations are shown on **Figure 10-22**.

Goals and Strategy

The goal of the project is to revegetate the project site with native pasture.

Water Allotment and Source

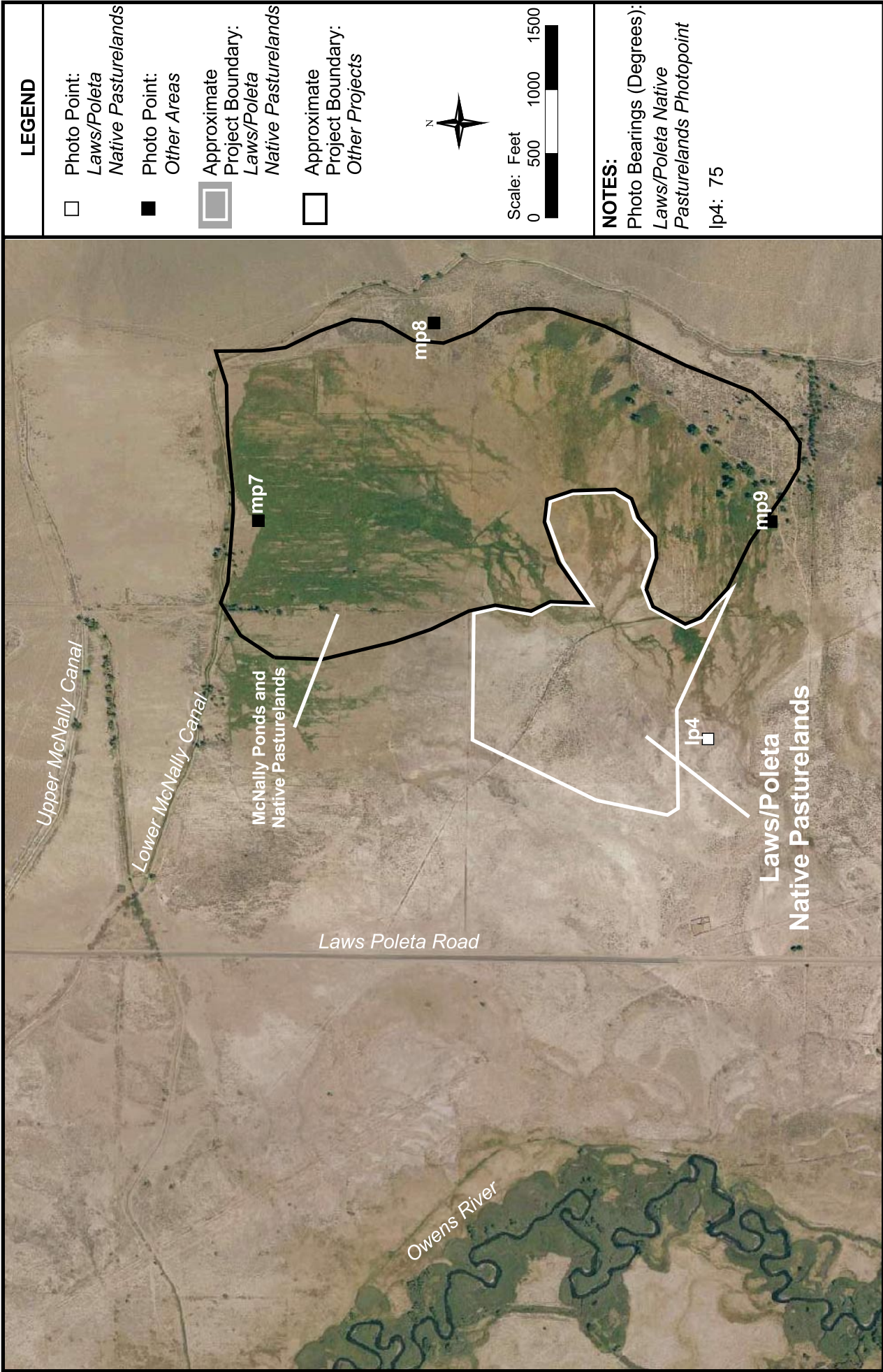
The Upper McNally Canal diversions No. 1 and No. 2 that convey water from the Owens River, and Wells W245AQ, W387EM, and W388EM supply water to the project.

Estimate of Completion

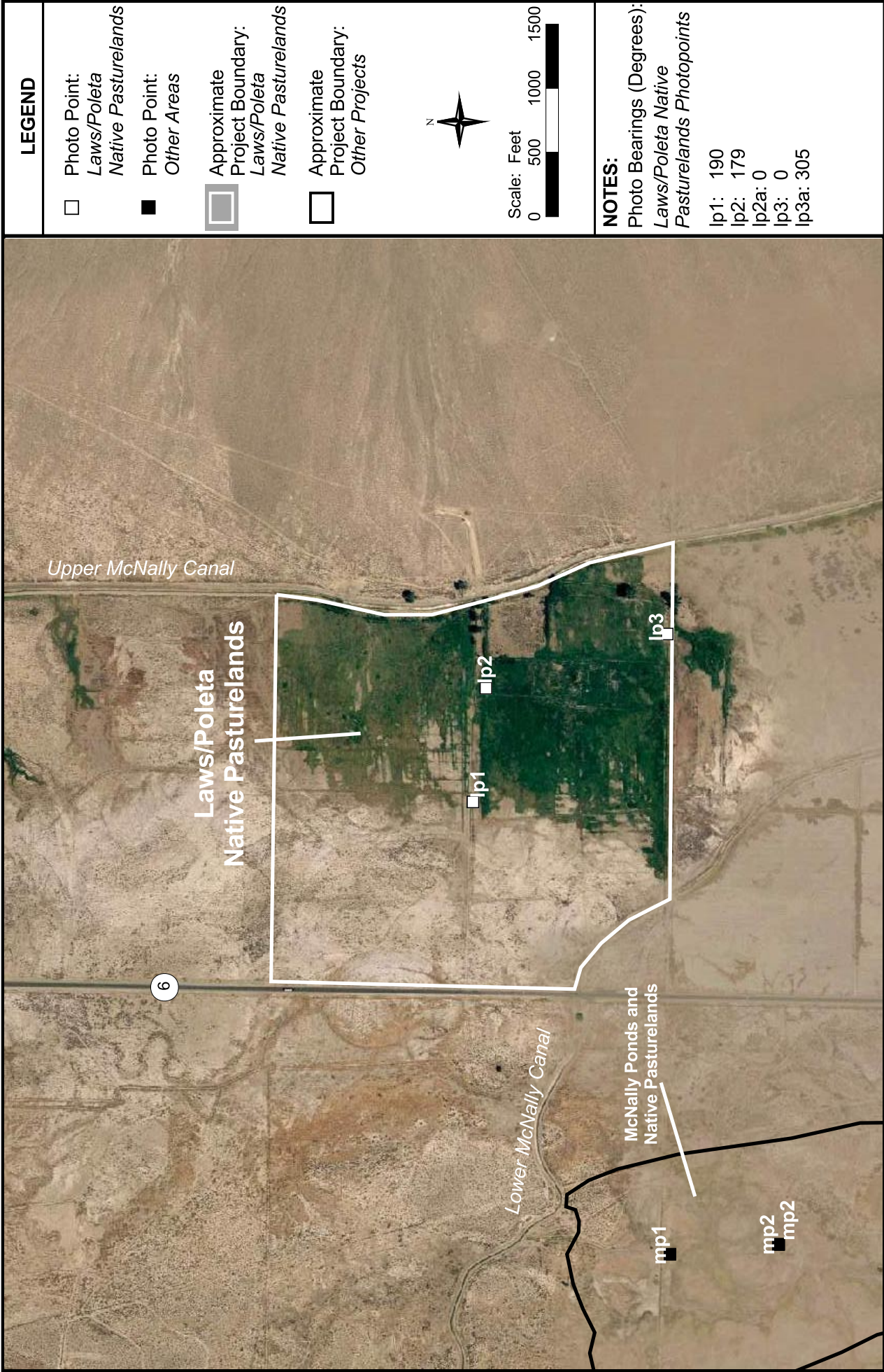
The implementation of the project is complete, and the project continues to be irrigated.

CEQA Compliance

This project was implemented under a CEQA negative declaration.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE	
LAWS/POLETA NATIVE PASTURELANDS PROJECT	
DATE: DECEMBER 2001	FIGURE 10-22a



<p>ANNUAL MONITORING REPORT</p>	
<p>SITE LOCATION MAP FOR THE</p>	
<p>LAYS/POLETA NATIVE PASTURELANDS PROJECT</p>	
<p>DATE: DECEMBER 2001</p>	<p>FIGURE 10-22b</p>

Figure 10-23
Photo Point Laws/Poleta Native Pasturelands 1 (lp1, bearing = 190°)



Figure 10-24
Photo Point Laws/Poleta Native Pasturelands (lp2, bearing = 179°)



Figure 10-25
Photo Point Laws/Poleta Native Pasturelands (lp2, bearing = 0°)



Figure 10-26
Photo Point Laws/Poleta Native Pasturelands (lp3, bearing = 0°)



Figure 10-27
Photo Point Laws/Poleta Native Pasturelands (lp3, bearing = 305°)



Figure 10-28
Photo Point Laws/Poleta Native Pasturelands (lp4, bearing = 75°)



Annual Water Use

Annual water use for the 60-acre portion of the project site is included with the McNally Ponds Native Pasturelands project water use and is summarized in **Table 10-2**. Water use for the 160-acre portion of the project is summarized below in **Table 10-3**. From 1997-1999, the ranch lease was under litigation, and as a result, there was no lessee was available to perform irrigation.

Table 10-3
Annual Water Use by Runoff Year for the Laws/Poleta Native Pasturelands Project

Year	Acre-feet
1992	301
1993	530
1994	539
1995	1,206
1996	368
1997	0
1998	0
1999	0
2000	166

Future Project Plans

No changes in the project are anticipated, and the project site will continue to be irrigated.

Problems

At the Laws/Poleta site located to the east of Highway 6, surface irrigation water cannot get to the west side of the site as a result of surface topography.

LAWS HISTORICAL MUSEUM PASTURELANDS

Project Description

About 36 acres of land comprise the Laws Historical Museum Pasturelands Project (**Figure 10-29**). Approximately 50 percent of the project site had received irrigation at some point in the past. At present, none of the project is irrigated. Photo points are presented in **Figure 10-30** through **Figure 10-33** and locations are shown on **Figure 10-29**.

Goals and Strategy

The goal of this project is to improve native vegetated areas adjacent to the Laws Museum and to provide windbreak trees.

Water Allotment and Source

The original project description contained an estimated water allotment of 105 acre-feet/year. The Upper McNally Canal that conveys water from the Owens River, and Wells W243AQ, W244AQ, W245AQ, W236AQ, W239AQ, W365AQ, W387EM, and W388EM are intended to supply water to the Laws Historical Museum Pasturelands project.

Estimate of Completion

The pasture located to the east of the museum has in the past been irrigated, whereas the pasture to the west of the museum has never been irrigated. Diversion structures have been installed in the east pasture, and irrigation was intermittent during the 1992 to 1998 period.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE	
LAWS HISTORICAL MUSEUM PASTURELANDS PROJECT	
DATE: DECEMBER 2001	FIGURE 10-29

Figure 10-30
Photo Point Laws Historical Museum Pasturelands (Imp1, bearing = 50°)



Figure 10-31
Photo Point Laws Historical Museum Pasturelands (Imp2, bearing = 170°)



Figure 10-32
Photo Point Laws Historical Museum Pasturelands (Imp3, bearing = 160°)



Figure 10-33
Photo Point Laws Historical Museum Pasturelands (Imp4, bearing = 195°)



Annual Water Use

Annual water use is summarized in **Table 10-4**.

Table 10-4
Annual Water Use by Runoff Year for the Laws Historical Museum Pasturelands Project

Year	Acre-feet
1992	64
1993	56
1994	13
1995	164
1996	221
1997	0
1998	64
1999	0
2000	0

Future Project Plans

The future of this project is under consideration by LADWP.

Problems

Irrigation has never occurred at the Laws Historical Museum pasture located to the west of museum, and the site would require extensive land leveling in order to facilitate irrigation.

The Laws Historical Museum pasture to the east of the museum does not have evidence of recent irrigation.

140-ACRE REVEGETATION PROJECT NEAR LAWS

Project Description

This 140-acre Revegetation Project near Laws consists of 140 acres situated between the Upper and Lower McNally canals (**Figure 10-34**), and is comprised of abandoned agricultural land.

Goals and Strategy

The project goal is to revegetate the site with native species found in the surrounding areas, with a live plant cover goal is 11.5 percent composed of at least 11 different species.

Water Allotment and Source

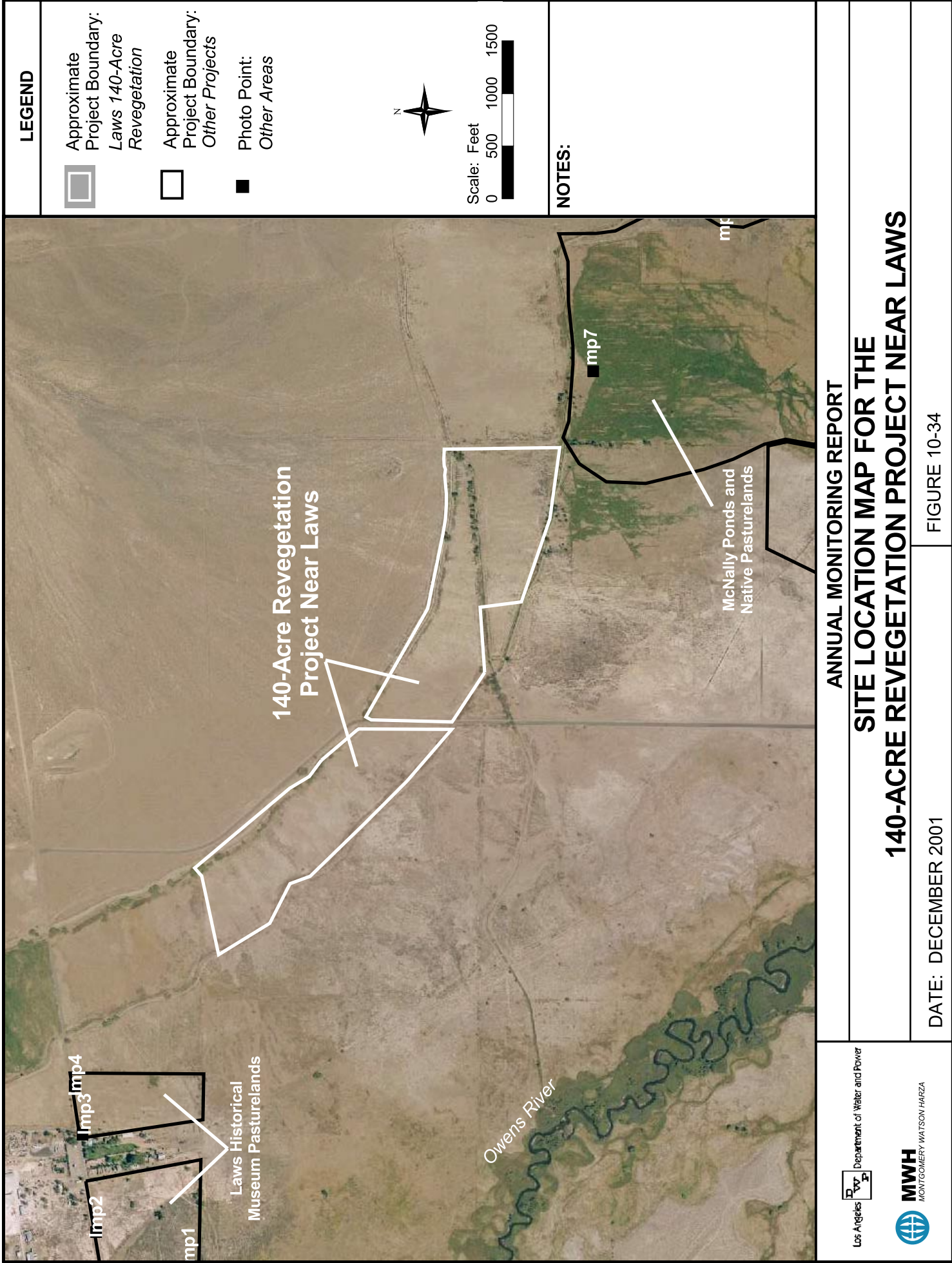
Water for the project could be available from the Owens River or wells in the area conveyed through the McNally Canals.

Estimate of Completion

Project implementation has been initiated and is ongoing with site fencing in place. Ten acres of the project site revegetation effort is being conducted by the consulting firm Science Applications International Corporation (SAIC). The SAIC project is evaluating irrigated revegetation methodologies. Revegetation test plots will begin in 2001.

Future Project Plans

Upon completion of the revegetation pilot project, the most cost effective revegetation plan will be identified and implemented.



Section 11

Section 11

Impact No. 10

DISCUSSION OF IMPACT NO. 10

Water management activities have had an adverse impact on vegetation in a portion of the Big Pine Wellfield (Mitigation Monitoring Program, 1991). The following projects were identified to mitigate this impact:

- Big Pine Ditch,
- Big Pine Northeast Regreening Project (see Section 4),
- 160-Acre Revegetation Project Near Big Pine, and
- 20-Acre Revegetation Project (Mitigation Monitoring Program, 1991).

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BIG PINE DITCH

Project Description

Since approximately 1942, some Big Pine residents have had small ditches through their properties. However, about 30 percent of the original ditch system has since been abandoned. As part of the Inyo/LA Water Agreement, Section XIV. E. (1991), the Big Pine Ditch project located in the Town of Big Pine (**Figure 11-1**) was developed to reestablish a ditch system in Big Pine. However, at this time, the exact routes of the proposed ditch system has not been finalized. In addition, local residents of the community have made several proposals for alternate uses of the water for the ditch system.

Goals and Strategy

The project goal is to reestablish a ditch system within the town of Big Pine so that all of residents in the town could have a surface water supply through their properties if desired.

Water Allotment and Source

The project proposal calls for up to 6 cubic feet per second (cfs) from early April to late September. Water for the ditch system is diverted from Big Pine Creek. Replacement water for the 6 cfs used in the ditch system will come from new wells west of town.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE BIG PINE DITCH PROJECT SHOWING AN AERIAL VIEW OF THE TOWN OF BIG PINE	
DATE: DECEMBER 2001	FIGURE 11-1

Estimate of Completion

The public has expressed an interest in several alternative uses for the water slated for the Big Pine Ditch system. However, it is anticipated that testing of the new water supply wells for the new ditch system will commence in Winter 2002. At present, the exact routes of the proposed ditch are under development.

CEQA Compliance

A CEQA negative declaration has been prepared for this project.

Annual Water Use

The LADWP is obligated by the Inyo/LA Water Agreement, Section XIV. E. (1991) to provide up to 6 cfs for Big Pine Ditch. . This amount equates to about 2,000 acre-feet for the April through September period. Historically, LADWP provided 2-3 cfs in small existing ditches from April through November. At this time, it is not anticipated that the entire 6 cfs will be a consumptive loss.

160-ACRE REVEGETATION PROJECT NEAR BIG PINE**Project Description**

Approximately 160 acres east of Big Pine (**Figure 11-2**) will be revegetated. The site is abandoned agricultural land that was once planted in alfalfa.

Goals and Strategy

The goal of the project is to revegetate the site with species found in surrounding areas, and to achieve a live cover of 17 percent that includes ten perennial species.

Estimate of Completion

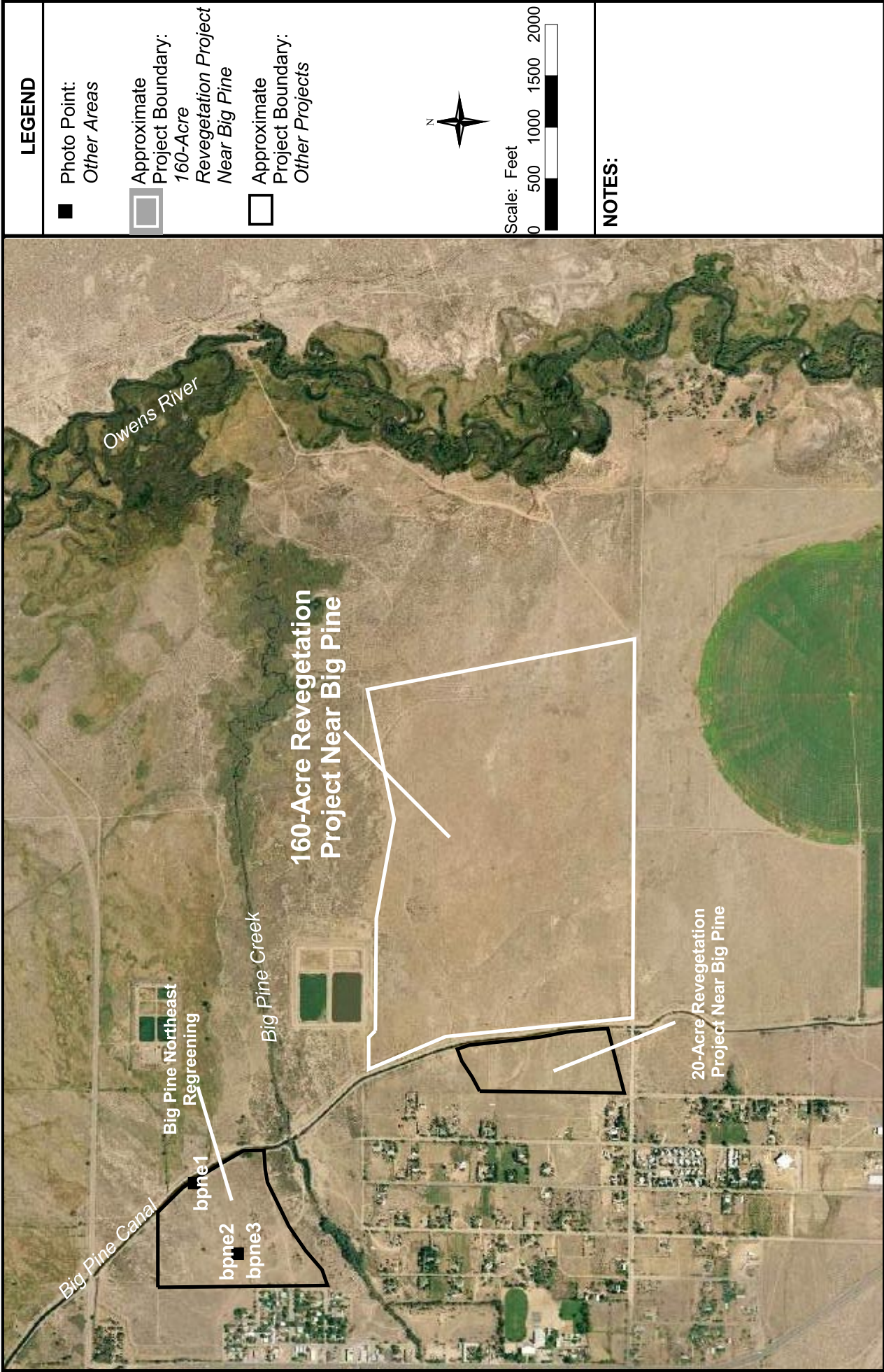
The project implementation is in progress with 209 acres enclosed within a fence and test plot seeding scheduled for the winter of 2001. The area to be fenced was selected based upon visual appropriateness and the natural topography of the site.

Future Project Plans

The future project plan is to evaluate the test plots after five years and later expand the most promising revegetation methods to a larger scale.

Problems

The fence at this site has been vandalized on numerous occasions and repairs are becoming costly.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE	
160-ACRE REVEGETATION PROJECT NEAR BIG PINE	
DATE: DECEMBER 2001	FIGURE 11-2

20-ACRE REVEGETATION PROJECT

Project Description

Per the Inyo County Water Department (ICWD) Revegetation Plan (Yamashita, 1999), about 20 acres located east of Big Pine (**Figure 11-3**) in need of revegetation, which are not part of any existing E/M project, will be evaluated as a potential E/M project. If irrigation is not feasible then the site will be revegetated with native species (Yamashita, 1999).

Goals and Strategy

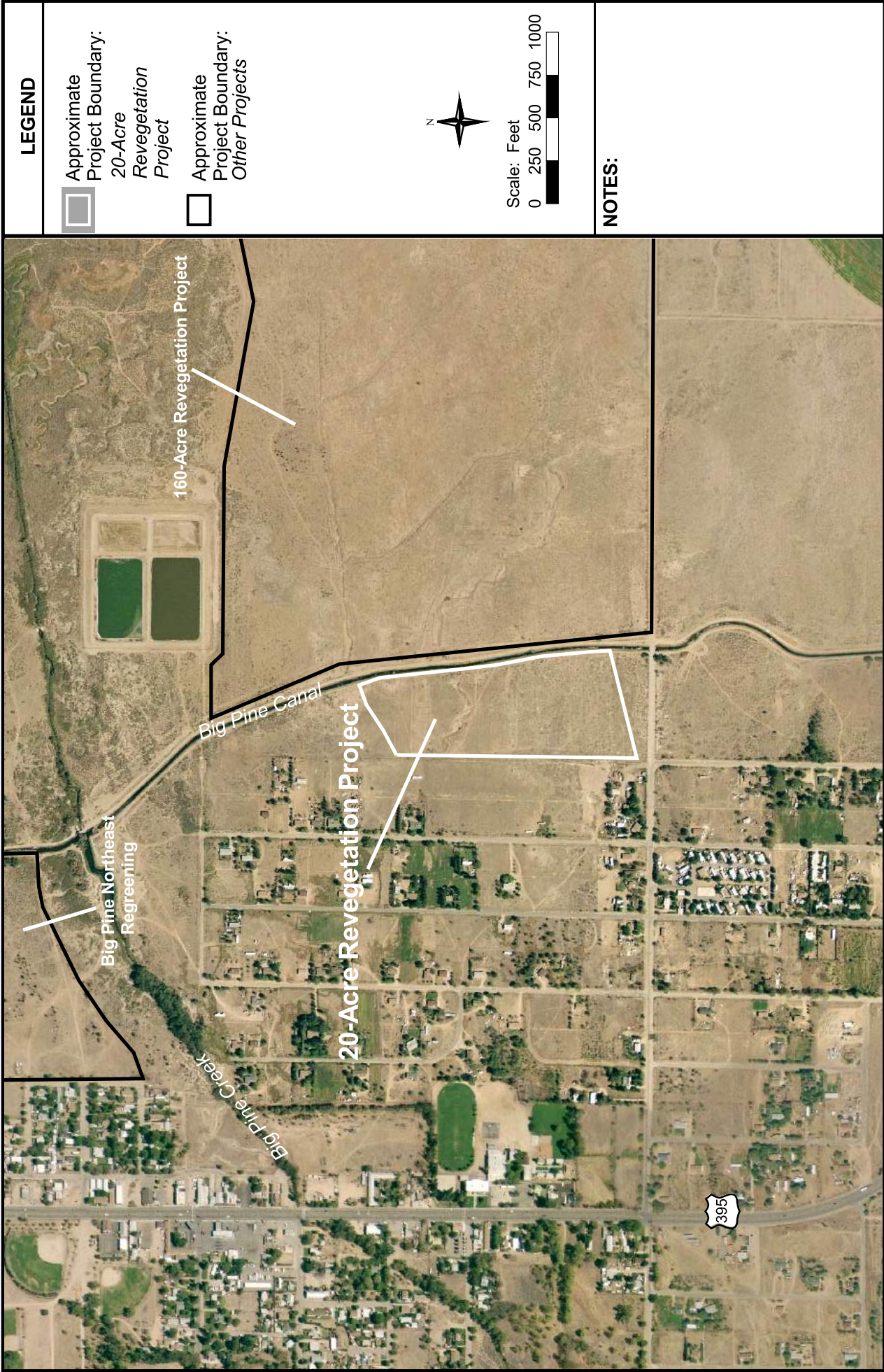
According to the ICWD Revegetation Plan (Yamashita, 1999), the site is being considered for irrigation, but if permanent irrigation proves infeasible, then the goal of the project will be to revegetate the site with species found in surrounding areas. The live cover goal for the site is 17 percent and should include ten perennial species (Yamashita, 1999).

Estimate of Completion

The project has not yet been implemented.

Future Project Plans

The ICWD Revegetation Plan (Yamashita) calls for evaluation of test plots after five years and then expand the most promising revegetation methods to a larger scale.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE 20-ACRE REVEGETATION PROJECT	
DATE: DECEMBER 2001	FIGURE 11-3

Section 12

Section 12

Impact No. 11

DISCUSSION OF IMPACT NO. 11

Loss and reduction of marsh habitat in the Thibaut/Sawmill area has occurred because of surface water diversion and groundwater pumping (Mitigation Monitoring Program, 1991). In addition, past water management activities have had an adverse impact on vegetation in a portion of the Big Pine Wellfield. The loss of formerly irrigated lands has also resulted in a loss of meadow or riparian vegetation that was dependent upon tailwater (Mitigation Monitoring Program, 1991).

Mitigation for this project will be in the form of compensatory mitigation by the Lower Owens River Project (Mitigation Monitoring Program, 1991), which is discussed in Section 7 of this report.

Section 13

Section 13

Impact No. 12

DISCUSSION OF IMPACT NO. 12

Vegetation changes described in Chapter 10 of the EIR (1991) are presumed to have had significant adverse impacts on certain wildlife species entirely dependent upon the impacted habitat (Mitigation Monitoring Program, 1991). Water management to create wet habitats will be used to mitigate the significant adverse impacts of the project. The following are examples of this water management:

- Klondike Lake,
- Lower Owens River Project (previously discussed in Section 7 of this report), and
- Other irrigation and/or revegetation projects previously described.

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KLONDIKE LAKE

Project Description

Water management at Klondike Lake, whose location is shown on **Figure 13-1**, will be conducted to create habitats as mitigation. When full, Klondike Lake covers nearly 160 acres of land and is situated immediately to the north of Big Pine and east of Highway 395. The photo point photograph for Klondike Lake is presented as **Figure 13-2**. An additional project benefit includes a sub-irrigated pasture along the Lyman ditch that brings water from the Big Pine Canal to Klondike Lake.

Goals and Strategy

The goals of the project are to create and maintain the lake level to enhance the attractiveness of the facility for recreation as well as improve waterfowl nesting and feeding habitat by providing a firm water supply to the site.

Water Allotment and Source

The original water allotment was 2,200 acre-feet/year. The Lyman Ditch, which conveys water from the Big Pine Canal, serves as the water source for Klondike Lake.



ANNUAL MONITORING REPORT	
SITE LOCATION MAP FOR THE KLONDIKE LAKE PROJECT	
DATE: DECEMBER 2001	FIGURE 13-1

Figure 13-2
Photo Point Klondike Lake 1 (kl1, bearing = 0°)



Estimate of Completion

The Klondike Lake Project is complete.

CEQA Compliance

The Klondike Lake project was implemented under a CEQA negative declaration

Annual Water Use

Annual water use for Klondike Lake is summarized in **Table 13-1**. As the table indicates, annual water use is lower than the allotment of 2,200 acre-feet/year. Because of the way Klondike Lake is managed, it is necessary to maintain the lake at a certain level for recreational purposes. As a result, water use is governed by the maintenance of the lake at a specified level. In general, during wet years, it is necessary to pass water through the lake and send it southward to prevent flooding.

Table 13-1
Annual Water Use by Runoff Year for the Klondike Lake Project

Year	Acre-feet
1992	1,798
1993	3,206
1994	1,684
1995	1,067
1996	1,889
1997	1,717
1998	1,606
1999	1,482
2000	1,387

Future Project Plans

It is planned that Klondike Lake's water supply will continue into the future.

Problems

Klondike Lake is used heavily for recreation including boating, water skiing, jet skiing, swimming, and more. At present, there are no facilities on site, and litter and waste products have become a concern.

Section 14

Section 14

Impact No. 13

DISCUSSION OF IMPACT NO. 13

Groundwater pumping during the period of 1970-1990 has caused impacts on air quality due to vegetation losses (Mitigation Monitoring Program, 1991). To mitigate this impact, approximately 730 acres have been revegetated as native pasture or alfalfa as part of the following projects:

- Independence Pasturelands/Native Pastures Project (previously discussed in Section 8),
- Independence Springfield Project (previously discussed in Section 4),
- Shepherd Creek Alfalfa Field Project (previously discussed in Section 4), and
- 40-Acre Revegetation Project East of Independence (Mitigation Monitoring Program, 1991).

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40-ACRE REVEGETATION PROJECT EAST OF INDEPENDENCE

Project Description

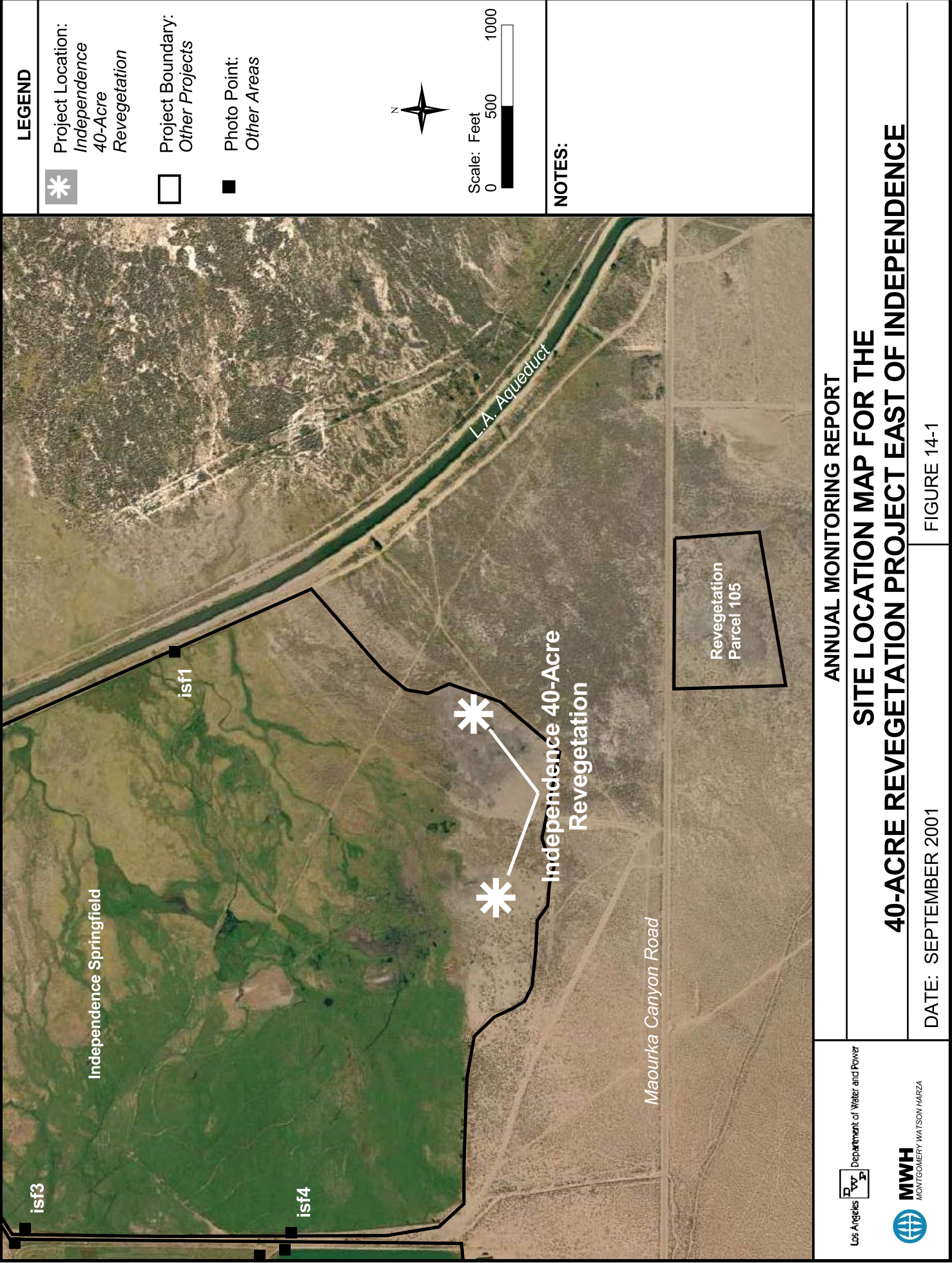
This 40-acre Revegetation Project East of Independence is actually part of the Independence Springfield project (**Figure 14-1**). The Independence Springfield project encompasses about 317 acres, with 260 acres of the project irrigated. Parts of the site are directly irrigated by surface water or have been revegetated through sub-irrigation to native species. The 40-acre project discussed herein is located on the south end of the project.

Goals and Strategy

The goals of the project included establishing native perennial vegetation where none existed, reduce blowing dust, and enhancing grazing.

Water Allotment and Source

The estimated original water allotment for the entire Independence Springfield project was 1,500 acre-feet/year, and Wells W60AQ, W65AQ, W383EM, and W384EM will be used as water sources for this project.



Estimate of Completion

The 40-Acre project has been designated as a “revegetation project,” and has not yet been implemented.

Problems

This 40-Acre site has diverse topography that would prevent uniform surface distribution of irrigation water.

Section 15

Section 15

Impact Nos. 14-26

DISCUSSION OF IMPACT NOS. 14-26

As specified by the Inyo/LA Water Agreement, Section X (1991), Impact Nos. 14-26 may occur from the period of 1990 onward (Mitigation Monitoring Program, 1991).

Impact No. 14

Increased groundwater pumping could result in increased dust (measured as PM₁₀) levels as a result of vegetation loss. Mitigation efforts would be similar to those for Impact No. 13 discussed in Section 14 of this report. Also, the Inyo/LA Water Agreement, Section IV. (1991) itself serves as mitigation to prevent future vegetation losses (Mitigation Monitoring Program, 1991).

Impact No. 15

Significant negative impacts to air quality may occur as a result of the removal of irrigation water to supply the Second Aqueduct, and therefore, the abandoned agricultural land could contribute to blowing dust. As previously discussed, many lands have been revegetated with native pasturelands and/or alfalfa (Mitigation Monitoring Program, 1991).

Impact No. 16

Construction of new recharge facilities could result in vegetation decreases or change. However, no further mitigation measures are needed for this impact (Mitigation Monitoring Program, 1991).

Impact No. 17

Construction of proposed recharge areas could disturb subsurface archaeological resource, with possible significant impact. To mitigate this impact, any new recharge facility location would be surveyed for cultural resources prior to any surface disturbance activities associated with any culverts, ditches, or trenches. In accordance with requirements of 36 CFR 800.11, should a previously unidentified National Register or eligible property be discovered during construction of a new project, the Los Angeles Department of Water and Power (LADWP) would comply with the provisions of the Archaeological and Historic Preservation Act of 1974 (Mitigation Monitoring Program, 1991).

Impact No. 18

Any new wells in the Big Pine area have the potential to lower groundwater levels that, in turn, could result in significant impacts to existing private wells. To mitigate this potential impact, wells will be monitored as described in the Inyo/LA Water Agreement, Sections VI. and Green

Book (1991). Adverse impacts will be mitigated as described in those documents (Mitigation Monitoring Program, 1991).

Impact No. 19

Operation of two new wells in the Laws area could cause flows in artesian wells to stop or be reduced to a level that impacts the dependent vegetation. As provided in the Inyo/LA Water Agreement, Sections III. – VI. (1991) and the Green Book (1991), existing and new monitoring wells will be used to monitor water levels and vegetation. Groundwater pumping is managed to avoid significant decreases in the amount of water flowing from these wells such that significant changes to vegetation will not occur. If changes in vegetation are predicted to occur then water will be supplied to avoid such vegetation changes (Mitigation Monitoring Program, 1991).

Impact No. 20

Pumping of Big Pine well BP-1 may impact Type D vegetation along the fault zone west of Big Pine. Existing and new monitoring wells are utilized to monitor vegetation, water levels, and soil water as described in the Inyo/LA Water Agreement, Section IV. (1991) and Green Book (1991). Groundwater pumping is managed to avoid decreases and changes in vegetation (Mitigation Monitoring Program, 1991).

Impact No. 21

New wells in the Independence-Symmes-Bairs area may reduce or eliminate flow from Reinhackle Spring and impact vegetation dependent upon flow from the spring. If it is projected that a decrease or change in vegetation that is dependent upon Reinhackle Spring flow will result, then LADWP will reduce pumping to the degree necessary to restore flow to avoid such vegetation decreases or changes, or provide water to avoid such vegetation decreases or changes (Mitigation Monitoring Program, 1991).

Impact No. 22

The construction of new recharge facilities could result in vegetation decreases, but provisions of the Inyo/LA Water Agreement, Section VIII. (1991) will continue to be met (Mitigation Monitoring Program, 1991).

Impact No. 23

Air quality could be adversely affected by the construction and maintenance of new wells. All areas disturbed during construction of new wells will be wetted during construction to minimize the generation of fugitive dust (Mitigation Monitoring Program, 1991).

Impact No. 24

Construction of 15 new wells in five well fields could disturb subsurface archeological resources, with possible significant impacts. Construction activity at the LP-1, BP-1, and BP-2 sites will be monitored. If subsurface prehistoric archeological resource evidence is found, excavation or other construction activity in the area will cease and an archeological consultant would be

retained to evaluate the findings in accordance with standard practices and regulations. Data and artifact recovery, if deemed appropriate, will be conducted during the period when construction activities are on hold. An appropriate representative of the Native American Indian groups and the County Coroner would be informed and consulted if human remains are discovered, as required by state law (Mitigation Monitoring Program, 1991).

Impact No. 25

Increased pumping in the Bishop Cone could impact discharge rates of artesian wells. Changes in flowing well flow rates will be monitored along with the vegetation that is dependent upon the flows from such wells. Groundwater pumping will be managed to avoid significant decreases or changes in vegetation dependent upon water from flowing wells. Water will be provided if necessary to avoid such decreases and changes in vegetation if flows from such wells are decreased as a result of groundwater pumping (Mitigation Monitoring Program, 1991).

Impact No. 26

Increased pumping on the Bishop Cone could adversely impact vegetation as a result of lowered water tables or reduced flows from flowing wells. As described in the Inyo/LA Water Agreement, Sections VII. (1991), existing and new monitoring sites will be utilized to monitor vegetation, water levels, and soil water. Groundwater pumping will be managed to avoid significant decreases and changes to vegetation and other significant impacts to the environment (Mitigation Monitoring Program, 1991).

Section 16

Section 16

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Platts, William, 1996. Final recommendations based on the goal to reestablish native grasses and willow. Five Bridges Mitigation Project. Letter to Lloyd Anderson, LADWP. Dec. 8, 1996.

Stipulation and Order, January 1985. Case No. 12908, Superior Court of California, County of Inyo, 29 pages.

MONITORING PROGRAM

This document serves as a monitoring program for the mitigation measures adopted by the Board of Water and Power Commissioners at the time it approved the Final Environmental Impact Report on the water from the Owens Valley to supply the Second Los Angeles Aqueduct Project.

1. Mitigation plans for each of the mitigation measures listed on the following pages are to be developed by the Technical Group as set forth in Section I.C.2 of the Green Book (Technical Appendix to the Long-Term Groundwater Management Agreement).
2. Each written mitigation plan will be submitted to the Standing Committee for review.
3. Periodic status reports for each mitigation plan will be prepared by the Technical Group and submitted to the Inyo/Los Angeles Standing Committee as required by the Mitigation Plan Provision of the Green Book.
4. An Annual Report will be submitted to the Los Angeles Board of Water and Power Commissioners. This report will contain a description of each mitigation effort; its goals, strategies, and actions; its status (completed activities, ongoing activities); and mitigation plans for the following year. A discussion of the overall effectiveness of each mitigation effort will also be provided.
5. Copies of the Annual Report will be made available to the public.

CITY OF LOS ANGELES DEPARTMENT OF WATER AND POWER
AND
COUNTY OF INYO

ENVIRONMENTAL IMPACT REPORT
ON
WATER FROM THE OWENS VALLEY TO SUPPLY
THE SECOND LOS ANGELES AQUEDUCT

- o 1970 to 1990
 - o 1990 Onward
- Pursuant to a Long-term
Groundwater Management Plan

SCH #89010705

MITIGATION MONITORING PROGRAM

OCTOBER 1, 1991

OCT X 9 1991

E.L. COUFAL

As required by CEQA Section 21081.6, pursuant to requirements of subdivision (a) of Section 21081, this document serves as a monitoring program for mitigation measures designed to mitigate effects of the 26 significant impacts (attached) described in Chapter 7 of the Draft EIR, and reduce such impacts to less than significant.

Mitigation plans for each mitigation effort are developed by the Technical Group as set forth in Section I.C.2. of the Green Book. Periodic status reports for each mitigation plan will be prepared by the Technical Group and submitted to the Inyo-Los Angeles Standing Committee.

In addition, an Annual Report will be submitted to the Los Angeles Board of Water and Power Commissioners. This report will contain a description of each mitigation effort; its goals, strategies, and actions; its status (completed activities, ongoing activities, and acres mitigated); and mitigation plans for the following year. A discussion of the overall effectiveness of each mitigation effort will also be provided.

**SIGNIFICANT IMPACTS AND MITIGATION EFFORTS
TO REDUCE TO LESS THAN SIGNIFICANT**

A. PERIOD 1970 TO 1990

<u>IMPACT</u>	<u>MITIGATION</u>	<u>STATUS OR COMPLETION DATE</u>
1. Pumping in Big Pine area lowered water in wells on Steward Ranch resulting in adverse economic effect.	1. Ranch owners have been fully compensated on an annual basis for reduced alfalfa production and for future costs of re-establishing any lost alfalfa. The DWP has made an offer to permanently mitigate the groundwater levels and adjust power costs (see discussion on Pages 9-74 to 9-77 of the Draft EIR).	1. Ranch owner has not yet accepted this offer.
2. Water spreading in area of dikes east of Independence fostered conditions favorable to the spread of saltcedar (Tamarisk).	2. A saltcedar eradication and control program will be implemented as described in Chapter 5, Pages 5-23 and 5-24, of the Draft EIR.	2. Inyo County Water Department will conduct this program beginning in 1992.
3. Groundwater pumping has caused water table fluctuations leading to die-off of approximately 655 acres of groundwater dependent vegetation.	3. a. Approximately 317 acres near Independence have been revegetated as part of the Independence Springfield and Woodlot E/M Projects. b. Approximately 198 acres have been revegetated with alfalfa under the Shepherd Creek E/M Project. c. Shepherd Creek Project may be expanded to 60 acres on opposite side of U.S. Highway 395 if native vegetation does not naturally increase in density.	3. a. Completed b. Completed c. Ongoing monitoring

IMPACT	MITIGATION	STATUS OR COMPLETION DATE
	<p>3. (continued)</p> <p>d. Revegetation projects will be initiated on 30 acres near Independence and on 30 acres near Big Pine under Town Regreening E/M Projects.</p> <p>e. An additional 80 acres will be revegetated at sites to be determined by DWP and Inyo County Water Department.</p>	<p>3.</p> <p>d. Planning stage; new wells required</p> <p>e. Planning stage</p>
	<p>For additional information see discussion on Pages 10-57 and 10-58 of the Draft EIR, and location maps 10-8A through 10-8L.</p>	
<p>4. Approximately 300 acres of vegetation near Five Bridges impacted by operation of 2 E/M wells.</p>	<p>4. Water has been spread over affected area since 1988. DWP and Inyo County have developed a revegetation plan.</p>	<p>4. Project is 90% completed</p>
<p>5. Pumping has impacted approximately 60 acres of vegetation in Symmes-Shepherd wellfield.</p>	<p>5. A revegetation program will be implemented.</p>	<p>5. Planning stage</p>
<p>6. Pumping has reduced flows and impacted vegetation at Fish Springs; Big and Little Seeley Springs; Hines Springs; Big and Little Blackrock Springs; and Reinhackle Spring.</p>	<p>6.</p> <p>a. Fish hatcheries serve as mitigation by producing fish for all of Inyo County at Fish Springs and Big Blackrock Springs.</p> <p>b. Water discharged from Well No. 349 at Big and Little Seeley Springs provides pond for birds and maintains riparian vegetation.</p>	<p>6.</p> <p>a. Completed</p> <p>b. Completed</p>

IMPACT

MITIGATION

STATUS OR
COMPLETION DATE

7. Approximately 1,080 acres of abandoned agriculture land have not successfully revegetated and have become a source of blowing dust.

6. (continued)
c. Water will be provided to 1 or 2 acres of ponds at Hines Spring as a research project to re-establish aquatic habitat and riparian and marshland habitats.
d. DWP will continue to supply water from Division Creek to former pond site at Little Blackrock Spring.
e. Groundwater pumping in Georges Creek area will be managed to avoid any reduction in flows at Reinhackle Spring.
f. Lower Owens River Project provides mitigation of compensatory nature for springs that do not receive on-site mitigation.

For further discussion, see Pages 10-59 through 10-62 of the Draft EIR. A more detailed discussion of the Lower Owens River Project is found in Appendix C-2, Pages C2-1 to C2-3, Volume III, of the Final EIR.

7.
a. Approximately 942 acres have been revegetated by E/M projects implemented by the DWP and Inyo County since 1985. These projects are described in Chapter 5 of the Draft EIR, and Appendix E-4, Pages E-17 through E-25, Volume II, of the Draft EIR.

6.
c. Planning stage

d. Completed

e. Ongoing monitoring

f. Completed

7.
a. Completed

IMPACT

MITIGATION

STATUS OR
COMPLETION DATE

- | | | |
|---|---|-------------------------|
| | 7. (continued) | |
| | b. Approximately 18 acres near Lone Pine have been converted to irrigated pasture under the Lone Pine Regreening E/M Project. These areas are described in Chapter 5 of the Draft EIR. | b. Completed |
| | c. Near Bishop, 120 acres will be revegetated with native vegetation (not irrigated pasture) by a process to be determined by the DWP and Inyo County. These lands are shown on Figures 10-8A through 10-8L, on Pages 10-34 through 10-45 of the Draft EIR. | c. Planning stage |
| | d. Irrigation will continue on lands at Olancho and Cartago that have been irrigated since 1981-82. | d. Ongoing |
| 8. Meadow and riparian vegetation maintained by tailwater from formerly irrigated lands have been impacted. | 8. These lands will be mitigated in the form of compensatory mitigation of meadow vegetation by the Lower Owens River Project. | 8. Completed |
| 9. Adverse vegetation change has occurred in the Laws area due to a combination of abandoned agriculture, groundwater pumping, water spreading, grazing, and drought. | 9.
a. Approximately 140 acres will be revegetated in the Laws area. Locations are shown on Figures 10-8A and 10-8B, on Pages 10-34 and 10-35 of the Draft EIR. | 9.
a. Planning stage |

IMPACT

MITIGATION

STATUS OR COMPLETION DATE

- | | | |
|---|---|---|
| <p>10. Water management practices have had adverse impact on vegetation in a portion of the Big Pine wellfield.</p> | <p>9. (continued)
b. The Farmer's Pond, an environmental project developed by the DWP in the 1970s, will continue. In addition, DWP and Inyo County have implemented the Laws Museum, Laws-Poleta Pastureland, and McNally Ponds Ponds E/M Projects, totalling approximately 541 acres of pastureland (see project location maps in Appendix E-4, Volume II, of the Draft EIR).
c. Groundwater pumping has been reduced in the area where it is suspected to have impacted vegetation. If impacts are confirmed, they will be mitigated under the Agreement.</p> <p>10.
a. Approximately 160 acres near Big Pine will be revegetated (see location maps 10-8E through 10-8G, on Pages 10-38 to 10-40 in the Draft EIR.
b. Approximately 30 acres will be revegetated with irrigated pasture northeast of Big Pine, and the Big Pine Ditch Project described on Page 5-23 of the Draft EIR will be implemented. The area will also be mitigated by the Valley-wide mitigation under the Agreement.</p> | <p>9.
b. Completed</p> <p>c. Ongoing monitoring</p> <p>10.
a. Planning stage</p> <p>b. Planning stage</p> |
|---|---|---|

IMPACT	MITIGATION	STATUS OR COMPLETION DATE
	<p>10. (continued)</p> <p>c. Approximately 20 acres east of Big Pine, which are not part of an E/M project, will be evaluated as a potential E/M project. This area is shown on Figure 10-8E, on Page 10-38 of the Draft EIR.</p>	<p>10.</p> <p>c. Planning stage</p>
<p>11. Loss and reduction of marsh habitat in the Thibaut/Sawmill area has occurred due to surface water diversion and pumping.</p>	<p>11. Mitigation will be, in part, in the form of compensatory mitigation by the Lower Owens River Project. Portions of this area are mitigated directly. Changes due to pumping during drought will be mitigated under the Agreement.</p>	<p>11. Completed</p>
<p>12. Vegetation changes described in Chapter 10 of the Draft EIR are presumed to have had significant adverse impacts on certain wildlife species entirely dependent upon the impacted habitat.</p>	<p>12. Water management to create wet habitats will be used as mitigation (e.g., Lower Owens River Project; Klondike Lake E/M Project; other irrigation and/or revegetation projects previously described.</p>	<p>12. Completed except for revegetation project which is in planning stage</p>
<p>13. Pumping during the period of 1970-90 has caused impacts on air quality due to vegetation losses.</p>	<p>13.</p> <p>a. Approximately 730 acres have been revegetated as native pasture or alfalfa as part of the Independence Pasturelands and Springfield E/M Projects.</p>	<p>13.</p> <p>a. Completed</p>

IMPACTMITIGATIONSTATUS OR
COMPLETION DATE

- | | |
|---|--------------|
| 13. (continued) | 13. |
| b. Approximately 200 acres have been converted to alfalfa under the Shepherd Creek E/M Project. | b. Completed |
| c. Approximately 40 acres east of Independence remain barren and will be revegetated with native pasture. | c. Ongoing |

B. PERIOD 1990 ONWARD (AGREEMENT)

- | | | |
|--|---|--------------------------|
| 14. Increased pumping could result in elevated PM levels due to vegetation loss. | 14. See mitigation #13 above. Also, the Agreement itself serves as mitigation to prevent future vegetation losses. | 14. See #13 |
| 15. Abandoned lands which were previously irrigated have resulted in adverse impacts to air quality. | 15. As previously discussed, approximately 1,240 acres have been revegetated with native pasture or alfalfa. | 15. Completed |
| 16. Air quality could be adversely affected by construction of recharge facilities. | 16. All disturbed areas would be wetted during construction to minimize generation of fugitive dust. | 16. Planning stage |
| 17. Construction of recharge areas could disturb subsurface archaeological sites. | 17.
a. Any new sites would be surveyed for cultural resources prior to any work on culverts, ditches, or trenches. Significance of any site will be determined through the use of subsurface testing as appropriate. | 17.
a. Planning stage |

IMPACT

MITIGATION

STATUS OR
COMPLETION DATE

- | | | |
|---|---|--------------------|
| | 17. (continued)
b. DWP will comply with all provisions of the Archaeological and Historic Preservation Act of 1974 by evaluating and implementing mitigation measures as warranted, as well as complying with provisions of 36 CFR 800.11 for eligible property for the National Register. | b. Ongoing |
| 18. New wells in Big Pine area would lower water table and impact local private wells. | 18. Monitoring will be conducted as provided in the Agreement and Green Book. Any adverse impacts will be mitigated as described in the Agreement and in Section 4 of the Green Book. | 18. Planning stage |
| 19. Operation of two new wells in Laws area could cause flows in artesian wells to stop or diminish with associated impact to vegetation. | 19. Wells will be monitored as described above. Groundwater pumping will be managed to avoid reductions in flows from artesian wells. If flows are affected, water will be supplied to avoid impacts to vegetation. | 19. Ongoing |
| 20. Pumping of Big Pine Well BP-1 may impact Type D vegetation along the fault zone west of Big Pine. | 20. As provided in the Agreement and the Green Book, existing and new monitoring sites would be utilized to monitor vegetation, water levels, and soil water. Groundwater pumping would be managed to avoid significant decreases and changes in vegetation. | 20. Ongoing |

IMPACT	MITIGATION	STATUS OR COMPLETION DATE
21. New wells in the Independence-Symmes-Bairs area may reduce or eliminate the flow from Reinhackle Spring and impact vegetation dependent upon flow from the spring.	21. If it is projected that a decrease or change in vegetation dependent upon flow from Reinhackle Spring will result if flow from the spring stops or is reduced, DWP will reduce pumping to the degree necessary to restore the flow to avoid such decreases or changes, or provide water to avoid such decreases or changes.	21. Ongoing
22. The construction of new recharge facilities could result in vegetation decrease.	22. Provisions of the agreement will be met.	22. Planning stage
23. Air quality could be adversely affected by the construction and maintenance of new wells.	23. All areas disturbed during construction of the new wells would be wetted during construction to minimize generation of fugitive dust.	23. Planning stage
24. Construction of 15 new wells could disturb subsurface archaeological resources, with possible significant impact.	24. a. Construction activity at the LP-1, BP-1, and BP-2 sites will be monitored. If subsurface prehistoric archaeological resource evidence is found, excavation or other construction activity in the area will cease and an archaeological consultant would be retained to evaluate findings in accordance with standard	24. a. Ongoing

IMPACT

MITIGATION

STATUS OR
COMPLETION DATE

- | | | |
|---|---|--------------|
| | 24. (continued)
practice and appli-
cable regulations.
Data/artifact
recover, if deemed
appropriate, would be
conducted during the
period when construc-
tion activities are
on hold. | |
| | b. An appropriate repre-
sentative of Native
American Indian
groups and the County
Coroner would be
informed and con-
sulted if remains are
discovered, as
required by State
law. | b. See above |
| 25. Increased pumping on
the Bishop Cone could
affect the rate of
discharge from flow-
ing wells. | 25. Changes in flow rates
from flowing wells
will be monitored
along with vegetation
dependent upon flows
from such wells.
Groundwater pumping
will be managed to
avoid significant
decreases or changes
in vegetation
dependent upon water
from flowing wells.
Water will be pro-
vided if necessary to
avoid such decreases
and changes in vege-
tation if flows from
such wells are
diminished due to
groundwater pumping. | 25. Ongoing |
| 26. Increased pumping on
the Bishop Cone could
adversely affect
vegetation due to
lowered water levels
or reduced flows from
flowing wells. | 26. As provided in the
Agreement, existing
and new monitoring
sites would be
utilized to monitor
vegetation, water
levels, and soil | 26. Ongoing |

IMPACT

MITIGATION

STATUS OR
COMPLETION DATE

26. (continued)
water. Groundwater
pumping would be
managed to avoid
significant decrease
and change to vege-
tation and other
significant effects
on the environment.