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MEETING NOTICE AND AGENDA

ENVIRONMENTAL MITIGATION PROGRAM WORKING GROUP

The Environmental Mitigation Program Working Group may take action on any item appearing on this agenda.

Tuesday, September 8, 2015

1 to 3 p.m.

SANDAG, 7th Floor Conference Room
 401 B Street
 San Diego, CA 92101-4231

Staff Contact: Keith Greer
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AGENDA HIGHLIGHTS

- **ASSESSMENT OF ENVIRONMENTAL MITIGATION PROGRAM LAND MANAGEMENT GRANT PROGRAM**
- **CONSERVATION EFFORT AT MARINE CORPS INSTALLATIONS WEST**
- **CLEVELAND NATIONAL FOREST RESOURCE MANAGEMENT AND PERMIT PROCESS**

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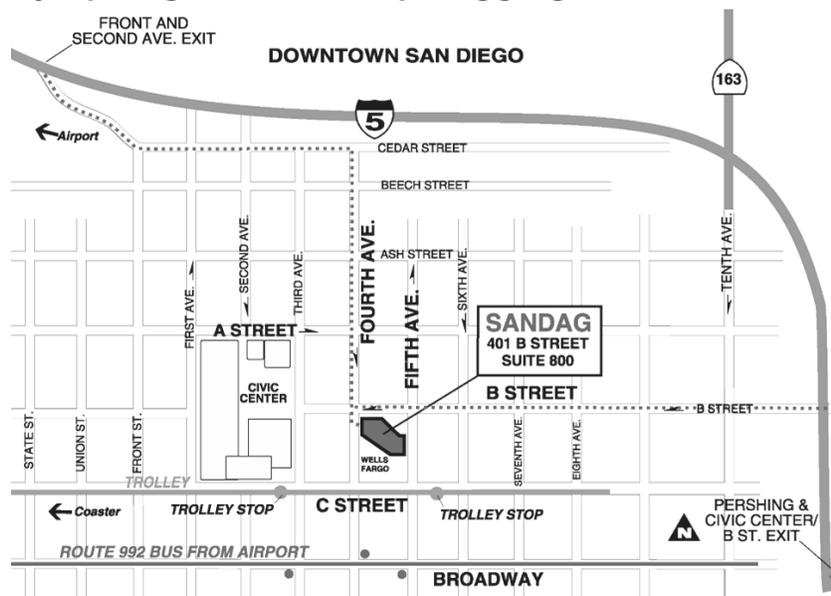
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ENVIRONMENTAL MITIGATION PROGRAM WORKING GROUP

Tuesday, September 8, 2015

ITEM NO.		RECOMMENDATION
1.	WELCOME AND INTRODUCTIONS (Vice-Chair, Mike Grim, City of Carlsbad)	
+2.	APPROVAL OF MEETING MINUTES The Environmental Mitigation Program Working Group (EMPWG) is asked to review and approve the minutes from its July 14, 2015, meeting.	APPROVE Estimated Start Time: 1 – 1:05 p.m.
3.	PUBLIC COMMENTS AND COMMUNICATIONS Members of the public will have the opportunity to address the EMPWG on any issue within the jurisdiction of the working group. Speakers are limited to three minutes each.	COMMENT Estimated Start Time: 1:05 – 1:10 p.m.
+4.	ASSESSMENT OF ENVIRONMENTAL MITIGATION PROGRAM LAND MANAGEMENT GRANT PROGRAM (Katie Day, SANDAG) SANDAG has provided grants for regional land management since 2006 under the <i>TransNet</i> Environmental Mitigation Program. Since its inception SANDAG has awarded 81 grants over seven cycles. Ms. Day will present the results of her efficiency and effectiveness audit of the program and provide recommendations to improve the grant program.	INFORMATION Estimated Start Time: 1:10 – 1:30 p.m.
5.	LAND MANAGEMENT GRANTS: REQUEST FOR FORMATION OF AN AD HOC COMMITTEE (Keith Greer, SANDAG) SANDAG staff will be requesting the formation of an ad hoc committee to discuss the next cycle of land management grants. This will include the development of eligibility and evaluation criteria to consideration by the EMPWG at a future meeting.	RECOMMENDATION Estimated Start Time: 1:30 – 1:45 p.m.
6.	CONSERVATION EFFORT AT MARINE CORPS INSTALLATIONS WEST (Bill Berry, Marine Corps Installations West) Camp Pendleton and MCAS Miramar are two important military facilities in the region. In addition to their important for national security, these installations contain key biological resources. Mr. Berry will present the various habitat-related conservation and planning efforts at these installations and provide insight into how to better coordinate on regional land management and monitoring efforts with the Marines.	INFORMATION Estimated Start Time: 1:45 – 2:15 p.m.
7.	CLEVELAND NATIONAL FOREST RESOURCE MANAGEMENT AND PERMIT PROCESS (Kirsten Winter, U.S. Forest Service). As stewards of the national forests, the U.S. Forest Service provides for the conservation of 21 threatened and endangered species and more than 70 sensitive species. Ms. Winter will present conservation efforts occurring in the Cleveland National Forest and discuss how to better coordinate on regional management and monitoring efforts.	INFORMATION Estimated Start Time: 2:15 – 2:45 p.m.

8. NEXT MEETING DATE AND ADJOURNMENT

Next Meeting of the EMPWG is scheduled for Tuesday, November 10, 2015, from 1 to 3 p.m.

INFORMATION

Estimated Start Time:
2:45 – 2:50 p.m.

+ next to an item indicates an attachment

San Diego Association of Governments
ENVIRONMENTAL MITIGATION PROGRAM
WORKING GROUP

September 8, 2015

AGENDA ITEM NO.: **2**

Action Requested: APPROVE

JULY 14, 2015, MEETING MINUTES

File Number 3200100

The meeting of the Environmental Mitigation Program Working Group (EMPWG) was called to order by Chair Terry Sinnot (City of Del Mar), Chair of the working group at 1:03 p.m.

1. WELCOME AND INTRODUCTIONS

Attendance sheet is attached.

2. APPROVAL OF JANUARY 13, 2015, MEETING MINUTES (APPROVE)

One issue with the January 13, 2015, meeting minutes was identified. Under Item 6, the Department of Fish and Wildlife was the agency that classified feral swine as a game animal, not the U.S. Fish and Wildlife Service. A member also voiced an inquiry about the intermittent use of the terms feral pig and feral swine.

Action: With the correction made, James Whalen, Alliance for Habitat Conservation, motioned to approve the meeting minutes for January 13, 2015, and Trish Smith, The Nature Conservancy, seconded the motion. The motion carried without opposition.

Yes - Terry Sinnot (City of Del Mar), Michael Beck (Endangered Habitats League), Robert Fisher (USGS), Anne Harvey (San Diego Conservation Network), Glen Laube (City of Chula Vista), Richard Van Sant (Army Corps of Engineers), Trish Smith (The Nature Conservancy), James Whalen (Alliance for Habitat Conservation), Susan Wynn (U.S. Fish and Wildlife Service), Bridget Strickland (The San Diego Foundation), Teri Muzik (Wildlife Conservation Board). No - None. Abstain - Joan Cardellino (California Coastal Conservancy), Gail Sevrens (Department of Fish and Wildlife). Absent - Building Industry Association, Caltrans, City of San Diego, City of Santee, City of Escondido, City of Poway, County of San Diego.

3. PUBLIC COMMENTS AND COMMUNICATIONS

There were no public comments.

REPORTS

4. DRAFT SAN DIEGO FORWARD: THE REGIONAL PLAN STATUS (INFORMATION)

This informational item was incorrectly labeled as a “discussion” item in the agenda. Laurie Gartrell (SANDAG) presented a summary of the current draft of the Regional Plan, called *San Diego Forward: the Regional Plan*. San Diego Forward was developed to provide a long range plan with interdependent goals of creating innovative mobility and planning, healthy environment and communities, and a vibrant economy for the region. The plan is updated every four years to reflect and incorporate new trends and technologies, and is currently in undergoing the public review. The deadline for comment submission is July 15, 2015. Attendees were encouraged to submit comments through sdforward.com or by emailing sdforward@sandag.com.

Ms. Gartrell showed maps depicting growth predictions and plans for transit, development, and open space in the region. She also introduced the concept of creating mobility hubs, and developing in a more concentrated manner, resulting in an increased amount of preserved open space. Previous plans called for roughly one third of the county to remain as open space, yet this current plan would result in 55 percent of the county to remain as open space. It is expected that every dollar invested in the plan will result in nearly two dollars of economic benefits to the region.

The EMPWG discussed litigation with previous plans, the benefits of increased open space in the region, the reduction in greenhouse gas emissions predicted to occur with the implementation of San Diego Forward, and the incorporation of sea level rise planning into regional developments.

5. AD HOC COMMITTEE'S FY 2016 - FY 2017 WORK PLAN AND FY 2016 FUNDING RECOMMENDATIONS (RECOMMEND)

Susan Wynn (U.S. Fish and Wildlife Service) presented the ad hoc funding committee's recommendations for the FY 2016 - FY 2017 Management and Monitoring Work Plan. The Management and Monitoring Work Plan establishes an annual funding budget for EMP management and monitoring activities funded through *TransNet*. For the past nine years, an ad hoc committee has been formed to review and allocate funding for various goals of the Work Plan's funding strategy. This year's ad hoc committee met on May 12, 2015, and the voluntary members included LeAnn Carmichael (County of San Diego), Robert Fisher (USGS), Keith Greer (SANDAG), Mike Grim (City of Carlsbad), Dave Mayer (Department of Fish and Wildlife), James Whalen (Alliance for Habitat Conservation), Susan Wynn (U.S. Fish and Wildlife Service), and Paul Fromer (SDMMP). Kristine Preston (SDMMP) and Yvonne Moore (SDMMP) provided informational support with respect to aligning the plan with current goals and objectives of the Management Strategic Plan (MSP).

The SANDAG Board of Directors will be asked to allocate four million dollars to execute the FY 2016 – FY 2017 Work Plan, and there is additional left over funding from previous years already assigned to designated categories. The committee recommended that the FY 2016 - FY 2017 plan allocate the following funding to the four strategic goals of the Work Plan:

1. Promote key sensitive species- \$2.285 million
2. Promote native vegetation communities- \$465,000
3. Improve wildlife movement- \$300,000
4. Promote regional collaboration- \$950,000

Ms. Wynn explained that the amount of funding for each strategic goal is consistent with previous years; the target species just change to reflect the region's current priorities. The current key sensitive species targeted in the plan include nine priority vertebrate species, two priority invertebrate species, and 13 priority plant species. The EMPWG discussed that it would be beneficial if the current priority species were specifically listed in the plan. James Whalen (Alliance for Habitat Conservation) acknowledged the EMP and SANDAG for providing a region wide plan to respond to these significant regional concerns.

One revision to the plan was suggested with respect to the second strategic goal of promoting native vegetation communities. Subtask 2.9 Emergency Land Management Fund, had \$50,000 recommended to add to the already \$300,000 of funding left over from previous cycles. It was suggested that the \$50,000 instead get added to Subtask 2.6 Enforcement, to provide funding for a regional assessment of the costs of security and access control. This transfer would change the proposed FY 2016 funding of Subtask 2.6 Enforcement to \$250,000, and subtask 2.9 Emergency Land Management Fund to \$0.

Action: With the one revision made, Michael Beck, Endangered Habitats League, motioned to approve the FY 2016 - FY 2017 Work Plan and Fiscal Year 2016 funding recommendations and Susan Wynn, U.S. Fish and Wildlife Service, seconded the motion. The motion carried without opposition.

Yes - Terry Sinnot (City of Del Mar), Michael Beck (Endangered Habitats League), Robert Fisher (USGS), Anne Harvey (San Diego Conservation Network), Glen Laube (City of Chula Vista), Richard Van Sant (Army Corps of Engineers), Trish Smith (The Nature Conservancy), James Whalen (Alliance for Habitat Conservation), Susan Wynn (U.S. Fish and Wildlife Service), Bridget Strickland (The San Diego Foundation), Teri Muzik (Wildlife Conservation Board), Joan Cardellino (California Coastal Conservancy), Gail Sevrens (Department of Fish and Wildlife). No - None. Abstain - None. Absent - Building Industry Association, Caltrans, City of San Diego, City of Santee, City of Escondido, City of Poway, County of San Diego.

6. STATE ROUTE 67 WILDLIFE MOVEMENT STUDIES (INFORMATION)

Megan Jennings, Ph.D. (San Diego State University) presented a summary of her findings, implications and recommendations with respect to her research on the movement of wildlife around State Route 67, (SR 67) funded by the Caltrans Median Barrier Feasibility Project. SR 67 is an important connectivity region because it runs in-between core preserves established by the County of San Diego's Multiple Species Conservation Plan (MSCP). The highway is believed to act as a barrier to movement between constrained coastal preserves to the west, and the more contiguous inland preserves to the east. Dr. Jennings explained that species need movement for population support and gene flow, among others. Dr. Jennings noted that she is thankful that Caltrans is incorporating wildlife needs into their transportation planning.

The goal of Dr. Jennings' project is to assess impacts of the proposed median barrier to wildlife connectivity, identify mitigations for the near term with existing structures, and gather data for long-term planning, including the SR 67 widening, a connectivity assessment, and potential land acquisitions. Using GIS data and culvert surveys, Dr. Jennings looked for culverts across segments of SR 67 that were large enough to allow for medium to large vertebrate species to pass through. These culverts were originally designed for drainage, not for wildlife movement. She also looked at inhibiting factors that would block access through the culverts, such as sedimentation and fencing.

Coordinating with multiple stakeholders, including researchers, land managers, regulatory agencies, and Caltrans, her team established a camera monitoring strategy at half of the culverts meeting the size criteria, created a road kill tracking network, and conducted monitoring on targeted focal species (bobcat and ring tail).

Several of the culverts analyzed were impassable due to gates, silt, homeless encampments, and vegetation over growth. Other culverts were very long resulting in limited light and visibility. Ideally, Dr. Jennings would recommend that culverts be over six feet tall and short enough that one can see out of the other side. Images from the trigger cameras show that medium sized vertebrates such as skunks, raccoons, and opossums, and larger vertebrates like coyotes, bobcats, foxes, and deer, use the culverts for safe crossing of the highway. Initial findings show that larger culverts seem to have the most species richness. Preliminary road kill data show where hotspots of road kill problem areas exist, through the use of a point-density mapping technique. These are considered "areas of connectivity concern", and are generally in-between the designated preserves with minimal crossing structures.

Based on the results to date, Dr. Jennings' recommendations include clearing vegetation growth at culverts, clearing sediment build up at culverts, increasing light in long culverts, installing signs and lights on freeways to avoid road kill, and consider placing fencing to direct animals into culverts for safe crossing. Other ideas include creating a human/wildlife overpass at Mt. Woodson, incorporating wildlife connectivity considerations into Santee's sub area plan, and prioritizing land acquisitions for preservation around Mt. Woodson. Dr. Jennings will continue to analyze road kill and culvert usage to provide specific recommendations about culvert conditions to Caltrans, and develop a predictive model to identify features of successful crossings.

The EMPWG discussed possible road designs and overpasses to promote connectivity, culvert conditions necessary for use by mountain lions and coordinating with the mountain lion crossing project occurring in Ventura County.

7. RANCHO JAMUL OTAY TARPLANT AND NATIVE GRASSLAND/FORBLAND RECOVERY (INFORMATION)

Jessie Vinje, a botanist with the Conservation Biology Institute (CBI) has been conducting a restoration project at the Rancho Jamul Ecological Reserve (RJER) managed by the C.A. Department of Fish and Wildlife. This restoration project is part of the South County Grasslands Project, funded by the *TransNet* EMP Land Management Grant Program. The project studies various methods to restore a historically occupied Otay tarplant population at RJER. Prior to this project, the species had not been seen in the area since 2004. Ms. Vinje explained that Otay tarplant is a federally threatened, state endangered, and MSCP covered species. The greatest threat to this species on preserved lands is nonnative grassland. Native grassland and forblands¹ has a decent amount of visible ground, while nonnative grasslands grow in thick, covering other plants and seedlings.

CBI worked with multiple agencies to develop a study to find the most effective and efficient way to control nonnative grasses and thatch, in order to recover populations of Otay tarplant. The goal was to determine a method that could be used for large-scale restoration projects. This three-year

¹ Forblands are native plant communities of herbaceous flowering plants other than grasses.

project tested several different treatment techniques including a prescribed burn to initially remove nonnative grass and thatch, followed by either line trimming, mowing, or spraying herbicide.

The study occurred in five locations at RJER, with each study site containing a plot that used line-trimming, a plot that used mowing, a plot that used herbicide applications, and a controlled plot of baseline conditions for comparison purposes. Each plot was 18 by 20 meters in size. In 2012, the prescribed burn occurred on all lots and locations. In 2013, no Otay tarplant was found in any plots. In 2014, of the eleven plants found, nine were in the herbicide plot. By 2015, there were thousands of Otay tarplants counted, 67 percent of which were in the herbicide plots, 13 percent in mow plots, and 14 percent in line trim plots. Only one percent was found in control plots, which were back to 2011 conditions, blanketed in nonnative grasses.

Results indicate that mowing was the quickest method to reduce the amount of nonnative grass (*Avena* Sp.) and stimulate Otay tarplant growth. Herbicide was the most effective method of reducing nonnative grass and resulted in the largest amount of Otay tarplant and other native forbs. Ms. Vinje stated that after a fire, action to control nonnative grassland is extremely important to protect the native grasses and forbs. The fire can work as an advantage as it saves money by reducing thatch. Her recommendations include continuing to fund research on large-scale native forbland and grassland projects, provide funding for a minimum of three years or longer, provide funding for perpetual management of native forbland and grassland habitats, and establish post-fire emergency funds to help manage nonnative grasslands.

The EMPWG discussed different types of herbicides, the effect of rainfall (amount and timing) on the growth of native forbs and grasslands, the possibility of combining multiple methods of treatment, the historical vegetation communities found at the study site at RJER, and the potential for mowing to cause negative impacts to reptiles. Robert Fisher (USGS) suggested that CBI quantify the risk to reptiles relative to the benefit of nonnative grass control before recommending large-scale mowing. Ms. Vinje is in the process of determining the cost per acre of the various methods used.

8. NEXT MEETING DATE AND ADJOURNMENT (INFORMATION)

Announcements: Robert Fisher (USGS) shared that USGS was able to video a badger at one of their monitoring sites near the San Diego River. He also offered to help distribute a recently published paper identifying distribution models for guiding conservation for the endangered arroyo toad. Terry Sinnot (City of Del Mar) inquired about methods for controlling crow populations in the region.

The next meeting of the Environmental Mitigation Program working group is scheduled for September 9, 2015, from 1 to 3 p.m.

Tentative Topics: Wildlife Management Efforts by the U.S. Forest Service and Military Bases.

The meeting was adjourned at 2:50 p.m. by Chair Sinnot.

REPRESENTATION	JURISDICTION / ORGANIZATION	NAME	MEMBER / ALTERNATE	ATTENDING
Environmental Mitigation Program Working Group Chair	Councilmember, City of Del Mar	Hon. Terry Sinnott	Chair	YES
South County Subregion	City of Chula Vista	Glen Laube	Member	YES
	Vacant	Vacant	Alternate	N/A
North County Coastal Subregion	City of Carlsbad	Mike Grim	Vice Chair/Member	NO
	City of Oceanside	Vacant	Alternate	N/A
North County Inland Subregion	City of Escondido	Barbara Redlitz	Member	NO
	City of Poway	Richard Whipple	Alternate	NO
East County Subregion	City of Santee	Kevin Mallory	Member	NO
	City of Santee	Melanie Kush	Alternate	NO
City of San Diego Subregion	City of San Diego	Jeanne Krosch	Member	NO
		Kristen Forburger	Alternate	NO
County of San Diego Subregion	County of San Diego	LeAnn Carmichael	Member	NO
		Vacant	Alternate	N/A
Other Public Agencies	Army Corps of Engineers	Richard Van Sant	Member	YES
		Vacant	Alternate	N/A
	California Coastal Conservancy	Joan Cardellino	Member	YES
		Megan Cooper	Alternate	NO
	Caltrans	Bruce April	Member	NO
		Kim Smith	Alternate	NO
	Department of Fish and Wildlife	David Mayer	Member	NO
		Gail Sevens	Alternate	YES
	U.S. Fish and Wildlife Service	Susan Wynn	Member	YES
		David Zoutendyk	Alternate	NO
	USGS	Robert Fisher	Member	YES
		Carlton Rochester	Alternate	YES
	Wildlife Conservation Board	John P. Donnelly	Member	NO
		Teri Muzik	Alternate	YES

Non-Profits	Endangered Habitats League	Michael Beck	Member	YES
		Scott Grimes	Alternate	NO
	San Diego Conservation Network	Anne Harvey	Member	YES
		Vacant	Alternate	N/A
	The Nature Conservancy	Trish Smith	Member	YES
		Vacant	Alternate	N/A
	The San Diego Foundation	Bridget Strickland	Member	YES
		Nicola Hedge	Alternate	NO
Business	Alliance for Habitat Conservation	James Whalen	Member	YES
		Nick Doenges	Alternate	NO
	Building Industry Association	Matt Adams	Member	NO
		Vacant	Alternate	N/A

Other Attendees:

Gabe Buhr, California Coastal Commission
Cathy Chadwick, Education Discovery Institute
Sharon Coe, San Diego Management and Monitoring Program
Mary Duffy, Education Discovery Institute
Pete Famolaro, Sweetwater Authority
Anne Fege, City of San Diego
Paul Fromer, San Diego Management and Monitoring Program
Michael Galloway, Caltrans
Cheryl Goddard, County of San Diego
Christa Horn, Institute for Conservation Research (San Diego Zoo)
Megan Jennings, San Diego State University
Sarah Krejca, San Diego Habitat Conservancy
Sanga Lindberg, Miami University
Patrick Macpherson, City of Chula Vista
Yvonne Moore, San Diego Management and Monitoring Program
Devon O'Meara, ECORP Consulting
Don Omsted, Batiquitos Lagoon Foundation
Amber Pairis, San Diego Climate Science Alliance
Emily Perkins, San Diego Management and Monitoring Program
Kris Preston, San Diego Management and Monitoring Program
Fred Sandquist, Batiquitos Lagoon Foundation
Anthony Santare, AMEC
Markus Spiegelberg, Center for Natural Lands Management
Jill Terp, U.S. Fish and Wildlife Service
Ann Van Leer, Land Conservation Brokerage
Jessie Vinje, Conservation Biology Institute

Katie Day, SANDAG
Laurie Gartrell, SANDAG
Sarah Pierce, SANDAG
Rob Rundle, SANDAG
Phil Trom, SANDAG

ASSESSMENT OF THE *TransNet*
ENVIRONMENTAL MITIGATION PROGRAM'S
LAND MANAGEMENT GRANT PROGRAM

August 28, 2015



Katherine Day

Environmental Mitigation Program Intern

San Diego Association of Governments

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Appendix 1: CONTRACT SUMMARY REPORTS AND FIELD DATA FORMS

1. ASSESSMENT INTRODUCTION AND PURPOSE

This assessment was conducted to test the efficiency and effectiveness of the *TransNet* Environmental Mitigation Program’s Land Management Grant Program. The Land Management Grant Program was established in 2006 by the San Diego Association of Governments (SANDAG) to assist land managers throughout San Diego County, by filling funding gaps to promote regional management priorities, and is funded through *Transnet’s* Environmental Mitigation Program (EMP).

TransNet is a local half-cent sales tax that funds street, highway, and transit improvements in San Diego County, as well as bike and pedestrian paths, smart growth projects, and habitat preservation. The SANDAG Board of Directors (Board) entered into a Memorandum of Agreement (MOA) with state and federal agencies on the implementation of the *TransNet* EMP on February 22, 2008. The MOA was most recently amended on April 26, 2013. A provision of the MOA allocates \$4 million annually for ten years to implement regional habitat management and monitoring efforts to help maintain the region’s biological integrity, thus helping to avoid the future listing of endangered species. The Board has allocated a portion of this annual \$4 million to the EMP Land Management Grant Program.

The first cycle of EMP Land Management Grants started in 2006. As of June 2015, the EMP Land Management Grant Program has awarded 70 projects and over \$11.3 million dollars for various habitat conservation and land management projects throughout the region. In July 2015, the Board approved 11 more projects for the seventh cycle of Land Management Grants, which are scheduled to commence in fall of 2015. Of the 70 previously awarded projects, 51 have been completed.

With over \$11 million dollars invested in this program, and growing, it is important to make sure that the funded projects are able to achieve their intended goals and objectives, and provide a sustained benefit to the region. The purpose of this assessment is to determine if the EMP Land Management Grant Program has been successful at providing long term, tangible benefits to the region’s natural environment and sensitive species, therefore advancing the goal of avoiding the future listing of endangered species in the region. In addition, this assessment is intended to make recommendations on improvements to the administration of the grant program to improve efficiency.

2. METHODOLOGY

To determine the lasting success and efficiency of the EMP Land Management Grant Program, a sample of completed land management grants funded through the *TransNet* EMP were analyzed individually. Efficiency was determined by the ability of grantees to have met their proposed objectives, budget, and timeline at the time of grant completion, and their effectiveness at providing a lasting impact since project completion.

A total of 25 projects were individually selected from the 51 completed at the time of this assessment. Two of the 25 projects were selected at the request of the *TransNet* EMP Program Manager, and the remaining 23 were randomly selected, weighted on the number of projects completed in each cycle of EMP Land Management Grants. Due to the unavailability of staff for two of the grants selected, only 23 projects were able to be analyzed for this report. Table 1 represents the breakdown of the selected grants.

Table 1: Breakdown of Project Selection

Year	Weighted Amount	Requested by Program Manager	Randomly Selected	Projects Assessed
2006	4	1	3	4
2008	6		6	6
2009	4		4	4
2010	4		4	3
2011	6		6	5
2013	1	1	0	1
Total	25	2	23	23

Two major categories were analyzed during this assessment. The first is the efficiency of each grantee's program management, which was determined by the ability of the grantee to provide timely, accurate, and inclusive invoice requests, timely and comprehensive deliverables, and the successful accomplishment of each task stated in the project's agreed upon Scope of Work. This information was collected by analyzing each contract agreement, invoice, submitted report, submitted deliverable and history of communication.

The second category analyzes the effectiveness of the project, which was determined by the ability of the project's accomplishments to provide a lasting effect to the surrounding environment. This aspect was accomplished by having the grant project manager physically escort SANDAG staff to sites treated during their respective project, to see if the tasks completed were still visible, functioning, or providing their intended impact to the area. For example, if a grant funded the fabrication and installation of a fence to deter off-road vehicles from access to a sensitive habitat, this sustained effectiveness category would check the physical state of the fence, and use images from pre-grant conditions to compare the current condition of the landscape to that prior to the fence's installation.

Grant project managers were contacted and field visits were conducted during the months of June, July, and August of 2015. While visiting site locations, visible changes from pre-grant conditions, visible changes from condition at grant completion, and any damages for each specific task that contained a field work aspect were identified. Grant project managers were asked if any conflicts were experienced, if continued actions have been taken to protect the longevity of the project, if there were any changes in the status of project objectives since the end of the grant, and if they felt that their project was successful. They were also encouraged to provide suggestions for SANDAG to improve the EMP Land Management Grant process.

The most important factor is the ability of the project to accomplish and maintain their goals and objectives. Efficiency was determined by the amount of projects that were able to accomplish those goals within their proposed budget and timeline, without requiring any extensions or amendments. Extensions required for random errors such as seasonal variance were noted. Individual Contract Summary Reports and Field Data Forms are stored at SANDAG headquarters. Projects selected during this assessment were not scored on how well they performed individually, but their information was used to analyze the efficiency and effectiveness of the EMP Land Management Grant Program as a whole.

3. RESULTS

3.1 Program Management: Efficiency of Project Execution

3.1.1 Ability to Meet Goals/Objectives

Of the completed EMP Land Management Grants analyzed, 91 percent of grantees were able to accomplish all tasks stated in their Scope of Work, though only 70 percent submitted all of the required deliverables. These deliverables are generally quarterly status reports, annual reports, a final report, and/or a GIS layer, depending on the nature of the work. An important deliverable is the submission of a final report that describes all tasks completed during the project, an analysis of the effectiveness of each task, and a description comparing before/after conditions. Final reports were submitted by 83 percent of the projects assessed. Of the final reports submitted, 16 percent were either missing important information, or did not provide a thorough analysis of the project as a whole. Table two on page 6 illustrates that over time, the amount of final reports submitted increased from 70 percent in the early cycles (2006/2008) to 86 percent in the middle cycles (2009/2010) and later to 100 percent in the recent cycles (2011/2013). In 2006/2008, not all projects were required to submit final reports, and only those that were required to submit a final report did so. In 2009/2010, all projects were required to submit a final report, but only 86 percent of grantees submitted one. Fifty percent of the reports submitted in 2009/2010 were lacking required information. In the recent years (2011/2013) all projects were required to and have submitted a comprehensive final report.

Progress reports are also an extremely important deliverable, as this is often the only way SANDAG staff is able to track the progress of the funded project, without having to physically go into the field and conduct an in-progress audit. All projects were required to submit quarterly progress reports, yet only 61 percent of grantees submitted them. Table two illustrates that throughout the program's cycles, the amount of progress reports submitted by grantees increased from 40 percent in early cycles, to 57 percent in the middle cycles. In recent cycles, 100 percent of grantees have submitted progress reports.

When SANDAG staff believes that a project is falling behind, or the grantee does not submit the necessary deliverables to show the progress of the project, an in-progress audit is conducted to ensure that the project is getting accomplished as planned. Of the projects analyzed during this report, 39 percent of projects were audited during the project execution. Table two illustrates how the amount of in-progress audits conducted fluctuated throughout the grant cycles, starting at 50 percent of projects in 2006/2008, increasing to the most in-progress audits occurring during 2009/2010 (57 percent), and the least occurring in recent cycles (17 percent). This reduction in the need of in-progress audits experienced in recent cycles is likely due to the fact that quarterly progress reports and final reports are being submitted by a larger amount of grant project managers. In-progress audits, although good for transparency and accountability, take up time and money, forcing staff to set aside other projects, travel to the site, and be escorted around the property. It is most cost-effective for both SANDAG staff and the grantee if the grantee submits the necessary quarterly reports and deliverables within the established timeline.

3.1.2 Ability to Meet Budget

Of the projects analyzed in this report, 26 percent of grantees spent 100 percent of their awarded grant funding. Sixty-five percent of grantees completed their project under budget, resulting in a total of \$75,095.57 in leftover funding. Unused awarded funds are liquidated, and reincorporated into future EMP Land Management Grant cycles. Although completing a project under budget is a positive trait, too much left-over funding could result in inefficiency as that extra funding could have been allocated to another project needing assistance. For the 23 projects analyzed, less than two percent of the total grant award was unspent, suggesting that projects were efficient with their budgets. One project went over the grant award by \$58,525.00, but was not reimbursed for money spent over the amount of grant funding awarded.

The budget allocated for each project does not just include the total financial award, but is specifically broken down into how much of the award will be allocated to each specific task described in the Scope of Work. Financial transfers of over 10 percent of the total budget for that particular project require an amendment to the contract. Sixty-five percent of projects transferred funds between tasks but only one project transferred over 10 percent threshold, and had to get an amendment to the contract.

The budget also includes the amount of matching funds that will be contributed to the project. Not all projects are required to submit matching funds, but those that agree to provide a certain percentage of the total budget in the application are required to provide that amount during project execution. Matching funds were provided by 87 percent of the grantees, and of those, 48 percent spent over their intended matching funds. The amount of matching funds spent over the intended amount totaled over \$370,000.00, roughly 13 percent over the total estimated amount. To note, two projects from 2006 had stated that they contributed matching funds, yet there is no documentation of how much matching funds were provided. The organization of invoice information and back up material has increased since the first two cycles of the grant program, resulting in better tracking of matching funds and expenditures in subsequent years. Table two illustrates that 83 percent of projects which submitted matching funds in 2006/2008 met their requirement, which increased to 86 percent of projects meeting their requirement in 2009/2010. In recent years, 100 percent of projects which provided matching funds met their required percentage.

Invoicing involves the payment request submitted by grantees for the reimbursement of project expenses. A complete invoice states accurate amounts of funding expended to date for each task and the project as a whole, what is being billed for the current time period, and remaining amounts. Grantees receive an invoice template at the time of contract signing, with clear instructions on what back up material is expected for each reimbursement request. Even with the explicit instructions, 91 percent of the grantees submitted invoices that contained mathematical errors, and multiple grantees failed to include the total amount spent to date. Almost half of all invoices submitted to SANDAG (47 percent) contained mathematical errors and/or were submitted without the necessary back up material. Throughout the grant program, inaccurate and incomplete invoices have continued to be a problem. Table two illustrates that in 2006/2008, 36 percent of invoices contained errors, which increased to 78 percent in 2009/2010. In 2011/2013, the amount of invoices containing errors decreased to 57 percent. These errors cause delays in processing the payment, and result in a larger gap of time before the grantee receives their reimbursement.

Retention is withheld from invoices to help ensure that all of the project's tasks and objectives get completed, as well as the required percentage of matching funds gets provided. In early years, retention was only withheld from grant project managers

associated with non-governmental organizations, and not from governmental agencies. Starting in 2013, all projects regardless of their governmental association have ten percent of each invoice withheld. Of the 23 projects analyzed, seventy percent had 10 percent retention withheld from each invoice. Projects with retained funds have higher instances of submitting the final report, and meeting the matching funds requirement. Eighty-eight percent of those with withheld funds provided a final report, compared to 71 percent submitting final reports without retention. Ninety-four percent of projects with withheld funds submitted their required percentage of matching funds. One project did not submit their required percentage of matching funds, resulting in the remaining balance being withheld to make up the deficit between the amount provided and the amount required. In this case, only 88.5 percent (the remainder) of the retention was released, compared to the others releasing 100 percent. Another project that failed to provide the required amount of matching funds did not have retention withheld throughout the project, resulting in that project faltering in meeting their matching fund requirement.

3.1.3 Ability to Meet Timeline

Grantees submit a detailed timeline for when each specific task will be completed, and when the project will be completed in its entirety. Final deliverables are to be submitted within 90 days of the final task's completion. Of the 23 projects analyzed during this study, 48 percent completed the project and submitted final deliverables in accordance with their original agreed upon schedule. Thirty-five percent of projects analyzed required at least one no-cost time only extension in order to complete their project by a revised and approved completion date. One quarter of those projects that received an extension, were still unable to complete their project and submit the required deliverables on-time. As shown by Table two, the percentage of projects able to complete in accordance with the approved timeline has fluctuated throughout the cycles.

Eight projects received amendments extending the timeline, with one project requiring a total of three amendments. This resulted in a total of 11 time extension amendments granted. Amendments for time extensions were most often granted for the treatment of invasive plants (25 percent). This would include a timeline extension so that a specific species could be controlled in a certain season or that additional treatments could be conducted on persistent invasive plants to increase effectiveness. Other reasons for time extensions include a late start due to contracting with SANDAG, fire season, issues with access, delay with the grantee's construction or contractor, and delay with receiving necessary permits. Table two illustrates that roughly one-third of projects required an extension in the early cycles and recent cycles, with the most required during the middle cycles (over half of all projects).

Table 2: Program Management Results Overtime

	2006/2008 "Early Cycles"	2009/2010 "Middle Cycles"	2011/2013 "Recent Cycles"
Deliverables: Final Report Submitted	70%	86%	100%
Progress Report Submitted	40%	57%	100%
In-progress Audit Conducted	50%	57%	17%
Budget: Matching Funds Requirement Met	83%	86%	100%
Invoices Contained Errors	36%	78%	57%
Timeline: On-time Completion (includes extensions)	80%	86%	67%
Received Extensions	30%	57%	33%

The timing of Board approval, both for the next cycle of the EMP Land Management Grant Program and recommended projects to be awarded, as well as the Call for Projects and due date for submittal of EMP Land Management Grant applications, has fluctuated throughout the seven cycles this grant program has been offered. The majority of cycles have had the initial Board approval granted in September of the prior year (for example, the 2013 grant program was approved in September of 2012). The Call for Projects has been announced anywhere in between three days after Board approval, to two months after Board approval (average of 34 days). Applicants have been given one to three months to submit their

applications (average of two months), and then final Board approval of the recommended grants to be awarded has occurred anywhere from 2.5 months after the application due date, to eight months after (average of 5.25 months). The average amount of time necessary from the Call for Projects to the final Board approval of awarded grantees averaged 2.8 months in the early cycles, and increased to 7.9 months in the middle cycles with a slight decrease to 7.5 months in the recent cycles.

These fluctuations are a result of changing Board policy regarding standards and requirements for the grant program. Early cycles of the EMP Land Management Grant Program had minimal requirements with respect to the amount of time for Call for Projects, formatting of application results, and process standards for approval from policy action committees. Overtime the grant program has become much more comprehensive, organized, and transparent. The Board has instilled additional requirements, including a 90 day Call for Projects period, standardized actions to get approval from multiple committees, and detailed and specific requirements for posting proposal applications, including scoring standards, results, and reasons for ranked scores. This increase in requirements and standards of the program has resulted in an increased amount of time necessary for SANDAG staff to offer, receive, organize, evaluate, and award project proposals.

After the Board has approved the awarded projects for each year of EMP Land Management Grants, a time lag was experienced from the approval date and the official signing of the contract between the grantee and SANDAG. For some projects, this resulted in the future need of a time extension as the grantee's timeline did not immediately get extended when contracting delays occurred. Of the 23 projects analyzed in this report, the time lag between the Board approval, and the official signing of the contract required an average of five months, with a median of 4.5 months. The shortest amount of time necessary for contract signing after Board approval was 2.3 months for a project in 2006 (annual average was 4.1 months), with the longest amount of time for a specific project requiring 9.5 months in 2011 (annual average of 5.75 months). The most recent year, 2013, had the shortest annual average of 3.3 months, with 2010 experiencing the largest annual average of 6.2 months.

3.2 Effectiveness Measure: Sustained Benefits to the Region

Each of the 23 projects analyzed in this report provided at least some long term benefit to the targeted environment. Comparisons between conditions of a site prior to project implementation and conditions after project completion were sometimes difficult as not all projects provided before/after images of the project site in the final or annual reports. In this case, SANDAG staff had to rely on descriptions provided by submitted reports and the discussion with the grant project manager at the time of the site visit. Other projects were conducted at multiple locations (over 25) so not all study sites could be physically visited during this assessment. In this case, effectiveness was determined based on the sample of sites visited.

When looking at tasks that contained field work, over 78 percent have sustained visible benefits since project completion for all of their stated tasks. Twenty-two percent have at least some of the tasks showing visibly sustained benefits to the region. The tasks that did not provide visible long term benefits to the region were often those that were damaged or made ineffective due to issues like fires destroying restoration sites, signs getting stolen, and drought conditions reducing the survival rate of planted vegetation.

Seventy-eight percent of the projects experienced at least some damage. Thirteen percent of projects experienced damages to all of their tasks; generally due to wildfires or continued theft and vandalism of installed signs, fencing, and gates. Other damages were caused by drought reducing the survival rate of planted vegetation, gophers and deer eating the planted vegetation and/or irrigation pipes, homeless encampments clearing vegetation and leaving behind debris, and users (human and animal) introducing new invasive species to restoration areas.

Some projects were very effective at accomplishing their goals at the time of grant completion, yet the long term benefits sustained from these projects were viable due to continued efforts, such as certain restoration sites and invasive plant control efforts. For example, an initial wide-scale control and eradication of invasive plants in a riparian area not only provided immediate benefits to the surrounding native environment, but made future invasive control efforts much more cost-effective for the land manager, as control efforts now only require spot-treatment once or twice each year, helping to ensure that the targeted percent of invasive species cover gets sustained. In this respect, the grant program achieved its intention of providing gap funding to alleviate a wide-scale issue, down to a level in which land managers could more cost-effectively maintain those

conditions by their own accord. Of the projects analyzed, over 70 percent provide continued efforts to ensure the long term benefits of the completed project, and 52 percent provide continued efforts on all tasks involving field work. The large amount of continued efforts by land managers likely assisted in the high percentage of projects providing visibly sustained benefits to the region. This continued work is especially important for the high effectiveness of invasive species control.

3.3 Suggestions from Land Managers

During the audits grant project managers were asked to provide their suggestions on the EMP Land Management Grant Program. Overall, many grant project managers were pleased with the grant program, and they highlighted their appreciation for the funding assistance, open communication, flexibility with amendments and extensions, and ease of working with SANDAG staff. Despite that, there were some reoccurring suggestions to the grant program's process, some of which were specific, while others touched on the fundamental purpose of the grant program. Currently, the EMP Land Management Grant Program is designed to provide gap program funding for land managers, not act as a perpetual funding source providing long-term financial assistance; a future Quality-of-Life initiative is being discussed to address this issue.

Specific suggestions include the need to streamline the agreement and contracting process. For those grantees whose organizations or agencies require the altering of indemnification language in the contract, it was suggested that those changes that were approved in previous cycles, be pre-approved in subsequent cycles to avoid additional delays to contract approval and implementation. Another frequent suggestion was for SANDAG to provide funding opportunities on an annual basis, as opposed to not knowing when the next call for projects will take place. Even though awarded grantees should not expect to receive funding from future EMP Land Management Grant cycles, understanding the options for potential future funding sources can better assist prospective land managers with long term planning.

Some suggestions, such as the following, would likely provide benefits to land managers and increase the effectiveness of the projects, yet may deter from the fundamental purpose of this grant program, such as providing longer term grant awards with built-in funding for future maintenance. Shorter term awards can result in increased time gaps between funding for land managers, and increased costs for additional proposal preparation and contracting. Additional funding for the future maintenance and repairs to infrastructure projects, such as the fabrication and installation of a fence or gate, was suggested to ensure long term effectiveness. Future cycles of the grant program may want to revisit the fundamental purpose of the grant program, be it to provide gap funding, or more long term funding opportunities.

4. CONCLUSION

Overall, the EMP Land Management Grant Program has been successful at providing sustained benefits to the region with every project completed. Although not every task of each project has been able to provide long term benefits, the majority have been very effective at accomplishing their intended goals, and maintaining those goals over time. Restoration efforts that were damaged by fires were still able to provide a benefit to the region by making that habitat more resilient. It is believed that the current native vegetation regrowth (mainly coastal sage scrub species) observed after the Bernardo Fire at Lusardi Creek Preserve, are growing from the seed bank planted during the restoration effort that occurred prior to the fire. Even the majority of invasive control efforts have either completely eradicated the target species in the project location, or have controlled the invasive species to a level that is much more manageable, both with respect to cost and effort, so that the respective land manger can continue spot treatments, and the surrounding native species can experience long term benefits

The continued effort and dedicated work of the awarded grant project managers has resulted in the successful effectiveness of this grant program. Straightforward tasks such as putting up a sign or fence have become much more complicated due to theft and vandalism due to a differing community perception of an area and strong desire for unauthorized access. Instead of giving up, many of the projects that involved the installation of a fence have continued to block unauthorized trails and fix fencing, showing that there is active management. Overtime, this has actually helped changed the user perception of the landscape from an unpatrolled recreational area to an actively managed sensitive habitat preserve. Such is the case with the City of Carlsbad's Calavera Preserve, where continued restoration efforts, trail enhancements, and public outreach has resulted in a notable reduction in the frequency and variety of unauthorized activities occurring on the preserve, and increase in family-friendly trail use.

This study has found that project management has been successful at accomplishing their intended goals, but could certainly be more efficient with respect to submitting deliverables and accurate invoices. The large amount of invoicing errors and the failure of grantees to submit required deliverables, results in additional resources having to be spent for SANDAG staff to conduct in-progress audits, routinely contact the project managers to request necessary documents, and delays in submitting reimbursements. Time extensions were required for almost 40 percent of the projects analyzed, also requiring resources to be spent on processing the necessary amendments.

Despite budget, timeline, and deliverable submission problems, 91 percent of the projects were able to accomplish all of their goals and tasks at the completion of the grant. Highlights of the 23 projects analyzed include the restoration of over 166 vernal pools, creation of at least eight burrowing owl burrows, installation of at least 50,000 linear feet of fencing to protect sensitive habitat, thousands of cacti planted across 150 acres to support cactus wren habitat, and over 2,100 acres of invasive control efforts, among others. In addition to the immediate benefits provided by these projects, many have laid the framework for subsequent restoration efforts to occur. Examples include San Diego thornmint and native grass restoration projects at Wrights Field Preserve in Alpine, made possible after an EMP Land Management Grant funded the fencing of almost the entirety of the preserve to protect habitat from degradation by off-road vehicles. The immediate and extensive invasive plant control efforts conducted after the Witch fire at Bernardo Mountain assisted with the success of subsequent restoration and native vegetation planting efforts in the area. Some of these restoration sites are now inhabited by known sensitive species including Coastal cactus wrens and gnatcatchers.

5. RECOMMENDATIONS

Based on the suggestions made by grant project managers, as well as an analysis of the effectiveness and long lasting impacts of some of the tasks included in the sample of selected projects, some recommendations to improve the effectiveness and efficiency of future projects follow.

5.1 Program Management: Efficiency of Project Execution

To improve the program management of the EMP Land Management Grant Program, concrete recommendations are provided with respect to invoicing, submission of final reports, timeframe of grant awarding, and the collaboration of the EMPWG members, among others.

5.1.1 Invoicing

Over 90 percent of grantees assessed in this report submitted multiple if not 100 percent of invoices containing mathematical errors and/or lacking the necessary back up documents. It is important for grantees to submit accurate and complete invoice requests so that SANDAG staff can efficiently process and reimburse grant project managers in a timely manner. Since government funds are used to award these projects, all necessary back up documents have to be provided clearly and accurately, and coincide with the quarterly time period and total amount of the invoice being submitted. It is currently required that all invoices be submitted on a quarterly basis, with the necessary back up documents and deliverable (likely a quarterly progress report, annual report, or final report pending on the time of year). It is recommended that any invoice submitted without these important documents, or containing mathematical errors, get returned to the grantee for correction. It is the grant project manager's responsibility to ensure that all paperwork regarding their project is accurate and complete. One method to reduce the amount of mathematical errors in the invoice could be the use of a protected excel spreadsheet, in which SANDAG staff would preemptively fill in each task stated in the agreed upon Scope of Work, agreed upon expected matching funds and agreed upon beginning grant balance for each awarded project. Certain fields would be linked so that updates to one column would be reflected in the remaining balance totals. This would be intended to further assist the grantee by going beyond providing a template, but providing one specifically tailored to the respective project.

5.1.2 Final Reports

A thorough and comprehensive final report is important for fully demonstrating the success of the project. A final report should include a summary of all activities conducted pertaining to each specific task outlined in the contract agreement, as well as the amount spent for each task and date each task was completed. The total amount spent for the successful

completion of the project in its entirety should be stated. A comparison between the expected outcomes of each task compared to what was accomplished throughout the duration of the project, such as specific acreages treated or measurement of fencing installed should be clearly mentioned. Any conflicts or damages experienced should also be disclosed. The total amount of acreage for which invasive control efforts were conducted is a low estimate of the actual accomplishments as few projects reported that information in their final reports. The total amount of fencing funded was also underestimated as not all projects that were funded to fabricate and install fencing disclosed the exact length of fencing installed. Specific and if possible numerical accomplishments should be clearly stated. Before and after images should be taken to document any changes accomplished through tasks containing field work. This would include an image of pre-grant conditions, and then at least one image taken at the same photo point at the completion of the grant. It is recommended that comprehensive final reports continue to be required for all funded projects, the reimbursement for the final invoice/ release of retention withheld does not get provided until a comprehensive final report is submitted, and that explicit verbiage be added in the contract agreement clearly stating all necessary elements to be included in the report.

5.1.3 Timeframe of Grant Awarding

As stated above, the time of year and duration for the Call for Projects, application due date and final approval of recommended proposals from the Board has fluctuated throughout the seven cycles of the EMP Land Management Grant Program to date. This varying degree of timeframes can have added stress onto the grant project managers as they don't know if their project will be funded until up to eight months after they first applied to the program. For those projects that require the hiring of contractors to accomplish certain tasks of the project, this uncertainty in approval and start date can affect their ability to plan accordingly. It is recommended that future timeframes for the awarding of EMP Land Management Grants, from the initial Call for Projects all the way through to the final approval and signing of the awarded contracts, happen on a more consistent timeframe.

Tables 3.a. - 3.c. on the following page, give an example of the required time from initiation of the grant eligibility and evaluation criteria to final grant execution. Taking into account the Board Policy requirements, even in the best case scenario this timeframe requires a minimum of 15 months from initiation of cycle development to the submittal of the notice-to-proceed.

The required timing for issuance of grant funding has increased over the years as SANDAG adopts uniformed standards and practices for all of its grant programs. Some of these requirements are federal and state mandated while others are internal procedures for consistency among the other grant programs. SANDAG should evaluate all of its grant programs and see where greater efficiencies of time could occur and reduce redundant processes. For the EMP Land Management Grant Program, it is currently more realistic to have a two year cycle with increased funding.

Table 3: Example of Current Grant Process Timeline

3.a. Development and Approval of Grant Cycle Period

Development and Approval of Grant Cycle							
	Set up for next Call-for-Projects			Recommend/ Approve Call-for-Projects			
Committee	EMPWG- Create AHC	Eval AHC Review/meet/ update application & criteria	Staff prep CFP, criteria, check w/ legal & contracts	EMPWG & ITOC	RPC & TC Info	RPC & TC Rec	BOD
Month	1	2	1-3	3-4	5	6	6
Expected Dates	May (year prior)	May-June (year prior)	May - mid July (year prior)	EMPWG July ITOC August (year prior)	Sept (year prior)	Oct (year prior)	Oct #1 (year prior)

3.b. Application and Evaluation Period

Application and Evaluation						
	Call-for-Projects			Evaluation/ Staff & Technical Services Review		
Committee	Release	Pre- Proposal Workshop	Close	Staff review for eligibility/prep	AHC review/ eval & meet	Technical Services independent review
Month	6	7	9	9-10	10-11	11
Expected Dates	Oct 15 (year prior)	Nov 1 (year prior)	Jan 15	Jan 15- Feb 1	Feb 1-Mar 1	Mar 1-Mar 7

3.c. Awards and Contract Execution Period

Awards and Contract Execution							
	Recommendations/ Approvals			Contracting			NTP
Committee	EMPWG & ITOC	RPC & TC Info	RPC & TC Rec & BOD	Routed internally for proc approval	Routed externally (45 days)	Routed internally for contract execution	Contract Executed. NTP sent
Month	11	12	13	14	14-15	15	16
Expected Dates	Mid March	April	RPC & TC May BOD May # 2	June 1-June 15	June 15- August 1	August 1- August 21	Sept 1

5.1.4 EMPWG Members' Knowledge of Current Land Management Issues

For the past seven cycles, the submitted EMP Land Management Grant proposals have been evaluated by a voluntary ad hoc committee, consisting of various EMPWG members. The members of the EMPWG consist of representatives from the County of San Diego, City of San Diego, the four SANDAG sub-regions, state and federal wildlife agencies, and various environmental organizations, among others. The EMPWG advises the Regional Planning Committee on issues pertaining to the EMP, which includes the habitat acquisition, management, and monitoring necessary to implement various conservation programs in the region. The Management Strategic Plan (MSP) for Conserved Lands in Western San Diego County (San Diego Management and Monitoring Program (SDMMP) 2013) provides management objectives and priorities suggested to better implement the various regional conservation programs. SDMMP hosts a Monthly Management and Monitoring Coordination Meeting in which land managers and related organizations can stay up to date and coordinate with current projects, priorities, and objectives in the region. Since the EMP Land Management Grant Program has become more aligned with the MSP, focusing on projects that best implement the current priorities and objectives, it is recommended that EMPWG members attend the Monthly Management and Monitoring Coordination Meetings, to increase their affiliation with current land management priorities and projects. This is beneficial as it would help all EMPWG members stay up to date with current management objectives in the region, as well as provide a solid understanding of priorities for the potential members of the next evaluation ad hoc committee.

5.1.5 Procedural Reminder

Due to the large amount of invoicing errors, insufficient back up materials, lack of required or comprehensive deliverables, and confusion with percentage requirements for matching funds, it is recommended that awarded grantees are provided with a handout reiterating procedural requirements with the expectation of reducing the amount of errors experienced. This procedural reminder would touch on aspects frequently left out or completed incorrectly. For example, it would specifically state what is required to be submitted in a quarterly progress report, annual report, and/or final report and specific timing and date requirements for quarterly invoicing. It would also reiterate what information is required to be submitted with each invoice, and what constitutes the necessity of an amendment to the contract. To note, this would just be an additional handout providing grantees answers to frequently asked questions, grantees would still be obligated to abide by all requirements stated in the official contract agreement.

It is recommended that the procedural reminder be accompanied by a table to assist grant project managers with tracking their percent requirement for matching funds. SANDAG staff assemble a separate spreadsheet for each project awarded to track the amount and total project percentage of matching funds submitted with each invoice, to ensure that the required percent of matching funds is provided. If requirements are not met, staff know exactly how much retention needs to be withheld to account for the discrepancy. Perhaps a copy of this initial tracking sheet could be provided to the grant project managers along with their pre-filled invoice and procedural reminder handout, to help those interested to better track and understand if they are meeting their required matching funds. Grantees would not be required to use this sheet, and if they choose to use it, it would be their responsibility to update it accordingly.

5.2 Effectiveness Measure: Sustained Benefits to the Region

To improve the effectiveness of projects funded by the EMP Land Management Grant Program, recommendations are provided with respect to invasive plant control, fencing and access control, signage, and restoration projects. At times, two recommendations are provided for each category, (1) under the current fundamental purpose of the EMP Land Management Grant Program to provide gap funding, the other (2) if the grant program chooses to provide the potential of more perpetual or longer term funding opportunities.

5.2.1 Invasive Plant Control

After seeing the difference between invasive plant control efforts funded for five years, compared to those funded for two to three years, it was clear that the additional years of invasive plant control result in more effective control/or eradication. One such example can be seen between the City of Chula Vista's Cactus Wren Restoration Project, compared to their San Diego Tarplant Restoration Project, which both occurred in Rice Canyon. The Cactus Wren Restoration Project was funded for five years, and invasive plants such as mustard, fennel, and nonnative grasses were barely visible one year after control efforts had

been completed. The City of Chula Vista's San Diego Tarplant Project contained invasive control efforts for three years, and one year after control efforts had been completed, there was a substantial amount of nonnative grass re-growth, and a large field of invasive mustard. It is recommended that future grantees funded for invasive plant control efforts either (1) agree and prove that they are capable of providing the necessary resources to ensure effectiveness by providing additional spot-treatments for multiple years or (2) receive some funding for continued maintenance.

It is also recommended that future invasive plant control efforts include the planting of native vegetation directly after invasive removal, to prevent against invasive re-growth or invasive species type conversion, when natural recruitment is believed to be unsubstantial. An example can be shown between two aspects of the same project funded by the Southwest Wetlands Interpretation Association (SWIA) for the Tijuana River Valley Invasive Plant Removal Project. Multiple areas of the river valley experienced invasive plant removal for arundo, tamarisk, and castor bean. At one location, arundo was removed from a riparian area, and native mulefat and willow posts were planted in their place. Years later, that area previously crowded with arundo is a lush, healthy, native riparian habitat. The mulefat and willow cuttings successfully grew to a point where they naturally competed with and crowded out invasives. After five years with no invasive control efforts, the area is 95 percent invasive free. At another riparian area treated during the same project, large amounts of tamarisk were removed yet no native vegetation was planted in its place. The native willows and mulefat in the area were able to grow larger, yet natural recruitment did not result in the ability of the vegetation community to compete with other invasives such as tumbleweed. Years later, their target percent of tamarisk has continued to be sustained, but thick bushels of tumbleweed line the native riparian area. Discussion with program managers indicate that they would ideally like to plant native mulefat (like they did at the other location) to give the area a stronger ability to compete with invasive plants.

5.2.2 Fencing and Access Control

Many projects contained a fencing element in order to protect sensitive habitats from degradation caused by off-trail hiking, off-road vehicle use, and/or unauthorized activities such as model airplane flying, jousting clubs, and camping, to name a few. Based on the results and experiences of the projects analyzed, the likelihood for vandalism or theft is reduced when the fencing used has natural characteristics, and is paired with signs describing the reason for the fencing, with clearly stated authorized and unauthorized activities.

One project initially used a more affordable orange plastic fencing to block off a restoration area, but after months of continued vandalism and theft, a more expensive yet aesthetic wooden fence was installed, and the vandalism and theft stopped immediately. Other projects that used unprotected wire fencing at areas with heavy use also experienced a large amount of theft and vandalism, as the wires could be easily cut, stolen, or damaged to the point of being ineffective. Replacing wire fencing with a plastic covered cable wire or a sturdier steel barrier seemed to result in decreased vandalism and increased effectiveness at blocking off-road vehicles.

Community view of the preserve or landscape can greatly impact the effectiveness of the installed fencing or barrier. Based on the projects analyzed, areas that were initially used for pure recreation had the greatest amount of vandalism and opposition to access control. Teaming up with the target user group can help reduce opposition, such as consulting with the San Diego Mountain Biking Association when it comes to re-routing trails. To increase the effectiveness of fence installations, it is recommended that future projects invest in high quality, sturdy fencing, with natural characteristics, as opposed to cheaper alternatives, and (1) prove that they are able to provide maintenance for a certain amount of years or (2) receive maintenance funding for a certain amount of years.

In areas of southern San Diego, fencing and gates installed at agency owned preserves are required to provide access to U.S. Border Patrol agents. Many grant project managers disclosed their conflicts with the amount of times border patrol agents misuse access gates, such as leaving the gate unlocked, locking the gate incorrectly blocking other users from opening their own lock, or driving off of authorized access roads through sensitive habitat. Some land managers stated that they have communicated with the Border Patrol Department of Homeland Security on multiple occasions, and training sessions have occurred in the past. Unfortunately, there is a very high turnover with respect to the individual agents for U.S. Border Patrol and additional training is necessary for recently arrived agents. Therefore, it is recommended that training and coordination efforts between Border Patrol agents and land managers occur on a more frequent schedule. This could result in higher

effectiveness of preserving lands as new agents would understand the environmental impacts of uncontrolled access and the effects of driving off of access roads through potentially delicate habitat inhabited by endangered species.

5.2.3 Signs

Signs often get posted throughout a preserve or project area to clearly state authorized and unauthorized activities and provide information on the importance of preserving the intended habitat. Based on the analysis of these 23 projects, signs that were “official looking” seemed to experience the largest amount of vandalism, such as tagging, bullet holes, and theft. Several of the grantees started using signs drawn by school children, and the amount of theft and vandalism decreased dramatically. Another grantee invested in large sturdy wooden signs that again incorporated a natural look, and the amount of vandalism and theft also decreased. Therefore, it is recommended that future signs incorporate a natural feel and style, incorporate community involvement such as drawings by school children, and if next to a fence, are placed behind the fence, away from a road.

5.2.4 Restoration Projects

Several grant project managers mentioned the need for a high quality region-wide seedbank for endangered plants, including vernal pool species. Difficulty with established seedbank quality has also been a problem. For example, during the City of Carlsbad’s five acre restoration project, converting non-native grassland to coastal sage scrub, a lot of the seedlings that sprouted from those seeds were invasive plants. It was hypothesized that the seeds used were corrupted with invasive plants, which required additional invasive species control. It is recommended that if possible, a future project work to establish a region-wide seedbank for at-risk and priority species. This could be difficult as the conditions would have to be favorable and plants expressive for seeds to be collected, but if it is possible it would be very beneficial to future restoration efforts throughout San Diego.

While visiting some sites previously treated for erosion control with the use of straw wattles, it was noted that not all of the barriers had been removed. Some barriers are biodegradable and will disintegrate over time, yet others are made of plastic and could potentially be a threat to small animals such as reptiles. It is recommended that any projects that involve temporary control barriers that are not biodegradable be required to remove them from the study site at project completion, or prove that the barrier’s presence is still required to control erosion, and as soon as they are no longer needed, grant projects managers or their affiliated organization will remove them.