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Take Pride in America Phase III - Further development of a local litter and desert dumping cleanup program: Project Compendium

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Take Pride in America Phase III
Further development of a local litter and desert dumping cleanup program

Agreement No# L11AC20191

Project Compendium

The Take Pride in America in Southern Nevada project began as a collaboration of four federal agencies committed to working together to combat the litter and desert dumping problem on the nearly seven million acres of public lands in Southern Nevada. In 2005, with funding from the Southern Nevada Public Land Management Act (SNPLMA), SNAP created an interagency anti-litter and desert dumping team and developed a partnership with the Public Lands Institute (PLI) at the University of Nevada, Las Vegas. SNAP and PLI managed the Take Pride in America in Southern Nevada project and launched the Don’t Trash Nevada messaging campaign.

In the beginning, dedicated federal employees and legions of Don’t Trash Nevada volunteers took on the tons of construction dumping on public lands while Clark County Nevada experienced the largest rate of growth in the nation. The continuous efforts of the stalwart volunteers earned them recognition as the Take Pride in America Outstanding State Volunteer Program in 2008. As building continued, landscape dumping quickly emerged as a battlefront for Don’t Trash Nevada. Then with the devastating economic downturn, another front in the war appeared: dumping of household goods from foreclosed homes. In the background, working as a continual threat, was the constant stream of litter from recreational users like picnickers, target shooters, boaters, and fishermen.

Technology played a big role in the third phase of the project. A Geographic Information System (GIS) database was developed and team members were trained to use a mobile version to enhance removal, mitigation and abatement planning. A system for using the GIS database to monitor litter conditions was also developed by leveraging the time and interest of concerned citizens. The technology of social media boosted the public awareness of the problem of litter and desert dumping and empowered youth to serve as the voice of the public lands.

This project compendium contains the accomplishments and products resulting from a collaborative effort to reduce litter and desert dumping in Southern Nevada. The project was funded by the SNPLMA Conservation Initiatives through the Great Basin Cooperative Ecosystem Study Unit (CESU). The achievements of this project would not have been possible without the commitment and participation of many people within the four federal land management agencies, the CESU program, UNLV, and the Clark County community. The successes captured in this compendium are impressive. Yet the biggest accomplishment continues as the impact of developing a community of citizens actively involved in caring for the land will be felt far into the future.

Margaret N. (Peg) Rees
Executive Director
UNLV Public Lands Institute

Take Pride in America in Southern Nevada – A Local Litter and Dumping Clean-Up Program was funded by the Southern Nevada Public Land Management Act and delivered by the Public Lands Institute at the University of Nevada, Las Vegas on behalf of and in cooperation with the Bureau of Land Management, National Park Service, U.S. Fish & Wildlife Service, and the U.S. Forest Service.
Take Pride in America

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Preface

In accordance with the task agreement (Agreement No. L11AC20191[07/25/2011]) the work completed in this project further developed the community-driven "Take Pride in America" partnership in southern Nevada to decrease litter and dumping through continued education, cleanups, and a comprehensive messaging campaign that was initiated in Southern Nevada Public Land Management Act (SNPLMA) Round 4 and 5 Conservation Initiative category.

Project Objectives:

The objectives of the project involved continuing the messaging and volunteer cleanups begun in the previous phases of the program. In addition development of the desert dumping database into a GIS format was an objective in order to improve the planning and management of trash abatement, removal and mitigation strategies. Finally, continuing to provide the necessary equipment required for litter collection including dumpsters and trash bags at key locations was a project objective.

Given these objectives the following deliverables were specified:

1. Updating the GIS database
2. Assisting in the coordination of a minimum of 12 cleanups per year
3. Updating the Don’t Trash Nevada website
4. Implementing phase 4 of the Don’t Trash Nevada messaging campaign
5. Initiating and completing the extension of the pilot litter program from Mt. Charleston to Lake Mead
6. Implementing and building staff and volunteer technological competency
7. Developing the GIS database to report and document desert dumping through the use of volunteers
8. Testing, refining and implementing the Interagency Public Lands Recycling Plan as widely as possible, and in a cost effective manner that potentially can be self-sustaining

The Take Pride in America in Southern Nevada project involved four federal agencies collaborating on addressing the litter and desert dumping issue in Southern Nevada. Supported by funding from the Southern Nevada Public Lands Management Act, the Bureau of Land Management (BLM), National Park Service (NPS), U.S. Fish and Wildlife Service (FWS) and U.S. Forest Service (USFS) partnered with the University of Nevada Las Vegas, Public Lands Institute to provide project management for their collaborative efforts. This partnership developed a brand by which they could be easily identified: Don’t Trash Nevada.

The partnership developed a strategic plan in the second phase of the Take Pride in America in Southern Nevada project which influenced the third phase contained in this report. The strategic plan identified four issues the Don’t Trash Nevada team faced:

Collaboration – Historically there was minimal success in collaborating on litter and desert dumping issues between government, public works and corporate stakeholders in Southern Nevada.
Community involvement – While there had been continued success involving individuals and small groups in litter and desert dumping issues, there was little neighborhood, community and civic group involvement in solving the problem of litter and desert dumping.

Lack of data – Valid data was needed in order to develop and measure effectiveness of team efforts. Examples of data needed included the amount of litter that exists, the type of litter being dumped on the public lands and the reach of the messaging campaign.

Sustainability – Funding for the Anti-litter and Desert Dumping team originated with the sale of Bureau of Land Management land. This was not a sustainable source of funds since there is a finite amount of land which is appropriate to sell. Additionally, the economic forces impacting the real estate market made it an unreliable source of funding. Consequently the team sought strategies to sustain the program through other means than in-kind donations and the Southern Nevada Public Lands Management Act funds.

The deliverables identified in the task agreement align with the strategic plan in the following ways:

COLLABORATION

- Updating the GIS Database

COMMUNITY INVOLVEMENT

- Assisting in the coordination of a minimum of 12 clean-ups per year
- Updating the Don't Trash Nevada web site
- Implementing phase four of the messaging campaign
- Initiating and completing the extension of the pilot litter program from Mt. Charleston to Lake Mead
- Implementing and building staff and volunteer technological competency

LACK OF DATA

- Developing the GIS database to report and document desert dumping through the use of volunteers

SUSTAINABILITY

- Testing, refining and implementing the Interagency Public Lands Recycling Plan as widely as possible, and in a cost effective manner that potentially can be self-sustaining.

The following sections describe in detail the work that was accomplished by the Don't Trash Nevada team to meet each of the deliverables listed above.
Further development of a local litter and desert dumping cleanup program
Strategic Issue: Collaboration

Deliverable: Updating the GIS Database

When litter and desert dumping became a problem in southern Nevada, the Bureau of Land Management began documenting the problem on paper and in electronic files. As the problem grew in scope, the BLM desert dumping coordinator transferred data from various locations into an Access database. The issue of illegal dumping had been particularly challenging for the BLM since many BLM parcels interface with urban lands.

To meet the deliverable of updating the GIS database, the Don't Trash Nevada team was able to use the BLM Access database as a starting point for the development of the interagency geospatial database. To determine the needed categories in the database, several iterations of the data catalog were created. The Director of the UNLV GIS lab and other GIS specialists assisted in the creation of a mobile version of the database to enable agency staff to collect information in the field that would synchronize with the main database.

The database was designed to enhance the efficiency of coordination, assist in the recruitment of appropriate volunteer work forces, and support the placement of appropriately sized dumpsters. After examining data in the database agency personnel are able to:

- Assess the effectiveness of abatement efforts such as post and cable, plant restoration, marketing campaigns, and neighborhood involvement
- Coordinate cleanup efforts
- Assist managers in setting priorities by identifying high problem sites or those in sensitive areas
- Quickly select and prepare ideal cleanup locations for a variety of volunteer groups
- Identify target audiences for outreach
- Implement recycling where appropriate
The data catalog began with four general categories that each contained multiple subcategories. After multiple field tests of the catalog and mobile tool, a final set of items emerged. Attachment 1 contains a blank field testing form, a completed example of the form and the final data dictionary.

To enhance collaboration, the Don’t Trash Nevada partnership (i.e., the BLM, NPS, FWS, USFS and UNLV) spent many hours working with the Mojave Desert Ecosystem Program (MDEP). The regional scope of MDEP suggested that this collaboration would provide additional collaborative opportunities with other federal, state and local entities. Plans were made to house the database on MDEP servers that already contained multiple GIS files. This would enable the database to have a central location from which all the agencies would work. Unfortunately MDEP experienced funding challenges and the scope of their work was scaled back.

Instead of having a central database from which the four SNAP agencies would work and to which the volunteers would submit their data, the decision was made that each agency will maintain a local copy of the database. The local copy will be continuously updated with individual agency data and synced with the other agencies twice per year in concert with the volunteer monitoring data collection.

**Attachment #1:**
GIS Database Forms

**Strategic Issue: Community Involvement**

**Deliverable: Assisting in the coordination of a minimum of 12 clean-ups per year**

During this project the Don’t Trash Nevada team produced over 27 clean-ups. This involved 906 volunteers who volunteered over 2,671 hours of time and assisted staff and crews in cleaning up a total of 10,795 cubic yards of litter, the equivalent of 5 football fields covered in a foot of trash which saved over $56,250 in labor costs.

In Phase II of the TPIA program multiple cleanups were organized for volunteers to attend. The majority of the planning was done by federal employees and their partners. For Phase III the Don’t Trash Nevada team implemented the Hector’s Helpers program under the guidance of the Youth Outdoor Leadership Academy to enable youth to assist in the coordination of clean-ups. The Hector’s Helpers program provided an opportunity to bring environmental education to students while developing youth knowledge, skills and abilities in environmental citizenship. The Public Lands Institute provided a once a week hands-on curriculum based on the Earth Force process model. Students took a field trip to clean up BLM land and learn general environmental concepts such as community, conservation, recycling, and litter prevention. During the program the students developed a comprehensive anti-litter project of their choosing.
The Hector’s Helpers program worked with multiple youth groups including the Cambridge Community Recreation Center, West Prep After School Club, Andre Agassi Boys and Girls Club, East Las Vegas Community Center Youth Council, McCabe Boys and Girls Club, Stupak Community Center Youth Council, and the 100 Academy. This was made possible due to the participation of the Public Lands Institute (as a representative of the Don’t Trash Nevada team) on the Keep Las Vegas Beautiful committee, a program of the City of Las Vegas. The city provided access to youth groups to work with and supplied snacks for the youth, many of whom face food insecurity issues.

### Table 1. Youth initiated cleanups

<table>
<thead>
<tr>
<th>Month</th>
<th>Number of New Locations</th>
<th>Total Contact Hours</th>
<th>Number of Cleanups</th>
<th>Cubic yards of waste removed</th>
</tr>
</thead>
<tbody>
<tr>
<td>July-October 2011</td>
<td>32010</td>
<td>407</td>
<td>39</td>
<td>291</td>
</tr>
<tr>
<td>Nov 2011-January 2012</td>
<td>0</td>
<td>291</td>
<td>68</td>
<td>68</td>
</tr>
<tr>
<td>February-April 2012</td>
<td>5</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>May-July 2012</td>
<td>407</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Aug-Oct 2012</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

While the initial goal of the program involved having youth organize a cleanup on the public lands (see Table 1), logistical issues with after school schedules prevented each group from doing so. However, the groups that were unable to organize a cleanup developed projects to increase public awareness of the program. For example, one group designed and delivered a puppet show to younger youth about the importance of picking up litter. The program ended in the fall of 2012 as the work with youth on the Social Media Squad picked up.

To successfully meet the deliverable of the agreement despite the logistical setbacks of the youth cleanups, the Public Lands Institute facilitated coordination of Make a Difference Day events in Southern Nevada. In June an employee of NV Energy contacted the Don’t Trash Nevada team to suggest that a large scale cleanup be conducted to engage the entire community in a day of cleaning up. The Don’t Trash Nevada project manager suggested that an efficient way to make that happen would be for the multiple agencies that host cleanup events to collaborate to host events on the same day. Since many of these agencies participated in the Keep Las Vegas Beautiful working group, the decision was made to use those monthly
meetings to plan the day. Planning began by working with the multiple agencies to find a day that most could host an event. October 20th was chosen and with the proximity to Make a Difference Day, it was decided to market the event as Make a Difference Day in Southern Nevada. To the credit of the Don’t Trash Nevada team, all agencies participating in the event quickly agreed that the Don’t Trash Nevada website would be the best central location for the public to find details on the many scheduled events.

The Southern Nevada Cleans Up events occurred all over southern Nevada throughout the month of October and early November. The majority of the events occurred on October 20, 2012. Don’t Trash Nevada assisted in coordinating 20 events between 17 organizations, including federal, state, and city government groups, non-profit organizations, and local businesses (see Figure 1).

Figure 1. Partners for Southern Nevada Cleans Up

The team created and maintained the listing of events and interactive Google Map of locations on the Don’t Trash Nevada website, co-created the event flyer, and took the lead on facilitating the exchange of pictures and cleanup metrics. As a result of this coordination over 227 volunteers contributed 706 volunteer hours and cleaned up 259 cubic tons of trash.

**Deliverable: Updating the Don’t Trash Nevada website**

The Don’t Trash Nevada team initiated and implemented a complete redesign of the Don’t Trash Nevada website as part of this project. Attachment 2 contains the objectives for the redesigned site for the target audiences the team identified. After establishing these objectives the team completed the following steps:

- Selecting a design
- Determining the appropriate navigation structure
- Receiving input from the Southern Nevada Agency Partnership (SNAP) executive director and the SNAP visual media specialist on SNAP logo placement
- Providing all the content for each web page
- Verifying the pages comply with federal regulations
- Ensuring transfer of the site to secure servers
This process was completed shortly after Earth Day 2012. Table 2 contains an overview of the visitation to the redesigned website. The highest number of page views was a direct result of the collaboration the team coordinated for the Make a Difference in Southern Nevada day discussed previously. The nadir of page views was a direct result of issues with the MDEP where the site was housed. The servers tended to run slowly and there was an extended period of time when the website was inaccessible to the public. During routine server maintenance the MDEP webmasters mistyped a location and it took thirteen days to diagnose and solve the problem. Once the site was moved to a faster, more stable UNLV server the page views increased substantially.

### Don't Trash Nevada Website Visitation

<table>
<thead>
<tr>
<th>Quarter</th>
<th>New Visitors</th>
<th>Returning Visitors</th>
<th>Total Pageviews</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 24 - July 24 2012</td>
<td>1431</td>
<td>552</td>
<td>2053</td>
</tr>
<tr>
<td>July 25 - Oct 24 2012</td>
<td>919</td>
<td>452</td>
<td>1371</td>
</tr>
<tr>
<td>Oct 25 - Jan 24 2013</td>
<td>2511</td>
<td>875</td>
<td>3386</td>
</tr>
<tr>
<td>Jan 25 - April 24 2013</td>
<td>2184</td>
<td>190</td>
<td>2374</td>
</tr>
<tr>
<td>April 25 - July 24 2013</td>
<td>891</td>
<td>257</td>
<td>1148</td>
</tr>
<tr>
<td>July 25 - Oct 24 2013</td>
<td>1799</td>
<td>278</td>
<td>2077</td>
</tr>
</tbody>
</table>

Table 2. Visitation to redesigned Don't Trash Nevada website

The impact of collaborating on the Make a Difference in Southern Nevada Day was also visible in the average duration of a visit (see Table 3). The quarter with the longest average visit was also the quarter when there were the most cleanup events to explore and sign up for. It is interesting to note that the table documents a drop in visitation and visit duration for the quarters when the Social Media Squad, a key component of the phase four messaging campaign, was in hiatus.
Since the beginning of the TPIA in Southern Nevada project, a multi-phase messaging campaign has been conducted. The UNLV project manager worked with marketing professionals to develop creative materials and media placement plans for the complete Don’t Trash Nevada team to review and approve. Phase Four improved upon previous phases with the addition of a social media component tied to the Don’t Trash Nevada website. The decision was made to use this social media component as an opportunity to engage youth in the creation and management of the messaging campaign.

Extending a relationship developed during previous phases of the project, the UNLV project manager met with the Information Technology instructor at West Career and Technical Academy (WCTA). The Don’t Trash Nevada team collaborated with WCTA to develop training materials for high school students interested in serving as members of a Social Media Squad. A position description was developed and topics for training sessions were identified. Students enrolled in the social marketing class and members of the high school's DECA (Distributive Education Clubs of America) club were recruited to serve as pilot members of the Social Media Squad. DECA “prepares emerging leaders and entrepreneurs for careers in marketing, finance, hospitality and management in high schools and colleges around the globe.” Participation in the social media squad

Table 3. Average visit duration to Don’t Trash Nevada

Attachment #2:
Don’t Trash Nevada Website Audience Objectives

Deliverable: Implementing phase four of the messaging campaign
supported the mission of the club while helping implement phase four of the Don't Trash Nevada messaging campaign, a win-win partnership to be sure.

To ensure the quality of the social media campaign, a social media consulting firm was contracted to develop a social media plan and the training materials needed for students to implement the plan. The firm was also responsible for delivering the training. The firm supported the initial group of Social Media Squad members and conducted a six month follow-up training to provide the students with guidance on improving effectiveness of the campaign.

The firm established goals and provided guidance to the Social Media Squad on developing a content calendar which included a work plan for the Squad. The Don't Trash Nevada project manager, in partnership with the Information Technology teacher at West Career and Technical Academy and the Public Information Officer for the BLM Southern Nevada District Office, helped the Social Media Squad follow the plan. The training documents and goals are included as Attachment 3 to this report.

To support the efforts of the Social Media Squad a media buy was made that included television, radio and gas pump topper ads. The media ran from mid-April to Mid-June. Table 4 (below) illustrates the growth of the Facebook followers over the life of the project. The most growth occurred when the media buy took place.

Table 4. Facebook likes for Don’t Trash Nevada
The relevant key performance indicators (KPI) used to analyze the performance of Don’t Trash Nevada’s social media platforms and website offer insight as to the general health of the brand community. General terms in social media analysis are defined below followed by definitions of the KPI selected for the Don’t Trash Nevada campaign. Data is provided to show the growth of the program over the lifetime of the social media campaign.

**General Terms**

- **Impressions:** The number of times content was seen by users.
- **Engagement:** Any time a user clicks on any part of the Page or content. May include liking the page itself, clicking “About Us,” liking content, sharing, commenting, clicking “See More,” clicking to see a picture, as well as Hiding posts and Unliking the page.
- **Page Reach, Post Reach:** How many unique users saw any content relating to the page or post. May be fans of the page itself or people who are friends with fans.
- **Stories:** Entries on News Feeds, including “Don’t Trash Nevada posted a picture” from the page itself, as well as stories generated by fans, such as “Trish commented on Don’t Trash Nevada’s picture.”

**Key Performance Indicator (KPI) Terms**

**KPI: Impressions Per User**

- Number of times a unique user sees any type of content related to the page (including About the Page, Page Timeline, etc.)
- Indicative of the overall health and pervasiveness of the Page content
- Impressions / Total Reach

**KPI: Overall Page Engagement**

- Evaluates the number of engagements from users seeing any content related to the page, including visiting the Page itself, seeing content on their News Feed, etc.
- Evaluates the relevancy of the content to the users seeing it
- Page Engagement / Page Reach

**KPI: Users Reached Per Engagement**

- Calculates the number of users reached per each engagement
- Higher users reached may mean more “lurkers” than “loyalists” in the audience. Lower users reached per engagement indicates the audience is more engaged by the content.
- Page Reach / Page Engagement
KPI: Percent Post Engagement

- Percent of visitors who saw a Post and ultimately interacted with it in some manner (Likes, Viewing Photos, Sharing, “See More” clicks, link clicks, etc.)
- This KPI indicates how interesting the audience finds the content.
- Post Reach / Post Consumers

KPI: Consumptions Per Consumer

- Calculates how many times a consumer actually engaged with a post (including Liking, Sharing, Commenting, clicking to See More, etc.)
- Higher Consumptions per Consumer indicates the audience finds the content interesting.

Table 5 illustrates the KPI for the Don’t Trash Nevada social media campaign. Comparisons can be made from the previous quarter and the previous year. Total likes consistently increased over time. One measure of success of the fourth phase of the messaging campaign was that the number of total likes increased 158% since the social media campaign began.

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Likes</td>
<td>72</td>
<td>112</td>
<td>55.56%</td>
<td>135</td>
<td>20.54%</td>
<td>170</td>
<td>25.93%</td>
<td>186</td>
<td>9.41%</td>
<td>199</td>
<td>6.99%</td>
</tr>
<tr>
<td>Average Impressions</td>
<td>9692</td>
<td>7448</td>
<td>-23.15%</td>
<td>5965</td>
<td>-19.91%</td>
<td>5577</td>
<td>-6.50%</td>
<td>1022</td>
<td>8.41%</td>
<td>4792</td>
<td>-53.15%</td>
</tr>
<tr>
<td>Overall Page Engagement</td>
<td>3.70%</td>
<td>12.04%</td>
<td>-12.04%</td>
<td>12.24%</td>
<td>-12.24%</td>
<td>1.66%</td>
<td>11.17%</td>
<td>-8.74%</td>
<td>-20.68%</td>
<td>6.25%</td>
<td>-29.46%</td>
</tr>
<tr>
<td>Users Reached Per</td>
<td>27</td>
<td>8</td>
<td>-69%</td>
<td>8</td>
<td>0%</td>
<td>8.94</td>
<td>11.75%</td>
<td>11.2</td>
<td>25.28%</td>
<td>16</td>
<td>42.86%</td>
</tr>
<tr>
<td>Engagement</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Post Engagement</td>
<td>9.78%</td>
<td>22.22%</td>
<td>-127%</td>
<td>20.83%</td>
<td>-6.26%</td>
<td>12.38%</td>
<td>-40.57%</td>
<td>14.7</td>
<td>18.74%</td>
<td>2.00%</td>
<td>-86.39%</td>
</tr>
<tr>
<td>Consumptions Per</td>
<td>6.32</td>
<td>6.25</td>
<td>-1.15%</td>
<td>4.47</td>
<td>-28.48%</td>
<td>3.11</td>
<td>-30.43%</td>
<td>2.62</td>
<td>-15.76%</td>
<td>2.423</td>
<td>-7.52%</td>
</tr>
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<td>Consumers Per Consumers</td>
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<td></td>
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</tbody>
</table>

Table 1. Don’t Trash Nevada Social Media Campaign Key Performance Indicators

The data reflected a growing community that “lurked” on the page. As the program gained followers, the initial community of brand loyalists became less concentrated as new users coming to learn about the brand impacted the Facebook Insight data. It is logical that less interaction on the page occurred over time as new users, less involved in the issues, joined the community. One goal of the social media program was to raise awareness of the issue and the fact that the percent of lurkers increased does not indicate failure. Rather it suggests that over time, awareness was raised with those less passionate about environmental issues which should be viewed as a success. With creative content these “lurkers” could become the next generation of brand loyalist.
The pilot litter program at the USFS Mt. Charleston involved developing a program in which volunteers would assist in cleanups on an annual basis. It included working with a bi-lingual consultant to devise strategies for reaching out to the Hispanic community, a visitor group whose numbers had been steadily increasing in recent years. The Don’t Trash Nevada team determined that Lake Mead National Recreation Area would be the best location for extending the work of the pilot litter program. This decision was made as a result of the strategic planning process which showed that the two areas face similar recreational littering issues. The BLM and FWS needed to focus their efforts on illegal desert dumping rather than recreational user litter.

The Mt. Charleston pilot litter effort involved the creation of a snow host program. To extend the program to Lake Mead, the team began development of a beach host program. The bi-lingual consultant that worked with the USFS on the initial stages of the snow host program was contacted and agreed to develop the beach host program. However, after various unsuccessful attempts to recruit bi-lingual volunteers, it was determined that the project was not a good fit for the consultant.

The Don’t Trash Nevada team decided a consultant would be unnecessary and determined that the NPS and PLI would work together to develop the program. The beach host was involved in the following volunteer recruiting strategies:

- On the spot recruiting for cleaning up the day of the contact
- Building relationships with current visitors to attend future planned cleanup events or become part of the adopt a cove program
- General recruiting from the Hispanic community

It was determined that a naturalistic approach should be taken so that specific strategies for recruiting Spanish speaking visitors to engage in spontaneous beach cleanups would emerge as the program developed. A target goal was set at 1-3 adopt a cove or organized cleanups being attended by Spanish speaking visitors. Attachment 4 contains a complete report on the success of the beach host program.

Attachment #4:
Site-Based Community Programs: Using Spanish-Speaking Volunteers to Enhance Environmental Stewardship
Outcomes of Hispanic Visitors
Deliverable: Implementing and building staff and volunteer technological competency

This deliverable was embedded within the updating of the GIS database, the implementation of phase four of the messaging campaign and the development of a volunteer litter monitoring program. As discussed previously, the development of the GIS database involved staff meeting with UNLV GIS specialists to determine the format of the data layers. Staff also participated in multiple field visits to test the usability of the data forms created for the mobile units. This process provided staff with knowledge and skills in the following areas:

- Assessing appropriate shape type for desert dumping
- Determining data categories for desert dumping
- Entering data into mobile devices
- Downloading mobile data
- Importing mobile data into a master database

Technological competency of volunteers was enhanced through the implementation of phase four of the messaging campaign. To accommodate the needs of the students in the social media squad and to build participant’s skills in online collaborative tools, a number of technologies, including Google Apps, Google Plus, Dropbox, and YouTube, were used in administrating and operating the program.

Two in-person student orientations were held, one for WCTA students during after-school hours, and one for other participants at the Public Lands Institute offices. Additionally, a screencast was recorded and provided by YouTube to students who were unable to complete in-person orientation. This orientation covered the basic of social media; what it is, who uses social media, why it is effective, what are the objectives, and so on. Furthermore, the R&R partner’s assessment of the Don’t Trash Nevada social platforms, including best practices and suggestions, and an overview of the Don’t Trash Nevada social media team organization were included in the orientation. Students watching the screencast version answered a brief online quiz to receive credit and to be allowed to continue to the next step, and receive specific assignments.

After orientation, participants were assigned to teams and began operating the Don’t Trash Nevada Twitter and Facebook platforms late November 2012. Teams were divided into single-focus areas, including content writers, community managers, blog writers, and analyzers. Content writers researched relevant and contextual topics to share on Twitter and Facebook and produced draft content, community managers then scheduled these drafts during specific days and times, and blog writers produced content for the DTN blog. Analyzers then reviewed the results of these posts, using analytical tools such as Facebook Insights and Twitonomy, and
provided feedback to the writers and community managers so they could adjust the subject and posting times accordingly. Participants used Google Documents and Dropbox to share drafts with the team coordinator and team members. Attachment 5 contains the orientation, best practices and Social Media 101 information the volunteers received.

A final area volunteer technological competency was built was with the litter monitors. These volunteers assisted in developing the field forms that were used to collect data for the litter and dumping database. Site assessment forms were used with the volunteers in a trial and error process. During this process the jargon used to assess the quantity and type of litter at a site was simplified. With the assistance of volunteers, the field monitoring forms were revised multiple times to ensure ease of use and accuracy for all volunteers. A full description of the volunteer monitoring program is contained in the next section.

**Attachment #5:**

Social Media Squad Orientation, Best Practices and 101 documents

**Strategic Issue: Lack of Data**

**Deliverable: Developing the GIS database to report and document desert dumping through the use of volunteers**

In conjunction with the development of the GIS database to record litter and dumping in southern Nevada, a program for monitoring a sample of sites on SNAP lands was developed. The goal of the program was to provide a longitudinal assessment of litter and dumping on public lands. The program was designed so that after examining data in the database agency personnel would be able to:

- Determine if the litter and dumping problem has gotten better or worse over time
- Determine if the dispersion of litter and dumping sites has shifted over time

The interagency litter and desert dumping team decided to develop the monitoring program as a stewardship opportunity for citizen volunteers. The UNLV GIS lab director created a layer for the litter and dumping database based on the SNAP Cultural Site Steward database. The Cultural Site Stewards program was an award winning data collection program with over 450 active volunteers that monitored SNAP cultural sites four times (minimum) per year. The GIS lab director worked closely with the Cultural Site Stewardship program manager to modify the data fields in the Cultural Site Stewardship database to reflect litter and dumping terminology and developed forms for the volunteers to use in the field, replicating the process the Cultural Site Stewards use. He also attended the field testing of the GPS units to develop an understanding of
the various components of the GIS database into which the volunteer data will be integrated. Attachment 6 contains a complete report on the monitoring program.

**Attachment #6:**
Litter and Desert Dumping GIS Monitoring Program: Measuring conditions by leveraging the power of concerned citizens

**Strategic Issue: Sustainability**

**Deliverable: Testing, refining and implementing the Interagency Public Lands Recycling Plan as widely as possible, and in a cost effective manner that potentially can be self-sustaining**

The heart of the Interagency Public Lands Recycling Plan was the use of common images on recycling containers on the public lands. To sustain this program it was necessary to encourage other public and private land managers and owners to use the same images. The visibility of the Interagency recycling logo was increased by participating in the celebration of America Recycles Day (ARD) at the UNLV homecoming games during the duration of the program. With attendance above 25,000 (based on tickets sold), tens of thousands of people were exposed to the logo on the jumbotron and in the announcements during the game. To highlight the appearance of the logo on the jumbotron the following announcement was made: "Celebrate America Recycles Day with Don’t Trash Nevada. Green up your day on November 15th."

Information on the Interagency Public Lands Recycling Plan was shared throughout southern Nevada. Red Rock National Conservation Area uses the information and materials gathered by the Don’t Trash Nevada team to develop a recycling plan for the Red Rock Visitor Center. Vendor information, recycling box plans, clear stream containers and recycling bags were provided.

In addition, the NPS implemented a pilot test of recycling in selected public areas at Lake Mead with support from the Don’t Trash Nevada team. The NPS developed and tested construction plans for recycling containers which were built by Boy Scouts working on their Eagle Scout projects. The revised plans, best practices and lessons learned during the NPS test were shared with the other SNAP agencies as they developed recycling in public areas.
Take Pride in America Phase III
Project Compendium Report
Attachment # 1
GIS Database Forms
Don’t Trash Nevada  
Site Monitoring Report (draft 1/30/12)

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**Construction Waste**

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Total Overall Construction Waste (yds) ________________

**Household Waste**

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Total Overall Household Waste (yds) ________________

**Landscape Waste**

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Total Overall Landscape Waste (yds) ________________

**Hazardous Waste**

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Total Overall Hazardous Waste (yds) ________________

**Dispersed Waste**

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Total Overall Dispersed Waste (yds) ________________

**Overall Intensity (Circle)**

\[
\text{Total Overall} = \text{Construction} + \text{Household} + \text{Landscape} + \text{Hazardous} + \text{Dispersed} = \text{Total (Yds)} \\
\text{Low} 5-35 \quad \text{Med} 35-5 \quad \text{High} \geq 50
\]

Comments:
**Don't Trash Nevada**
*Site Monitoring Report*

**Site name:** Fort Apache & Furnace Creek  
**Site Number:** 81  
**Beginning time visit:** 11:28  
**Ending time visit:** 12:05  
**Total miles driven:** 23  
**Volunteer Names:** Heather W., Gabrielle M., Eric C., Melissa E., Craig P., Zhongwei L.  

**Date of visit:** 01/24/2012  
**Date of Previous Visit:** n/a

---

### Construction Waste

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**Total Overall Construction Waste (yds): 21**

### Household Waste

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**Total Overall Household Waste (yds): 2**

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**Total Overall Landscape Waste (yds): 0**

### Hazardous Waste

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<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Medical</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Other</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Total Overall Hazardous Waste (yds): 0**

### Dispersed Waste

<table>
<thead>
<tr>
<th>Windblown</th>
<th>1</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
<th>25</th>
<th>30</th>
<th>35</th>
<th>&gt;35 yds</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

**Total Overall Dispersed Waste (yds): 1**

**Total Overall =** 1 + 2 + 0 + 0 + 1 = 4

**Overall Intensity (Circle): Low Med High**
- Total (Yds): ≤5
- 5-35
- ≥35

**Comments:** picked up lumber and scrap metal
**Don’t Trash Nevada**

**Site Monitoring Report (draft 1/30/12)**

<table>
<thead>
<tr>
<th>Site name:</th>
<th>Fort Apache &amp; Gowan</th>
<th>Site Number:</th>
<th>New Site 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning time visit</td>
<td>12:30 pm</td>
<td>Date of visit:</td>
<td>01/24/2012</td>
</tr>
<tr>
<td>Ending time visit:</td>
<td>1:15 pm</td>
<td>Date of Previous Visit:</td>
<td>n/a</td>
</tr>
<tr>
<td>Total miles driven:</td>
<td>0 (between sites?) all day?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volunteer Names(s):</td>
<td>Heather W, Gabrielle M, Fred D, Melissa K, Craig P, Ziheng W.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

### Construction Waste

<table>
<thead>
<tr>
<th>Fill Material</th>
<th>Block/Brick/Drywall</th>
<th>Glass/Tile</th>
<th>Scrap Metal</th>
<th>Wire Cable</th>
<th>Wood/Lumber</th>
<th>Asphalt/Concrete</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Overall Construction Waste (yds)** 12

### Household Waste

<table>
<thead>
<tr>
<th>Garbage</th>
<th>Furniture</th>
<th>Appliances</th>
<th>Carpeing</th>
<th>Tires</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Overall Household Waste (yds)** 3

### Landscape Waste

<table>
<thead>
<tr>
<th>Palm</th>
<th>Branches</th>
<th>Grass/Sod</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Overall Landscape Waste (yds)** 3

### Hazardous Waste

<table>
<thead>
<tr>
<th>Oil/Lubricants</th>
<th>Containerized Chemicals</th>
<th>Paint</th>
<th>Compressed Gases</th>
<th>Live Ammunition</th>
<th>Asbestos</th>
<th>Batteries</th>
<th>Medical</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Overall Hazardous Waste (yds)** 0

### Dispersed Waste

<table>
<thead>
<tr>
<th>Windblown</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Overall Dispersed Waste (yds)** 1

**Total Overall** = 12 + 3 + 3 + 0 + 1 = 19

**Overall Intensity (Circle)**

- Low
- Med
- High

Comments: Additional trash on right-of-way.
<table>
<thead>
<tr>
<th>Field Name</th>
<th>On ArcPad Form</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ObjectID</td>
<td></td>
<td>Assigned by the computer, it can't be edited. Don't use it as a reference number as it changes depending on how you manipulate the data. Ignore it.</td>
</tr>
<tr>
<td>Site_Number</td>
<td>X</td>
<td>User assigns this number. <strong>NOTE:</strong> Any point taken at that same spot should have the same site number.</td>
</tr>
<tr>
<td>Site_Status</td>
<td>X</td>
<td>Option of <strong>Open</strong> or <strong>Closed</strong>. <strong>Open:</strong> A complaint has been received for the site or a site has been assessed and there is garbage present. <strong>NOTE:</strong> After a clean up event has occurred, unless all the garbage has been satisfactorily removed, the site will retain its Open status. <strong>Closed:</strong> The site has been satisfactorily cleaned up or the complaint is not on BLM land.</td>
</tr>
<tr>
<td>Land_Status</td>
<td>X</td>
<td>Will indicate who owns the land.</td>
</tr>
<tr>
<td>In_Valley</td>
<td>X</td>
<td>Will indicate if the site is within the Las Vegas disposal boundary or outside of it.</td>
</tr>
<tr>
<td>Address</td>
<td>X</td>
<td>The cross streets of a site or the best general description of a site location. <strong>Remember:</strong> Keep it short as this will be the main means of identifying sites in a query.</td>
</tr>
<tr>
<td>Complaint_Date</td>
<td>X</td>
<td>Day that complaint was receive or a best estimation. If date is entirely unknown leave field blank.</td>
</tr>
<tr>
<td>Survey_Date</td>
<td>X</td>
<td>Dated that site was visited.</td>
</tr>
<tr>
<td>Survey_Notes</td>
<td>X</td>
<td>A detailed description of site location. If there is a specific reason as to why the trash is present in the location, state the reason. Any other particularly relevant or potentially useful information.</td>
</tr>
<tr>
<td>Total_Cubic_Yds</td>
<td>X</td>
<td>Estimate the total number of cubic yards of garbage/waste present at the entire site.</td>
</tr>
<tr>
<td>Construction_Fill_Material</td>
<td>X</td>
<td>Any kind of dirt piles. Would typically require the use of heavy equipment for effect removal.</td>
</tr>
<tr>
<td>Construction_Block, Brick, Drywall</td>
<td>X</td>
<td>Any kind of blocks, bricks or drywall.</td>
</tr>
<tr>
<td>Construction_Glass, Tile</td>
<td>X</td>
<td>Any kind of glass or tile.</td>
</tr>
<tr>
<td>Construction_Scrap_Metal</td>
<td>X</td>
<td>Any kind of scrap metal.</td>
</tr>
<tr>
<td>Construction_Wire_Cable</td>
<td>X</td>
<td>Any kind of wire cabling.</td>
</tr>
<tr>
<td>Construction_Wood, Lumber</td>
<td>X</td>
<td>Any kind of wood or lumber.</td>
</tr>
<tr>
<td>Construction_Asphalt, Concrete</td>
<td>X</td>
<td>Any kind of asphalt or concrete. Would typically require the use of heavy equipment and would be sorted into a specific dumpster for recycling.</td>
</tr>
<tr>
<td>Construction_Other</td>
<td>X</td>
<td>Note any other types of construction garbage found at site.</td>
</tr>
<tr>
<td>Construction_Intensity</td>
<td>X</td>
<td>The intensity of garbage present at the site. Options of <strong>Light</strong>, <strong>Medium</strong> or <strong>Heavy</strong>. <strong>Light:</strong> is any site where all the garbage/waste present could be removed by one person with a pickup truck. <strong>Medium:</strong> is any site where all the garbage/waste present could be removed by two people and a couple of stakebed truck loads. <strong>Heavy:</strong> is any site where to remove all the garbage/waste present would require a minimum of 3 people and a minimum of a single 35yd dumpster.</td>
</tr>
<tr>
<td>House_Garbage</td>
<td>X</td>
<td>Any kind of household garbage.</td>
</tr>
<tr>
<td>House_Furniture</td>
<td>X</td>
<td>Any kind of household furniture.</td>
</tr>
<tr>
<td>House_Apppliance</td>
<td>X</td>
<td>Any kind of household appliances.</td>
</tr>
<tr>
<td>House_Carpet</td>
<td>X</td>
<td>Any kind of carpeting.</td>
</tr>
<tr>
<td>House_Tire</td>
<td>X</td>
<td>Any kind of tire.</td>
</tr>
<tr>
<td>House_Other</td>
<td>X</td>
<td>Note any other types of residential garbage found at site.</td>
</tr>
<tr>
<td>House Intensity</td>
<td>X</td>
<td>The intensity of garbage at the site. Options of Light, Medium or Heavy. Light: is any site where all the garbage/waste present could be removed by one person with a pickup truck. Medium: is any site where all the garbage/waste present could be removed by two people and a couple of stakebed truck loads. Heavy: is any site where to remove all the garbage/waste present would require a minimum of 3 people and a minimum of a single 35yd dumpster.</td>
</tr>
<tr>
<td>----------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Landscape Palm</td>
<td>X</td>
<td>Any kind of palm tree waste.</td>
</tr>
<tr>
<td>Landscape Branches</td>
<td>X</td>
<td>Any kind of tree branches or bush pruning waste.</td>
</tr>
<tr>
<td>Landscape Grass, Sod</td>
<td>X</td>
<td>Any kind of grass or sod waste.</td>
</tr>
<tr>
<td>Landscape Other</td>
<td>X</td>
<td>Note any other types of landscaping waste found at site.</td>
</tr>
<tr>
<td>Landscape Intensity</td>
<td>X</td>
<td>The intensity of waste at the site. Options of Light, Medium or Heavy. Light: is any site where all the garbage/waste present could be removed by one person with a pickup truck. Medium: is any site where all the garbage/waste present could be removed by two people and a couple of stakebed truck loads. Heavy: is any site where to remove all the garbage/waste present would require a minimum of 3 people and a minimum of a single 35yd dumpster.</td>
</tr>
<tr>
<td>Hazardous Automotive</td>
<td>X</td>
<td>Any kind of automotive waste such as oil, antifreeze, petroleum or lubricants.</td>
</tr>
<tr>
<td>Hazardous Containerized Chemicals</td>
<td>X</td>
<td>Any kind of unlabled or unidentifiable chemical waste.</td>
</tr>
<tr>
<td>Hazardous Paint</td>
<td>X</td>
<td>Any kind of paint.</td>
</tr>
<tr>
<td>Hazardous Compressed Gases</td>
<td>X</td>
<td>Any kind of compressed gases.</td>
</tr>
<tr>
<td>Hazardous Live Ammunition</td>
<td>X</td>
<td>Any kind of live ammunition or explosives.</td>
</tr>
<tr>
<td>Hazardous Asbestos</td>
<td>X</td>
<td>Any kind of asbestos.</td>
</tr>
<tr>
<td>Hazardous Batteries</td>
<td>X</td>
<td>Any kind of batteries.</td>
</tr>
<tr>
<td>Hazardous Medical Waste</td>
<td>X</td>
<td>Any kind of medical waste including needles and condoms.</td>
</tr>
<tr>
<td>Hazardous Other</td>
<td>X</td>
<td>Note any other types of potentially hazardous waste found at site.</td>
</tr>
<tr>
<td>Hazardous Intensity</td>
<td>X</td>
<td>The intensity of waste at the site. Options of Light, Medium or Heavy. Light: is any site where all the garbage/waste present could be removed by one person with a pickup truck. Medium: is any site where all the garbage/waste present could be removed by two people and a couple of stakebed truck loads. Heavy: is any site where to remove all the garbage/waste present would require a minimum of 3 people and a minimum of a single 35yd dumpster.</td>
</tr>
<tr>
<td>Planned Clean Up Date</td>
<td></td>
<td>Fill in when once a date has been decided on for the clean up of the area. This is done so that agencies looking at our data will know for what dates clean ups are planned to help reduce the amount of overlap.</td>
</tr>
<tr>
<td>Planned Clean Up Method</td>
<td>X</td>
<td>The estimated type of clean up method that will next by employed on the site. Options of Crew, Coordinator, Community, School or Unknown. Crew: when a a minimum of 3 people and a maximum of 15 people are used to remove garbage. These crew are typically paid and work for days or weeks at a time Ex: Nevada Conservation Corps or the BLM firefighters. Coordinator: when only people from the BLM Desert Clean Up crew remove garbage. Community: when people from the community volunteer their time to pick up garbage. This event is usually coordinated in conjunction with the Public Lands Institute, involves many people of various age groups and lasts only one day. School: when the clean up has an educational component. This involves many people of various age groups and lasts only one day. Ex: schools or boy scout groups Other: when more than one group type is participating at one time or when nearby property/lease owners contribute to the clean up event.</td>
</tr>
<tr>
<td>Planned Notes</td>
<td>X</td>
<td>Any information or suggestions that would be useful when looking back to make decisions on how best to do clean ups at the site.</td>
</tr>
<tr>
<td>Recycling_Dumpsters Needed 10yds</td>
<td>Make an assumption of 10yd capacity dumpster and list the estimated number of recycling dumpsters needed for the next clean up. <strong>Remember:</strong> This is not an estimation for the total amount of recyclable garbage/waste present but rather just for the next planned clean up. <strong>Remember:</strong> If any dumpster is filled with more than 10 yds of concrete or asphalt the bins will be too heavy to remove.</td>
<td></td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Dumpsters_Needed 10yds</td>
<td>Estimate how many 10yds dumpster will be ordered. <strong>Remember:</strong> This is not an estimation for the total amount of garbage/waste present but rather just for the next planned clean up.</td>
<td></td>
</tr>
<tr>
<td>Dumpsters_Needed 20yds</td>
<td>Estimate how many 20yds dumpster will be ordered. <strong>Remember:</strong> This is not an estimation for the total amount of garbage/waste present but rather just for the next planned clean up.</td>
<td></td>
</tr>
<tr>
<td>Dumpsters_Needed 28yds</td>
<td>Estimate how many 28yds dumpster will be ordered. <strong>Remember:</strong> This is not an estimation for the total amount of garbage/waste present but rather just for the next planned clean up.</td>
<td></td>
</tr>
<tr>
<td>Dumpsters_Needed 35yds</td>
<td>Estimate how many 35yds dumpster will be ordered. <strong>Remember:</strong> This is not an estimation for the total amount of garbage/waste present but rather just for the next planned clean up.</td>
<td></td>
</tr>
<tr>
<td>Planned_People</td>
<td>Estimated number needed for next clean up event.</td>
<td></td>
</tr>
<tr>
<td>Planned_Hours per Person</td>
<td>Estimated hours per person to be spent on next clean up event</td>
<td></td>
</tr>
<tr>
<td>Planned_Total Hours</td>
<td>Estimated total number of individual hours to be spent on next clean up event.</td>
<td></td>
</tr>
<tr>
<td>Action_Date</td>
<td>Date that a clean up event occurred. If the clean up lasted for a couple of days record the start day.</td>
<td></td>
</tr>
<tr>
<td>Action_Notes</td>
<td>Any important notes or evaluations on planning or executing the clean up event, to be used to improve next clean up event.</td>
<td></td>
</tr>
<tr>
<td>Action_Clean Up Method</td>
<td>The actual method of clean up used at the site. Options of <strong>Crew, Coordinator, Community, School</strong> or <strong>Other. Crew:</strong> when a a minimum of 3 people and a maximum of 15 people are used to remove garbage. These crew are typically paid and work for days or weeks at a time Ex: Nevada Conservation Corps or the BLM firefighters. <strong>Coordinator:</strong> when only people from the BLM Desert Clean Up crew remove the garbage. <strong>Community:</strong> when people from the community volunteer their time to pick up garbage. This event is usually coordinated in conjunction with the Public Lands Institute, involves many people of various age groups and lasts only one day. <strong>School:</strong> when the clean up has an educational component. This involves many people or various age groups and lasts only one day. Ex: schools or boy scout groups <strong>Other:</strong> when more than one group type is participating at one time or when nearby property/lease owners contribute to the clean up event.</td>
<td></td>
</tr>
<tr>
<td>Action_People</td>
<td>The actual number of people that worked at the clean up event.</td>
<td></td>
</tr>
<tr>
<td>Action_Hours per Person</td>
<td>The actual number of hours per person spent at the clean up event. This is cumulative if the clean up lasted more than one day.</td>
<td></td>
</tr>
<tr>
<td>Action_Total Hours</td>
<td>The actual total number of individual hours spent at the clean up event. This is cumulative if the clean up lasted more than one day.</td>
<td></td>
</tr>
<tr>
<td>Yards_Removed</td>
<td>The actual total number of cubic yards removed at the clean up event. This is cumulative if the clean up lasted more than one day.</td>
<td></td>
</tr>
<tr>
<td>Action_Educational</td>
<td>Will indicate if there was an educational component at the clean up event.</td>
<td></td>
</tr>
<tr>
<td>Picture_Before</td>
<td>A picture of what the site looked like before the clean up. <strong>NOTE:</strong> Take the after picture from the same location as the before picture for a more accurate comparison.</td>
<td></td>
</tr>
<tr>
<td>Picture_After</td>
<td>A picture of what the site looks like after the clean up. <strong>NOTE:</strong> Take the after picture from the same location as the before picture for a more accurate comparison.</td>
<td></td>
</tr>
</tbody>
</table>
Take Pride in America Phase III
Project Compendium Report
Attachment # 2
Don’t Trash Nevada
Website Audience Objectives
<table>
<thead>
<tr>
<th>Target Audience</th>
<th>Objectives</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sponsors/Donors</strong></td>
<td>After visiting the website 75% of sponsors/donors will be motivated to donate to DTN</td>
<td>Number of visitors to sponsor/donor page</td>
</tr>
<tr>
<td></td>
<td>While visiting the website 20% of sponsors/donors will donate to DTN</td>
<td>Number of sponsor/donor FB likes</td>
</tr>
<tr>
<td></td>
<td>While visiting the website 100% of sponsors/donors will receive recognition for their contribution</td>
<td>Number of donations compared to number of users visiting donation pages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Report on time between donation being made and recognition being posted</td>
</tr>
<tr>
<td><strong>Adults</strong></td>
<td>After visiting the website 30% of adults will get involved in DTN through volunteering at an event or adopting a spot</td>
<td># of hits on events page compared to number of registrations received thru click to register link</td>
</tr>
<tr>
<td></td>
<td>While visiting the website 80% of adults will find information they need to properly dispose of their waste and recycle</td>
<td># of people saying disposal and recycling FAQ answers were useful; # of people liking content on disposal &amp; recycling pages</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Avg. time on site</td>
</tr>
<tr>
<td></td>
<td></td>
<td># of returning visitors</td>
</tr>
<tr>
<td><strong>Teens</strong></td>
<td>100% of teens doing DTN projects will have opportunity to showcase their work</td>
<td>Report on number of teen projects displayed on website</td>
</tr>
<tr>
<td></td>
<td>50% of teens will interact with DTN web content</td>
<td># of participants in DTN teen polls</td>
</tr>
<tr>
<td></td>
<td>While visiting the website 80% of teens will find info needed to complete school work</td>
<td># of people saying FAQs were useful, # of people suggesting a question for homework FAQs, # of people liking info on homework page(s)</td>
</tr>
<tr>
<td></td>
<td></td>
<td># of FB likes</td>
</tr>
<tr>
<td><strong>Kids</strong></td>
<td>20% of kids will learn about importance of not littering through the coloring pages</td>
<td># of downloads or uses of coloring pages</td>
</tr>
<tr>
<td></td>
<td>While visiting the website 80% of kids will find info needed to complete school work</td>
<td># of likes on kids homework page(s)</td>
</tr>
<tr>
<td><strong>Educators</strong></td>
<td>All educators will be able to find curriculum materials to use in their classroom</td>
<td># of downloads of curriculum material</td>
</tr>
<tr>
<td></td>
<td>All educators will have the ability to share success stories</td>
<td># of submissions of success stories</td>
</tr>
<tr>
<td></td>
<td></td>
<td># of FB likes</td>
</tr>
<tr>
<td></td>
<td></td>
<td># of LinkedIn connections</td>
</tr>
</tbody>
</table>
Take Pride in America Phase III
Project Compendium Report
Attachment # 3
Social Media Squad Training
Documents and Goals
Don’t Trash Nevada Social Media Squad Position Description & Requirements

POSITION DESCRIPTION OVERVIEW

As a member of the Don’t Trash Nevada (DTN) Social Media Squad (SMQ), students will become public advocates of DTN in social media spaces. The goal of the DTN SMQ program is to provide students with a complete understanding of how social media works, as well as how to successfully manage social channels in a manner expected by potential employers.

Members will receive training and certification, prior to managing the DTN brand in public facing position, requiring excellent judgment and discretion. Once they are actively managing the program, SMQ team members will be required to present new ideas, as well as reports on the performance of campaigns.

SMS TEAM MEMBER TRAINING

Members of the SMQ team will undergoing training on social media systems, as well as learn the organization’s brand standards and key messages. When training is complete, and certification earned, members of the SMQ team will be empowered to post messages and engage in conversations within the DTN social media channels. Training modules include the following, which must be completed before certification is achieved and SMQ team members are allowed to participate in social media efforts:

Common Sense 101: Before entering the world of social media, prospective members of the SMQ team will need to understand the consequences of posting materials. This portion of the program will ensure that students understand how to post relevant and inoffensive material. Examples of how others have been placed in serious trouble from seemingly meaningless social media activities.

Social Media Channel Basics: Understanding file formats and standards, character limits and content type and tone, with regard to the social channels that will be utilized by DTN. Also, SMQ team members will learn about what audiences are using each social channel, and in what ways they use the content.

Digital Rights Management: When populating social channels, the SMQ team will need to understand what kind of content can be used and under which circumstances. This includes securing rights to photographs by getting people in photographs to sign releases, and using photo, video and copy assets whose use is allowed under pertinent copywrite laws.

DTN Messaging: Learning how DTN creates messaging that will be delivered through social media channels. This includes standard responses to questions from those interacting the organization, as well as working through challenging questions to develop timely responses to unplanned situations.

Reporting & Analytics: Social media outreach efforts are conducted to achieve certain goals. SMQ team members will learn about establishing and measuring benchmarks and how to prepare and present reporting on the success of efforts to reach those goals.

KNOWLEDGE, SKILLS, ABILITIES AND BEHAVIORS (KSABS) REQUIRED FOR SMS TEAM MEMBERS

Once they are trained and certified, SMQ team members will be expected to participate in DTN social media efforts by successfully managing the following responsibilities:

Program Management & Optimization: Help brainstorm, define, and execute online fundraising campaigns, applying all of the best practices that you can to make it engaging and relevant to the audience. Part of this responsibility is having a good feel for which campaigns not to attempt, fixing ones that aren't performing well, and knowing when to pull the plug on ones that are failing.
**Channel & User Interaction:** Encourage user discussions, help users promptly get the answers they’re seeking, create forums and topics that meet the needs of the users, and make sure posts are relevant and aptly placed. Feed information back from the community to the DTN project manager; Identify threats and opportunities in user generated content, troubleshoot and report to DTN project manager as needed.

**Manage & Moderate Content:** Manage and moderate the DTN presence in social networking sites including Facebook, Twitter, YouTube, Tumblr and other similar community sites, posting on relevant blogs, and seeding content into social applications as needed.

**Message Development & Optimization:** Improve, maintain, and work with other Social Media Squad members to ensure a consistent "voice" (tone, brevity, diction, etc.) in all communications.

**Community & Database Development:** Identify, track and encourage potential users, social media influencers, community leaders, writers and other potential environmental stewardship/volunteer influencers via participation in related online channels.

**Content Optimization:** To optimize content for search, tag and title content, with an understanding of how tags and titles impact natural search traffic and rankings via recurrent optimized content. Conduct keyword research including cataloging and indexing target keyword phrases. Optimize tags on DTN feeds and search engines through copywriting, creative and keyword optimization.

**Research & Analysis:** Create and monitor effective benchmarks for measuring the growth of the community, and analyze, review, and report on effectiveness of new initiatives; translate anecdotal or qualitative data into recommendations and plans for revising the social media campaigns.

**Channel Management & Expansion:** Research and identify relevant new technologies, social networks, tools, or marketing tactics that can improve the efficiency of DTN's marketing efforts or provide us with significant opportunities to motivate our donors. Help DTN know what they don't know and help figure out the answers.

**PROGRAM COMPLETION**

The program runs six months. After which, upon successful completion of the program SMQ team members will receive a certification.
Don’t Trash Nevada
Social Media Training

Each of you will be assigned to a specific Don’t Trash Nevada social media team. Each team will have different responsibilities, but must work in unison with the other teams to create a successful social media effort. Supervisors will determine the duration of time students will stay on a team and will set specific dates for teams to switch roles.

**Team 1: Content Creators**

- This is the team that will produce and ideate content that is posted, scheduled and maintained by the Community Managers. This team will typically take pictures, search the web to re-purpose articles, go to events and construct posts.

  - **Relevant Topics:** Environmental news clips, new laws on littering, photos, videos, volunteer spotlights, events, polls, etc. (refer to content calendar and competitive analysis for examples).
  - **Amount of Content:** Draft one to two posts and tweets for a single day. The Content Creators should work hand-in-hand with the Community Managers to make sure they are planning out the proper amount of content on a weekly basis.
  - **Drive Traffic:** Remember to link back to the Don’t Trash Nevada website when conversationally appropriate. The website serves as a great resource for getting fans and advocates involved with Don’t Trash Nevada’s core efforts. When using other website’s links make sure to follow network best practices.
- Facebook & Google+ Best Practice: Copy and paste link into the text box. Once the graphic populates below the post, delete the actual web address in the text box.
- Twitter Best Practice: Utilize Twitter's URL shortening service or a similar service (bit.ly or ow.ly).
- YouTube Best Practice: Include resource links within YouTube video descriptions.
  - **Descriptions/Captions**: Include photo and video captions when posting media content from events, cleanups, etc.
  - **Page/Handle Tagging & Hashtags**: When talking about other brands, organizations, companies, etc., tag them in the post. This will help notify external entities about the Don't Trash Nevada campaign.
    - **Tagging Best Practice**: Always make sure DTN is the focus of post if you're mentioning other brands.
    - **Use relevant Twitter Hashtags** - (#littering, #cleanup, #DTN)
- **Engaging Content**: To encourage engagement from your social community, ask a question in your post or create a call to action that requires fan participation.
  - Facebook: Do you think people should be fined for littering?
  - Twitter: Do you think people should be fined for #littering? #DTN
  - My favorite thing to do at Red Rock is ____
- **Less is More**: Social network users desire content that is short and sweet. Make sure you get to the point in as few words as possible.
  - Facebook: Condense what you want to say in one clear sentence and follow it with an engagement question. Facebook posts with 80 words or less tend to see higher engagement.
  - Twitter: 140 characters (includes link)(shorten link in Hootsuite)
Relevant Voice/Tone: Create content that resonates with the demographics of the Facebook Page and remember to speak to the individuals that are in your “target.” Also, be sure to remember that content created by the Don’t Trash Nevada channels should mirror the professional standards required by the organization.

Send content concepts and ideas to supervisors for approval. Once approved, meet and communicate with Community Managers to help establish scheduling requirements for the content.

Example: Content Creators identify an event as a perfect opportunity to take pictures and upload it to a Facebook album. The event is on a Thursday and pictures can be uploaded by Friday. Content Creators must communicate with the supervisor for approval and coordinate with the Community Managers to make sure timelines are met for the scheduling of the post.

Team 2: Community Management

- Community Managers are the gatekeepers of content execution and social media outreach. Once content from the Content Creators has been approved, Community Managers will schedule it into a content calendar (see attachment). This team will facilitate the daily communication and engagement of the social media channels and will work closely with Content Creators to maintain and schedule the social media channels.

  - Content Calendar: The development of a content calendar helps to organize content into a format that is easy to schedule and implement.
    - Input one to two Facebook posts and tweets a day (can tweet more often).
• Once you have a week’s worth of content laid out in your content calendar, and approval is given, schedule appropriate content into Hootsuite.
  ▪ Schedule posts/tweets during high trafficked times: 6 – 9 a.m.; 11 a.m. – 2 p.m.; 6 – 10 p.m.

  o **Community Engagement:** Respond to comments/posts/tweets daily
    • NOTE: Approval from supervisors is required before responding.
    • Personalize responses with ^cb (first and last initial of the student who is posting).
    • Retweet when tweets support Don’t Trash Nevada’s objectives.
    • Identify Twitter handles and Facebook Pages to determine if Don’t Trash Nevada should follow/like them.

  o **Relevant Voice/Tone:** Create conversations that resonate with the demographics of the Facebook Page and remember to speak to the individuals that are in your “target.” Also, be sure to remember that content created by the Don’t Trash Nevada channels should mirror the professional standards required by the organization.

**Team 3: Analytics**

  o The Analytics team is the key to making sure the efforts of the Community Managers and Content Creators are effective. This team will identify successes, failures and opportunities that will help shape the actions and strategies of the Community Managers and Content Creators.
- **Facebook, Youtube and Twitter Analytics**: Use Facebook Insights and Twitter engagement tracking to measure success.
  - Facebook: Identify trends in content pieces with high engagement (likes, comments, shares, talking about this).
  - Facebook: Document the demographics of the page, such as age and location.
- Twitter: Take screenshots of posts that receive engagement and mentions. Engagement includes retweets, replies, mentions and favorites.
- YouTube: Track video views, video and channel data, such as subscribers.
- Track and record fan/follower growth as well as video views. Use an Excel document to track the analytics and corresponding dates.

  **Optimize.** Share your findings with the Content Creators and Community Managers so they can compliment their successes and fix any issues. Present analytics to the entire team on a regular basis. Remember to note specific examples of good and “average” content. Also, note which times content/posts work the best on your various channels.

REMINDER: Use an Excel document to track how many “likes,” followers, video views and subscribers. Determine what data is appropriate for your channels and what data defines campaign success.

Example Excel Document:
Rules all teams MUST follow:

1. All content and scheduling must be approved by a supervisor before posting/tweeting.
2. Event photos must be posted on Facebook within a timely manner (5 days after event).
3. Must respond to comments within 24-48 hours after a fan/follower has posted or engaged with your channel.
4. At a minimum, one post/tweet must be scheduled a day (Mon-Fri)
5. MOST IMPORTANTLY – HAVE FUN!
Don’t Trash Nevada
Social Media Goals

Facebook:

3 Months

6 Months

9 Months

1 Year
Twitter:

3 Months

6 Months

9 Months

1 Year
Take Pride in America Phase III
Project Compendium Report
Attachment # 4
Site-Based Community Programs
Site-Based Community Programs:
Using Spanish-Speaking Volunteers to Enhance
Environmental Stewardship Outcomes of Hispanic Visitors

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Abstract

Previous research suggests that Hispanic visitors are underrepresented in many national parks, but as a growing population it is important to create community programs that adapt to the cultural mores of this group. The present study uses observations from different sites within the Lake Mead National Recreation Area to investigate further the environmental benefits of site-based programs, and to enrich the field’s understanding of how national parks can use Spanish-speaking volunteers to support Hispanic visitors. We employ a series of community programs and other approaches to provide insight into why the site-based community program is effective, finding that the relationship between the volunteer and the visitor appears to play a key role. The observations suggest that developing a close relationship with a bilingual (Spanish/English) volunteer led to increased participation for Hispanic visitors, in contrast, on average, Hispanic visitors that were approached by a non-Spanish speaker did not experience a close relationship and showed no interest in the community programs. Findings reveal that programs structured with weekly events and with opportunities for visitors to interact with park representatives were more likely to generate close representative-visitor relationships. Beyond reporting new observational findings, this paper contributes theoretical structure with which to implement site-based community programs. Findings identify relevant contributions for future programs at national parks.

This project, part of the Take Pride in America in Southern Nevada – A Local Litter and Dumping Clean-Up Program, was funded by the Southern Nevada Public Land Management Act and delivered by the Public Lands Institute at the University of Nevada, Las Vegas on behalf of and in cooperation with the Bureau of Land Management, National Park Service, U.S. Fish & Wildlife Service, and the U.S. Forest Service.
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Introduction

The National Park Service (NPS) Call to Action sets an inspiring vision for a second century of heritage stewardship. Connecting people to parks is a primary theme in the Call, with action items that include developing future park stewards by “conducting fun, engaging, and educational biodiversity discovery activities,” improving urban residents’ awareness of parks and enhancing the “connection of densely populated, diverse communities to parks, greenways, trails, and waterways to improve close-to-home recreation and natural resources conservation.”

These action items speak to Lake Mead National Recreation Area (LAKE), due to the close proximity of the park to Las Vegas, Nevada. The Las Vegas metropolitan area is an urban island surrounded by vast stretches of public lands. The demographic profile illustrates the multicultural reality of the city. In 2010 the Census Bureau estimated that 62% of the more than 583,000 people were Caucasian, 31% were Hispanic, 11% were African American, 6% were Asian and 5% were mixed race.

Since 2011, the volunteer office at LAKE has implemented a series of site-based community programs in an effort to engage park visitors. These programs, in which volunteers interact with visitors to provide opportunities for stewardship activities on national park grounds, are a strategy for involving local communities in park stewardship. The programs directly align with the NPS Call to Action and support the sustainability efforts of LAKE by developing a local base of support.

The mission of site-based community programs at LAKE is to provide visitors with one-to-one relationships to enhance the environmental stewardship of visitors. Site-based community programs are not limited to the park but also aim to establish partnerships with local businesses to promote the stewardship of park resources.

The overarching aim of this paper is to enrich the field’s understanding of how Spanish-speaking volunteers influence participation in site-based community programs to support the environmental mission of national parks. Our central qualitative analysis investigates whether creating closer relationships by eliminating a language barrier between park representatives and visitors leads to better outcomes. We examine whether site-based community programs with non-native English speaking visitors work primarily through the connection the visitor feels with the bilingual volunteer rather than through other, more direct processes, such as providing outdoor stewardship activities during visits.

Prior research on relationships between park representatives and minority groups points out that Hispanics have a greater sense of anxiety than Anglos about having to ask agency people for information about the recreation site (Gudykunst, 1988). This sense of anxiety may be reduced by having field volunteers who speak Spanish and have some knowledge of the Hispanic culture. Also, the communication channels of Hispanics are very different than

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1 Call to Action, 2013 update, p. 7
Anglos. Hispanic groups report using word of mouth (family or friends) to learn or hear about the area (Hodgson, Pfister, & Simcox, 1990) more than Anglos. This difference in communication channels suggests that Spanish-speaking volunteers may be seen as a more valid source of information than someone unfamiliar with the language and by extension, unfamiliar with Hispanic culture.

The present study provides preliminary evidence that using Spanish-speaking volunteers promotes a greater sense of relationship between the park and Hispanic visitors. Finally, we investigate the characteristics of programs, volunteers, and Hispanic visitors that may increase the likelihood of a close relationship. We present findings that may help agencies design site-based community programs more conducive to close visitor/park-representative relationships, and perhaps to more environmental stewardship.

The next section provides background information on the site-based community program at Lake Mead National Recreation Area. The second section of the paper summarizes the observational phase of the project, followed by a discussion of findings. Section three offers a summary of recommendations followed by a theoretical framework of how to implement SBC programs.

**Site-Based Community Programs: Background**

The Lake Mead National Recreation Area (LAKE) Site-Based Community (SBC) programs work to enable visitors to build on their own strengths and capacities to promote the conservation of national park areas. While these programs come in different forms (e.g., the Trail watch, the OZ Program), they have a common goal of increasing the level of visitor participation and reducing or preventing ecological degradation. Programs are embedded in their communities and contribute to the community-building process.

A fundamental characteristic of community-based programs is that staff and visitors work together in relationships based on common interests. The programs make every effort to affirm and strengthen visitors’ experience and their ability to function in a sustainable society. The programs work with visitors to mobilize formal and informal resources to support land preservation.

Finding common interests between staff and visitors is not difficult. Previous surveys on recreation preferences showed that a “nonlittered” area was the most important item listed by Hispanics and Anglos (Bass, Ewert, & Chavez, 1993). Like many other national parks across the country, LAKE experiences a littering problem. So when the opportunity to partner with the other federal land management agencies in Clark County presented itself, LAKE staff actively participated on the interagency anti-litter and desert dumping team. This team, one of several Southern Nevada Agency Partnership (SNAP) teams, received funding through the Southern Nevada Public Lands Management Act to support their work. Through the efforts of this team along with community partners, the Don’t Trash Nevada program developed. The purpose of this program is to reduce littering and promote awareness of the problem.

With the support of the interagency team and in conjunction with the Don’t Trash Nevada program, the volunteer office at LAKE created litter related SBC programs and committed to
having a greater presence on site. Some of the efforts include: having rangers more frequently visiting the area, making more visitor contacts, passing out trash bags, and disseminating information about the area. More specifically, LAKE has implemented the following litter related programs:

**Impromptu Beach Clean-Ups**
During the summer the volunteer office hosts a series of impromptu beach clean-ups, supported in part by funds from Don’t Trash Nevada, consisting of park rangers and park representatives roving along the beach inviting visitors to be part of the clean-up. For visitors that participate during the event the office provides them with a bucket, trash bags, and a trash picker.

**Adopt-A-Cove Program**
The volunteer office created the Adopt-A-Cove program which gives visitors the opportunity to become a park steward on an ongoing basis. The program has helped improve the appearance of the Lake Mead shorelines. The program asks participants to adopt a certain area within the park and clean it at least three times a year, report back to the park service about how much litter they collected, and report any safety issues seen. As an incentive visitors that “adopt” a cove and sign up as volunteers get a free day pass every time they come to clean the area.

**Business-Concessions**
This consists of an agreement made between the volunteer office and local businesses to set an informational booth inside the business amenity with the purpose of connecting with clientele that are current or prospective park visitors, some of most visited businesses include: West Marine, Bass Pro, and REI (Recreational Equipment Inc.)

Despite the efforts of the National Park Service, these programs had low participation from the Hispanic community. Low participation in similar SBC programs existed at the Spring Mountains National Recreation Area (SMNRA), a United States Forest Service (USFS) site and a SNAP anti-litter and desert dumping team partner. Building on a pilot project supported with SNPLMA funds, the team decided to extend lessons learned at SMNRA to LAKE. At SMNRA a bi-lingual consultant systematically observed visitors, organized impromptu clean-ups and informally gathered feedback from Spanish speaking visitors. Therefore, in a multi-organizational collaboration, the Public Lands Institute (PLI) and the volunteer office at Lake Mead prepared a bilingual team to implement the SBC program for the summer of 2013.

**Method**

**Study Area**
The Lake Mead National Recreation Area is located 24 miles from the Las Vegas metropolitan area, and it covers the states of Nevada and Arizona. High recreation use of the site occurs on weekends and holidays. Environmental degradation is also evident; litter and graffiti are apparent in some areas.
Visitors were observed at five different locations: Boulder Beach, Willow Beach, Cottonwood, Six Mile Cove, and Placer Cove. These areas were included in the study based on visitation rates and because they represent most of the kinds of recreational uses that occur at Lake Mead.

All visitors within the site area were approached and asked if they would help pick up litter along the recreation area. Those individuals that agreed to participate and fill out the proper forms were considered observations. Participants and visitors were informed about the Adopt-A-Cove program and were asked if they would like to sign up for the program.

**Observation Foci**

It is important to note that this report is based primarily on observational field research and therefore is subject to the applicable methodology limitations. The observational phase began Friday, May 31st and concluded on Saturday, August 24th. Our multilingual team conducted approximately 109 hours of observation and interaction at the indicated study sites for a period of thirteen weeks. Minimization of subjectivity was managed through repeated and continuous observations at different locations and at different times. For the purposes of the study we used four categories of observations:

1. *Background characteristics* – based on observations and conversations a visitors’ profile was developed.
2. *Perception of site features* – includes both volunteers’ and visitors’ overall perception of the site, generally involved aspects they liked and disliked.
3. *Perception of Site-Based Community (SBC) programs* – in a form of casual conversations participants were asked about their overall experience during the impromptu beach clean-up and/or Adopt-A-Cove program.
4. *Future participation or involvement* – visitors were asked if they would want to become more involved with the park or pursue similar projects on their own.

**Findings**

**Background Characteristics**

Visitors of all ethnic groups and backgrounds use the lake for various recreational uses. Of the total 689* individuals counted, the following table represents the total percentage by visitor, assessed by informal observation and conversation:
*The total of individuals contacted includes also observations made through business concessions.

However, the profile of SBC participants is very different from the visitor’s profile. Of the total of 83 volunteers, the following graph depicts distribution of volunteers based on race (See Figure 1).

Most of the Hispanic visitors that we observed traveled in large family groups, and with children. This observation relates to previous surveys repeatedly finding that Hispanics are more likely to visit parks with other people (Byrne, 2009). On average, Hispanic visitors showed a consistent pattern by traveling in groups. Other types of visitors (e.g., White/Non-Spanish-speaking, Asian/Pacific Islander, and African Americans) showed more diverse patterns with visitors traveling in smaller groups with children under 16, or simply traveling with friends or alone.
Perception of site features

All of the observation sites can be considered as being ethnically diverse. The picnic areas were occupied primarily by minority groups especially Hispanic and Pacific Islander visitors. This observation supports previous studies done on Hispanic visitors and recreational activities. Researchers such as Baas, Ewert, and Chavez found that Hispanics perceived developed campground amenities such as, picnic tables, garbage disposals, and toilets as more important than did Whites (1993). Preferences for well-maintained facilities (cleanliness, shaded trails, picnic areas) over natural features were also found among Hispanics (Cronan, Shinew, & Stodolska, 2008).

Places with high concentration of Hispanic visitors are Cottonwood, Boulder Beach, and Willow Beach. These sites shared common characteristics such as: swimming areas, access to public amenities (parking space, restrooms, picnic areas), and family oriented themes. Also, certain kinds of recreational uses seemed to influence Hispanic visitation. For instance, places that were primarily used for boating, sailing, or rafting purposes were mainly occupied by White/Non-Spanish-Speaking visitors, whereas, places that offered fishing, or jet skiing seemed to attract more Hispanic visitors.

Litter is a problem in many areas of the park. It is common to see a variety of unattended items including but not limited to: clothing items, pool toys, tent equipment etc. The most common trash items observed were: cigarette butts, food remnants, beer/soda cans, plastic bags and bottles and bottle caps. Glass bottles were another common item even though they are prohibited in all areas of the park.

One final consideration of the site was weather related. The aridity and hotness of the place limits the ability of visitors to safely participate in SBC programs during summer months.

Perception of Site-Based Community (SBC) programs

For liability issues all volunteers have to sign an agreement form to which many parents showed suspicion (especially Hispanics). To prevent this, the SBC impromptu beach program simplified the process and limits information requirements to just a parent or guardian’s name and a phone number or email.

A typical group of SBC participants would consist of adolescents and young adults, always with the supervision of one parent or adult. For Hispanic visitors, when asked to be part of an impromptu clean-up most parents immediately ask their kids to help us, and kids showed active participation during the clean-up event. Also, Hispanic visitors seemed more receptive and interested in impromptu beach clean-ups when they felt related either physically, culturally, or linguistically with the volunteer.

We observed that Hispanics attach a family value to the clean-up experience. In contrast, White/Non Spanish-Speaking families were less family oriented and more practical about offering their help. While talking to some of Hispanic visitors we realized many of them are aware of the littering issues at the lake. Some of them explained that many members of their community are not considerate about their behavior and their impact to the environment.
Thus, they felt the responsibility to help keep the park clean. Most important, Hispanic visitors acknowledged the educational attributes of having their kids volunteer their time for the organization's program. The majority of Hispanic participants shared that what they valued the most of the event was having "their kids learn about protecting the environment and helping to maintain it clean”.

Based on previous observations we realized Hispanic families are mother-centered. We noted that on average, talking to the matriarch of the group increased the visitors’ likelihood to become involved. Additionally, Hispanic families were more prone to participate for beach clean-ups as a whole family. In other demographic groups it was far more likely for just a few family members (like kids and/or teenagers) to volunteer for a project.

Some visitors were willing to help but asked if they would get something in exchange (e.g., a t-shirt). During our impromptu clean-ups giveaways were typically shared with participants at the end of the event. It is important to note they were never used as a way to engage visitors in a quid pro quo deal. For comparison purposes we decided to change our strategy a little bit and use giveaways as an incentive. We noted that it does trigger people’s interest but ultimately people that wanted to help would do it without expecting anything in exchange. Nonetheless, giveaways and souvenirs had a positive effect on our participants; it enhances their experience of being part of our event.

**Future participation or involvement**

When asked about their future involvement through programs such as Adopt-A-Cove, most participants showed interest in the program. We also asked Hispanic participants if they would pursue or organize impromptu beach clean-ups on their own. The majority of them said yes, and even asked for more information on how to find out more about the programs offered through the volunteer office.

Many Hispanic visitors showed even more interest when they realized they could get free access to the park provided they would spend some of their time picking up litter and reporting back to the park office.

Although their answers are subject to response bias, it will be interesting to follow up on those impromptu beach clean-up participants that signed up for the Adopt-A-Cove program and track their commitment to protecting the lake beyond our clean-up event.

The following section reports the overall findings of our work. We first present evidence on the nature of close volunteer-visitor relationship, as well as support for a simple characterization of this relationship. Next, we examine the evidence for benefits of Spanish-speaking volunteers and report the effects in visitor’s participation and program involvement.
Summary & Discussion
We have used this site-based approach for participant identification and volunteer recruitment in a study design for which casual interviews and observations are the major data-collection method.

The largest group of participants included Mexico-born Hispanic and US-born Hispanics, followed by US-born Anglos. Based on the profile of visitors and previous conversations with former volunteers and park representatives this was a huge change in ethnic composition from previous years. Of the 689 contacts made this year, 12% of them volunteered for the SBC programs, this is a 5% increase in participation from last year. Also, if we compared the number of volunteer and number of clean-up ratios with the years of 2011 and 2012 we find there was a 15% and 67% increase respectively.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Beach Clean-Ups</th>
<th>Total Number of Volunteers Involved</th>
<th>Volunteer/Event Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>13</td>
<td>59</td>
<td>4.53</td>
</tr>
<tr>
<td>2012</td>
<td>11</td>
<td>34</td>
<td>3.09</td>
</tr>
<tr>
<td>2013</td>
<td>16</td>
<td>83</td>
<td>5.18</td>
</tr>
<tr>
<td>Total</td>
<td>40</td>
<td>176</td>
<td></td>
</tr>
</tbody>
</table>

Having someone that could speak their language made Hispanic visitors more interested in our programs. Hispanic visitors engaged in an informal and casual conversation with us. We think that using Spanish-speaking volunteers reduced anxiety levels of Hispanic visitors, thus they were more open and engaged during our events. We noticed that if a Hispanic visitor was in the middle of a task and a Spanish-speaking volunteer came along, the task was set aside immediately, and attention was placed on the volunteer. In other groups, when we approached visitors it almost seemed as we were interrupting them and/or invading their personal time. In contrast, Hispanic visitors responded to a different set of values that gave priority to the volunteer. Giving priority to the task or personal needs would have gone against a basic value in the Hispanic culture, causing criticism from peers or family members.

On average, based on program involvement we conclude Hispanic visitors were likely to relate better with Spanish-speaking volunteers as a park representative and were more likely to maintain dialogue with a Hispanic volunteer than with White park staff. Our findings indicate that the cultural and linguistic tenor of the volunteer-visitor interaction is a key feature that Hispanic-aimed programs should support.

This study finds evidence suggesting that unless a Hispanic visitor feels a form of relation with a park representative, the SBC program will likely have little effect on the visitor’s stewardship behavior. Perhaps the cultural similarities encourage visitors to trust or empathize with the bilingual volunteers’ mission. We thus posit that language is an active ingredient that supports closer relationships between Hispanic visitors, park volunteers and, by extension, the stewardship goals of the park volunteers.
Program staff and park representatives alike often worry that the visitors willing to connect with volunteers and become interested in the SBC program are those who would have normally done so without Spanish-speaking staff. However, our findings indicate that having bilingual volunteers helps include apprehensive Hispanic visitors that were not historically receptive to park representatives.

According to former (non Spanish-speaking) volunteers, when they approached Hispanic families they communicated mainly with kids and/or young adults and parents did not engage in the conversation due to their language barrier. Based on this comment, we noted that having bilingual volunteers is an asset in this type of situation for both the NPS and for visitors. Since the matriarchs in many of the Hispanic groups we encountered established the participation of the groups in our impromptu clean-ups, being able to communicate directly with the parents seems to be a critical component of our successful summer.

Besides overcoming language barriers, other reasons that can explain a higher number of Hispanic volunteers relative to other ethnic groups can be attributed to the values attached to the beach clean-up process. We think the design of the activity crosses with very important values in the Hispanic community, such as the affinity for group activities, appreciation of non-littered areas, and the desire for educational opportunities.

**Recommendations**

The analysis carried out in this study suggests that the LAKE SBC program (and potentially others with similar characteristics) can make close relationships more likely by incorporating several program practices:

- Recruiting bilingual volunteers
- Appointing Hispanic park representatives
- Training multilingual teams of volunteers and park officials
- Having volunteers interacting with visitors in different areas at different times

Because of the bilingual staff limitations the LAKE volunteer office experiences, it is difficult to maintain closer relationships with Hispanic visitors that either signed up for the Adopt-A-Cove Program or that are simply seeking future involvement. One solution could be using a volunteer that could follow up on previous sign ups and could assist Hispanic visitors and answer some questions pertaining to SBC programs.

Since communication channels are very different in Hispanic groups one way to approach this group might be by posting fliers on places that are frequented by Hispanic members, such as supermarkets, beauty salons, churches, and the like.

Although we found that using Spanish-speaking volunteers led to increased participation of Hispanic visitors, our findings are preliminary and should not be considered as definite conclusions. Building on the results of this study, future qualitative or even experimental
research can include designs to refine our understandings of the mechanism behind the relationship between bi-lingual volunteers and Spanish-speaking visitors.

Many national parks are struggling to meet the needs of their diverse range of visitors and to address multiple environmental issues. In the future the federal government will implement further budget constraints on national parks; thus, volunteer labor will be increasingly attractive. We find that incorporating bi-lingual volunteers into the delivery of site-based community programs can strengthen relationships between the park and visitors and can improve stewardship outcomes.
References


Tinsley, H. E. (2002). Park Usage, social milieu, and psychosocial benefits of park use reported by older urban park users from four ethnic groups. Leisure Sciences, 24, 199-218.
Appendix

Implementing a Site-Based Community (SBC) Program
Some national parks around the country can also create SBC programs to increase stewardship outcomes. Here are some steps in developing and implementing a SBC program and training the team.

The plan and main objectives of the SBC program should identify the needs of the audience. In our study the main need was to include Hispanic visitors into our stewardship programs and activities. The following diagram displays chronological steps to guide national parks through the necessary stages of implementing a bi-lingual volunteer component to the delivery of a SBC program.

SBC Program Outline

<table>
<thead>
<tr>
<th>Design Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Identify the need for an SBC program</td>
</tr>
<tr>
<td>• Understand the limitations and resources</td>
</tr>
<tr>
<td>• Establish a goal for the program</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Recruit Bi-lingual Volunteers to assist in Program Delivery</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Create an incentive for prospective volunteers (e.g., earn college credit, mileage reimbursement, free access to the park etc.)</td>
</tr>
<tr>
<td>• Use formal and informal communication channels to find bi-lingual volunteers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Help volunteers understand the culture of the agency they are representing</td>
</tr>
<tr>
<td>• Ensure volunteers receive cultural sensitivity training</td>
</tr>
<tr>
<td>• Enhance volunteer interpersonal skills and roving techniques</td>
</tr>
<tr>
<td>• Provide volunteers with environmental knowledge to share with visitors since education is an important step to gaining visitor support for a SBC program.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Strategically locate places that could facilitate communication between visitors and volunteers</td>
</tr>
<tr>
<td>• Provide opportunities for bi-lingual volunteers to shadow park staff during SBC programs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Maintain good relationships with visitors and involve bi-lingual volunteers in encouraging future involvement</td>
</tr>
<tr>
<td>• Periodically observe and evaluate overall relationship of bi-lingual volunteers and visitors</td>
</tr>
</tbody>
</table>
Take Pride in America Phase III
Project Compendium Report
Attachment # 5
Social Media Squad Orientation,
Best Practices and 101 Documents
Don’t Trash Nevada
Social Media Team Orientation
Trish Horton
Social Media Team Coordinator

Welcome!
About me...

Before we get started...

Objectives & Handouts
Don’t Trash Nevada Objectives
- Raise awareness & reduce desert dumping and shooting range issues throughout Nevada’s public lands.

Don’t Trash Nevada
- Part of UNLV’s Public Lands Institute manages projects between members of Southern Nevada Agency Partnership (SNAP) - BLM, USFS, USFWS, NPS
- SNAP agencies promote conservation of public lands and their resources.

DTN
- Project Support & Clean Up Trailer
- Littering Site Monitoring
- Adopt A Block manual

Don’t Trash Nevada Campaign
Campaigns

Accomplishments

Since January 2006

- 118 volunteer events
- 10,335 volunteers
- 46,005 hours – over 5.25 years of time!
- 14,950 cubic yards of trash
- 39 times taller than the Stratosphere
- Enough to fill 421 school buses!

Two truths... and a lie!

- Write three statements on the notecards: Two Truths ... and one lie.
- We’ll go around the room, read our statements, and try to figure out which one is the lie.
Objectives

- Explain why social media is a valuable tool.
- Identify which social media platforms are appropriate and why.
- Describe the characteristics of each social network and its users.
- Differentiate between content that is or is not relevant and appropriate.
- Identify resources and practices that are appropriate and inappropriate for content.
- Explain why inappropriate content is a risk to the organization and to the employee.

Social Media Internship

- What do you already use?
  - Twitter?
  - Facebook?
  - Instagram?
  - Pinterest?
  - Google Drive/Docs?
  - Google Chat?
  - Dropbox?
  - What would you like to learn?

Objectives

- Explain the functions and responsibilities of the content writing, community management, and reporting teams.
- Locate Social Media Squad resources and position descriptions on the GDrive shared folder.

Why Social Media?

http://youtu.be/0eUeL3n7fDs
Your Roles

Content Writers

- Create content!
  - Facebook and Twitter are primary platforms
  - Text, pictures, videos, etc.
  - Work with Community Managers and Analyzers
  - Follow Editorial Style Guide for cohesive voice
  - Submit drafts to Content Coordinator/Program Manager (Trish or Beth)

Community Managers

- Figure out when to post content and update Content Calendar
- Post content through TweetDeck, Facebook
- Reply to community questions, comments, etc.

Analyzers

- Analyze Facebook Insights and other data & review previous week’s posts
- Figure out what’s working best and what isn’t
- Update Content Forms with results
- Compile community reports
What to Expect

- Working with your mini-teams throughout the week to discuss assignments, ideas, etc.
- Weekly meeting to share team-wide results, provide feedback, determine assignments for the week.
- Weekly newsletter, To Do lists, etc.

Resources We’ll Use:

- Google Docs – Document Management
- Asana – Task Management, Discussion
- DropBox – File & Document Sharing
- DTN Delicious – Ideas and other resources
- Google URL Builder – Campaign tracker *
- Bit.ly – Link shortener & tracker *
- HootSuite & TweetDeck – Schedulers

Social Media 101

- Twitter
  - What is it?
  - How is it used? (What the heck is a hash tag?)
- Facebook
  - How is a Page different than a Profile?

Social Media 101

- Facebook
  - Best Practices
    - Embrace your fans/customers
    - Use images
    - Encourage interaction.
  - Don’t forget to Tag/Mention
Descriptions & Instructions

- GDrive > Social Media Team Docs > Social Media Team Position Descriptions and Instructions
- Step by step guide for each position.

Content Mix

- Example:

Content

- Purposes:
  - To inform...
  - To teach...
  - To inspire...
  - To entertain...
  - To persuade...
  - To start a conversation or controversy
  - To express an onion
  - To share industry knowledge or resources.

Content Mix

- A good rule of thumb... (But not a strict one!)
  - 70% “On Message” – Brand related topics, information, etc.
  - 20% Networking – Resharing relevant content, Retweeting, Referring to 3rd parties (always tag or mention!)
  - 10% Self-promoting – Refer back to website, announce events, etc.

Our Reporting team will tell us if we need to adjust!
Content Writers

- Posts should read just like a natural conversation you’re having with someone, not a Public Service Announcement. (We’ll talk about brand voice in a moment here!)
- Remember to leave your initials at the end of a post (so you can get credit, and our audience knows we are a team!)

Don’t be afraid to try new things.

- That’s why we have a reporting team... to tell us if something works, or doesn’t.
- Keep in mind/record what themes, topics, and ideas you’re trying, so we can see what’s working.

Documents & Work Flow

Content Writers - Submission Form

*Complete & Email SMS Coordinator to review

*Complete & Email SMS Coordinator to review

Community Managers

- Actually post the content that the writers generated.
- Manage the community - respond to comments, find new users to follow, etc.
Analyzers

- Work is meaningless if we don’t know if it’s working!
- Analyzers look at the data and tell us what’s working, what isn’t, how to improve.

Documents & Work Flow

- Analyzers
- Weekly Updates

<table>
<thead>
<tr>
<th>Result</th>
<th>Comments</th>
<th>Followed</th>
<th>Community Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Positive</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>1</td>
<td>Neutral</td>
</tr>
</tbody>
</table>

Documents & Work Flow

- Analyzers

[Diagram showing Bad Timing and Good Timing with Bad Content and Good Content]

Analyzers – FB Insights

[Table showing data]

Meaningless data...
Analyzers – FB Insights

... to useful information.

Top Posts, Lowest Posts,
Most Engaging, Least Engaging, etc.

Your Roles

Content Writers
Community Managers
Analyzers

My role!

- Make sure the work is getting done.
- Help you develop skills, achieve your goals! (Coaching!)
- Open & Honest communication

The Don’t Trash Nevada Brand

- Social Media Policy
  - As a social media team member, you are a representative of Don’t Trash Nevada
  - The internet is ALWAYS a public space.
  - The internet still has rules and there are consequences of breaking them.
Clean Hands

- Use content you KNOW is okay to use. Comply to any licensing or copyrights, verify the source, verify image releases, etc.
- If it has a watermark, you can’t use it!

Social Media Fails
During the riots in Egypt...

Learning from the past...
- What can go wrong with social media?

Social Media Fails
What went wrong here?

- Obama’s gma even knew it was going to be bad! ‘She died 3 days b4 he became president’. #nbcpolitics
Social Media Fails

Burger King... http://www.youtube.com/watch?v=P_Y7Caaz

Moral of the story...

- BE CAREFUL WHAT YOU POST ON THE INTERNET.
- If you wouldn’t want your mom, your boss, the President, or anyone else seeing it, Don’t Post It.

So...

- Now that we know how to say something, who are we trying to talk to?

Tribes

http://youtu.be/uGy99nkhw
What do we want to say?
- What is our story?
- Who is our tribe?
- What things interest them?
  - What things don't they want to hear about from us?
  - What are the best outlets?

How do we want to say it?
- Editorial Style Guide
  - Establishes the “voice” of the brand.
  - Also clarifies what type of grammar is acceptable.

What next?
Facebook & Twitter

Competitive Analysis

Competitive Analysis

Facebook pages with similar initiatives:

- Greenpeace International – 1,047,128 Likes
- WWF – 818,787 Likes
- Charity Water – 216,944 Likes
- Clean up Australia – 2,248 Likes
- Keep Texas Beautiful – 1,044 Likes

Greenpeace International – 1,047,128 Likes

- What it does well
  - Wall content
    - Original content
    - Uses engagement tactics
    - Consistent tone/voice

- What "Don't Trash Nevada" should apply
  - Highlight unique tone/voice of "Don't Trash Nevada" and facilitate engagement by participating in the conversation. Highlight state laws or regulations that support "Don't Trash Nevada." Post original content about what "Don't Trash Nevada" is doing to support its objectives.

Greenpeace Posts

- HITS
- INSIGHTS
  - Visuals (photos & video) are key
  - Recognize volunteers, supporters, employees, etc. for their efforts
  - Keep positive tone consistent
Greenpeace Posts

- MISSES
  - When the post doesn’t include engagement tactics it suffers
  - When there’s inconsistent tone the engagement decreases

- INSIGHTS

WWF Posts

- HITS
  - Engagement tactics are a must
  - Relative articles keep your community informed

- INSIGHTS

WWF – 818,787 Likes

What it does well
- Wall content
  - Uses engagement tactics
  - Provides upcoming events
  - Encourages community to take action
  - Consistent tone/voice

What “Don’t Trash Nevada” should apply
- Engagement tactics empower your community to speak their mind about the subject of the post.
- Providing information about relative topics keeps your community informed and educated which in turn builds your credibility.

Charity Water – 216,944 Likes

- What it does well
  - Content
    - Photos
    - Consistent tone/voice

- What “Don’t Trash Nevada” should apply
  - Posting photos of how your community support is making a difference personalizes the experience.
  - Highlighting supporters who are taking action encourages the rest of your community to do the same.
Charity Water Posts

**HITS**

• Visuals encourage engagement
  • Recognition is empowering

**INSIGHTS**

**Clean Up Australia Posts**

**MISSES**

• Allowing other advocates to post engages the community
  • Participating in conversation with your community builds credibility

**INSIGHTS**

**Clean Up Australia – 2,248 Likes**

• What it doesn’t do so well
  • Wall content
    • No interaction with community
    • Inconsistent tone/voice

• What “Don’t Trash Nevada” should apply
  • When you’re trying to build up a community you have to an active member by responding to your supporters and providing your community with informative content.

**Keep Texas Beautiful – 1,044 Likes**

What it doesn’t do so well

• Wall content
  • No engagement tactics
  • Inconsistent voice

What “Don’t Trash Nevada” should apply

• When posting education content include engagement tactics that empower your community to speak their mind about the subject. Make sure the content posted supports your objectives.
Keep Texas Beautiful Posts

- **MISSES**
- **INSIGHTS**
  - Engagement questions are vital
  - Showing your support for “Partners” is reputable but it takes the focus off the cause

Charity Water – 1,372,454 Followers

- **What it does well**
  - Content
    - Original content
    - Photos
    - Consistent tone/voice

- **What “Don’t Trash Nevada” should apply**
  - Highlight unique tone/voice of “Don’t Trash Nevada” and post original content about what “Don’t Trash Nevada” is doing to support its objectives. Show your community how their time and money is making a difference.

Competitive Analysis

Twitter pages with similar initiatives:

- @CharityWater - 1,372,454 Followers
- @WWF – 581,447 Followers
- @Greenpeace – 421,156 Followers

Charity Water Tweets

- **HITS**
- **INSIGHTS**
  - Post photos showing followers the difference they are making by supporting the cause
  - Retweeting relevant posts from followers is a simple way to recognize their efforts
**WWF – 581,447 Followers**

- **What it does well**
  - Wall content
    - Encourages followers to get involved
    - Provides community with relevant news content
    - Uses engagement tactics
    - Consistent tone/voice

- **What “Don’t Trash Nevada” should apply**
  - Page provides info on ways followers can get involved and take action. Photos and videos of relevant content are posted regularly. Educating the community on news relevant builds your credibility.

**Greenpeace – 421,156 Followers**

- **What it does well**
  - Wall content
    - Recognizes those taking action
    - Calls out growing online community
    - Provides community with relevant news content
    - Uses engagement tactics
    - Consistent tone/voice

- **What “Don’t Trash Nevada” should apply**
  - Recognize your followers for helping DTN reach its goal. As your online community continues to grow, thank those who have joined the movement and taken action. Retweeting relevant tweets shows your community support.

**WWF Tweets**

- **HITS**
  - Posting videos and photos garners interest from followers
  - Encourage followers to get involved by asking them engagement questions
  - Posting relevant news articles builds your credibility and ultimately your community

- **INSIGHTS**

**Greenpeace Tweets**

- **HITS**
  - Recognizing your supports goes a long way
  - Showing your followers the difference they are making encourages them to continue their support
  - Pictures and videos are always interesting

- **INSIGHTS**
Competitive Analysis Conclusions

- Engagement tactics will facilitate interaction, but engagement tactics with proper tone/voice will empower fans to share and comment
- If you’re sharing the love with a partner, make sure “Don’t Trash Nevada” is the center
- Personalizing the page with photos makes your fans feel like they are part of a community
- Recognizing volunteers and employees for their service will push a positive message
- When providing information on volunteer opportunities make sure to personalize it by letting your fans know how their service will positively impact their community, city, state, etc.
- Encourage fans to share their experiences by posting photos, content and links
- Geo-target local news, events and relevant content
Overview: Facebook is, by far, the most popular social networking site with more than 800 million active users as of July 2011, according to the LA Times. More than half of active users log on to Facebook every day. Users create a personal timeline, add other users as their friends, exchange private messages and post on other users’ timelines. Additionally, users may join common-interest user groups organized by workplace, school or other characteristics. The website is free to users, and generates revenue from advertising, such as banner ads.

Facebook penetration is highest in North America (69 percent), followed by Middle East-Africa (67 percent), Latin America (58 percent), Europe (57 percent) and Asia-Pacific (17 percent). More than 75 percent of users are outside of the United States. According to Social Media Today, 35 percent of Facebook users are between the ages of 18 to 25, 20 percent of users are ages 26 to 34 and 16 percent of users are between the ages of 35 to 44. Of these, more than 350 million active users currently access Facebook through their mobile devices.

How people use the site vs. how a brand uses the site:
Brands engage users by starting discussions with users about their products. They give their customers a voice and encourage an avenue for instant feedback. Brands also utilize Facebook to offer premium content like custom apps and engaging photos and videos. For example, Ford entices fans with a social contest to win a new car and Mercedes-Benz lets fans high-quality images of the entire fleet of models.

Personal timelines, non-brand users, use the site to post their thoughts and follow friends and brands that interest them. Users can also go back in time and add important life events such as marriages, relocations, and other milestones, to create a chronological and visually engaging timeline of users’ lives on Facebook.
• **Consumer-Brand Dynamics:** Brands interact with customers by posting engaging content such as open-ended questions, polls, photos, videos, and links. They may ask for feedback or comments about a new product or service and enlist their followers’ opinions, which in turn, brands can use in marketing campaigns. The mantra to keep in mind with consumer-brand interaction is:

> "Content is the ad. People are the media."

• **Benefits (ROI):** Brands can benefit from using Facebook because they receive instant feedback and comments from followers about their products and services. People rely on word-of-mouth referrals, so this is a great forum for people to “like” certain products, services, and content; promoting them instantly on their pages to hundreds of friends. Many brands use Facebook as a means of free advertising and word-of-mouth referrals.

• **Paid Media Opportunities:** Through Facebook, businesses can choose who to target by narrowing down location, interests, relationship status, gender, age, and location of the target market. Brands who utilize Facebook Ads can track their revenue increases from particular ads. For example, over a 12 month period, CM Photographics generated nearly $40,000 in revenue directly from a $600 advertising investment on Facebook. Brands can promote Facebook ads or pay to promote at timeline post that has been liked or commented on by their friends’ friends.

• **Best in Class:**

*Red Bull* is very in tune with their target audience. This is evidenced in their custom apps and unique content. For example, they offer competitive games, a web TV program highlighting sponsored athletes and a very impactful timeline cover image.
Uno Chicago Grill has taken advantage of a Facebook app to highlight healthy menu options in an appealing way in honor of National Nutrition Month. They dedicate tabs to specific areas of their menu and use imagery to entice their fans as well as offer online ordering options.

LiveScribe has created a savvy storefront with feature tabs where visitors can buy directly from the Facebook page. You can also tweet about products and post about them on your Facebook wall. These options help create greater exposure for LiveScribe's products.
• **Additional Best Practices** Facebook’s five guiding principles include: use an authentic voice, be interactive, nurture your relationships and use reporting tools and feedback to continuously adapt your marketing strategy.

• **Common Terms:**
  
  o **Block:** You can block someone from seeing your profile, adding you as a friend and sending you messages. Blocked can also mean that Facebook has temporarily restricted you from using a specific feature or multiple features, but you can still access your account.

  o **Chat:** Chat is a feature that lets you send instant messages to online friends. At this time, brands cannot chat one-on-one with fans.

  o **Credits:** Credits are Facebook’s virtual currency that you can use to engage with games and apps.

  o **Event:** Events is a feature that lets you organize gatherings, respond to invites and keep up with what your friends are doing. These are mostly used between individuals, although brands can create events.

  o **Facebook Questions:** Facebook Questions is a feature that lets you get recommendations, conduct polls and learn from your friends and other people on Facebook.

  o **Friend:** Friends are people you connect and share with on Facebook.

  o **Group:** Groups are close circles of people that share and keep in touch on Facebook.

  o **Instant personalization:** Instant personalization makes a few select websites more useful by letting you bring your friends and interests with you when you visit.
Like: Clicking Like is a way to give positive feedback and connect with things you care about.

Lists: Lists are an optional way to organize your friends on Facebook.

Messages: Messages is a central place to exchange private messages, chats, emails and mobile texts with friends. Individuals can initiate private message conversations with brand pages.

Mobile: You can update your status, browse a timeline and view friends' profiles (timelines), all from your mobile phone.

Mobile texts: You can receive and respond to notifications through text messages (SMS) on your phone.

Networks: Networks are affiliations with schools or workplaces on Facebook.

News Feed: News Feed is the ongoing list of updates on your home page that display what’s new with the friends and pages you follow.

Notes: Notes is a feature that lets you publish what’s on your mind in a full rich format.

Notifications: Notifications are email, onsite or mobile updates about activity on Facebook.

Page: Pages allow businesses, brands and celebrities to connect with people on Facebook. Admins can post information and News Feed updates to people who “like” their pages.

Photos: Photos is a feature that lets you share images and tag people.

Places: You can share where you are with your friends by checking into places. You can also find friends nearby.

Poke: You can poke someone to get their attention or say hello.

Profile: Your profile (timeline) is a complete picture of yourself on Facebook.

Search: Search is a tool to find people and content on Facebook.

Social plugins: Social plugins are tools that other websites can use to provide people with personalized and social experiences. When you interact with social plugins, you share your experiences from Facebook with your friends on Facebook.

Subscribe: Subscribe is a way to hear from people you’re interested in, even if you’re not friends. The Subscribe button is also a way to fine-tune your News Feed to get the types of updates you want to see.
o **Tagging:** A tag links a person, page or place to something you post, like a status update or a photo. For example, you can tag a photo to say who’s in the photo or post a status update and say who you’re with.

o **Ticker:** Ticker, on the right-hand side of your home page, lets you see all your friends’ activity in real-time.

o **Top story:** Your top stories are bits of info from the News Feed that Facebook thinks you’ll find interesting. They’re marked with a blue corner and may be different depending on how long it’s been since you last visited your News Feed.

o **Typeahead:** A typeahead is a dropdown menu that appears when you're searching for something. It guesses what you're searching for so you can find it faster. If you see what you’re looking for in the typeahead, click on it to save time. If you don’t see what you’re looking for, click “see more results.”

o **Timeline:** Your timeline is the space on your profile where you and friends can post and share.

o **Video:** Upload short videos to share your experiences.

o **Video calling:** Video calling is a feature that lets you to talk to your friends face to face.

- **Tools for certain circumstances:**

  Brands can create their own personalized tabs on their Facebook page. Brands can also use insight tools for business pages to obtain important metrics on the number of people that have viewed their site, clicked on an ad, etc. Businesses can follow how individual posts influence the number of people talking about a particular brand as well as the impact it has on the overall reach. Businesses can also measure how photos, status updates, videos, etc. are stacking up. Finally, businesses can analyze their audience to see how many people were reached and who is talking about a page.
Overview: Twitter is an online social networking and microblogging service that allows users to send and read text-based posts of up to 140 characters, known as “tweets.” Twitter has more than 300 million users. Users may subscribe to other users’ tweets – this is known as following - and subscribers are known as followers or tweeps. According to the Pew Research Center, 19 percent of online adults age 18-24 and 20 percent of online adults age 25-34 have used Twitter or something like it. The median age of a Twitter user is 31. The website is free to users.

How people use the site vs. how a brand uses the site: Consumers tend to use Twitter to post short updates about their daily lives or links to sites that interest them. Brands use Twitter to update customers of company deals, coupon codes or contests by referring them to a webpage link, to offer an alternative customer support option, to run entertaining discussions with their customers, to react to feedback and to post company news in real time. Dedicated brand pages with larger headers and the ability to pin tweets to the top of the timeline are available for brands who use paid advertising features on Twitter (as of March 2012).

Consumer-Brand Dynamics: Brands interact with customers by engaging them with open-ended questions and contests. They may ask for feedback or comments about a new product or service and enlist their followers’ opinions, which in turn, can be used in marketing campaigns. Brands typically post numerous small tweets and retweet followers throughout the day.

Benefits (ROI): For businesses, there are a number of benefits to using Twitter. They engage customers in industry conversation and create brand awareness. By using Twitter, brands receive free advertising and referrals on users’ timelines, and engage with target audiences who choose to follow a particular brand. It is also an effective research tool. You can ask for feedback to determine how to improve your brand. It also enables networking with colleagues and people from around
the world in a particular field.

- **Paid Media Opportunities:**
  - **Promoted tweets** are ordinary tweets purchased by advertisers who want to reach a wider group of users or to spark engagement from their existing followers. All promoted tweets are first displayed as regular tweets to the timelines of people following an account. Users see promoted tweets at the top of some search results pages on search.twitter.com and through select ecosystem partners. Users may also see a promoted tweet in the search results and may be visible within a user’s timeline if an advertiser has promoted a tweet that is relevant to those users. A promoted tweet will appear in a user’s timeline only if the tweet is likely to be interesting and relevant to that user.
  - **Promoted accounts** are part of the “Who To Follow” section, which displays accounts that users don’t currently follow and may find interesting based on the accounts they follow and their tweets. Promoted accounts help introduce a wider variety of accounts that people may enjoy, and allow brands to quickly grow their followers base.
  - **Promoted trends** are topics that are timely, contextual, and event-sensitive that are promoted by advertisers. They appear at the top of the Trending Topics section.

- **Best in Class:** Lady Gaga (@ladygaga) has the most Twitter followers with 20,116,598. Justin Bieber (@justinbieber) comes in second with 18,112,935 followers and more than 13,000 tweets.

- **Additional Best Practices** According to Mashable, your brand will be more successful on Twitter if you follow these best practices: Do your research before engaging customers, build credibility and equity, track metrics and conversation trends, listen and observe before engaging, be authentic and believable, and finally, track measure and iterate.

- **Common Terms:**
  Users can group posts together by topic or type by use of hashtags – words or phrases prefixed with a “#” sign. This makes it easier to organize tweets around a topic. Similarly, the “@” sign followed by a username is used for mentioning, or replying, to other users. To repost a message
from another Twitter user, and share it with one’s own followers, the retweet function is symbolized by “RT” in the message. A direct message or “DM” is a private tweet exchange between users. If multiple people are posting content on the same Facebook page or Twitter handle use the “^” symbol to identify who is posting what.

- **Tools for certain circumstances:**
  TwitterCounter allows you to produce your own graphs to see the number of followers and tweets. TweetStats gives you plots for timelines of followers and retweets, as well as analysis of which Twitter posting software was used. TwitGraph produces a number of different graphs, including the tweets per day over the last week and top words used in your tweets.
SOCIAL MEDIA 101 - YOUTUBE
March 2012

- **Overview**: YouTube is a video-sharing website, operated as a subsidiary of Google, on which users can upload, view and share videos. YouTube provides a forum for people to connect, inform and inspire others across the globe and acts as a distribution platform for original content creators and advertisers large and small. YouTube uses Adobe Flash Video and HTML5 technology to display a wide variety of user-generated video content, including movie clips, TV clips, and music videos, as well as amateur content such as video blogging and short original videos.

- **How people use the site vs. how a brand uses the site**: Most of the content on YouTube has been uploaded by individuals, although media corporations including CBS, BBC, VEVO, Hulu, among others offer some of its material via the site, as part of the YouTube partnership program. User see new videos displayed in a news feed on their home page. Users can like, dislike, comment, and create a “video response” to videos posted on YouTube.

  Brands may also use YouTube as a video library that stores videos posted by the brand’s YouTube account manager.

- **Consumer-Brand Dynamics**: One of the key features of YouTube is the ability of users to view its videos on web pages outside the site. Each YouTube video is accompanied by a piece of HTML, which can be used to embed it on a page outside the YouTube website. This functionality is often used to embed YouTube videos in social networking pages and blogs. Embedding, as well as ranking and commenting, can be disabled by the video owner.

- **Benefits (ROI)**:
  - Nearly 17 million people have connected their YouTube account to at least one social service (Facebook, Twitter, Orkut, Buzz, etc)
- Over 12 million people are connected and auto-sharing to at least one social network
- 150 years of YouTube video are watched every day on Facebook (up 2.5x year/year) and every minute more than 500 tweets contain YouTube links (up 3x y/y)
- 100 million people take a social action on YouTube (likes, shares, comments, etc) every week
- An auto-shared tweet results in 6 new YouTube.com sessions on average, and we see more than 500 tweets per minute containing a YouTube link
- Millions of subscriptions happen each day. Subscriptions allow you to connect with someone you’re interested in — whether it’s a friend, or the NBA — and keep up on their activity on the site
- More than 50% of videos on YouTube have been rated or include comments from the community
- Millions of videos are favorited every day

- **Paid Media Opportunities:** As the world’s largest online video site, many advertisers are interested in running campaigns that reach their audience. Advertisers can buy ads on the YouTube homepage, search results pages and even within the videos themselves. They also run contests and sponsor events such as live concerts and holiday promotions.

- **Best in Class:** YouTube charts the most viewed videos, the most discussed, most liked, top favorite and most viewed HD videos. Log in is not required to view a video but in order to “like,” “dislike,” “share” or add to favorite playlist you have to be logged in.

- **Screen Shots / Links:** The viewed videos are shared to its fan page on Facebook. Sharing your videos on multiple social media platforms allows for more exposure which in turn will drive more traffic to your YouTube account.
• **Common Terms:**
  
  o **Viral video** – Video that becomes popular through the process of Internet sharing, typically through video sharing websites, social media and email.
  
  o **3D videos** – A motion picture that enhances the illusion of depth perception. 3-D films are not limited to feature film theatrical releases; television broadcasts and direct-to-video films have also incorporated similar methods, primarily for marketing purposes.
  
  o **HTML** - is the predominant markup language for web pages. HTML elements are the basic building-blocks of webpages.
Overview: Google+ is a social networking and identity service operated by Google Inc. Google+ pages provide businesses, products, brands and organizations with a public identity and presence on Google+. Pages can be created for one of five categories: Product or brand; company or organization; local business or place; arts, entertainment or sports; and other. Circles enable users to organize contacts into groups for sharing. This system replaces the typical “friends” list function used by sites like Facebook. Google+ also features hangouts – places used to facilitate group video chat. Early adopters of Google+ have been mostly male (71 percent) and the dominant age bracket (35 percent) is between the age of 25-34.

How people use the site vs. how a brand uses the site: Both personal users and brands can utilize Google+ to create circles to separate colleagues, friends, etc. and send messaging directly to that target audience.

Consumer-Brand Dynamics: Brands interact with customers by engaging them with open-ended questions and contests. They may ask for feedback or comments about a new product or service and enlist their followers’ opinions, which in turn, can be used in marketing campaigns.

Benefits (ROI): Google+ has a smaller base than Facebook so it seems to be driven more by content of a professional, informational and industry-specific manner. Google+ offers users the ability to “hang out” using video conferencing and connect with fans visually. As it grows, it will be integrated with services such as Google Places and maps, web and image search and YouTube, increasing a brand’s visibility.
• **Paid Media Opportunities:** TBD

• **Best in Class:** Carnival does a great job of encouraging participation by asking open-ended questions and asking followers to recommend Carnival on Google searches. They also have eye-catching videos.

  ![Carnival Image](image1)

Intel’s page is loaded with photos, videos and graphics. They also engage users by asking them which circle they would like to be a part of.

  ![Intel Image](image2)

• **Additional Best Practices** According to Mashable, you will be more successful if you follow these best practices: Do your research before engaging customers, build credibility and equity, track metrics and conversation trends, listen and observe before engaging, be authentic and believable, and finally, track measure and iterate.
• **Common Terms:**
  
  **Circles:** enables users to organize contacts into groups for sharing across various Google products and services

  **Hangouts:** Places used to facilitate group video chat

  **Messenger:** Feature available to Android, iPhone and SMS devices for communicating through instant messaging within circles. You can also share photos between circles.

  **Sparks:** Enables users to identify topics they might be interested in sharing with others

  **Stream:** Users see updates from those in their circles

  **Hashtag:** Hyperlink a recent or high-trending search results within Google+ containing the word.

• **Tools for certain circumstances:**

  Twittercounter allows you to produce your own graphs to see the number of followers and tweets.

  Tweetstates gives you plots for timelines of followers and retweets, as well as analysis of which Twitter posting software was used.

  Xefer tracks tweets by time of day and the week and presents them in a graph.

  TwitGraph produces a number of different graphs, including the tweets per day over the last week and top words used in your tweets.
• **Overview:** Foursquare is a location-based mobile platform that makes cities easier to use and more interesting to explore. By “checking in” via a smartphone app or SMS, users share their location with friends while collecting points and virtual badges. Foursquare guides real-world experiences by allowing users to bookmark information about venues that they want to visit and surfacing relevant suggestions about nearby venues. Merchants and brands leverage the foursquare platform by utilizing a wide set of tools to obtain, engage, and retain customers and audiences.

As of June 2011, the company reported it had 10 million registered users.[5] The company was expected to pass 750 million check-ins before the end of June 2011, with an average of about 3 million check-ins per day.

• **How people use the site vs. how a brand uses the site:** Consumers can “check-in” via smartphone and share their location with friends not only on FourSquare but also their other social networking sites such as Facebook and Twitter. Consumers can also leave tips about the business: favorite dish, product on sale, etc. which they can also share with their friends via Foursquare, Facebook and Twitter.

Businesses can offer specials and rewards to users who “check-in” to their location. By doing this is gives the user an incentive to go to that specific business.

• **Consumer-Brand Dynamics:** FourSquare offers a bunch of free tools for your business: from offering Specials to learning about your customers to keeping your foursquare listing updated.
Businesses can create a Tips page which allows you to post special offers, recommendations, microblogs, etc. and users who chose to follow you can see your tips in their news feed. Your followers are unable to comment on your tips but the info posted might lure them into your business.

**Benefits (ROI):**

Whether you're a mom-and-pop shop, a national chain, or a brand, foursquare can provide you with tools to engage with your customers and fans. With millions of people checking in every day, foursquare allows you to find new customers and form deeper connections with your best ones.

- **Community:** Over 10 million people worldwide
- **Over a billion check-ins, with millions more every day**
- **Businesses:** Over 500,000 using the Merchant Platform

**Best in Class:** Ellen DeGeneres has 219,414 Followers. She posts tips about restaurants she eats at, bookstores she shopping in, schools she’s visiting, etc.

**Screen Shots / Links:** Ellen DeGeneres Tips Page: [https://foursquare.com/theellenshow](https://foursquare.com/theellenshow)
• **Overview:**
HootSuite is a social media management platform for businesses and organizations to collaboratively execute campaigns across multiple social networks from one secure, web-based dashboard. Key social network integrations include Facebook, Twitter, LinkedIn, Foursquare, etc.

• **How people use the site vs. how a brand uses the site:**
Brands can use Hootsuite to launch marketing campaigns, identify and grow audiences, and distribute targeted messages.
  o Multiple users can manage social profiles securely at the same time.
  o Custom search streams allow you to monitor brand mentions, industry key words, competitor names and more.
  o Draft and schedule messages to send at a time your audience is most likely to be online – communicate with multiple team members through Hootsuite.
  o Utilizing HootSuite’s assignment functionality allows you to delegate messages to team members for follow-up so you can be sure the right member of your organization is responding to queries and comments.
  o Auto-update your profiles from your blog or news feed with RSS integration right in your HootSuite dashboard.
  o Add apps to your dashboard for YouTube, Flickr, Tumblr and more.
  o Ability to download dashboard for your iPhone/ iPad, BlackBerry or Android mobile device

• **Consumer-Brand Dynamics:**
Brands can post, comment, retweet, direct message, upload videos, etc. in real time on its Hootsuite dashboard.
• Benefits (ROI) :
3 years, 3 million users

Time sure flies when you're an owl! In three short years, HootSuite has grown from a fledgling startup to a robust industry leader with over three million users worldwide. With more than 30 social networks and 5 languages, we're thrilled to reach this most recent milestone only six short months since surpassing the two million user benchmark. To all of the owls who've joined the nest, we say thank you, and onwards to the next million!

Account Signups

Top 10 User Signups By Country

**Daily Usage By Platform**

<table>
<thead>
<tr>
<th>Platform</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web</td>
<td>80%</td>
</tr>
<tr>
<td>Mobile</td>
<td>20%</td>
</tr>
<tr>
<td>Phone</td>
<td>67%</td>
</tr>
<tr>
<td>Android</td>
<td>26%</td>
</tr>
<tr>
<td>Blackberry</td>
<td>3%</td>
</tr>
<tr>
<td>iPad</td>
<td>14%</td>
</tr>
</tbody>
</table>

**Networks Added**

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<tr>
<th>Network</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>45%</td>
</tr>
<tr>
<td>Twitter</td>
<td>42%</td>
</tr>
<tr>
<td>LinkedIn</td>
<td>8%</td>
</tr>
<tr>
<td>Others</td>
<td>6%</td>
</tr>
</tbody>
</table>

**Effective Reach**

- 700 Million Unique Messages Sent to Date
- 1.7 Billion Effective Reach
- 1.5 Million Messages Sent Daily

'Hootsuite is built to enhance communication through social media. Brands can securely collaborate with teams to engage across multiple social networks and accounts, including Twitter, Facebook, LinkedIn, Google+, YouTube, and more. With advanced measurement tools to track your business activities and report on success, and a growing app directory, the Hootsuite dashboard will revolutionize your digital presence. Learn more at hootsuite.com.'
• **Paid Media Opportunities:**
  o Google+ access in the dashboard is available to HootSuite Enterprise clients.
  o Hootsuite Pro is $5.99/month and includes:
    ▪ Unlimited Social Platforms
    ▪ 1 Free Team Member
    ▪ 1 Free Enhanced Analytics Report
    ▪ Google Analytics Integration
    ▪ Facebook Insights Integration
    ▪ Opt out of Ads
    ▪ Archive Tweets
    ▪ Unlimited RSS Feeds
  o HootSuite's Pro and Enterprise plans allow you to have multiple contributors to your social profiles without sharing passwords.
  o With HootSuite Pro and Enterprise, you can batch-schedule up to 50 unique messages at one time.
  o Get individual link stats and summary stats to measure the success of your messaging.

• **Common Terms:**
  o Stream – Live feed of activity on a specific social channel, search query, or RSS feed.
  o Direct Message (DM) – private message sent from one Twitter handle to another
  o Ow.ly – HootSuite’s proprietary URL Shortener
Take Pride in America Phase III
Project Compendium Report
Attachment # 6
Litter and Desert Dumping
GIS Monitoring Program
LITTER AND DESERT DUMPING
GIS MONITORING PROGRAM

Measuring conditions by leveraging the power of concerned citizens
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This project, part of the Take Pride in America in Southern Nevada – A Local Litter and Dumping Clean-Up Program, was funded by the Southern Nevada Public Land Management Act and delivered by the Public Lands Institute at the University of Nevada, Las Vegas on behalf of and in cooperation with the Bureau of Land Management, National Park Service, U.S. Fish & Wildlife Service, and the U.S. Forest Service.
Introduction

In 1997 the Southern Nevada Agency Partnership (SNAP), a partnership of federal land professionals from the U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service and the National Park Service, formed to coordinate the protection, conservation and use of the federal lands of Southern Nevada. At the time the population in Southern Nevada’s Clark County was 1,741,000\(^1\). In 2012, the population was estimated at 2,000,759\(^2\), an increase of 15%. Concomitant with this rapid growth, litter and desert dumping became pervasive in the area.

In Southern Nevada, litter and desert dumping have been a perpetual problem, despite the fact that adequate garbage collection exists for the majority of residents. As the population has grown, the problem has worsened. In 2003 the Southern Nevada Health District received 873 complaints of illegal dumping. By 2007 that number had jumped to 1,604\(^3\). In just the first nine months of 2008, the Southern Nevada Health District responded to 1,611 illegal dumping calls\(^4\).

The problem of litter and desert dumping, on the over eleven million acres of public lands in Southern Nevada, has been challenging to quantify due to the multiple jurisdictions involved. Each agency received and monitored complaints in different systems. Beginning in 2005 SNAP partnered with the University of Nevada Las Vegas Public Lands Institute (PLI) to manage the anti-litter and desert dumping efforts. Systems emerged to quantify the extent of the problem and the remediation being done. This partnership built needed capacity for the agencies and developed a broader volunteer database and public involvement.

Interagency Litter and Dumping Database

As the partnership continued the team sought funding through the Southern Nevada Public Lands Management Act Round 6 Call for Nominations process. In addition to their request for clean-up funds, the team proposed developing a centralized geospatial database to track cleanup sites including the types of materials to be cleaned up and an estimate of the volume of material. The database was designed to enhance the efficiency of coordination, assist in the recruitment of appropriate volunteer work forces, and support the placement of appropriately sized dumpsters.

After examining data in the database agency personnel would be able to:

- Assess the effectiveness of abatement efforts such as post and cable, plant restoration, marketing campaigns, and neighborhood involvement
- Coordinate cleanup efforts
- Assist managers in setting priorities by identifying high problem sites or those in sensitive areas
- Quickly select and prepare ideal clean up locations for a variety of volunteer groups
- Identify target audiences for outreach
- Implement recycling where appropriate

---

While a decision on funding was pending, the Bureau of Land Management (BLM) began using a Microsoft Access database to manage the litter and desert dumping complaints they had been receiving. The BLM desert dumping coordinator transferred data from various locations into the database. The issue of desert dumping had been particularly challenging for the BLM since many BLM parcels interface with urban lands.

When funding was secured, the interagency team was able to use the BLM Access database as a starting point for the development of the interagency geospatial database. To determine the needed categories in the database, several iterations of the data catalog were created. The Director of the UNLV GIS lab and other GIS specialists assisted in the creation of a mobile version of the database to enable agency staff to collect information in the field that would synchronize with the main database.

The data catalog began with four general categories that each contained multiple subcategories. After multiple field tests of the catalog and mobile tool, a final set of items emerged. Appendix 1 contains a blank field testing form, a completed example of the form and the final data dictionary.

**Volunteer Monitoring**

As work on the geospatial database continued, a program for monitoring a sample of sites on SNAP lands was developed. The goal of the program was to provide a longitudinal assessment of litter and dumping on public lands. The program was designed so that after examining data in the database agency personnel would be able to:

- Determine if the litter and dumping problem has gotten better or worse over time
- Determine if the dispersion of litter and dumping sites has shifted over time

The interagency litter and desert dumping team decided to develop the monitoring program as a stewardship opportunity for citizen volunteers. The UNLV GIS lab director created a layer for the litter and dumping database based on the SNAP cultural site steward database. The cultural site stewardship program was an award winning data collection program with over 450 active volunteers that monitored SNAP cultural sites four times (minimum) per year. The GIS lab director worked closely with the cultural site stewardship program manager to modify the data fields in the cultural site stewardship database to reflect litter and dumping terminology and developed forms for the volunteers to use in the field, replicating the process the cultural site stewards use. He also attended the field testing of the GPS units to develop an understanding of the various components of the GIS database into which the volunteer data will be integrated.

**Site Selection**

To meet the objectives of the monitoring program, a sampling plan was developed for the program. The UNLV GIS specialists created a statistically valid transect sampling plan and field tested it to determine the feasibility of the protocol. A balanced design plan was created based on the sites recorded in the BLM database which includes open dumping sites, closed dumping sites (i.e., sites that have been cleaned) and sites that do not have a dumping record. Sites that did not have a dumping record were included to enable land managers to assess whether new dumping areas are being created. An equal number of each type of site was selected for the sample to create the balance in the design.
The United States Forest Service (USFS) and the United States Fish and Wildlife Service (FWS) did not have an existing database of known dump locations. After consultation with staff two areas for each agency were selected for the monitoring program. Initially each agency was to have equal representation in the interagency database but without an agency database to begin with it proved to be infeasible. Since the bulk of the dumping was occurring on BLM land, the disproportionate distribution was determined to be acceptable.

For the National Park Service (NPS), monitoring sites were selected based on known areas of concern. The NPS interagency litter and desert dumping team member presented the monitoring program to the park leadership team, who identified sites with input from each division. Initial field visits to ground truth the feasibility of the proposed NPS sites was conducted. This process was done to ensure that volunteers could safely access the selected locations. A specific plan was developed for monitoring at each of the proposed sites. It was determined that the NPS resource stewards, an existing group of volunteers, would take on the additional duties of litter monitoring.

Field Testing
A field test of the monitoring procedure was conducted with volunteers from the cultural site steward program. The Southwest region of the Las Vegas area was selected as the testing area. Thirty-two of the over 400 sites in the BLM desert dumping database were randomly selected for inclusion in the pilot testing. An additional 16 BLM parcels that did not have a record of desert dumping were selected using Clark County road map layers. Including parcels with no record of dumping is essential to tracking the movement of dumping throughout the valley. Each of the 48 sites was visited to ensure safety and accessibility for monitoring volunteers.

A letter was drafted and sent to the active cultural site stewards with approximately ten individuals volunteering to assist in the pilot testing of the new monitoring program. A short training was held at the UNLV Public Lands Institute which covered program objectives as well as how to estimate litter volume. Volunteers were then scheduled for a site visit. Each volunteer was assigned a minimum of three sites, which were pre-grouped by location. The volunteers were oriented to their site during a one-on-one field training session to ensure site familiarity and consistency in filling out the site assessment form.

Site assessment forms were used in a trial and error process. It was learned that there was confusing jargon on the forms for assessing a site, in terms of quantity of litter and/or type of litter. During this process the jargon used to assess the quantity and type of litter at a site was simplified. With the assistance of volunteers, the field monitoring forms were revised multiple times to ensure ease of use and accuracy for all volunteers. Appendix 2 contains the volunteer monitoring position description, the final volunteer monitoring form, the volunteer litter monitoring manual, and the training materials used in the classroom session.

Volunteer Recruitment
The first step in recruiting volunteers was the development of a volunteer position description (see Appendix 2 for the description). Volunteers for the litter monitoring program were recruited with the assistance of the Get Outdoors Nevada program, an interagency volunteer program that coordinates volunteer activities on SNAP lands. The Get Outdoors Nevada program uses a newsletter, website, Facebook and Twitter accounts to recruit
volunteers. Word of mouth was an effective recruitment strategy due to the small time commitment and ease of monitoring.

**Site Monitoring**

A recruited volunteer became a monitor by signing a volunteer agreement for the agency on which their sites are located. To build a relationship with the monitor who will ideally monitor the sites for multiple years, training is provided in a one on one setting. When multiple monitors were beginning, classroom training was conducted. All monitors received a safety briefing and a binder of materials. The binder contains the monitoring manual, aerial photos of the transects they are to walk to determine the amount of litter, copies of the field form and an identification card. The card is carried while monitoring in case local authorities or interested parties have questions. Appendix 3 contains an overview map of all sites and the photos of the transects for all monitoring locations.

After reflection and discussion the interagency litter and desert dumping team determined that sites should be monitored twice per year (May and November). The following process was established:

1. Volunteers are contacted by Get Outdoors Nevada two weeks prior to the start of the month and reminded that the site monitoring needs to occur in the upcoming month.
2. Volunteers complete a copy of the field form after walking the transect lines on their sites.
3. As soon as possible they enter the data from their field form(s) online via a google survey form which creates a spreadsheet with the data. (Appendix 4 contains a copy of the online form.)
4. The volunteer sends an email to the Get Outdoors Nevada team which is tracking completion of monitoring. When all monitors have reported in, the Get Outdoors Nevada team notifies the BLM.
5. The spreadsheet is downloaded by BLM staff and added to the interagency litter and desert dumping database.

**Data Analysis**

The pilot data and one round of monitoring were completed. Since it would be premature to analyze this small data set, the interagency team did not meet to discuss the findings. In the future the monitoring data will be used to produce a map of the SNAP monitoring sites that shows which sites have seen reductions in litter, which have seen an increase and which have remained neutral. A report indicating the type of trash predominant at the sites will also be produced.

The map and report will be used by the SNAP litter and desert dumping team to set priorities and coordinate interagency anti-litter and cleanup efforts. They will also be used when the team collaborates with public information officers, interpreters and environmental educators to develop outreach and messaging for specific target audiences.
Recommendations

To ensure the continual success of the monitoring program the following recommendations are suggested:

- Establish a point person at each agency to track email and phone call complaints related to litter and desert dumping.
- Communicate the contact information for each point person within and across the SNAP agencies
- Communicate the contact information for at least one point person to the public so complaints can be recorded properly
Appendix 1

Field testing form, completed example, final data dictionary
### Don't Trash Nevada

**Site Monitoring Report** (draft 1/30/12)

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<thead>
<tr>
<th>Site name: ____________________________</th>
<th>Site Number: ____________________________</th>
</tr>
</thead>
<tbody>
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<td>Date of visit: ____________________________</td>
</tr>
<tr>
<td>Ending time site visit: ____________________________</td>
<td>Date of Previous Visit: ____________________________</td>
</tr>
<tr>
<td>Total miles driven: ____________________________</td>
<td>Date of Previous Visit: ____________________________</td>
</tr>
<tr>
<td>Volunteer Names(s): ____________________________________</td>
<td></td>
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</tr>
<tr>
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### Overall Intensity (Circle)

Total Overall = Construction + Household + Landscape + Hazardous + Dispersed = Total (Yds)

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Comments:
Don't Trash Nevada
Site Monitoring Report

Site name: Fort Apache Furnace Cutoff
Site Number: 81
Beginning time site visit: 11:28
Ending time site visit: 12:05
Total miles driven: 23

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Total Overall = 1 + 2 + 0 + 0 + 1 = 4
Overall Intensity (Circle)
- Low: ≤5
- Med: 5-35
- High: ≥35

Comments: picked up lumber and scrap metal
**Don’t Trash Nevada**

**Site Monitoring Report (draft 1/30/12)**

- **Site name:** Fort Apache & Goper
- **Site Number:** New Site 16
- **Beginning time site visit:** 12:30 pm
- **Ending time site visit:** 1:15 pm
- **Date of visit:** 01/24/2012
- **Date of Previous Visit:** n/a
- **Volunteer Names(s):** Harriet W., Gabrielle M., Fred D., Melissa S., Craig P., Zhongwei L.

---

### Construction Waste

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**Total Overall Construction Waste (yds):** 12

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### Household Waste

| Garbage | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 24 |
| Furniture | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 12 |
| Appliances | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 12 |
| Carpeting | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 12 |
| Tires | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 12 |
| Other | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 12 |

**Total Overall Household Waste (yds):** 3

---

### Landscape Waste

| Palm | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 18 |
| Branches | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 12 |
| Grass/Sod | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 6 |
| Other | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 12 |

**Total Overall Landscape Waste (yds):** 3

---

### Hazardous Waste

- **Oil/Lubricants**
- **Containerized Chemicals**
- **Paint**
- **Compressed Gases**
- **Live Ammunition**
- **Asbestos**
- **Batteries**
- **Medical**
- **Other**

**Total Overall Hazardous Waste (yds):** 0

---

### Dispersed Waste

| Windblown | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Other | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

**Total Overall Dispersed Waste (yds):** 1

---

**Total Overall =** 12 + 3 + 3 + 0 + 1 = 19

**Overall Intensity (Circle):** Low Med High

- **Overall (Circle):** Med

**Comments:** Additional trash on right of way.
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<td>Site_Number</td>
<td>X</td>
<td>User assigns this number. <strong>NOTE:</strong> Any point taken at that same spot should have the same site number.</td>
</tr>
<tr>
<td>Site_Status</td>
<td>X</td>
<td>Option of <strong>Open</strong> or <strong>Closed</strong>. <strong>Open:</strong> A complaint has been received for the site or a site has been assessed and there is garbage present. <strong>NOTE:</strong> After a clean up event has occurred, unless all the garbage has been satisfactorily removed the site will retain its Open status. <strong>Closed:</strong> The site has been satisfactorily cleaned up or the complaint is not on BLM land.</td>
</tr>
<tr>
<td>Land_Status</td>
<td>X</td>
<td>Will indicate who owns the land.</td>
</tr>
<tr>
<td>In_Valley</td>
<td>X</td>
<td>Will indicate if the site is within the Las Vegas disposal boundary or outside of it.</td>
</tr>
<tr>
<td>Address</td>
<td>X</td>
<td>The cross streets of a site or the best general description of a site location. <strong>Remember:</strong> Keep it short as this will be the main means of identifying sites in a query.</td>
</tr>
<tr>
<td>Complaint_Date</td>
<td>X</td>
<td>Day that complaint was receive or a best estimation. If date is entirely unknown leave field blank.</td>
</tr>
<tr>
<td>Survey_Date</td>
<td>X</td>
<td>Dated that site was visited.</td>
</tr>
<tr>
<td>Survey_Notes</td>
<td>X</td>
<td>A detailed description of site location. If there is a specific reason as to why the trash is present in the location, state the reason. Any other particularly relevant or potentially useful information.</td>
</tr>
<tr>
<td>Total_Cubic Yds</td>
<td>X</td>
<td>Estimate the total number of cubic yards of garbage/waste present at the entire site.</td>
</tr>
<tr>
<td>Construction_Fill Material</td>
<td>X</td>
<td>Any kind of dirt piles. Would typically require the use of heavy equipment for effect removal.</td>
</tr>
<tr>
<td>Construction_Block, Brick, Drywall</td>
<td>X</td>
<td>Any kind of blocks, bricks or drywall.</td>
</tr>
<tr>
<td>Construction_Glass, Tile</td>
<td>X</td>
<td>Any kind of glass or tile.</td>
</tr>
<tr>
<td>Construction_Scrap Metal</td>
<td>X</td>
<td>Any kind of scrap metal.</td>
</tr>
<tr>
<td>Construction_Wire Cable</td>
<td>X</td>
<td>Any kind of wire cabling.</td>
</tr>
<tr>
<td>Construction_Wood, Lumber</td>
<td>X</td>
<td>Any kind of wood or lumber.</td>
</tr>
<tr>
<td>Construction_Asphalt, Concrete</td>
<td>X</td>
<td>Any kind of asphalt or concrete. Would typically require the use of heavy equipment and would be sorted into a specific dumpster for recycling.</td>
</tr>
<tr>
<td>Construction_Other</td>
<td>X</td>
<td>Note any other types of construction garbage found at site.</td>
</tr>
<tr>
<td>Construction_Intensity</td>
<td>X</td>
<td>The intensity of garbage present at the site. Options of <strong>Light</strong>, <strong>Medium</strong> or <strong>Heavy</strong>. <strong>Light:</strong> is any site where all the garbage/waste present could be removed by one person with a pickup truck. <strong>Medium:</strong> is any site where all the garbage/waste present could be removed by two people and a couple of stakebed truck loads. <strong>Heavy:</strong> is any site where to remove all the garbage/waste present would require a minimum of 3 people and a minimum of a single 35yd dumpster.</td>
</tr>
<tr>
<td>House_Garbage</td>
<td>X</td>
<td>Any kind of household garbage.</td>
</tr>
<tr>
<td>House_Furniture</td>
<td>X</td>
<td>Any kind of household furniture.</td>
</tr>
<tr>
<td>House_Applicance</td>
<td>X</td>
<td>Any kind of household appliances.</td>
</tr>
<tr>
<td>House_Carpet</td>
<td>X</td>
<td>Any kind of carpeting.</td>
</tr>
<tr>
<td>House_Tire</td>
<td>X</td>
<td>Any kind of tire.</td>
</tr>
<tr>
<td>House_Other</td>
<td>X</td>
<td>Note any other types of residential garbage found at site.</td>
</tr>
</tbody>
</table>
### House Intensity X
The intensity of garbage at the site. Options of **Light, Medium** or **Heavy**. **Light**: is any site where all the garbage/waste present could be removed by one person with a pickup truck. **Medium**: is any site where all the garbage/waste present could be removed by two people and a couple of stakebed truck loads. **Heavy**: is any site where to remove all the garbage/waste present would require a minimum of 3 people and a minimum of a single 35yd dumpster.

### Landscape Palm X
Any kind of palm tree waste.

### Landscape Branches X
Any kind of tree branches or bush pruning waste.

### Landscape Grass, Sod X
Any kind of grass or sod waste.

### Landscape Other X
Note any other types of landscaping waste found at site.

### Landscape Intensity X
The intensity of waste at the site. Options of **Light, Medium** or **Heavy**. **Light**: is any site where all the garbage/waste present could be removed by one person with a pickup truck. **Medium**: is any site where all the garbage/waste present could be removed by two people and a couple of stakebed truck loads. **Heavy**: is any site where to remove all the garbage/waste present would require a minimum of 3 people and a minimum of a single 35yd dumpster.

### Hazardous Automotive X
Any kind of automotive waste such as oil, antifreeze, petroleum or lubricants.

### Hazardous Containerized Chemicals X
Any kind of unlabeled or unidentifiable chemical waste.

### Hazardous Paint X
Any kind of paint.

### Hazardous Compressed Gases X
Any kind of compressed gases.

### Hazardous Live Ammunition X
Any kind of live ammunition or explosives.

### Hazardous Asbestos X
Any kind of asbestos.

### Hazardous Batteries X
Any kind of batteries.

### Hazardous Medical Waste X
Any kind of medical waste including needles and condoms.

### Hazardous Other X
Note any other types of potentially hazardous waste found at site.

### Hazardous Intensity X
The intensity of waste at the site. Options of **Light, Medium** or **Heavy**. **Light**: is any site where all the garbage/waste present could be removed by one person with a pickup truck. **Medium**: is any site where all the garbage/waste present could be removed by two people and a couple of stakebed truck loads. **Heavy**: is any site where to remove all the garbage/waste present would require a minimum of 3 people and a minimum of a single 35yd dumpster.

### Planned Clean Up Date
Fill in when once a date has been decided on for the clean up of the area. This is done so that agencies looking at our data will know for what dates clean ups are planned to help reduce the amount of overlap.

### Planned Clean Up Method X
The estimated type of clean up method that will next by employed on the site. Options of **Crew, Coordinator, Community, School** or **Unknown**. **Crew**: when a a minimum of 3 people and a maximum of 15 people are used to remove garbage. These crew are typically paid and work for days or weeks at a time Ex: Nevada Conservation Corps or the BLM firefighters. **Coordinator**: when only people from the BLM Desert Clean Up crew remove garbage. **Community**: when people from the community volunteer their time to pick up garbage. This event is usually coordinated in conjunction with the Public Lands Institute, involves many people of various age groups and lasts only one day. **School**: when the clean up has an educational component. This involves many people of various age groups and lasts only one day. Ex: schools or boy scout groups **Other**: when more than one group type is participating at one time or when nearby property/lease owners contribute to the clean up event.

### Planned Notes X
Any information or suggestions that would be useful when looking back to make decisions on how best to do clean ups at the site.
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycling_Dumpsters Needed 10yds</td>
<td>Make an assumption of 10yd capacity dumpster and list the estimated number of recycling dumpster needed for the next clean up. Remember: This is not an estimation for the total amount of recyclable garbage/waste present but rather just for the next planned clean up. Remember: If any dumpster is filled with more than 10 yds of concrete or asphalt the bins will be too heavy to remove.</td>
</tr>
<tr>
<td>Dumpsters_Needed 10yds</td>
<td>Estimate how many 10yds dumpster will be ordered. Remember: This is not an estimation for the total amount of garbage/waste present but rather just for the next planned clean up.</td>
</tr>
<tr>
<td>Dumpsters_Needed 20yds</td>
<td>Estimate how many 20yds dumpster will be ordered. Remember: This is not an estimation for the total amount of garbage/waste present but rather just for the next planned clean up.</td>
</tr>
<tr>
<td>Dumpsters_Needed 28yds</td>
<td>Estimate how many 28yds dumpster will be ordered. Remember: This is not an estimation for the total amount of garbage/waste present but rather just for the next planned clean up.</td>
</tr>
<tr>
<td>Dumpsters_Needed 35yds</td>
<td>Estimate how many 35yds dumpster will be ordered. Remember: This is not an estimation for the total amount of garbage/waste present but rather just for the next planned clean up.</td>
</tr>
<tr>
<td>Planned_People</td>
<td>Estimated number needed for next clean up event.</td>
</tr>
<tr>
<td>Planned_Hours per Person</td>
<td>Estimated hours per person to be spent on next clean up event</td>
</tr>
<tr>
<td>Planned_Total Hours</td>
<td>Estimated total number of individual hours to be spent on next clean up event</td>
</tr>
<tr>
<td>Action_Date</td>
<td>Date that a clean up event occurred. If the clean up lasted for a couple of days record the start day.</td>
</tr>
<tr>
<td>Action_Notes</td>
<td>Any important notes or evaluations on planning or executing the clean up event, to be used to improve next clean up event.</td>
</tr>
<tr>
<td>Action_Clean_Up_Method</td>
<td>The actual method of clean up used at the site. Options of Crew, Coordinator, Community, School or Other. Crew: when a a minimum of 3 people and a maximum of 15 people are used to remove garbage. These crew are typically paid and work for days or weeks at a time Ex: Nevada Conservation Corps or the BLM firefighters. Coordinator: when only people from the BLM Desert Clean Up crew remove the garbage. Community: when people from the community volunteer their time to pick up garbage. This event is usually coordinated in conjuction with the Public Lands Institute, involves many people of various age groups and lasts only one day. School: when the clean up has an educational component. This involves many people or various age groups and lasts only one day. Ex: schools or boy scout groups Other: when more than one group type is participating at one time or when nearby property/lease owners contribute to the clean up event.</td>
</tr>
<tr>
<td>Action_People</td>
<td>The actual number of people that worked at the clean up event.</td>
</tr>
<tr>
<td>Action_Hours per Person</td>
<td>The actual number of hours per person spent at the clean up event. This is cumulative if the clean up lasted more than one day.</td>
</tr>
<tr>
<td>Action_Total Hours</td>
<td>The actual total number of individual hours spent at the clean up event. This is cumulative if the clean up lasted more than one day.</td>
</tr>
<tr>
<td>Yards_Removed</td>
<td>The actual total number of cubic yards removed at the clean up event. This is cumulative if the clean up lasted more than one day.</td>
</tr>
<tr>
<td>Action_Educational</td>
<td>Will indicate if there was an educational component at the clean up event.</td>
</tr>
<tr>
<td>Picture_Before</td>
<td>A picture of what the site looked like before the clean up.</td>
</tr>
<tr>
<td>Picture_After</td>
<td>A picture of what the site looks like after the clean up. NOTE: Take the after picture from the same location as the before picture for a more accurate comparison.</td>
</tr>
</tbody>
</table>
Appendix 2

Position description, final form, manual, training materials
Position Title: Litter Monitor

Goal:
To monitor public land for illegal dumping practices and patterns. To observe and document safety issues requiring attention by staff and to serve as a positive influence on community members to protect public lands against illegal dumping.

Duties:
- Walk various distances over uneven terrain in diverse weather conditions
- Observe and reporting possibly unsafe material on parcels, major changes in illegal dumping activities and damage on parcel, signage repair needs, vandalism, and trail usage
- Assist community members with questions and provide information
- Follow U.S. Department of Interior safety guidelines and take responsibility for your safety and the safety of others
- Be the eyes and ears of the parcels
- Demonstrate proper public land use and etiquette
- Report back to staff
- Carry provided ID card

Physical Environment:
- Uneven terrain and variable elevation gain.
- Normal daytime temperatures ranging between 40 to 110 degrees.
- Some tasks could take place in remote areas
- Snakes, scorpions, spiders, and thorny vegetation are common
- Exposure to direct sun, wind, dust, and possible rain

Qualifications:
- Willingness to attend training
- Motivated to learn about land conservation and preservation
- Ability to communicate with staff
- Ability to drive to the parcel
- Volunteer needs to be in good physical health in order to meet the requirements of the duties
- Must be 18 years or older

Time Commitment:
- 1-2 hours, twice a year

Training & Benefits:
- Training provided includes topics such as safety, litter estimating and proper completion of forms
- Benefits include the opportunity to help staff identify current and potential threats to the public lands
- Benefits also include the opportunity to work with a diversity of people dedicated to protecting the environment
Don’t Trash Nevada  
Site Monitoring Report  

Site Number: ______________________________ Date of visit: ______________________________  

Volunteer Name(s): ____________________________________________________________________________  

*********************************************************************************************

### Construction Waste

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>1-5</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175 BAGS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fill Material</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Block/Brick/Drywall</td>
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<tr>
<td>Glass/Tile</td>
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<tr>
<td>Scrap Metal</td>
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<td>Wire Cable</td>
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<tr>
<td>Wood/Lumber</td>
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<tr>
<td>Asphalt/Concrete</td>
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<tr>
<td>Other</td>
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<td></td>
</tr>
</tbody>
</table>

**Total Overall** Construction Waste (BAGS) ________

### Household Waste

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>1-5</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175 BAGS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garbage</td>
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<td>Furniture</td>
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</table>

**Total Overall** Household Waste (BAGS) ________

### Landscape Waste

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>1-5</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>100</th>
<th>125</th>
<th>150</th>
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</thead>
<tbody>
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</tr>
<tr>
<td>Grass/Sod</td>
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<td>Other</td>
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</table>

**Total Overall** Landscape Waste (BAGS) ________

### Hazardous Waste

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>1-5</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>100</th>
<th>125</th>
<th>150</th>
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<th>Total</th>
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</thead>
<tbody>
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<td>Live Ammunition</td>
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</table>

**Total Overall** Hazardous Waste (BAGS) ________

### Dispersed Waste

<table>
<thead>
<tr>
<th>Waste Type</th>
<th>1-5</th>
<th>25</th>
<th>50</th>
<th>75</th>
<th>100</th>
<th>125</th>
<th>150</th>
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</thead>
<tbody>
<tr>
<td>Windblown</td>
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<td></td>
<td></td>
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<td>Other</td>
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<td></td>
</tr>
</tbody>
</table>

**Total Overall** Dispersed Waste (BAGS) ________

---

**Overall Intensity (Circle)**  
- **No Litter**: O (50 bags or less total)  
- **Slightly Littered**: (51 to 124 bags total)  
- **Littered**: (over 125 total)  
- **Trashed**: (over 125 total)

Comments: ______________________________
# Table of Contents

<table>
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<th>Section</th>
<th>Page</th>
</tr>
</thead>
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<td>3</td>
</tr>
<tr>
<td>What do I do as a Litter Monitor?</td>
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<td>Monitoring Details</td>
<td>4</td>
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<td>Rating Details</td>
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<td>Reporting Illegal Dumping</td>
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<td>6</td>
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<td>Frequently Asked Questions</td>
<td>6</td>
</tr>
<tr>
<td>Contact Information</td>
<td>8</td>
</tr>
</tbody>
</table>
History
Desert dumping in Southern Nevada destroys habitat, threatens human health and unfortunately seems to be an acceptable public fact rather than a cause for outrage. The history of desert dumping in Clark County mirrors the boom and bust of the unprecedented population growth at the turn of the century. As the community grew and construction increased, construction waste such as concrete, dry wall, and brick littered the natural landscape. With homes established, piles of landscaping waste (palm fronds, branches and old turf) smothered native species and precious biotic crust. And now, with the record setting foreclosure rate in Clark County, the contents of gutted homes (furniture, appliances, and toys) spread over the desert.

Faced with challenges on multiple fronts, the public land management agencies tackled the need to clean up the dumping in their first move to combat the litter and dumping problem. Volunteers stepped forward to attend organized clean up events while agency employees developed a map based tracking system for parcels with litter and dumping. As the tracking system evolved new technology was incorporated to create a Geographic Information System (GIS) database that contains multiple layers of information that can be dynamically displayed to produce a variety of visual representations of the data.

With the development of a database of known problem areas, the possibility of creating a monitoring program to estimate the amount of litter and dumping throughout southern Nevada opened up. By working with scientists to develop a statistically valid sampling plan, the information collected in the monitoring program will be able to be generalized to the larger Clark County area, giving managers a much needed tool for tracking litter and dumping trends and analyzing the effectiveness of the various abatement efforts employed.

Why should I be a Litter Monitor?
Litter Monitors fill a crucial role in the protection of the beautiful natural resources of Clark County. The information that litter monitors collect populates a GIS database that provides citizens and public land managers alike with a tool to assess trends, plan mitigation strategies and track effectiveness of the strategies. In 2011 over 1,416 cubic yards of litter was removed from Southern Nevada’s public lands by 2,668 volunteers. The data you collect as a litter monitor will be invaluable as we work together to eliminate the need for volunteers to pick up trash from our stunning desert landscape.

What do I do as a Litter Monitor?
As a litter monitor we ask that you visit your site(s) and submit a status update twice a year. When you visit a site you walk the length of the parcel twice to collect data on the current amount of litter and dumping on a paper data collection form. You submit your data via the Don’t Trash Nevada website which you can access on any computer connected to the internet.
A representative of a public land management agency will accompany you on your first visit to your site(s) to orient you to the location and familiarize you with the data collection form.

**Monitoring Details**

A copy of the litter monitoring form is located at the end of this handbook. Monitoring litter includes recording the amount and types of litter you see at your site. We will then translate your estimate into cubic yards so agency staff can order the appropriate size dumpsters for any needed clean ups.¹

Here’s a brief summary of the types of litter you will be tracking:

- Construction materials include drywall, concrete, wood, wiring, tile.
- Household materials include furniture, appliances, clothing, and toys.
- Landscape materials include palm fronds, branches and grass.
- Hazardous materials include batteries, oil containers, paint, asbestos, and medical supplies.
- Dispersed Waste is a general category that refers to the windblown litter you may find at your site.

**Rating Details**

In addition to estimating the amount of the various types of trash at your site(s), you’ll need to give the site an overall rating. This rating will be used to create a layer in a Geographic Information System (GIS) database which will provide a picture of the overall litter and dumping situation, making it possible to visualize changes over time. The overall rating system is based on the Litter Index developed by Keep America Beautiful, the largest non-profit organization addressing litter and beautification in the United States. You can use your estimated amounts to guide your rating and/or refer to the descriptive guidelines below.

**No Litter = Zero bags**

Virtually no litter can be observed at the site. You have to look hard to see any litter, perhaps a very occasional litter item or two at the site. Any litter seen could be quickly collected by one individual. The entire parcel has a generally neat and tidy appearance; nothing grabs the eye as being littered or messy.

**Slightly Littered = 50 or less total bags**

Upon careful inspection, a small amount of litter is obvious. The litter at the site could be collected by one or two individuals in a short period of time. While the site has a small amount of litter, the eye is not continually grabbed by litter items. Slightly littered means the area can be

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¹ If you’re interested in the formula, here’s the logic behind the numbers. According to an industry standard retrieved 26 March 2012 from http://www.wastecare.com/Products-Services/Compactors/Compactors_About.htm, an average of approximately 202 gallons of loose, non-compacted trash will fit into each cubic yard of dumpster space. Since a 10-yard dumpster is the equivalent of approximately 2020 gallons of capacity (i.e. 202 x 10) this means that, if full, a 10-yard dumpster would hold roughly 50 of the yellow 40 gallon Don’t Trash Nevada bags of loose, non-compacted waste. (i.e. 2020 divided by 40 gallons).
cleaned up by hand, and the area of the litter can fully be removed by a few bags that will fit into the bed of a truck.

**Littered = 51 to 124 total bags**
Visible litter can readily be seen throughout the site, likely requiring an organized effort for removal. This area is "littered" and clearly needs to be addressed. A small dumpster would need to be used to remove the litter. Please make a note in the comment section if special equipment would be needed.

**Trashed = Over 125 total bags**
A continuous amount of litter is one of the first things noticed about the site. Major illegal dumpsites might be seen on the parcel, requiring equipment and/or extra manpower for removal. There are items which are large in size and quantity and will need one or more large dumpsters to fully clean the area.

**Reporting Illegal Dumping**
If you see dumping do not engage the dumper in any way. Simply record the pertinent information (below) and call one of the numbers listed below.

- Incident Date
- Incident Time
- License Plate Number
- Vehicle Description
- Incident Location
- Violator's Description
- Material Dumped

The number to call depends on who is managing the land. Below is a list of numbers that apply to monitoring sites:

- BLM, Forest Service, or U.S. Fish & Wildlife: 702-515-5000
- National Park Service: 702-293-8932
- All other lands (or if you don’t know who manages the land): call the Southern Nevada Health District at 702-759-0600.

**Tools and Supplies**
You should wear comfortable shoes, protective clothing, and always bring water to stay hydrated. Remember your Litter Monitor card in case you get any questions about what you are doing wandering around a vacant parcel of land.
Safety Tips

- Wear thick-soled shoes, no sandals.
- Wear long pants and a long-sleeved shirt.
- Be aware of the weather, if monitoring in the heat wear sun screen and stay hydrated.
- Don’t overdo physical exertion – stop and take a rest break and drink water.
- NEVER place yourself in an unsafe situation. Be aware your surroundings.
- Be watchful of vehicles on the streets.
- Under no circumstances should anyone touch or pick up a needle syringe.
- Safety is the most important consideration.

Frequently Asked Questions

Even though being a litter monitor is a relatively simple activity and a good opportunity for exercise, there are questions that arise.

What is required?
Your time and personal transportation to your designated sites.

How often?
Twice a year.

Do I have to pick up the trash I see?

This is solely up to you. As a Litter Monitor, you are not required to pick up anything. If you do choose to pick up litter on your parcel please remember to:

- Only pick-up items you feel comfortable lifting.
- If picking up a piece of cardboard or metal lift the edges of away from you so if there is a critter under the item they will run away from you.
- Do not pick up anything hazardous or harmful to you.
- If picking up glass be careful you don’t cut yourself as you pick it up AND as you carry the bag back to your vehicle.

What if I no longer can monitor my sites?

This is a volunteer service, please contact Don’t Trash Nevada.

Who do I contact?

Contact Melissa Sanders or Scott Cambrin at the BLM District Office (702) 515-5000. Their direct contact information is located on page 8 of this document.

What if I meet someone who wants to volunteer?

Contact Melissa Sanders or Scott Cambrin at the BLM District Office (702) 515-5000. Their direct contact information is located on page 8 of this document.
Do I have to sign a binding contract or legal document?

No, this is a volunteer program. You will be asked to sign volunteer waiver for our public lands.

What about my personal safety?

Your safety is always the first area of importance. Please be aware of the regular temperatures in the months you choose to monitor and to always stay well hydrated. Please also be aware that these areas are public land and undeveloped, therefore plants and animals are wild and are protected by the BLM. This is a volunteer effort and you are responsible for your activities.

If you have a question not covered, please contact Melissa Sanders or Scott Cambrin at the BLM District Office (702) 515-5000. Their direct contact information is located on page 8 of this document.
Contact Information

Please feel free to contact us at any time with questions, concerns and suggestions. We look forward to hearing from you!

Litter Monitor Coordinators

**Melissa Sanders**  
Desert Clean Up Coordinator  
Great Basin Institute  
BLM Southern Nevada District Office  
4701 N Torrey Pines Dr.  
Las Vegas, NV 89130  
702-515-5034  
msanders@blm.gov

**Scott Cambrin**  
Air Quality and Desert Clean-Up Technician  
Great Basin Institute  
BLM Southern Nevada District Office  
4701 N Torrey Pines Dr.  
Las Vegas, NV 89130  
(702) 515-5025  
scambrin@blm.gov

Website

http://www.donttrashnevada.org/

Don’t Trash Nevada  
Public Lands Institute  
University of Nevada, Las Vegas  
RAJ 280, Box 452040  
4505 S. Maryland Parkway  
Las Vegas, Nevada 89154-2040
The Take Pride in America in Southern Nevada project is funded by the Southern Nevada Public Land Management Act and delivered by the Public Lands Institute at the University of Nevada, Las Vegas (UNLV on behalf of and in cooperation with the Southern Nevada Agency Partnership.

Public Lands Institute
4505 S. Maryland Parkway Box 452040
Las Vegas, NV 89154-2040
http://publiclands.unlv.edu
Litter Monitor

Jane Doe
Volunteer

Public Lands Institute
University of Nevada, Las Vegas
RAJ 280, Box 452040
4505 S. Maryland Parkway
Las Vegas, Nevada 89154-2040
DontTrashNevada.org
Litter Monitoring Volunteer Program

This card was provided with the understanding that I, Erika Shumacher, Chief Ranger Law Enforcement Southern Nevada District Office Bureau of Land Management am aware of a Litter Monitoring Program occurring on BLM’s land. This person is volunteering their time to collect data for the Southern Nevada Agency Partnership and for the University of Nevada, Las Vegas. It is to the best of our knowledge and their knowledge that they will be walking parcels of BLM land monitoring illegal dumping patterns. This person is a volunteer and understand their rights as citizen as well as the parameters of being a volunteer on public land. If there is any concern or question please contact my office at 702 515-5030.

Erika Schumacher, Chief Ranger Law Enforcement
Southern Nevada District Office
Bureau of Land Management
4701 N. Torrey Pines Dr.
Las Vegas, NV 89130
Litter Monitoring

March 10, 2012
Training

Who Are We-SNAP Anti-Litter and Desert Dumping Team
• Take Pride in America in Southern Nevada
• Don’t Trash Nevada branding
• Encourage clean-up efforts and discourage litter and illegal dumping in Southern Nevada.

Overview
• Introduction
• Reason for the Program
• Review of the Assessment Form
• How to Rate Your Site
• Assessment
• Site Selection

Don’t Trash Nevada’s 2011 Accomplishments
• 41 clean-up events
• 2,668 volunteers → 10,779 hours
• Removing 1,470 cubic yards of litter
Facts

• Nevada has more federal land than any other state, based on percentage
• BLM - Administers nearly 48 million acres of public land in Nevada. BLM public lands make up about 67 percent of Nevada's land base.
• NPS - Lake Mead - 1.5 million acres
• USFS - The Spring Mountains National Recreation Area (SMNRA) covers 315,648 acres of national forest system land in Clark and Nye counties in Southern Nevada

Goal & Objectives

• Goals -
  - Assess the state of litter and dumping
  - Track litter and dumping trends
  - Engage the community in public land stewardship

• Objectives -
  - Collect quantifiable data on litter and dumping
  - Analyze data to assess effectiveness of abatement and mitigation efforts
  - Share information with stakeholders and the public

Why Does This Form Ask Strange Questions?

• Why does it ask to measure in yards?
  – We do all of our measuring in cubic yards.
• Why are there so many categories?
  – We ask this to know what kind of equipment we would need in order to remove it.
Keep America Beautiful- Litter Indexing

- Each KAB affiliate is required to do a litter indexing each year.
- Utilized on an annual basis can help track overall progress in reducing litter, and can quantitatively express success in community improvement.
- 1- No Litter, 2- Slightly Litter, 3- Littered, and 4- Extremely Littered

www.kab.org

Zero

How To Rate Your Site

- **None- "No Litter" = Zero**
- Virtually no litter can be observed in the sub-area being scored. The scorer has to look hard to see any litter, perhaps a very occasional litter item or two in a city block, or equivalent. Any litter seen could be quickly collected by one individual. The entire sub-area has a generally neat and tidy appearance; nothing grabs the eye as being littered or messy.

How To Rate Your Site

- **Low- "Slightly Littered" = <5**
- Upon careful inspection, a small amount of litter is obvious to the scorer. The litter in the sub-area could be collected by one or two individuals in a short period of time. While the sub-area has a small amount of litter, the eye is not continually grabbed by litter items.
- This means the area can be cleaned up by hand, and the area of the litter can fully be removed by a few bags that will fit into the bed of a truck
How To Rate Your Site

- **Medium- "Littered" = 5-35**
- Visible litter can readily be seen throughout the sub-area, likely requiring an organized effort for removal. This area is "littered" and clearly needs to be addressed.
- The items in this area can be removed by fitting into the bed of a truck or a small dumpster, please make a note in the field notes section if there are large items
How To Rate Your Site

- **High** - "Extremely Littered" = >35
- A continuous amount of litter level is one of the first things noticed about the sub-area. Major illegal dumpsites might be seen in the sub-area, requiring equipment and/or extra manpower for removal. There is a strong impression of a lack of concern about litter in the sub-area.
- These items are large in size and quantity and will need one or more large dumpsters to fully clean the area.
Do Not Get Discouraged

• Currently the BLM has one staff member to pick up all of the illegally dumped items.
• Best efforts are made to keep up with this huge problem, but one person can only do so much

Who Are We- SNAP

• Southern Nevada Agency Partnership
• SNAP was formed in 1997 as a unique interagency partnership to address 14 initiatives including litter clean-up, volunteerism, resource protection, recreation, science and research, education, law enforcement, and other issues
  – Bureau of Land Management
  – National Park Service
  – U.S. Fish and Wildlife Service
  – U.S. Forest Service

Questions

We appreciate your time!!

Thank You!

Who Are We- PLI

• Committed to developing effective solutions for public land management and stewardship for the protection, multiple use, sustainability, and management of public lands
• Collaborating with federal, state, and non-profit partners
• Creating new knowledge, advance technology, improve education, and engage the community
Equation:

- If you had to carry 1,416 cubic yards of trash in the trailer of a single truck, say 3 yards wide by 3 yards high, how long would that trailer have to be?
- Answer: \(1,416 / (3 \times 3) = 157\) yards;

- Swimming pools ~54 yards
Appendix 3

Map of litter monitoring sites, photos of transects
BLM Site Numbers -3, -15, -18, -2002 and -2004

Close up BLM Site Number -3
Close up BLM Site -15

Close up BLM Site Number -18
BLM Site Numbers -10 and -3002

Close up BLM Site Number -10
Close up BLM Site Numbers -13 and -2003

BLM Site Numbers -20 and -3005
Close up BLM Site Number -44

BLM Site Numbers -111 and -3006
Close up BLM Site Numbers -111 and -3006

Close up BLM Site Number 123
BLM Site Number -131

Close up BLM Site Number -131
BLM Site Numbers -266, -376, -386, -1010, -1011, -1019

BLM Site Numbers -266 and -376
Close up BLM Site Number -386

BLM Site Numbers -1010 and -1011
Close up BLM Site Number -383

USFS Site Number 26
Close up USFS Site Number 28

USFWS Site Number 27
Close up USFWS Site Number 27
Appendix 4

Online monitoring data form
Litter Monitoring Report

Site_Number *
This number is preassigned. Please enter negative sign if applicable. Check with your volunteer coordinator if you have forgotten it.

Date *
Date the site was visited.

Name *
Your name

Email *
Your email address in case there are questions regarding your responses

Address *
This is the preassigned name of the site. Check with your volunteer coordinator if you have forgotten it.

Construction Waste

Total_Construction_Waste *

Household Waste

Total_Household_Waste *

Landscape Waste

Total_Landscape_Waste *
Hazardous Waste

Total_Hazardous_Waste *

Dispersed Waste

Total_Windblown_Waste *

Overall_Intensity *

- 0 - No litter
- 1 - Slightly littered (50 bags or less total)
- 2 - Littered (51 to 124 bags total)
- 3 - Trashed (over 125 bags total)

Notes

Use the space below to record any other observations or comments about this site. Please be brief.

Never submit passwords through Google Forms.