8-17-2004

Oliver Ranch Core Group Meeting: August 17, 2004

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AGENDA

1. Introductions (5 minutes)

2. Approval of Minutes from July 20 Meeting (5 minutes)

3. Line & Space Programming Document – Michael Reiland (15 min)

4. Report on Tour of Wild Horse and Burro Facilities – Michael Reiland (15 min)

5. Standing Reports (30 minutes)
   A. Line and Space Architects’ Update – Les Wallach/Henry Tom
   B. UNLV/CESU Update – Peg Rees/Nancy Flagg
   C. RRCNCA Capital Improvements Update – Mark Morse/Michael Reiland

6. ORSS Committee Reports (15 minutes)
   A. Building – Angie Lara
   B. Design Oversight – David Frommer
   C. Educational Programs – Paul Buck
   D. Fund-Raising & Partnerships – Blaine Benedict
   E. NEPA – Charles Carroll
   F. Operations – Jack Ramsey
   G. Other Uses – Pat Williams
   H. Wild Horse & Burro – Billie Young

7. Open Discussion / New Business (5 minutes)

Next Meeting:
Tuesday, September 21, 2004
8:30-10:30 a.m.
UNLV Paradise Campus, Room 401 (Tropicana & Swenson)

Oliver Ranch Core Group meetings are open to any interested member of the public. Attendance by new individuals is always welcomed. Reasonable efforts will be made to assist and accommodate physically handicapped persons attending the meeting. Please call the UNLV Public Lands Initiative Office (702-895-5148) in advance so that arrangements may be made.
The meeting commenced at 8:32 a.m. with the following persons in attendance:

1. **Introductions**
The group welcomed Richard Leifried from the Master Gardeners program.

2. **Approval of Minutes**
The minutes of the July 20, 2004, meeting were approved with no changes.

3. **Line and Space Programming Document**
Line and Space submitted its programming document to the BLM last month. The BLM has approved the document as final. Michael Reiland is working with Line and Space to format the document as a manageable pdf file so that it can be provided to the Core Group. Michael will send out an email when it is available and how it can be accessed. If anyone sees any glaring omissions or errors in the document, that feedback can be provided to the BLM.

4. **Report on Tour of Wild Horse & Burro Facilities**
Michael Reiland showed a video of a recent fact-finding tour of four wild horse and burro facilities in California, Utah, and Nevada: Ridgecrest, Hurricane, Palomino Valley, and Susanville. A copy of Michael’s DVD can be made available to anyone interested in having a copy. The tour was attended by representatives from BLM, Line and Space, UNLV, and the National Wild Horse and Burro Association. The personnel at these facilities were asked about their operations and what they would have done differently. Billie Young pointed out that many specific operational and physical details were investigated – including the types of fencing and gates used, shaders, post footings, chutes, veterinary equipment, etc. – and the findings are already influencing the potential design of the Oliver Ranch project and will be discussed in-depth with the Design Oversight Committee. Most of the facilities are much larger than what will be built at Red Rock. Hurricane is a public facility owned by Washington County that has faced issues with parking and a covered arena that are similar to Nevada’s project. Billie noted that the Other Uses Committee may want to meet with the Hurricane manager about how he brings in other revenues. Angie Lara asked whether any of the other facilities have an educational component, and Billie responded no. There were educational events like 4-H occurring at the Hurricane facility, but nothing specifically sponsored by the facility.

5. **Standing Reports**
A. **Line and Space Architects**
Henry Tom and Les Wallach of Line and Space Architects provided an update on recent activities (on file in UNLV Public Lands Initiative office and BLM office). The firm visited the Oliver Ranch site on July 27-29. The focus of this visit was to look at where teaching venues
and physical structures should be sited for both the science school and the wild horse and burro facility. The pros and cons of various sites were discussed and will be presented to the Building Committee. Student activities related to water exploration, spring monitoring, camp-outs, hikes, topography mapping, archaeology, astronomy, and animal observations were discussed in relation to potential teaching venues. The site visit was also used to study the visual impact of the school, especially from the existing cistern on the property. Angie Lara asked if the visual impact was studied from the perspective of private landowners in the area or the school participants. Les replied that both audiences were considered.

The architects also visited the water recycling plant at Ethel M Chocolates and met with representatives from Nevada Power Company and Southern Nevada Water Authority. In all three instances the discussion focused on conservation measures that could be incorporated into the design of the facilities, along with a possible buy-back program offered by Nevada Power. Nevada Power may also be interested in supporting scholarships at the science school.

Helen Mortenson emphasized the need to partner with local utilities and suggested looking at Nevada Power’s partnership with Hyde Park School. Angie Lara pointed out that the BLM has an office that deals solely with Nevada Power projects, so there are established relationships in place that can be drawn upon. Alan O’Neill also suggested contacting Pat Shalmy through the Outside Las Vegas Foundation to look at structuring any agreement with Nevada Power as more of a partnership than a business deal. Angie Lara indicated that the Fund-raising and Partnership Committee should follow-up on the possibility of a Nevada Power scholarship.

Les Wallach reported that his staff also met on-site with Stan Helin, a trails specialist with the U.S. Forest Service who is a licensed landscape architect. Mr. Helin’s insight into the logistics of student and employee access to all areas of the site were invaluable to the design team. Line and Space is working with the BLM and the Forest Service to see if Mr. Helin’s time and expertise may be drawn upon in a more formal way on this project.

The design team also met with Jennifer Parrot of Bonnie Springs to discuss the size of the arena planned for the wild horse and burro facility. A tour of the Bonnie Springs arena provided important information on the size of the arena needed, consideration of prevailing winds, and dust and odor control. These discussions have led to some initial conclusions that the 13,000 square foot arena proposed in the original Oliver Ranch nomination may not be big enough.

Henry Tom updated the Core Group on the design timeline. The conceptual design is due September 29, followed by schematic design on December 10. On October 11-13, Line and Space will be hosting an alternative energy/resource workshop at its office in Tucson. The workshop will focus on narrowing down the alternative energy features to be built into the facilities.

**B. UNLV**

Nancy Flagg gave an update on UNLV’s activities related to the project. She introduced the Public Land Initiative’s new web coordinator, Megan Iudice. Megan will collaborate with Michael Reiland to design and develop the website for the Red Rock Desert Learning Center. She will also develop websites for other SNPLMA projects in which the university is involved.

Nancy will be interviewing finalists next week who have been solicited to provide publicity and marketing assistance to the university on SNPLMA projects, including the Red Rock Desert Learning Center. This person will be asked to develop a communications plan and assist with product development. Angie asked Nancy if she was aware of another initiative the BLM is
working on with Richard Lee of the Division of Educational Outreach. Nancy indicated that she was not.

Nancy queried the group as to whether they would like to be notified in advance of committee meeting dates. The consensus was to feature a calendar on the new website. However, committee chairs will need to keep either Michael or Nancy informed of any changes to meeting dates, times, or locations.

Nancy reported that the starting time for the October 19 Core Group meeting has been changed from 8:30 a.m. to 10:30 a.m. The location will remain at the BLM office on North Torrey Pines Drive. Nancy will send out a revised meeting schedule.

C. Red Rock Canyon National Recreation Area

Patrick Putnam provided an update on capital improvement projects underway at Red Rock Canyon. Work on the Red Springs project will be starting soon. The BLM is waiting for a cost estimate on a design/build concept. The project will be completed in two phases, including a parking lot just below Red Springs, which should help with traffic in Calico Basin, as well as removing an old road, creating a boardwalk, and creating an interpretive site.

Patrick also reported on the Cottonwood parking lot and the Red Rock campground projects. The plans are to move the parking lot approximately one mile south of its current location and then to reclaim and revegetate the old site. The campground project includes completing an environmental assessment to bring power and utilities to the campground and the fire station off Route 159. Phase 2 will be to install the utility lines.

The first core group meeting for the Red Rock Visitor Center was held last week. The next meeting is Sept. 14, noon-2, at the BLM offices. Michael Reiland added that he will add anyone to the e-mail list who wishes to be notified about future meetings.

Approved Round 5 nominations for Red Rock Canyon include $2.5 million to repave the scenic loop road and money to pave critical parking areas, including Willow Springs and Oak Creek. Money was also allocated to acquire the Garland property at Calico Basin.

Round 5 Approvals
Michael Reiland reported on Round 5 nominations that were approved for the Oliver Ranch site, including alternative energy features, trails, curriculum, and scholarships. Loretta Asay asked Michael to provide a summary chart of each of the SNPLMA Rounds awarded to the Oliver Ranch project to help the Core Group understand each piece of the overall project.

6. Committee Reports

A. Building Committee
Chair Angie Lara reported that the second meeting of the committee will be held today, August 17, directly after the Core Group meeting. Alan O’Neill asked about the difference between the Building Committee and the Design Oversight Committee. Angie reported that the new committee has decision-making authority on construction and design questions; its membership is set by the BLM. The Design Oversight Committee is a public committee with a broader mission to provide input on the design of the project and its integration into the site.

B. Design Oversight Committee
Chair David Frommer stepped out of the meeting and was unavailable to provide a verbal report, but minutes of the committee’s July 19 meeting were sent to the Core Group. Michael Reiland also reported that the committee had another meeting on August 16, and those minutes will be sent with the next Core Group agenda.

C. **Educational Programs Committee**
Chair Paul Buck reported that the committee has been meeting continuously over the summer to establish broad outlines and to examine the FOSS kits used by the Clark County School District. The committee has formed smaller working groups along two themes: Biology/Ecology and Physical Sciences/Earth Sciences. Each working group will include a research faculty member paired with 2-3 classroom teachers to produce a 2-page outline for 6-8 coherent themes. The outlines will include prerequisite experiences, how the activity links with CCSD standards and how they link with the FOSS kits, the kinds of activities envisioned, follow-up activities in the regular classroom, resources needed, linkages to history and culture, and linkages to Globe protocols. Globe is a National Science Foundation project in which schoolchildren are conducting uniform protocols around the country, and Paul hopes that by tying school activities to these protocols the students’ work can serve as a data collection point for scientists. The overall committee won’t meet until these working groups finish their work, which Paul hopes to have done in 6-8 weeks. If anyone from the Core Group wants to participate in the working groups, Paul will help make that happen.

Another related piece of work to be done on curriculum concerns the common elements the group would want all students to experience at the science school. Some examples include wild horses and burros, green building technology, culture and history, connections to Spring Mountain Ranch, archaeology, and the night sky. The group discussed how this work could be accomplished, because the Educational Programs Committee will not have time to do it. Michael Reiland said that Billie Young and Laurie Howard will work on the wild horse and burro piece. Nancy Flagg indicated that UNLV will be hiring a staff person to help with writing interrelated curriculum across several conservation initiatives, with the Oliver Ranch project being a natural extension of that work. This person can build upon the vision of the Educational Programs Committee and provide the connecting activities that Paul mentioned.

D. **Fund-Raising and Partnerships Committee**
Michael Reiland reported on behalf of Committee Chair Blaine Benedict that the committee has not met, but plans to set a new meeting soon.

E. **NEPA Committee**
The NEPA Committee will not meet again until the Environmental Assessment information comes in. Angie Lara asked about the wells and Michael Reiland reported that they have not yet been drilled. He has asked Bob Boyd if the work should be undertaken by someone else, since the U.S. Geological Survey has run into scheduling problems. Helen Mortenson noted that the Desert Research Institute has the capability to do the job and wondered why they couldn’t be hired. Michael indicated that it might be a possibility, but there may be issues related to how BLM contracts out work. Les Wallach noted that the delay could provide an opportunity to investigate side issues like defining the extent of non-potable water. Patrick Putnam pointed out that the NEPA study cannot be completed without the water quality results. Pat Fleming said that taking the project past schematic design without the environmental assessment completed is a risk, because the design may have to be modified to eliminate or mitigate impacts. Michael indicated that getting the initial results from Otak should provide a pretty good idea of whether the project can proceed, but Pat Fleming reiterated the potential for rework on the design. Angie Lara requested having Otak come to the next Core Group meeting to discuss these issues.
Helen Mortenson asked if the flood plain is being examined before a final site is selected for the school facilities. Les Wallach responded that his firm is taking the flood plain into account as it proceeds with design work.

F. Operations Committee
Chair Jackson Ramsey reported that the committee met on August 3 and talked about what would be expected from a potential school operator and what the operator could expect from BLM. The BLM plans to issue a request for proposals (RFP) in mid-September, with responses due by mid-December and a decision made by mid-February. Very detailed proposals will be requested. Potential bids will be helped by the $700,000 in financial assistance that was just approved in Round 5. Paul Buck clarified that the Round 5 money will be provided to the students to attend the school and not to the operator. Angie concurred but pointed out that it is money the operator will not have to raise privately. Paul reiterated the need to keep the equity issue at the forefront with respect to how children are selected to attend the school. Angie stated that this would be a school district issue and that when the BLM met recently with Superintendent Carlos Garcia he indicated his desire for the district to be very involved in these kinds of details. Jackson said he does not expect the operator to set policy; rather the operator is told what the policy is. He also asked the Core Group to remember that all students will be subsidized in some way; what parents pay will not cover full costs, but some students would have their entire way paid. Angie noted that the BLM still intends to pursue SNPLMA funding to cover all students. Michael Reiland reminded the group that studies show that having students pay some nominal fee is best, even if it is 10 dollars. Les Wallach agreed and pointed out that the operators of the Campbell Creek School found that cancellations were reduced when they started charging a fee. Michael asked that the next Core Group agenda include a discussion of different options for forming a policy-making group for the school to oversee the mission.

G. Other Uses Committee
The committee will not meet until after schematic designs are provided.

H. Wild Horse and Burro Committee
Chair Billie Young informed the group about the Clark County Farm Festival to be held September 21-23 at Horseman’s Park. The National Wild Horse Association is interested in hosting a booth at this event but will need help with information and volunteers. Last year, approximately 9,000 schoolchildren were reached over the 3 days, and Billie sees this as an opportunity to begin talking to students and their parents about the plans for the Red Rock Desert Learning Center. The Core Group discussed some materials that could be useful for teachers to take back to their classrooms. Michael Reiland will send out an email and schedule for people to volunteer to work specific timeslots.

7. New Business
Michael Reiland reported that the name for the school is currently Red Rock Desert Learning Center. The word “National” is out of the name for now, after the BLM looked into the implications of using this word in the title.

Paul Buck asked about the status of Desert Research Institute’s proposal to install three monitoring wells at Oliver Ranch. Michael indicated that the BLM plans to look at doing this as they get closer to completion of schematic design, when the overall costs can be evaluated. Loretta Asay asked if monitoring wells affect the water allocation. Pat Fleming explained that the proposed DRI monitoring wells would be approximately 2 inches in diameter and would be used solely to study the depth and quality of groundwater. The wells to be drilled and tested by
the U.S. Geological Survey will be cased with a pipe approximately 8 inches in diameter, and it is expected that they will be equipped with pumps and piping to allow withdrawal and use of the groundwater they tap.

Michael Reiland reported that the August 19 meeting BLM had scheduled with representatives from other science schools has been postponed and will be rescheduled in the future.

Pat Putnam asked the architects to involve him in any trails work being contemplated at the Oliver Ranch site. He wants to be sure existing footprints are followed and that public access to existing trails, like Willow Springs, is not impeded.

Angie Lara stated that the Division of State Parks is interested in partnering on trails between Oliver Ranch and Spring Mountain Ranch. Helen Mortenson offered to facilitate a meeting between Spring Mountain Ranch personnel and Line and Space Architects. Michael Reiland will follow up with State Parks on having a representative attend future Core Group meetings.

The meeting adjourned at 10:30 a.m.
Oliver Ranch Design Oversight Committee
Meeting Minutes
July 19, 2004

Attendees:
David Frommer, Les Wallach, Henry Tom, Billie Young, Michael Reiland, Bruce Beierle, Bill Cates, Pat Fleming

Minutes:

1. The meeting was called to order at approximately 4:00 PM.

2. Review was given to past DOC tasks, with the following results for further action:
   ITEM 1:
   • Spreadsheet of like projects, basic characteristics, contact information. – Les Wallach, Pat Fleming
   • Spreadsheet of sustainable technologies in similar projects, basic information to include type of technology, cost, scope, operations costs, educational overlap. – Les Wallach, Pat Fleming

   The two items above will be combined in a binder to be distributed to Line and Space and Michael Reiland. Included in this binder will be the following items. Line and Space and Michael Reiland will work together to generate this binder.
   1. An environmental report generated by Line and Space of some other facilities, that lists their environmental features, strategies and facility summary.
   2. A summary of 10 +/- books on environmental education generated by Line and Space.
   3. A spreadsheet generated by Michael Reiland on 30 +/- National Park Service (NPS) facilities that are on public lands and might be similar to the ORSS & WHB situation, with a listing of their mission statements.

   ITEM 2:
   • Broad project process chart for the Core Committee to clarify major process elements, overlap, and concurrent activities. – Les Wallach, Pat Fleming, Tim O’Brien,

   It was agreed that once BLM and Line and Space have completed negotiations for schematic design, the CPM schedule that comes out of this will be consolidated with Michael Reiland’s CPM schedule for all general ORSS & WHB project activities in a simple format for background for the Core Committee. This CPM schedule will include items such as design, construction, NEPA, operator procurement, fundraising, curriculum development, etc…

   ITEM 3: TABLED
• Develop a detailed organization chart in concert with BLM that would detail design and construction delivery methods and basic timelines/activities/milestones of all project processes in cooperation with the design contractor.

ITEM 4: COMPLETE

• Develop proposal for BLM for Building Committee to make project decisions relative to design and construction. – David Frommer, Billie Young

ITEM 5: AVAILABLE ON-CALL

• Assist BLM in presentation updates for programming and design in cooperation with the design contractor for community advocacy at key milestones for stakeholders. Helen Mortensen, David Frommer, Billie Young, Les Wallach (Graphic Support), Kirsten (BLM Coordination) –

DOC members agreed that they would be available to participate as needed in this activities, and most of the background information going forward would probably be design documents developed by Line and Space.

3. Line and Space presented their report which included a timeline of critical dates for design progress and design review in 2004, and dates beyond for further progress. It was noted that the schematic/master planning development of ORSS & WHB will overlap the programming of the Red Rock Visitors Center. This will allow opportunity for synergy to develop between the facilities. It was also noted that many elements of both facilities are related, and sticking to the timeline will be critical to avoid potentially significant ‘ripple’ effects in the schedule. Line and Space also stated they have received BLM’s comments on the program document and are generating the final program document. Discussion occurred on BLM approvals of design work, and BLM anticipates providing letters of approval with comments. Line and Space also presented summaries of visits to the Las Vegas Springs Preserve and Campbell Creek Science Center, with a note that BLM needs to invite some participants from the Springs Preserve to participate in ORSS & WHB.

4. Discussion occurred regarding coordination with other committees/issues to ensure the design proceeds with necessary information. The most critical items for design progress is the development of a business plan. This will become critical for schematic design to inform the nature, type and quantity of certain facilities and elements. It would be necessary to have a business plan in place and potentially an operator on board prior to Jan 2005, with a preference in early October 2004. BLM stated they are working on Operator RFP and plan to finish to allow for October 2004 procurement assuming no unexpected delays.

5. Billie requested input from DOC as to questions to ask when visiting the WHB facilities on 7/22 and 7/23. Comments were as follows:

   Water – quality, quantity per animal, management, types of uses
   Healthcare management of animals, how, when, what types
   Short term density – holding, rounding up, adoption
   Longer term density – ideal space allowances per animal for best care
   Safety issues
Handling animal waste – how
Interface with public – adoptions and public education
Surface materials and layout – walking area, work area, pasture
Staffing levels, time slots and staff facilities
A schematic layout of each place visited for review
Vehicular access and adoption/visitor vehicle management/parking loads

6. Michael Reiland stated BLM has invited 6 (5 NPS, 1 BLM) EE school operators and owners to talk about issues with their facilities and provide suggestions for ORSS & WHB. This will occur August 19, 2004 at BLM. All invited facilities are on Federal Land, and 5 are managed by contract type operators. ORSS & WHB DOC Committee members are invited to attend.

7. The new PRELIMINARY name of ORSS & WHB is the Red Rock National Desert Learning Center. Michael Reiland is verifying if National can be a part of the name per BLM guidelines.

8. The Building Committee Document was distributed. Minor review and modification occurred, subject to BLM final approval. BLM needs to send out formal invitations to all members to participate. Almost all members are aware of their role on the Building Committee.

9. Recap of future Core, DOC and Building Committee meetings:

Next Meetings – DOC

August 16, 2004 – 4:00 PM – 6:00 PM, UNLV CSB Room 102
September 20, 2004 – 4:00 PM – 6:00 PM, UNLV CSB 102
October 18, 2004 – 4:00 PM – 6:00 PM, UNLV CSB 102

Next Meetings – Building Committee - PROPOSED

July 20, 2004 – AFTER CORE, BLM
August 17, 2004 – AFTER CORE, UNLV
September 21, 2004 – AFTER CORE, UNLV
October 19, 2004 – AFTER CORE, BLM

10. Meeting was adjourned at 5:40 PM.
Educational Programs Subcommittee
Meeting Minutes
July 21, 2004

Attendees:

Paul Buck     DRI   Kathy August   BLM
Mary Weisenmiller CCSD   Loretta Asay   CCSD
Mary Sowder    CCSD   Kim Blanc  DRI
Dave DuBois    DRI   Jin Xi       DRI
Laura Flynn    CCSD   Michael Young  DRI
John Farley    UNLV   Dale Etheridge  CCSN
Nancy Elder-Kjenstad CCSD

Minutes:

Michael Young gave everyone a handout of the science questions he had come up with after looking at his research and the FOSS kits. He found many links with the FOSS kits with soil and air to do experiments with. His three big questions were:

1) Where does water go?
2) What is the role of water in soil development?
3) How are the processes of soil, plants, and fauna linked through time?

The group then discussed how his questions could fit in with the FOSS kits and Oliver Ranch. The group agreed to refine the big questions to a fifth grader. How would we make the questions relevant for fifth graders and interesting?

Dave, Jin, and Vic met prior to this meeting and discussed three topics for big ideas:

1) Visibility – long term visibility, aspects of visibility
2) Ozone – health topics, air quality linkage concerning how it affects people, it’s also the current hot topic for this area
3) Weather Station – wind dynamics, acid rain

Paul also gave an overview of the timeline for Oliver Ranch Science School and the direction this group is heading. We are now primarily focused on developing the science curriculum for 5th grade residents in enough detail to provide Line and Space with physical locations and brief descriptions of facilities. This will be done before December 2004, followed in 2005 by greater details about the actual programming.

The next meeting: 1) scientists from the life sciences (i.e., ecology/biology) will present their “big ideas” 2) we will then narrow the big questions down and formulate small groups to work on specific strands to put in a matrix that Mary Weisenmiller created.

The next meeting is Monday, August 9th at 9am at DRI.

Also Kathy August is leading a tour of Oliver Ranch on Monday, August 2nd meeting at Red Rock Canyon Visitor Center at 1pm.
Fund-raising and Partnerships Subcommittee Report

The Fundraising and Partnerships Committee has not met since the last Core meeting. No meetings are scheduled.

Blaine Benedict, Chair

NEPA Subcommittee Report

We don’t anticipate the NEPA committee meeting again while the NEPA is in progress with the contractor. A meeting would be scheduled only if something interesting or unanticipated arises through the analyses.

Charles Carroll, Chair
Wild Horse and Burro Committee
Meeting Minutes
July 21-23, 2004

In attendance:
Line & Space: Bob Clements, Kevin Stewart
UNLV: Nancy Flagg, Bill Cates
BLM: Michael Reiland, Mark Morse, BT Frost (Utah)
RRCIA & NWHA: Billie Young
NWHA: Laurie Howard

During July 21st through July 23rd, members from the Oliver Core Committee in Las Vegas were provided tours of several key wild horse and burro facilities. Because the Oliver WH&B Facility is in the developmental stages, viewing facilities in operation is crucial to our planning.

The Committee visited both Ridgecrest and Susanville in California, and Palomino Valley Center (PVC) in Nevada, as well as, Washington County Regional Park in Hurricane, Utah. The staff at each facility was very accommodating and extremely helpful.

All sites were dissected to view every conceivable corner including but not limited to: chute & corral systems, public greeting areas & trails, mascots, maintenance, water, shade, lighting & security.

The extensive information we gathered on the operation of these facilities has provided further insights into the Wild Horse & Burro Program, interpretive and educational needs along with public integration at different facilities.

A presentation of gathered info will be made at the next Core meeting Tues., Aug. 17.

Billie Young, Chair
Building Committee  
Meeting Minutes  
August 17, 2004

Subject: Site selection - RRDLC  
Location: Room 400 UNLV Paradise Campus  
Date: Aug 17, 2004  
Time: 10:45 – 11:45 am

Attendees  
Angie Lara, Pat Fleming, Michael Reiland, Billie Young, Bill Cates, David Frommer, Loretta Asay, Les Wallach and Henry Tom

Meeting Notes

• Les presented a diagram overlaid upon an aerial photo of Oliver Ranch which outlined approximate locations for various sites contemplated for the RRDLC and WHB facilities.

• Approximately 14 teaching locations reflecting input from Paul Buck (see prior minutes of Meeting at Oliver Ranch, Tuesday, July 27, dated 8/12/04) and located throughout the property were also shown.

• Three sites were selected by the architects for the RRDLC; the Ranch Site, the Disturbed Site and the View Site. Positive and negative attributes were summarized verbally and are recorded in the attached document (Site Selection, dated 8/13/04) as well as within a Site Selection Matrix.

• Individual diagrams, at an approximate scale of 1”=100’, outlining each of the three sites mentioned above were presented.

• Even though there is some issue with using previously undeveloped land, the committee seemed to gravitate toward the View Site since this location offered the opportunity for more of a Mojave Desert experience than building the core of the school within the disturbed areas. It was felt that the “long term aspects” of experience should strongly outweigh “short term gain” of using the previously damaged land, especially in view of its proximity to Highway 159. Also mentioned:
  o The View Site sits within the 100 year flood plain and further study is necessary to determine feasibility.
  o The View Site offers some interesting vegetation restoration/building re use possibilities in the ranch house area.
  o The Ranch Site offers opportunities for earth integrated buildings
  o The total building area, on the order of 3 or 4 acres, is only around 1% of the total site.

• The WHB site discussion was deferred until Bob Clements (designer for WHB) reviews it with Billie. The meeting tentatively planned August 19 for this purpose was postponed because of cancellation of an associated trip.

• The Building committee will re-convene on site at Oliver Ranch at 1:00pm
PLEASE NOTE: There will be an Alternative Energy Workshop focusing upon RRDLC and WHB at Line and Space, in Tucson, October 11-13. Loretta and Paul are confirming availability.

Subject: Site selection - RRDLC
Location: On site at Oliver Ranch
Date: Aug 17, 2004
Time: 1:00 – 2:15 pm

Attendees
Pat Fleming, Michael Reiland, Billie Young, Patrick Putnam, Bill Cates, Loretta Assay, Les Wallach and Henry Tom

Meeting Notes
- Diagrams were reviewed on site in conjunction with walking each of the examined locations. A straw poll was taken.
- The View Site was preferred with the following commentary:
  - Consider placing dining/admin areas further NE (towards existing buildings) than shown on the diagrams. This should allow for unrestricted flow in the area of the arroyo in case of flooding.
  - Biggest challenge will be keeping the site from being damaged during construction.
  - Board walk trails may be appropriate due to sandy nature of terrain
  - Nearby public trail is an issue but screening by existing vegetation helps mitigate this.
    - Teaching venue (topographic/geology) located near oak tree in this area may have to be relocated due to this proximity.
    - Also, concerns about travel to Wheeler Camp for same reason.
  - Staff housing could be constructed near existing ranch buildings (in the vicinity of the old garage).
- Generally, the Ranch Site was the second choice.
  - In this scenario, the buildings, except for one small remnant will be totally removed to allow freedom in placement of circulation, utilities, structures etc.
  - It was noted that this solution will delay the removal of the invasive Siberian Elm due to requirements for visual mitigation from Highway 159.
Agenda

Oliver Ranch School - CORE Meeting
August 17, 2004

1.) Meeting Reports
   - Oliver Ranch Trip Summary – Yellow Sheets
     - Oliver Ranch site visit - Input on teaching venues
     - Oliver Ranch teaching venue exploration
     - WHB Pasture Site and Lone Willow Site exploration
     - Ethel M. Chocolate Factory Water Recycle Plant
     - ORS View Site exploration
     - WHB Road Site exploration
     - Overall site usage concept discussion at Oliver Ranch
     - ORS trails/paths discussion at Oliver Ranch
     - WHB Ranch Site exploration
     - Parrot Ranch and Bonnie Springs arena visit
   - Nevada Power – Purple Sheet
   - Southern Nevada Water Authority – Blue Sheets
   - Tour of Wild Horse and Burro Facilities – Pink Sheets

2.) Report on Work
   - Site Analysis – in progress
   - Potential Sites – in progress
   - Site Selection – in progress
   - Conceptual Design – due September 29
   - Schematic Design – due December 10
Trip Summary
Oliver Ranch School + Wild Horse and Burro Facility

These notes document the information gathered during a site analysis trip by Line and Space to Las Vegas. Items on the agenda for this trip included the following items:

- On-site education opportunities meeting with Paul Buck
- Visit Wheeler Camp
- Exploration of Oliver Ranch for a school site
- Exploration of Oliver Ranch for a Wild Horse and Burro Facility site
- Exploration of sites for educational venues
- Visit the water recycling plant at the Ethel M. Chocolate Factory
- Meet with Nevada Power
- Meet with Southern Nevada Water Authority
- Review trail ideas with Stan Helin (USFS)
- Visit the arena facilities at the adjacent ranch and Bonnie Springs

A more detailed record of these items follows.

Day 1 - Tuesday, July 27th 10:00am – 12:00pm
Oliver Ranch site visit

Meeting Objective:
Receive input from Paul Buck on teaching venues, and locations on Oliver Ranch where each of these teaching venues would best be located.

Attendees:
Paul Buck, Desert Research Institute, UNLV
Les Wallach, Line and Space, LLC
Bob Clements, Line and Space, LLC
Kevin Stewart, Line and Space, LLC
Mike Anglin, Line and Space, LLC

Discussion of paths:
- Path to Mormon Green Spring
- Path to Wheeler Camp
- Path to Wild Horse and Burro Facility
- Path to Topo Hill
- Path to Spring Mountain Ranch State Park

Discussion of Possible Thematic “Menu Items”:
- Botany (plant ecology, dry land, plant physiology, plant distributions, abundance, communities)
- Water (hydrologic cycle, stream flow, earth sciences, surface water, run-off/erosion, how plants utilize water)
- Geology (earth, surface geology, big picture geology of the area)
- Archeology (history, resources on site, Spring Mountain Ranch State Park, Native Americans, settlers, photo stations to record change over time)
- Topography/mapping (possibly part of surface processes tract)
- Astronomy/night sky (Native Americans’ view and use of night sky)
- Animal (observation, large animals - more difficult to see, small animals)
- Entomology (more easily observed critters, ability to explore biotic relationships – relationship between insects and plants through study plots)
Trip Summary

Oliver Ranch School + Wild Horse and Burro Facility

- Weather and climate (including air quality, health effects, haze, light quality, discussed relationship with a television news channel in Las Vegas – "the Channel 8 weather station at Oliver Ranch is...")
- Difference in native vs. more recent (European) development

Discussion of Teaching Venues:
- Approximately 12-14 formalized teaching venues
- Storage at these sites may need to be considered vs. gathering materials before the hike out to the venue
- some "choreography" is necessary to maintain separation between the groups of 10-12 children
- Some sort of interpretive panel for each teaching station
- Not just "shade structures" but "outdoor formalized teaching structures"
- Possibility of photovoltaic panels on roof of these structures for power at remote location

Discussion of venue possibilities and locations:
Venue No. 1 - Whispering Ben Spring
- Possible location to talk about water/hydrologic cycle
- Swimming pool/existing well area

Venue No. 2 - Mormon Green Springs
- Good location for water exploration (spring monitoring – flow, water character, water quality, water chemistry, water temperature, biology including snail fauna study, dissolved solids)
- Reusable/restockable for interactive activities
- Perhaps a camera (with infrared technology for evening viewing) could be employed to monitor animals (in the event that they cannot actually be observed by students)

Venue No. 3 - Mormon Green Camp Site
- Shade here from the dense mesquite grove is a plus
- Possibly a good place to experiment with a composting toilet, portable structures, etc.
- How to get power to this location is an issue, possibly off roofs (?)
- Develop portable or erectable camping shelters

Venue No. 4 – Mormon Green History
- Archeological/historical interpretation (old building foundations, rusted car body)
- Could be part of the trail to the Mormon Green Springs

Venue No. 5 - Topo Hill
- Discussed choice of a hill as possible venue for topographic education.
- 2 different locations were identified during this discussion – 1 location discussed being the ridge WNW of Oliver Ranch and the other being the hill located SE of Oliver Ranch (refer to later meeting when using the toe of cistern hill as another possible location for the topography exercise)
- Perhaps paths are along topo lines
- 2-4 hour activity
- should have a "shade structure" associated with this activity

Venue No. 6 - Animal Blind
- Spring site located between Mormon Green Spring and Lone Willow Spring
- Possible location for an animal blind
- Perhaps a camera (with infrared technology for evening viewing) could be employed to monitor animals (in the event that they cannot actually be observed by students)
Trip Summary

Oliver Ranch School + Wild Horse and Burro Facility

Venue No. 7 - Wild Horse and Burro
  - Two teaching venues are to be associated with the WH+B as identified in the
    SNPLMA Round 5 nomination

Venue No. 8 - Lysimeter
  - Equipment that studies how plants use water/flow/transpiration
  - Possible greywater demonstration with comparison of a mesquite receiving rainfall
    versus a mesquite that is receiving greywater in addition to rainfall
  - Could be located in area of Oliver Ranch or wherever we need to put it but it should
    be in area of previous disturbed land

Venue No. 9 - Cistern Ridge Observatory
  - Possible venue for telescopes or large gathering area (amphitheatre)
  - Telescope enclosure could be cut into hill to reduce visual impact (sliding roof panel?)

Venue No. 10 - Cistern Ridge Geology
  - A great place to talk about the "big picture" geology (360 degree views of
    surrounding mountains)

Venue No. 11 - Acid Rain Monitoring Station
  - Possible to add other monitoring equipment for students to use at this location,
    including haze/air quality.
  - This could require the addition of a pad and power to this point.
  - Weather stations can also be added to the top of one of the buildings
  - Good spot for weather/climate teaching as climate monitoring is already located
    here
  - Additional sensors including soil probes and air sensors to record air and soil
    temperature, soil moisture, humidity

Venue No. 12 - Wheeler Camp
  - Location subject to vandalism
  - Location that may be open to the general public
  - Shade structure may not be necessary due to larger shade trees in the area

Venue No. 13 - Spring Mountain State Park
  - Located off of State Park property but close to the pond on the State Park
  - Panels and interpretive exhibits
  - Use needs to be coordinated with Spring Mountain Ranch State Park

Venue No. 14 - Limestone Bluff Trail
  - This could be a place for geological exploration- exposed rock strata, etc.
  - Could be part of students' arrival sequence from a bus drop-off point
  - Perhaps a 200-300 yard walk from bus drops to old ranch.
  - Gateway sense provided by separated rock formation
  - Monitoring station for ecology; baseline how the area has changed with the
    presence of humans

Venue No 15 - Pasture Rehabilitation
  - Disturbed pasture at the ridge along Bonnie Springs Road
  - A rest point for continuing along the trail to Spring Mountain State park
  - Monitoring station for ecology; baseline how the area has changed with the
    presence of horses and burros
  - Restoration/re-vegetation area of disturbed land
  - Study plot vs. control plot- something the students could take part in
  - This could also be a spot for weather and climate monitoring stations

Venue No. 16 - Sand Dune
  - Dune and possible obsidian site - eligible for preservation?
Trip Summary
Oliver Ranch School + Wild Horse and Burro Facility

Discussions of study plots for long term monitoring:
- Sand dune location north of Mormon Green Spring
- Rocky slope location
- One located outside of Oliver Ranch property compared to one within to study impact of wild horses/burrors on land
- Mormon Green Spring to study impact of students on a riparian area
- Along a trail to demonstrate impact of trail usage compared to desert without a trail

Day 1 - Tuesday, July 27th 1:30pm – 5:15pm
Oliver Ranch teaching venue exploration

Meeting Objective:
Visit teaching venue locations with Paul Buck and discuss location possibilities and potentials.

Attendees:
Paul Buck, Desert Research Institute, UNLV
Les Wallach, Line and Space, LLC
Mike Anglin, Line and Space, LLC

Exploration of Venues locations:
- Venue No. 3 - Mormon Green Camp Site
  - A series of platforms take one down to/over the water but not into it. (pictures 126-127)
  - No huge advantage going all the way to the edge of the water- perhaps it better to stay in the dense part of trees (closer to foundations)
  - Dead branch/trampled area under trees (pictures 124, 125) could be cleared out
  10-12 kids could easily fit underneath for camping
    - Perhaps there is more than one of these cleared out “tree tents”
    - Adjacent clear spot could be used for gathering, bordered by large trees
    - See images 123-102 for panorama of this area
  - Could discuss mesquite trees as a source of food for the native Americans and a point of wildlife concentration (especially when water is present)
- Venue No. 4 - Mormon Green History
  - Some sort of canopy could go over them or adjacent to them.
  - Large cottonwood almost makes a natural canopy over foundation; there is concern about this tree dropping it’s limbs (one is sitting within the foundation currently)
- Venue No. 5 - Topo Hill
  - See pictures (92-101)
  - Possible change in topography spot to toe of cistern ridge
  - A bit rough, but close to existing ranch buildings, could be accessible if a sort of “boardwalk” were constructed.
  - Could conform to ADA requirements and be an exiting experience as one travels around the end of the ridge along the prominent rock shelves.
Trip Summary

Oliver Ranch School + Wild Horse and Burro Facility

- Venue No. 10 - Cistern Hill Observatory
  - Depression area to the west could be a good spot for the observatory-
  - blocked from view to and light pollution from the highway, but lights from
    Bonnie Springs/neighboring ranch could be an issue
  - Walking down (in drainage path) from the depression spot, the ridgeline covers
    blue diamond hill
    - Good potential for amphitheatre here.
    - A subterranean amphitheatre could block view to Bonnie
      Springs/neighboring ranch and mitigate harsh western sun.
    - Access from the road going over cistern ridge is easier here (shallow slopes)
- Venue No. 11 - Cistern Ridge Geology
  - Perhaps a shade structure goes over the cistern to protect it and provide shade for
    the teaching area- concerns about visual impact from road
  - Perhaps structure exists on the down slope (toward cliffs) or down on a rock shelf
    (toward road)
  - Very clear view of geology from this location
  - See images for panorama view taken from cistern (132 on)
  - Takes advantage of an already established ridge trail
  - Perhaps there could be separate amphitheatres for morning/evening (response to
    solar conditions)
- Venue No. 12 - Wheeler Camp
  - Location subject to vandalism
  - Location that may be open to the general public
  - Shade structure may not be necessary due to larger shade trees in the area
- Venue No. 14 - Limestone Bluff Trail
  - Split rock could serve as "gateway" to those entering
  - Amazing natural cantilever of stone over vertical stone face at this spot
  - Visible differences in rock strata- good for discussion of geology

Day 1 - Tuesday, July 27th 1:30pm – 5:15pm

WH+B Pasture Site and Lone Willow Spring Site exploration

Meeting Objective:
Exploration of the Pasture Site and the Lone Willow Spring Site and adjacent areas to assess
positives/negatives of each location for the WH+B.

Attendees:
Bob Clements, Line and Space, LLC
Kevin Stewart, Line and Space, LLC

For approximately 45 minutes Billie Young was on site and discussed aspects of locating
the wild horse and facility during this time period (Billie’s comments are included in
exploration)
Trip Summary
Oliver Ranch School + Wild Horse and Burro Facility

Exploration of the Pasture Site along Bonnie Springs Road:
- Visual impact to highway is at a distance but on a ridgeline silhouetted against the sky
- Steady wind (approximately 20mph) from the south-southwest was un-buffered while at this site
- If MOA is reached to use Bonnie Springs parking lot for overflow during large events the relationship to the parking lot is ideal
- Large flat area
- Previously disturbed area from pastured wild horses and some abandoned roads
- Dramatic view of the Wilson Cliffs to the west and northwest
- Accessible to Oliver Ranch students along on abandoned road
- Trail from Oliver Ranch could be extended past the WH+B to Spring Mountain Ranch State Park
- Billie Young comments based on previous experience with using this site to pasture wild horses included:
  - Access off Bonnie Springs Road reduced the amount of public accessing the horses
  - Vehicular access is good although conflicts with entrance into the neighbors property must be mitigated
  - Pasture previously situated at this site was moved away from the fence close to the road to reduce the number of public interacting with the horses. Moving the pasture away from the edge of the property helped dramatically in keeping the public from interacting with the wild horses
  - Vegetation previously relocated prior to erecting pasture at this site

Exploration of the Lone Willow Spring Site:
- Visual impact to highway potentially great due to size of facility but some shielding behind existing trees at Lone Willow Spring may be possible
- Visual impact to highway potentially great due to sloping site but some shielding behind existing trees at Lone Willow Spring may be possible and depressing facility into ridge may reduce this visual impact from Highway 159
- Drainage throughout area is northward down into the Lone Willow Spring area.
- Entry to this site from Bonnie Springs Road to the north may invite too much public curiosity and impact Lone Willow Spring
- Densely spaced and very large specimens of Joshua Tree throughout this area
- Area is in close proximity to Lone Willow Spring

Exploration of the basin south of where wild horses were pastured in the past (a depressed basin south of the old pasture area was evaluated for development as part of the WH+B):
- Some of the larger structures of the wild horse and burro facility could possibly be located in this basin.
- View of larger structures from Highway 159 would be greatly reduced or eliminated
- View of larger structures from teaching venues associated with the Oliver Ranch School would be screen by intervening foliage at the spring between Mormon Green Spring and Lone Willow Spring
- Basin is drainage into the spring between Mormon Green Spring and Lone Willow Spring
- Using this basin may impact neighbors to west
- Existing vegetation is not “specimen quality” in general

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Oliver Ranch School + Wild Horse and Burro Facility

Day 2 - Tuesday, July 28th 8:00am – 9:00am
Ethel M. Chocolate Factory Water Recycling Plant

Meeting Objective:
Visit an operating water recycling plant and develop an understanding of the process, needs, etc.

Attendees:
- Paul Buck, Desert Research Institute
- Blaine Benedict, Outside Las Vegas Foundation
- Les Wallach, Line and Space, LLC
- Bob Clements, Line and Space, LLC
- Kevin Stewart, Line and Space, LLC
- Mike Anglin, Line and Space, LLC

Summary of tour:
- Established in 1990 at a cost of $750,000
- The stages of water treatment are as follows:
  - 32,000 gallons per day of waster water go through grease trap as the first layer of filtering
  - Water moves into closed aerobic tanks where microorganisms (grease eating bacteria) clean water
  - Open aerobic tanks where plants, microorganisms, and fish filter the water
  - Clarifying tanks are cone-shaped with sediments pumped out from the bottom
  - Sediments are composted and used to enrich soils in the gardens around the facility
  - Water then flows into ecological fluidized beds where it percolates through pumice stones for filtering by microorganisms
  - Ecological fluidized beds contain fish to monitor water quality and show that the water is clean enough for them to live here.
  - Constructed wetlands discharge uses the filtered water to grow plants
  - A pond serves as a storage buffer before it is used around the grounds for irrigation
  - City of Henderson tests the water at its exit point with analysis performed by Silver State Analytical Labs.
- For our project, one must weigh the positives and negatives; will there be enough waste water generated to sustain a system like Ethel M’s or does it make more sense to use waste water to flush the toilets or get some other second use out of it.
- There is a great potential for a system like this to serve as an educational tool for students attending the school.

Day 2 - Wednesday, July 28th 1:00pm – 2:00pm
Meeting with Nevada Power

(See separate meeting minutes)
Trip Summary
Oliver Ranch School + Wild Horse and Burro Facility

Day 2 - Wednesday, July 28th
ORS View Site exploration

Meeting Objective:
Explore the View Site and assess its positives/negatives for ORS

Attendees:
Les Wallach, Line and Space, LLC
Mike Anglin, Line and Space, LLC

Notes on View Site as possible site for Oliver Ranch School:
- Located south of existing complex of buildings between the mesquite grove and the arroyo; and including an area of land at the toe of cistern ridge on the opposite side of arroyo.
- Spectacular 360 degree views
- Highway hidden
- No view into site from road
- Noise from highway still present
- Cistern ridge shields views in and out (to/from neighbors)
- Wonderful scale to mountains to the southeast (kid-sized but still a mountain)
- W/NW incredible view of cliffs beyond
  - Desirable views possibly conflict with optimum solar orientation (i.e. view to Mt. Wilson over cistern ridge to the west)
- Gently sloping terrain
  - Potential approach to Mormon Green Springs on ADA grades from this point
- Arroyo as possible welcoming micro-environment
  - Significant drainage paths narrow here
  - Plant species are generally native, allows contrast to exotics found near existing ranch buildings.
  - Arroyo has cattails and sedges, indicating presence of water
- Plenty of open space
- Great perimeter vegetation

Day 2 - Wednesday, July 28th
WH+B Road Site exploration

Meeting Objective:
Explore the Road Site and assess the positives/negatives of location for the WH+B.

Attendees:
Bob Clements, Line and Space, LLC
Kevin Stewart, Line and Space, LLC

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Trip Summary
Oliver Ranch School + Wild Horse and Burro Facility

Notes on Road Site as possible location for the Wild Horse and Burro Facility:
- Located east of existing complex of buildings; on flat between Highway 159 and north facing slope
- Visibility from Highway 159 screened by vegetation along paralleling drainage
- Traffic noise from highway easily heard
- Gentle north sloping terrain from stream channel to base of hill
- Could be impacted by flooding
- Space appears adequate for needs of the facility
- Undisturbed area except for abandoned road and existing recreation trail
- Typical vegetation although there does seem to be a greater number of creosote bushes
- Waste dump containing mostly rusted tin cans located at the base of the slope
- Major vehicular circulation is currently established
- Proximity to school could be an issue especially regarding dust, odor, and flies

Day 3 - Thursday, July 29th 8:00am – 9:00am
Overall site usage concept discussion at Oliver Ranch

Meeting Objective:
Meeting among Line and Space to discuss new overall site usage concepts developed on the previous day.

Attendees:
Les Wallach, Line and Space, LLC
Bob Clements, Line and Space, LLC
Kevin Stewart, Line and Space, LLC
Mike Anglin, Line and Space, LLC

Discussion of new possible site planning strategy (see diagram?):
- Utilize existing road paths to create two loops, one for the school and one for the WH+B facility
  - Loops could be one-way, separate entry points, but one common exit path and parking area.
  - This allows the facilities to share resources yet maintain necessary separation
  - Loops also facilitate ease of maneuvering for buses/semi trucks
  - North loop would lead to WH+B facility, located in existing disturbed area
  - South loop would lead to bus drop-off area for ORS
- Existing corral area could be re-vegetated, providing further buffer between facilities.
- School facilities could be located either north, south or both north and south of the existing arroyo
- Potential for existing building to be used as shared gathering area by both ORS and WH+B facility.
Trip Summary
Oliver Ranch School + Wild Horse and Burro Facility

Day 3 - Thursday, July 29th
9:00am - 10:00am
Meeting with Southern Nevada Water Authority
(See separate meeting minutes)

Day 3 - Thursday, July 29th
2:00pm - 5:00pm
ORS Trails/paths discussion at Oliver Ranch

Meeting Objective:
Receive input from Stan Helin on trail concepts, site concepts, trail development, accessibility issues, materials

Attendees:
Stan Helin, U.S. Forest Service, trails specialist
Les Wallach, Line and Space, LLC
Mike Anglin, Line and Space, LLC

General accessibility concerns (per Stan):
- Access to the program is more important than the experience of getting there.
- Those paralyzed from the chest down do not sweat, so shade is essential for them to keep cool.
- A clear zone is important beyond the path itself to avoid people being injured by adjacent plant life (tree limbs, cactus thorns, etc.) – 6’ each side is preferred
- Access path could be wide enough for a service cart (Gator) rather than a truck, for maintenance, service, supplies, emergencies, etc.
  - Maintenance access is key - if they can’t get to it they won’t take care of it.
- Path could be designed to serve as a memorable experience
  - Maybe include bridges, etc.
  - Whatever can be done to encourage the “moving experience” - a necessary aspect especially when trying to hold the attention of fifth-graders
  - Breakdown could occur as follows:
    - 8-10’ wide main trunk line- provides truck and emergency vehicle access
    - 5-6’ wide access to teaching venues- provides maintenance access for teaching venues
    - +/- 4’ wide pedestrian paths

Venue/path exploration:
- Venue No’s. 2,3,4 - Mormon Green Springs
  - Access could occur all along the south side of the wash (more interesting side with vegetation, etc.)
    - Relatively low slope all the way from potential ORS buildings area allows easy access.
  - Two pools of water located at braided stream area near the bottom end of the springs
Trip Summary
Oliver Ranch School + Wild Horse and Burro Facility

- Perhaps two paths reach this point:
  - One low-slope access way that goes to the foundation/campsites
  - One that is a "wash exploration" route that goes near the wash and may even criss-cross over it with bridges, etc.
- Venue No. 5 - Potential site for topographic exercise and access route:
  - Access could wrap around the toe of cistern ridge rather than go over it (grades are too steep for ADA access)
  - Potential to "nibble through" the existing rock shelves to create a path cutting through them
- Venue No. 6 - Potential site for animal blind:
  - Wash near road to existing WH+B site
  - Amazing Joshua trees present, young cottonwoods
  - Wind wants to be in the face of the viewer
  - Perhaps a bridge crosses the wash
  - Blind should attempt to be a continuous part of the bank
    - Want to be up along the edge, out of the way of animals but looking down on them clearly
    - See pictures 11-13

Day 3 - Thursday, July 29th 2:00pm – 4:00pm
WH+B Ranch Site exploration

Meeting Objective:
Explore Oliver Ranch as a location for the WH+B and assess positives/negatives

Attendees:
Bob Clements, Line and Space, LLC
Kevin Stewart, Line and Space, LLC

Review of Oliver Ranch area for the new Wild Horse and Burro Facility:
- In response to the discussion from 8:00am to 9:00am on the morning of July 29, 2004 summarized above, the northern portion of disturbed area associated with Oliver Ranch was reviewed as a possible location for the WH+B
- Without first determining to what extent the ORS will utilize existing areas and structures at Oliver Ranch, it is difficult to ascertain how much disturbed land would need to be utilized for the WH+B
- Parking could be shared between the ORS and the WH+B
- Roads could be shared between the two facilities
- Potential parking conflicts between the two facilities could arise (a teacher from the school could park in front of a gate, loading chute, etc.)
- Proximity of the two facilities would make controlling/supervising students access to horses a much more important priority
- Existing trees could be used as screening for portions of the facility
- Due to the disturbed space perhaps not being enough area for the required pasture area some undisturbed land would possibly need to be utilized
  - Due to school being located to south, new disturbed area would be close to the highway
- Pasture could be prone to flooding
Trip Summary
Oliver Ranch School + Wild Horse and Burro Facility

- Sharing roads and parking could lead to potential use conflicts such as access or parking needs
- Site vegetation/shade provides pleasant setting for some activities of the wild horse and burro facility
- Flies, dust, and odors may negatively impact the students experience at the school
- Utility sharing – well water sharing more feasible, biogas generator closer to schools waste, WH+B closer to recycled water, WH+B closer to wastewater treatment
- Activities/noise generated at WH+B may impact students experience
- Reduces potential for sharing Bonnie Springs parking and arena
- Facilities sharing – maintenance facilities, trash and recycling, storage, etc.
- Taller/larger structures proximity to highway will make screening important

Day 3 - Thursday, July 29th 4:00pm – 5:00pm
Parrot Ranch/Bonnie Springs arena visit

Attendees:
Jennifer Parrot, Ranch Owner
Billie Young, RRC Interpretive Association
Bob Clements, Line and Space, LLC
Kevin Stewart, Line and Space, LLC

Tour of the Parrot’s arena building:
The building includes a riding arena, indoor stalls, outdoor stalls, hay storage, grain storage, general indoor storage, general covered outdoor storage, tack room/guest apartment, horse wash rack, and circulation space
- Building size is approximately 140’ x 125’
- Structure is wood framed with metal siding and metal roof deck
- Underside of roof is insulated with foil-wrapped blankets approximately ¾” thick
- Arena is 95’ x 95’
  - Footing is sand over type 2 foundation (compacted aggregate base course approximately 12” thick)
  - Water spray for dust control – 9 sprinklers on a timer system hung from the roof trusses (operates 5 minutes 3 times per day)
  - Jennifer Parrot and Billie both stated that the size/proportions of the arena are adequate for English riding but inadequate for western riding
    - 95’ is too short of a distance to break into and maintain a lope
  - Open west wall of the arena allows wind to funnel through the arena and out the stalls – in the winter this wind makes the stalls and arena spaces very cold
  - Circulation around the arena was originally dirt but was too messy so the concrete slab was poured.
- Indoor stalls 8 @ 12’ x 12’ or 4 @ 12’ x 24’
  - Footing is ½ thick hard rubber mats over type 2 foundation (compacted aggregate base course approximately 18” thick.
  - Lighting – mercury halide that Jennifer Parrot was wild about
  - Large fans – hung high in the space and pointed down to were the horse stands within the stall (operate on a timer – on during the day - spring, summer, and fall)
  - Too much winter wind funnels through the stalls - plywood has been installed throughout interior stalls to help in blocking wind and also to keep horses in adjacent stalls from biting each other
  - Automatic water basins mounted to plywood wall the interior stall
Trip Summary
Oliver Ranch School + Wild Horse and Burro Facility

- Outdoor stalls 8 @ 12' x 12' or 4 @12' x24'
  - Made of pre-manufactured horse stall panels clad with plywood
  - Footing is sand over type 2 foundation (compacted aggregate base course approximately 12" thick)
  - Too much winter wind funnels through the stalls – plywood has been installed throughout the panels of the exterior stalls to help in blocking wind and also to keep horses in adjacent stalls from biting each other
  - Approximately 7' of exterior stalls are shaded by roof – Jennifer Parrot said that she would provide more cover over the exterior stalls if she could redo her building

- Hay storage
  - Totally enclosed except for 4' wide opening to stall side of space
  - Hay is brought in through a roll-up door

- Grain storage
  - Separate room for storage of grain, oats, medicines and other products such as fly wipe, etc.
  - Totally mouse proof

Other items Jennifer Parrot discussed include:

- They compost the manure produced and use all of it in their garden
- The vehicular entrance needs to be organized to prevent access to their property from being blocked – when horses were pastured by their property trucks, and the vehicles belonging to the general public trying to interact with the horses blocked their gate.
- Bonnie Springs has a permit that allows use of their arena until 3:00am for events like gymnacana
- Odors from their manure (including waste from carnivores) has been noticeable at times
- Wind gusts can come from any direction but the predominant direction for these strong intermittent gusty winds is from the southwest throughout the year and at all times during the day
- Strong sustained winds blow from the east throughout the year but especially during the winter, commonly all day long
- Flies are a problem at any horse facility
- Horses will chew on everything – Jennifer Parrot has everything that horses have access to wrapped in replaceable plywood

Tour of the Bonnie Springs arena

- Approximate size 190’ x 275’
- Pole mounted lights are currently being installed
- Bonnie Springs has a permit that allows use of their arena until 3:00am for events like gymnacana
- Construction is of pre-manufactured corral panels
- Infrastructure for rodeos is installed (chutes, gates, etc.)
- Billie young stated that the width of this arena (approx. 190’) would be adequate for the length of the Wild Horse and Burro arena (through conversations and research it has been determined that an arena for the WH+B would need to be approx. 120’ x 200’ to serve the functions that are anticipated).
Nevada Power Meeting Minutes

Oliver Ranch School + Wild Horse and Burro Facility

Subject: Preliminary meeting to discuss electrical service to project site
Location: Nevada Power - New Construction Office
Date: July 28, 2004
Time: 1:00pm

Attendees
    Keith Jackson, Nevada Power
    Les Wallach, Line and Space, LLC
    Bob Clements, Line and Space, LLC
    Kevin Stewart, Line and Space, LLC

Meeting Notes
    • Three-phase service currently supplies the BP gypsum plant and will probably not be extended further west along Highway 159 due to limited land for future development, per KJ
    • 1200 to 2000 amps at 3 phase (approximately 1800amps to 3000amps at 1 phase) should be adequate for the needs of this project, per LW
    • As of right now, power is above ground, and probably will not be relocated underground (unlikely due to high costs)
    • Above ground lines can be dropped underground once they are on the site, per KJ
    • Single phase will be what the project has to work with if the BLM does not pay to update it, per KJ
    • Nevada Power (NP) has an established process with the BLM to get easements through.
    • Approximately 200,000 watts could be generated by solar power, per LW
    • NP has a buyback program which could avoid the problem of storage of solar generated electricity - L+S should talk to Lisa Bartlett (NP) about these issues
    • Sierra Pacific (Reno) is NP’s parent company
    • NP has no problem with a multi-meter setup that could be used for kids to monitor their power consumption - Option for having this setup funded by NP? Keith will forward this request to NP’s corporate communications department.
    • Keith suggests splitting the two issues: one is construction of the lines to the site, the other deals with NP’s outreach program which would deal with the partnership issues.
    • L+S to provide Keith with parcel numbers so he can gather more specific information
    • L+S to provide Keith with an estimate of load use- NP can then evaluate power requirements
    • Keith expressed that Nevada Power may be interested in supporting scholarships for the students at ORS
    • See NP Map #225801 for existing electric service.

Meeting concluded at 2:00pm
Notes by: Mike Anglin – Line and Space, LLC
Southern Nevada Water Authority
Meeting Minutes
Oliver Ranch School + Wild Horse and Burro Facility

Subject: Preliminary meeting to discuss water service to project site
Location: Oliver Ranch
Date: July 29, 2004
Time: 9:00am

Attendees
Rick Watson, Southern Nevada Water Authority
Mitch Bishop, Southern Nevada Water Authority
Les Wallach, Line and Space, LLC
Bob Clements, Line and Space, LLC
Kevin Stewart, Line and Space, LLC

Meeting Notes
- Rick: former principal with Clark County School District (CCSD) and member of OLVF Education Committee
  - Contact information: 702.260.9946 (home telephone)
- CCSD operates a grant that awards upwards of $1 million to train teachers to teach history - could tie into programs at Oliver Ranch
  - Potential to use OR School as a PDE (professional development education) venue for educators (Rick said that he could help out with this and that Loretta Asay is the person at CCSD to contact)
- SNWA has a program in which credit is earned for return-flow
  - The focus is on consumptive use conservation
  - "Consumptive" defined as uses in which water does not go down the drain or otherwise return to the public water system (i.e. watering lawns)
- Indoor usage is also a concern because power is consumed in the process of filtering and moving water to the tap.
- Water consumption is the single largest use of power in this region
  - SNWA recently purchased a 1/4 stake in a power plant to help with power consumption costs.
- Oliver Ranch came with water rights of 19 acre-feet; L+S predicts that the school can get by with 10 acre feet.
- Existing community wells:
  - Implemented before water service was available to all areas.
  - Usually 4 houses sharing one well (typical well depth around valley – 1000’)
  - Permit would be for 4.5 acre-feet but some are pumping upward of 12 acre-feet.
  - Over half of these wells are over-pumping (more than 1.1 acre foot)
  - Private wells may be up to 1000’ deep
  - This equates to 3000 gallons daily per family (or about 700 gallons daily per person) which is an extremely high figure
- 70% of water is used outdoors, for non-living uses (i.e. uses that are not necessary to sustain human/animal life)
  - The greatest enemy is turf
  - "WaterSmart" (SNWA’s xeriscaping compensation program – pay $1/sf to remove turf) landscaping uses 1/3 vs. turf or other non-desert landscaping
- Suggested resources:
  - Health District may be able to help in monitoring water quality, with maintenance, or in test water quality of treated wastewater.
Southern Nevada Water Authority
Meeting Minutes
Oliver Ranch School + Wild Horse and Burro Facility

- Potential to gain volunteer support from SNWA's water technicians
  - SNWA technicians may become a partner in maintaining/servicing the wastewater treatment plant at the school
- SNWA has an established Youth Advisory Board that puts together and executes projects each year.
- Suggested internet references:
  - www.snwa.com - Southern Nevada Water Authority homepage
  - www.h2ouniversity.org - H2O University homepage - operates programs to provide education and awareness regarding water conservation issues
  - www.groundwater.org - The National Groundwater Association Homepage - they operate a large educational component
  - www.lvwash.org - Las Vegas Wash Coordination Committee homepage – “The Wash Team” - operates educational outreach programs - see Kim Zikmund or Christie Leavitt
  - The Desert Learning Center at the Las Vegas Springs Preserve website
- Potential to spread water conservation knowledge learned at OR School- students report back to their parents, school, etc.
- Potential for experiments performed at the OR School to be brought back to the student's campuses and treated as year-long projects.
- Idea of letting the kids calculate and monitor their water use- they come up with a plan and they have control over their environment with respect to consumption
- SNWA has a “plug program” to plug abandoned wells to prevent contamination of the aquifer. Old wells serve as a direct conduit into the aquifer.
- Discussed needing to engage the teachers, teachers need to take the experience back and teach lessons throughout the year but also advertise the school.
- Discussed the idea of a school website where classes can post/brag about their accomplishments at the school
- “Cholla” Group – environmental educators – CCSD uses their scientists as resources.

Meeting concluded at 10:00am
Notes by: Mike Anglin – Line and Space, LLC
Trip Summary
Wild Horse and Burro Facility

Notes:
1. All times shown below are approximate and include travel time to/from the facility shown
2. Refer to the attached photos for visual documentation of the facilities

Wednesday, August 21st

8:00pm – 9:15pm
Ridgecrest Wild Horse and Burro Facility visit

Attendees
Dan, Director of Ridgecrest Wild Horse and Burro Facility
Michael Reiland, BLM
Nancy Flagg, UNLV
Billie Young, RRCIA and NWHA
Laurie Howard, NWHA
Bob Clements, Line and Space, llc
Kevin Stewart, Line and Space, llc

Summary of visit
• Facility capacity of 1100 head (horses and burros together), 800 of which could be horses.
• The facility was originally set-up for burros.
• Reviewed layout for handling of wild horses:
  - Horses are delivered to the site in an 18-wheeler (the semi had difficulty aligning with the unloading ramp) which unloads to a ramp at trailer height leading down to the alley at grade
  - Horses kept in pens separated by the 14’-18’ alley (males on one side of alley – separated into groups within individual pens, females on other side of alley – separated into groups within individual pens).
  - Pens are opened individually and the horses are driven down the alley to a ‘waiting’ area (to receive ‘tub’ in future)
  - ‘Waiting’ area leads to a chute (footing within chute is rough textured concrete) which leads to the squeeze chute in the handling area (this is the ‘infirmary’ for the horses at this facility. It also leads to the loading area for adopters with the opening/closing of some gates within and adjacent to the chute. Chutes are lined with rubber mats to decrease level of noise and help in safety of horses. Chute, squeeze chute, and handling area are all shaded by a metal shade structure with ceiling fans and 8 fluorescent 2 lamp fixtures. The ceiling fans were ineffective at circulating the air, however a large fan/mister was successfully utilized to help a horse recover within this area during our visit.
  - Horses are given shots, etc. within the squeeze chute, and are then pulled from the chute (while drugged) and handled in the area in front of the chute. A 20’ metal shipping container is located adjacent to the squeeze chute and used for storage of medications, medical supplies, and other items needed for activities in this area.
  - For the gelding process, stallions are led from the squeeze chute into 1 of 2 separate gelding pens adjacent to the squeeze chute (while one horse is recovering in one pen, the other pen can be used to geld another horse, and vice versa).
  - A veterinarian is on call for the facility and is scheduled to be present during the processing of new horses.
  - The handling area leads to a large circular holding area (completely lined with plywood) which in turn leads to the alley serving large holding areas of multiple acres each (male horses on one side of the alley, female horses on the other), shade is provided at some of the large holding areas with fabric shade structures.
Trip Summary
Wild Horse and Burro Facility

- Additionally, a new tip-over chute area is being built to handle additional horses and for working on horse hooves

- Reviewed operation of facility:
  - Hay (mainly Bermuda) is stored on-site, uncovered and is placed on the ground for the horses – feeding is performed by a contractor.
  - Water is placed in tubs (through main line and automatic fillers) at far end of holding areas (where the horses go when first placed within holding areas)
  - Due to arid windy climate, the majority of the manure gets packed with the fine dirt and blown off site, but a manure contractor comes and cleans out all manure from the facility every three months. Manure is placed in large piles downwind from the pastures.
  - Sprinkler system has been installed in the alleyways and the pens for dust control, helps with visibility and reducing anxiety of horses (them not being able to see, breathing large amounts of dust)
  - Adoptions are by appointment and they do participate in satellite adoptions. If an adopter selects a horse it is generally ready to load within 15 minutes to an hour.
  - Currently there are 4 wranglers and 1 secretary, as well as, the facility manager on staff
  - Brand inspector is not required for adoptions in California which makes adoptions faster and
  - Mascot burros and Wrangler horses kept on site in pens with no shade, the Tack room is a metal shipping container with sprayed on insulation.
  - Small maintenance building houses the gator and 2 electric carts. Little space is left around these vehicles for work space.

- Review of possibilities for new facility:
  - Separate infirmary area/sick pen with shade
  - Shade for each holding area/pen
  - Flexibility and ease of modification is key, because do not know all possible scenarios
  - More efficient layout will aid in processing of horses and the adoption process

- Equipment:
  - Tractor with hay handler and hay hauler
  - Tractor attachments – gannon, ripper, forks, bucket
  - Several horse trailers
  - Second tractor that appears to not get used very often
  - Misc. trailers
  - 1 gator and 2 electric golf carts
  - Water truck
  - Forklift
  - Backhoe

- Other items to note:
  - Pole mounted lights are installed around the buildings/entrance to the facility for security/vandalism deterrence
  - Pole mounted lights are located at the sorting area
  - Entire facility is surrounded by 6’ high chain link fence
  - Facility has mascot burros which are housed in small stalls across the entrance from the office
Trip Summary
Wild Horse and Burro Facility

Thursday, August 22nd

7:30am – 3:00pm
Washington County Regional Park tour

Attendees
Gary Brown, Director of Washington County Regional Park
Michael Reiland, BLM
Billie Young, RRCIA and NWHA
Laurie Howard, NWHA
Bob Clements, Line and Space, llc
Kevin Stewart, Line and Space, llc

Summary of visit
- This facility is used for equestrian events as that is its primary purpose, however, it is also used for other events both related to equestrian activities (FFA, Livestock/horse shows, etc) and unrelated events (demolition derby’s, wrestling competitions, dances, etc.)
- The facility consists of multiple used metal buildings:
  - Administrative offices and exhibit building
  - ¾ mile race track
  - 118’ x 196’ indoor arena – seats 1900 people
  - 195’ x 300’ outdoor arena – seats 5000 people
  - 145’ x 265’ outdoor arena
  - (240) 12’ x 12’ training stalls
  - (26) 12’ x 12’ overnight stalls
  - 90’ x 400’ show barn holding up to (215) 10’ x 10’ stalls
- The following is a summary of Gary Brown’s discussion of a good facility (many of the issues discussed below have been incorporated into this facility):
  - Locate it on the outskirts of town in order to distance itself from the public and their concerns with flies, smells (manure), and noise
  - Develop the site plan with an eye towards the different circulation patterns of the visitors, the horses, and the equipment/trailers
  - Ensure adequate drainage (especially that associated with flash flooding) but beware of manure run-off, etc.
  - Wind needs to be taken into account (especially micro-bursts) because of the many overhanging shade elements associated with the buildings, but also to harness the predominant breeze to cool the horses
  - Safety issues included separation of animals with appropriate barriers (panel/corral types, gates which are operable from horseback)
  - A central sound/communication system with paging capabilities (used on a daily basis and with emergencies) should be installed
  - The facilities should be colored to reflect the heat and blend into the environment
  - Controlled access (via a gate or similar) and visible signage
  - Maintain clearances for the heavy equipment (backhoe, skidloader, etc.) used on site
  - Ease of maintenance (manure, etc.) and cleaning with materials and necessary heavy equipment
  - Eliminating flies is not possible, but a ‘fly repellent misting system’ for resident horses could be used
  - The footing for the horses (all present noticed that this facility had what seemed to be ideal footing) within all of the arenas is a mixture of sand and clay that is brought on site and then worked (watered/compacted/loosened) to the requirements appropriate for the activity/event to take place
- Design stalls so that the deterioration of the stall materials (steel in this case) does not occur at the base where it is constantly exposed to dirt, urine, and manure
- A big fan to help cool the horses at the infirmary area
- An automatic watering system for the horses (one that is not chewable) with many shut-off valves (in cases of broken/freezing pipes)
- Solid walls capture/radiate heat and do not allow for ventilation, however, depending upon the design, the solid walls could be used in the resident horse barn and infirmary
- The parking lot should have good crushed gravel (6-8" deep) with pea gravel on top
- Centrally located equipment garage/shop

- Discussion of facilities (specifically the indoor arena) during tour:
  - The 120' 200' indoor arena is a bit too small and Gary would like to have an additional 50' added onto the long dimension (120' x 250')
  - A sprinkler system (to keep the soil moist) is desired also
  - Lighting is critical as it is fully enclosed but with many night functions the translucent roof panels would be unable to provide the necessary light
  - Everything inside the arena gets quite dusty and is sprayed down/cleaned every once in a while – durable materials are necessary
  - The seating/judges area are located along one side of the arena and the pens/chutes for the animals are located along the other side
  - This facility utilizes feed cubes (Billie said no good for wild horses, they won't know what it is), and wood shavings for the stalls
  - The facility utilizes a water truck for dust control, water is spread areas in the early morning hours
  - Large maintenance building – also used for storing wood shavings on pallets
  - Equipment – several gators, skidsteer, manure hauler, tractor, pick-up trucks

5:30pm
Flight to Reno, Nevada

Friday, August 23rd

6:20am –11:30am
Litchfield Wild Horse and Burro Facility tour

Attendees
Casey, Director of the Litchfield Wild Horse and Burro Facility
Doug, Wrangler at the Litchfield Wild Horse and Burro Facility
Mark Morse, BLM
Michael Reiland, BLM
Bill Cates, UNLV
Billie Young, RRCIA and NWHA
Laurie Howard, NWHA
BT Frost, BLM
Bob Clements, Line and Space, llc
Kevin Stewart, Line and Space, llc

Summary
- This is the oldest wild horse and burro facility by the BLM. Much of its construction is original and some construction techniques used (plywood wired to panels with sharp wire protruding into the pens, sharp corners/edges on panels, etc.) are not acceptable for the new WH&B facility.
Trip Summary
Wild Horse and Burro Facility

- The facility is in the process of upgrading their handling area with a tilt-up chute and a 'tub' to replace their holding area prior to the chute. Once complete they will have the ability to handle 2 animals at once (or stage the handling of the animals between the 2 chutes) as both the squeeze chute and the tilt-up chute can be used simultaneously.
- The facility currently completes 80-100 adoptions per year, by appointment. Once an animal is selected it is available for pick-up by the adopter within a week. Appointments/adoptions are not allowed during processing of animals.
- Facility can accommodate 1000 horses and can process an average of 70-80 animals in one day.
- Functional layout was similar to the Ridgecrest facility (though hanging feeders were used in the pen, muddy site conditions made ground-feeding impossible within this area, it was noted that the hanging feeders need to have vertical bars @ 12" o.c. in order to be effective and not provide a way for the horses to escape or get caught): Horses are unloaded from the truck and sent to the far end of the alley where a 'teardrop' pen is located. From this pen the horses are sorted into one of four pens between it and the 'waiting area' leading to the chute/handling area. Once processed, the horses are released into a round holding corral which leads to an alley serving the many holding areas consisting of multiple acres each, none of which had shade. The length of the alley is over a mile.
- The watering system within the pens consisted of one watering tank shared between 2 pens. The watering system for the large holding areas consisted of metal tanks with concrete bottoms and automatic fillers (the horses like to 'play' with the automatic fillers and the wranglers have provided a tamper-resistant float assembly on a chain rather than fixed by a rod, this allows the horses to play with the float with out manipulating the actual fill level). The concrete bottoms on the metal tanks were considered unacceptable as they cannot be sanitized during cleaning (Plastic tanks or large tractor tires cut in half were recommended as alternatives).
- Security - This facility the target of arsonists so they are currently upgrading the security of the facility.
  - They are currently installing 2 security cameras – 1 at entrance to the facility and one on the main buildings.
  - The main buildings and entrance to the facility are lighted at night by pole-mounted fixtures.
- Hay is stored on the ground and uncovered. The facility did have a hay barn but it was destroyed by the arson fire. Feeding is performed by a contractor.
- Sorting pens (teardrops) had 10' tall ends, necessary in these high stress areas because horses were able to get over the 7' tall panels.
- Alleyways had some flaws that the facility is in the process of remodeling such as some square corners and circulation flow problems
- Alleyways are sprinkled with rotating heads but pressure is inadequate for this system to be effective. The wranglers did state that the watering they did do was extremely beneficial in controlling dust and easing its impact on the animals
- Resident horses and mascots were kept in holding areas adjacent to the holding areas for the wild horses.
- Facility had no manure management – it gets cleared away by the wind adequately
- Equipment
  - Tractor with hay trailer
Trip Summary
Wild Horse and Burro Facility

12:30pm – 3:30pm
Palomino Valley Wild Horse and Burro Facility tour

Attendees
John Neil, Assistant Director of the Palomino Valley Wild Horse and Burro Facility
Mark Morse, BLM
Michael Reiland, BLM
Bill Cates, UNLV
Billie Young, RRCIA and NWHA
Laurie Howard, NWHA
BT Frost
Bob Clements, Line and Space, llc
Kevin Stewart, Line and Space, llc

Summary of tour
• The facility is 30 years old and can handle 2000 animals (it currently has ±400) in multiple large holding areas able to handle 100 to 300 horses each.
• Outside of the front gate were some interpretive panels that general public could access if the y ventured off of the highway to the facility.
• The facility has three solid metal walled chute/tub systems with textured concrete floors accessed off of alleys: 1 is a tub with two chutes (1 for semi unloading/loading and 1 for haltering and adopter loading), 2 are tubs with one chute and a squeeze or tilt chute for processing/treating animals (1 has a squeeze chute, the other has a tilt chute)
• The 2 processing/treatment chutes have a shaded area over the chute and are adjacent to their own tack/infirmry storage (metal shipping container)
• The processing of the animals was very similar to the Litchfield facility (including the ‘teardrop’ pen).
• There are 2 (±32’ high by ±65’ X ±120”) hay storage areas (and is looking to build a third. The hay storage is open-sided, and the bales sit on the ground with the ground sloped away at the edges for drainage
• A feed contractor is responsible for feeding the animals and places the feed in interior mounted feeders with bars less than 12” o.c. (BT stated that the exterior feeders were much better). NOTE: the primary feed for animals in this facility is alfalfa, but this is not appropriate for the animals at the Oliver Ranch Facility as it is too high in protein (for the most part, they will be fed Bermuda grass with the possibility of alfalfa supplementation)
• Manure was handled by a contractor.
• Sprinklers were located throughout but required manual hook-up to a water system and operation
• The facility utilized water from a hot water aquifer high in arsenic (highly corrosive – it ate through much of the original plumbing fittings). They have installed a treatment system which makes the arsenic inert and allows it to be used for the horses and sprinklers. However, it is not fit for human consumption.
• In addition to the animal areas, the facility had an administrative building and a large 2-room shop (1 room was for welding/metalwork, the other was for general shop work) with a maintenance office. The maintenance office was also a staff meeting/briefing/ lunch room.
• Equipment used and located on site: (2) backhoes, skidsteer, maintenance truck, welding truck, hay handler, forklift w/backhoe attachment, jumping jack, 4 yd. dumpster, mortar mixer, numerous (and a wide variety) of welders, large air compressor
• Adoptions were by appointment with the possibility for walk-ins. Once an animal was selected, it would be ready for pick-up within a week
• When asked about problems with the facility and what he would change John offered the following:

Line and Space, llc
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Trip Summary
Wild Horse and Burro Facility

- The metal chutes should be in shade as they can get real hot
- The metal chutes need a certain amount of clearance off of the ground because wherever it contacts the dirt/urine/manure, the panels begin to rust and fall apart – this clearance can not be big enough for an animal to get a hoof stuck in.
- Clearances (width, overhead, and turn-around) for all equipment (backhoes, forklifts, etc.) should be taken into account. It is sometimes necessary to use the heavy equipment to get a horse out of a chute (if it has flipped over), to remove a dead horse from any area, and to aid in the maintenance and cleaning of all areas.
- The chute/tub system associated with the loading/unloading of horses could have an additional chute (which would make it 3 total) to reduce the stress of the animals when loading them onto a semi
- Provide as much shade as possible
- A centrally controlled sprinkler system for dust control
- Utilize stress-free design concepts with correctly sized alleys (14'-18') and no dead-ends/corners

7:10pm
Flight to Las Vegas, Nevada (and then to Tucson, Arizona)

Notes by: Kevin Stewart – Line and Space, llc