

Clark County Multiple Species Habitat Conservation Plan Amendment

**Avoidance and Minimization Measures Work Group**

**Final Report**

February 2026

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## I. Overview of the Avoidance and Minimization Measures Work Group

In Summer-Fall 2025, the Clark County Desert Conservation Program convened a stakeholder Work Group for the Avoidance and Minimization Measures (AMMs) component of the upcoming amendment to the Multiple Species Habitat Conservation Plan (MSHCP). AMMs are actions the County and other entities will implement to avoid and minimize impacts to plant and animal species as part of the permit issued by the US Fish & Wildlife Service for take of species listed under the Endangered Species Act within the developable area defined in the plan. The AMM Work Group process was facilitated by Southwest Decision Resources (SDR), a neutral team of facilitators contracted by the County.

The AMM Work Group was convened to ensure the measures included in the plan amendment will be feasible to implement across the County. The US Fish & Wildlife Service's requirements for AMMs are significantly more rigorous for the amended MSHCP than the current MSHCP; therefore, the amendment will necessitate new policies and actions by the County, local jurisdictions, and developers. During a broader stakeholder engagement process for the Plan Amendment in early 2025, local jurisdictions and developers stated that they wanted to discuss the AMMs in detail to ensure they understood the AMMs and would be prepared to implement them upon finalization of the Plan Amendment.

As a result of that feedback, the County and the SDR facilitation team convened an AMM Work Group in Summer 2025 with jurisdictions and developers to refine and reach agreement on the AMMs. The result of the Work Group was a final list of AMMs that are broadly supported and understood by key partners (Appendix B). Consensus on all AMMs except one was reached.

The AMMs will be brought to the Clark County Board of County Commissioners in Spring 2026 for approval and inclusion in the Plan Amendment package for submission to the US Fish & Wildlife Service. In addition, the County and jurisdictions will incorporate the final AMMs into the MSHCP Amendment Interlocal Agreement that will define how AMMs will be implemented, adopted and enforced, as well as define the process for Certificates of Inclusion between developers and jurisdictions. The County will work together with Work Group partners to develop supplemental documents that provide further details (such as design standards) to be referenced throughout plan implementation.

This report documents the process to collaboratively refine the AMMs, including the input partners provided, key decision points, and the final agreed upon AMMs. The report is organized into 5 sections: the AMM review process, Work Group participants, feedback gathered from the Work Group, decisions made on changes to the AMMs, and the list of final

agreed upon AMMs. The final AMMs will be included in the proposed plan amendment submitted by the County to the US Fish & Wildlife Service for coverage under the Endangered Species Act.

## II. AMM Review Process

The objectives of the AMM Work Group were to clarify the process for finalizing and implementing the AMMs, identify topics that may require updates to local building codes and ordinances, and to agree upon the content of the AMM language to include in the MSHCP Amendment. The Work Group built upon language the DCP drafted in Fall 2024 to arrive at the final AMMs (Appendix C). This was an iterative process that involved meeting with many jurisdictions and developers, gathering new information to refine the AMMs, and reviewing the final list of proposed AMMs.

The Work Group's goals were accomplished through the following activities:

- A. Information Gathering Interviews** - SDR conducted Interviews with key partners to gather information about their understanding of the AMMs, hear suggestions for designing and convening the Work Group, learn which AMMs would likely require changes in local development codes/ordinances, and which AMMs might pose challenges to developers or jurisdictions as originally written.
- B. AMM Work Group Meetings** - In total, seven Work Group meetings were convened with local planning departments and representatives of developer groups and major utilities to review draft AMMs, address issues and concerns, and jointly refine as needed to reach agreed upon language.
- C. AMM Content Revisions** - DCP staff and SDR worked between meetings to gather new information, integrate recommended improvements to AMMs, share updated versions with Work Group members, and identify remaining topics for discussion at subsequent meetings.

### A. Information Gathering Interviews

The SDR facilitation team conducted interviews with 12 key partners to gather information that informed the AMM Work Group process and identify key issues relevant to each entity. Interviews were conducted with at least one representative of each entity below:

- Clark County jurisdictions:
  - City of Las Vegas
  - City of Mesquite
  - City of North Las Vegas

- City of Boulder City
- City of Henderson
- Clark County
- Other governmental entities:
  - US Fish & Wildlife Service
  - Pima County, Arizona
  - Southern Nevada Water Authority
- Development representatives:
  - National Association of Industrial and Office Parks
  - Southern Nevada Home Builders Association
  - Southwest Gas
  - NV Energy
  - Cox Communications

Prior to convening the Work Group, SDR coordinated with the County to identify key partners and interview questions. Interview topics included partners' levels of familiarity with the AMMs, AMM topics that would be of high interest and relevance to respective entities, and desired points of contacts for the Work Group. The conversations helped inform whom to invite to Work Group meetings, clarify issues that needed to be covered, and accommodate partners' preferences for meeting locations and frequency.

### **B. Work Group Meetings**

From August through November 2025, SDR and Clark County convened seven Work Group meetings to discuss and refine draft AMMs. All meetings were virtual and held on weekdays. Initially, jurisdictional planning departments and developers met separately to discuss issues most relevant to their interests. Those groups began meeting together in October. Two jurisdiction-only meetings and one developer-only meeting were held. Four joint meetings were held with all work group members invited. By the last meeting in November the Work Group had identified suggested edits to AMMs, identified topics that may require changes in local development codes, discussed processes for updating jurisdictions' building codes, identified additional needs for implementing the AMMs, and agreed on final language for all but one AMM.

#### AMM Work Group Meeting Schedule (all meetings were held virtually and lasted two-hours)

- Jurisdiction Meeting #1 (8.7.25)
- Jurisdiction Meeting #2 (8.26.25)
- Developer Meeting #1 (8.22.25)
- Full Work Group Meeting #1 (9.22.25)

- Full Work Group Meeting #2 (10.15.25)
- Full Work Group Meeting #3 (10.28.25)
- Full Work Group Meeting #4 (11.20.25)

### C. AMM Content Revisions

Between Work Group meetings DCP staff and SDR worked to gather additional information and answer outstanding questions, integrate suggested improvements to AMMs, provide additional details and specifications as requested, and remove AMMs that were considered redundant with existing policies and regulations. Through Work Group discussion it became clear that numerous AMMs would require additional supplemental documents to guide implementation, such as Best Management Practices and design guidelines. Those measures requiring such information have been identified in the final AMM document (Appendix B).

### Project Timeline

The general timeline of project activities was as follows:

<b>May 2025</b>	<ul style="list-style-type: none"> <li>● Develop goals for AMM Work Group</li> <li>● Gather key documents (contact lists, etc.)</li> <li>● Identify key partners to engage in interviews and Work Group</li> </ul>
<b>June 2025</b>	<ul style="list-style-type: none"> <li>● Design and schedule interviews</li> <li>● Conduct interviews</li> </ul>
<b>July 2025</b>	<ul style="list-style-type: none"> <li>● Continue conducting interviews</li> <li>● Gather input on AMMs</li> <li>● Schedule initial AMM Work Group Meetings</li> </ul>
<b>August 2025</b>	<ul style="list-style-type: none"> <li>● Synthesize stakeholder input on AMMs to inform Work Group meetings</li> <li>● Design initial AMM Work Group meetings</li> <li>● Conduct first AMM Work Group meetings</li> </ul>
<b>Sep-Oct 2025</b>	<ul style="list-style-type: none"> <li>● Continue AMM Work Group meetings</li> <li>● Synthesize feedback gathered</li> <li>● Make iterative revisions to AMMs and share with Work Group members throughout</li> </ul>
<b>November 2025</b>	<ul style="list-style-type: none"> <li>● Convene final AMM Work Group Meeting</li> <li>● Discuss and identify next steps with DCP</li> </ul>
<b>December 2025</b>	<ul style="list-style-type: none"> <li>● Synthesize all feedback gathered</li> <li>● Submit Final AMM Work Group Report</li> </ul>

## Work Group Participants

Participants included members of planning, building, flood control, and other departments of local jurisdictions, as well as representatives of development companies and associations. Below is the list of all individuals who attended at least one Work Group meeting; see Appendix A for participation by meeting.

### Work Group Participants - Local Jurisdictions

<b>Clark County</b>	Sami Real - Department of Comprehensive Planning Director Werner Hellmer - Building Department Deputy Director
<b>City of Las Vegas</b>	Marco Velotta - Planning Project Manager and Chief Sustainability Officer Sherri McMahon - Environmental Compliance and Enforcement Administrator Peter Lowenstein - Deputy Director Community Development Fred Solis - Planning Manager
<b>City of Mesquite</b>	Dan Catron - Senior Planner Simon Kim - Development Services Director
<b>City of North Las Vegas</b>	Jason Calhoun - Senior Engineer, Flood Control Johanna Murphy - Principal Planner Brian Urga - Deputy Building Official Summer Roybal - Planner Lenny Badger - Flood Control Department John Iannuzzi - Planning and Zoning Intern
<b>City of Boulder City</b>	Nakeisha Lyon - Planner Brok Armantrout - Contracts and Real Estate Manager Michael Mays - Community Development Director Kristol Bias - Administrative Assistant
<b>City of Henderson</b>	Annamarie Smith - Principal Planner Tom McCleister - Combination Plans Examiner Carrie Becker - Community Development Topher Barnes - Development Services Center Diane Cottrell - Archives and Records Technician Nathan Ball - Development Services Matthew Mallmer - Senior Permit Technician Andrew Powell - Long Range Planning Manager Eddie Dichter - Director of Community Development and Service

### Work Group Participants - Developers and Utilities

<b>Southern NV Homebuilders Association</b>	Tina Frias - Executive Director Jon Rudolph - Policy Director Melany Quintero - Community Affairs Manager
<b>National Association of Industrial Office Parks</b>	Phillip Dunning - Panattoni Development Company, Inc.
<b>DR Horton</b>	JF Stevens - Director of Entitlements and Forward Planning
<b>Howard Hughes</b>	Brian Walsh - Senior VP Summerlin
<b>KB Homes</b>	Paul Chao - Director of Forward Planning Anthony DeLeon - Forward Planner Christa Bilbrey - Director of Forward Planning
<b>Kimley Horn</b>	Eric Hopkins - Civil Engineer
<b>Las Vegas Chamber of Commerce</b>	Nick Schneider - Director of Government Affairs Taylor Avery - Manatee of Political Affairs
<b>Pulte Group</b>	Rhonda Miller - Project Manager
<b>Richmond American</b>	Angela Pinley - Director of Forward Planning Erica Goff- Forward Planning Specialist
<b>Southwest Gas</b>	Dylan Keith - Senior Manager of Public Affairs Andy Carlson - Energy Solutions Supervisor Ryan Leonard - Government Affairs

**Clark County Desert Conservation Program** - Kimberley Goodwin, Principal Environmental Specialist  
*Working Group Facilitation: Southwest Decision Resources - Julia Guglielmo and Colleen Whitaker*

### III. Work Group Feedback and AMM Revisions

Through the series of seven AMM Work Group meetings partners reviewed, discussed and worked together to develop a refined set of agreed upon AMMs. All the AMMs were agreed by consensus with the exception of measures related to burrowing owls (see the Species Specific Measures section). It should be noted that not all partners were present in every meeting (see Appendix A). To help address this, updated versions of the AMMs were shared between meetings as possible, and feedback was welcomed asynchronously (in draft documents and over email). Every effort was made to ensure that Work Group members had sufficient opportunity to review, provide feedback and reach a level of comfort with the final AMMs.

Through this process, it became clear that several AMMs will require additional supplemental information to help guide implementation by jurisdictions and developers. The Work Group identified these measures and provided initial feedback on the type of additional information that will be required.

For this effort, the Work Group was asked to ensure the AMM language provides helpful overall guidance at a high-level that can be used to develop additional implementation details as required in subsequent stages. The AMMs finalized by the Work Group will become part of the permit application package to be submitted to the US Fish and Wildlife Service (USFWS).

The final AMMs agreed upon by the Work Group are in [Appendix B](#). All language in this report that is taken directly from the final AMMs is presented in [blue text](#). An asterisk (\*) indicates that the measure has been identified as requiring supplemental information. The initial draft AMMs that served as a starting point for this Work Group are referenced throughout this report as "previous," and can be found in [Appendix C](#).

## **A. General Construction Measures**

General Construction Measures are avoidance and minimization activities that would occur during the construction phase of development projects. AMMs related to construction include nighttime lighting, trash management, weed management, and wildlife reporting.

The main concerns of partners related to construction included avoiding duplication with existing local regulations for project construction, implementing measures only in the wildland-urban buffer when appropriate, and ensuring that the AMM language would be clear enough for developers and their construction partners to easily understand and implement.

The AMM Work Group clarified language for nighttime lighting, trash management, reporting of and weed management. They also combined the language for measures related to reporting observances and take of desert tortoise, Gila monster, and burrowing owl into a single AMM, and moved the measure related to worker education to the Outreach section. In addition, the Work Group identified existing policies and regulations that provide sufficient guidance for dust control, erosion, speed limits, and construction site clean-up activities, and therefore removed AMMs related to those topics.

Regarding future work, partners conveyed that provisions related to nighttime lighting, weed management, and desert tortoise, and burrowing owl may require changes in local development codes. They suggested that supplemental documents be developed to provide further details on nighttime lighting and weed management.

## **Overview of Revisions to General Construction Measures (GCMs)**

- GCMs that are addressed by other regulatory/permitting requirements were removed as AMMs, and instead these are referenced in Section I.A (Existing Regulations). These included measures related to dust control (previous GCM-1, Appendix C), erosion (previous GCM-4, Appendix C), speed limits in construction zones (previous GCM-6, Appendix C), and construction site clean-up (previous GCM-9, Appendix C).
- The section was re-structured into measures that apply in the urban-wildland area, and those that apply in all locations. Measures related to lighting, trash management and weed management now only apply within the urban-wildland area.
- Removed: The GCM related to avoiding wildlife entrapment by covering or providing escape ramps for holes and trenches of more than one-foot (previous GCM-3, Appendix C) was removed. Developers felt this measure was onerous, and there was agreement that this is already sufficiently addressed through fencing and species surveys requirements.
- Moved:
  - The measure requiring construction worker education (previous GCM-2a, Appendix C) was moved to section IV. Outreach (OUTREACH-1).
  - The measure requiring take reporting of desert tortoise, Gila monster and burrowing owl (previous GCM-2b, Appendix C) was combined with the requirement to report observance of these species on a construction site. These now appear as GCM-4 and apply to all locations.

## **Final General Construction Measures: Revisions and Deliberations**

Following are the final GCMs, and a summary of revisions agreed by the Work Group. GCM-1, GCM-2 and GCM-3 all apply only within the urban-wildland area (See [Project Design Measures](#) for definition). GCM-4 applies in all locations.

**\*GCM-1. Night-time lighting.** Control night-time lighting at construction sites. All temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) will be directed away from adjacent natural habitats and shall be designed to minimize light pollution into adjacent habitats.

### *Summary of agreed revisions and deliberations:*

- There were minimal revisions to this GCM. The primary change was that this measure now applies only within the urban-wildland area, to make it more practical to implement and to focus implementation in the most important areas.
- Language was added to clarify that the intention of the measure is to "minimize light pollution into adjacent habitats."

*Considerations for implementation:*

- This GCM has been identified as requiring additional supplemental information to support implementation. Code changes in local jurisdictions may be necessary.
- Additional information to be provided includes: further definition of "control" and "temporary," and guidelines for best practice.

**GCM-2. Trash management.** All food items and scented trash items at construction sites will be properly disposed of in wildlife-resistant containers and removed regularly to reduce attractiveness to opportunistic predators such as ravens, coyotes, and feral dogs. Containers shall be made of durable, non-chewable materials (such as metal or heavy-duty plastic) and shall have a lid that is kept closed to secure trash items. Examples of scented trash items may include, but are not limited to cigarettes, cigars, gum wrappers, tissue, cans, paper, and bags.

*Summary of agreed revisions and deliberations*

- The measure was updated to apply only within the urban-wildland area, to make it more practical to implement and to focus implementation in the most important areas.
- Partners asked whether trash containers need to be self-locking and confirmed that standard dumpsters with covers are permissible.
- Additional details were added to further clarify this GCM:
  - Specification of trash container material that should be used.
  - The original language stated that the measure applied to all "trash and food items." This was updated to "food items and scented trash items," and examples of scented trash items were added.

*Considerations for implementation:* This measure as written was perceived as straightforward and partners did not suggest additional actions for implementing the measure. The supplemental document on PDM-3 will describe appropriate details on trash management.

**\*GCM-3. Weed management.** BMPs for weed management (including noxious weeds) shall be employed to minimize the potential to introduce weeds into the project area. Weed management will be conducted in accordance with all applicable State and County regulations and guidelines, and any applicable Weed Management Plan and/or Early Detection Rapid Response Program.

*Summary of agreed revisions and deliberations:*

- The measure was updated to apply only within the urban-wildland area, to make it more practical to execute and to focus implementation in the most important areas.
- The Work Group approved GCM-3 without the reference to applicable Weed Management Plans and Early Detection Rapid Response Programs. The DCP has since determined that these initiatives are important to include in the AMM and believes their addition would align with the intention of the Work Group to list applicable standards and initiatives.

*Considerations for implementation:*

- This GCM was identified as requiring additional supplemental information to support implementation. Code changes in local jurisdictions may be necessary.
- Supplemental information should include clarification of best management practices (BMPs) and reference to any relevant existing standards or regulations.

**GCM-4. Wildlife Reporting.** *(Note this GCM applies to all construction activities regardless of location.)*

- a. If desert tortoise, Gila monster, or burrowing owl are observed on-site during construction activities, all observances will be reported to the DCP as described in the worker education program (see OUTREACH-1).
- b. Take reporting. If accidental injury or death of any Covered Species occurs, workers will immediately inform the DCP as described in the worker education program (see OUTREACH-1).

*Summary of agreed revisions and deliberations:*

- There were no revisions suggested to the language in this measure. Developers noted that it is already common practice to report tortoise and burrowing owl currently. The addition of Gila monster here was not a concern.

## **B. Project Design Measures**

### **Overview of revisions to Project Design Measures**

This category of AMM was a significant focus of the Work Group. Through discussion and feedback, the AMMs in this section were clarified and simplified to support more effective implementation.

The original PDMs were divided into three area types: *developments adjacent to lands with conservation designations; developments adjacent to undisturbed land that may be developed in the future, or undisturbed land designated for multiple public uses; developments adjacent to publicly owned, undisturbed land that will not be developed in the future and are designated*

*with additional environmental protections.* This structure was seen as cumbersome and overly complicated. The Work Group suggested the categories be simplified, so all measures were combined to apply only within one area called the “urban-wildland area.”

The urban-wildland area is defined as places where human development is within 660' of undisturbed natural areas as defined by the maximum limits of potential development. Originally, the urban-wildland “area” was referred to as a “buffer,” and partners were concerned that the term would conflict with legislation that established adjacent protected areas (e.g., Tule Springs Fossil Beds National Monument, Sloan Canyon National Conservation Area, and Red Rock Canyon National Conservation Area). Legislation for these protected areas prohibits the creation of buffers or implied protected perimeters. The intent of the MSHCP Plan Amendment is not to designate a buffer precluding all development around protected areas, but rather to require developers to implement actions that reduce edge effect impacts to protected lands. The term “urban wildlife area” and the actions permitted within these boundaries is being further discussed by jurisdictions and DCP.

Work Group discussion about the urban-wildland area primarily focused on understanding how the area applies to development; for example, the requirement for wildlife barriers refers only to the *boundary* of the urban-wildland area, not to all locations within the area. The width of the urban-wildland area was revised down from 700' to 660' to more easily align with surveying and design practices (660' is  $\frac{1}{8}$  of a mile). It was also suggested that any future updates to the boundary definition should be handled as an administrative action, and that this should be clear in the application. Upon further review, DCP staff concluded that the boundary definition change would qualify as a minor modification rather than administrative revision; however, approval from the USFWS will still be required.

In addition to simplifying the categories of the types of lands in which Project Design Measures would occur, the Work Group recommended simplifying the requirements. Through the Work Group process, the PDMs were consolidated into three topic areas: barriers and access points, edge effects, and predator subsidies.

The original AMMs included a measure related to road structure design of “new public roads under the jurisdiction of permittees and located in unincorporated areas, and that are not privately owned or controlled that traverse undeveloped habits” (previous PDM-2, Appendix C). It was concluded this likely applies to a very small number of instances, or perhaps none at all, and was removed.

There was significant discussion around the topic of edge effects. The Work Group successfully refined provisions around weed management, landscaping, and drainage to make them more understandable and practical.

For predator subsidies, the proposed measures related to trash protection are already being used across Clark County and did not need to be included as a Design Measure. All actions related to trash management are now included in the General Construction Measures (CGM-2).

### **Final Project Design Measures: Revisions and Deliberations**

Following are the final PDMs accompanied by the statement that all PDMs apply only within the urban-wildland area. A summary of revisions agreed by the Work Group follows.

The following measures apply to the urban-wildland area, which is defined as the area where human development is within 660 feet of undisturbed natural areas as delineated by the maximum limits of potential development (Figure X). These standards shall apply to all non-residential developments and residential developments of two units per acre or more. Design guidelines and recommendations will be provided by DCP and adopted into relevant development codes by each jurisdiction. Determination of applicable standards and appropriate locations for PDMs will be completed during the development review process.

**\*PDM-1. Barriers and access points.** The following provisions shall be included for the management of unauthorized access, illegal dumping, illegal OHV activity, and other unauthorized uses.

- a. Barriers will include installation of **tortoise-proof barriers** along the outer edge of the interface with wildlands.
- b. Requirements that **roads not terminate at the boundary** of wildlands unless there is a planned access point.
- c. Restrictions on the **placement of new roads** adjacent to wildlands to reduce incidence of domestic pets entering adjacent wildlands, to insulate wildlife that might enter urban areas from risk of vehicular mortality, to discourage desert dumping, and to prevent unauthorized vehicular access to wildlands.
  - i. If roads must be placed adjacent to natural areas, additional measures will be identified to minimize unauthorized access, illegal OHV use, dumping, wildlife incursions, and minimization of human-caused fire ignition. These may include, but are not necessarily limited to, the following:
    1. Fencing, including potential for tortoise fencing.
    2. Reduced speed limits.
    3. Warning signage.
- d. Restriction on the allowance of **access points**, except where there are existing or planned trails, trailheads, visitor centers, and/or other approved public recreation areas.
- e. Prohibition on the allowance of **private gates from an individual homeowner's property** into wildlands.

*Summary of agreed revisions and deliberations:*

- The measure was updated to apply only within the urban-wildland area, to make it more practical to implement and to focus implementation in the most important areas.
- Language was added to clarify that tortoise-proof fencing is only required along the *outer edge* of the urban-wildland area, not everywhere within the 660' buffer (PDM-1a)
- Placement of new roads (PDM -1ci) - this measure previously included a requirement for a minimum 15' setback as measured from the back of the curb. There was concern and lack of clarity about how this would be implemented and administered, and how to coordinate with ROW restrictions. This requirement was removed.
- The original draft included a measure related to road structure design of "new public roads under the jurisdiction of permittees and located in unincorporated areas, and that are not privately owned or controlled that traverse undeveloped habits" (previous PDM-2, Appendix C). It was concluded this likely applied to an extremely small number of instances, or perhaps none at all. Therefore, it was removed for clarity and efficiency.

*Considerations for implementation:*

- There was a fair amount of discussion in the Work Group about the need for additional implementation information for this PDM. It was suggested that DCP could convene a discussion to explore multiple real-life development projects to better understand the full breadth of considerations that should be included. The Work Group felt it would be beneficial to work together to develop this information.
- Some of the topics identified as requiring additional information include:
  - Tortoise barriers - requirements and guidelines; clarification of inspection process, including who will be responsible; clarification for cases in which fencing is already installed on nearby federal lands with their own fencing requirements.
  - Additional measures for placement of new roads adjacent to wildlands- guidance on the definition of roads that terminate at wildland boundaries, what are considered acceptable deterrents and allowable access points, and clarification of who is responsible.
  - Access points - further clarification on requirements.
- Follow-up conversations are needed with jurisdictions regarding how PDMs will be enacted within urban-wildlife boundaries.

- Code changes will likely be needed in some jurisdictions related to this measure.

**\*PDM-2. Edge effects.** The following provisions will be included to minimize edge effects onto adjacent wildlands and to protect adjacent habitat for MSHCP Covered Species.

- a. Requirements for the use of **drought tolerant and non-invasive species** such as those specified in the Southern Nevada Water Authority (SNWA) and Southern Nevada Regional Planning Coalition (SNRPC) Regional Plant List (2021, or subsequent updated versions). Use of native species is encouraged.
- b. Requirements for **establishing vegetated landscapes** along the outer edge of the urban-wildlife area.
- c. Specifications for **drainage** prescribing that water flows that are directed toward wildland areas incorporate appropriate filtration provisions into project designs to prevent transport of trash and debris into adjacent wildlands.
- d. All **outdoor lighting** shall be designed to minimize light pollution into adjacent habitats and effects on wildlife, except where a Permittee determines lighting is necessary for public safety or security.
- e. **Signage** to indicate that the adjacent wildlands include sensitive habitat and that unauthorized access outside of designated areas is prohibited.

*Summary of agreed revisions and deliberations:*

- The measure was updated to apply only within the urban-wildland area, to make it more practical to implement and to focus implementation in the most important areas.
- PDM-2a: There was discussion about how much guidance to provide on which types of plants should be used, and if specific lists should be mandated. The group eventually concluded that referencing the Southern Nevada Water Authority (SNWA) and Southern Nevada Regional Planning Coalition (SNRPC) lists, but not *tying* the requirement to those lists exclusively, is appropriate. Additionally, it was noted that this measure should reference any updated versions of these lists. The group added that use of native species will be encouraged.
- PDM-2b: Original language referenced the requirement for "buffers" but not that they be vegetated. This was added to help better achieve the objective of minimizing edge effects, while not requiring additional built infrastructure and allowing views to remain open. The Work Group approved the AMM language that included the term "buffer;" the DCP staff has since replaced "buffer" with "vegetated landscapes" to avoid confusion here.
- PDM-2c: Previous language indicated that runoff be directed away from wildlands and toward regional flood control facilities. It was noted that this did not address situations such as washes running through properties or flowing water that needs access to historic drainage paths. This measure was revised to

better express the intention to ensure that when drainage does go into natural areas, that appropriate measures are taken to support the natural state of those areas.

- Previous versions of the measures related to outdoor lighting (PDM-2d, Appendix C) and signage (PDM-2e, Appendix C) contained more detail about specific guidance and considerations. Through discussion it was decided that less detail in this AMM will allow jurisdictions to work together later to develop shared implementation guidance that will help ensure consistency across boundaries and allow needed flexibility to meet the overall objective of the measures appropriately.
- The original measure included a provision to "reduce the shared boundary between urban areas and adjacent wildlands." This was considered vague and difficult to define, and could be viewed as infringing on private property rights, and was removed.

*Considerations for implementation:*

- This PDM was identified as requiring additional supplemental information to support implementation. Specific suggestions include:
  - PDM-2b: vegetated area specifications, e.g. width and suitable composition.
- PDM-2c: Additional clarification may be needed about what constitutes "appropriate filtration," including methods of effective drainage away from wildland boundaries; guidance for cases where water cannot be directed away from wildland boundaries; and examples of appropriate filtration.
- PDM-2d and 2e: These would benefit from development of shared standards across all jurisdictions to ensure county-wide consistency. Signage guidance should include details such as size, color, font, locations/spacing, and allowable materials. Lighting guidance should include details such as spacing, height and lighting type.
- This measure will likely require code changes from some jurisdictions.

**\*PDM-3. Predator subsidies.** The following provisions will be included to minimize predator (e.g., coyotes, ravens) subsidies.

- a. **Trash containers.** New developments must use wildlife-resistant refuse containers or a wildlife-resistant enclosure for all refuse. The container or enclosure shall be kept closed and secured, except when refuse is being deposited.
- b. **Utilities.** All new or relocated above-ground utility infrastructure—including utility poles, lines, and cell towers—constructed within suitable desert tortoise habitat (as defined by the DCP's species distribution model) shall include measures to mitigate impacts to the desert tortoise and other covered species. The map in Figure X illustrates the areas in which this

measure applies. Specific measures will be established at the direction of the authorizing agencies, which may include:

1. Anti-perching devices or other measures to avoid/minimize their use by predatory avian species.
2. Application of current Avian Power Line Interaction Committee (APLIC) guidance for structure designs to minimize perching surfaces.

*Summary of agreed revisions and deliberations:*

- The measure was updated to apply only within the urban-wildland area, to make it more practical to implement and to focus implementation in the most important areas.
- The measure was expanded from addressing only utilities to more broadly addressing "predator subsidies," as minimizing predator subsidies is the intended outcome of this measure. As such, part (a) relating to trash containers was added.
- The reference to utility infrastructure was clarified to specify that this refers to "above-ground" structures only.
- The group agreed to the language regarding utilities, but recommended final review by the energy sector. NV Energy was consulted and supported the language, with the suggestion to refer to the APLIC standards be referenced in this AMM. The DCP will continue working with NV Energy to make minor refinements.

*Considerations for implementation:*

- This PDM was identified as requiring additional supplemental information to support implementation. Specific suggestions include:
  - Trash containers - Descriptions of containers allowed
  - Utilities - Provide examples of appropriate anti-perching devices, non perch-friendly framing, and other anti-perching methods
- Code changes may be required for some jurisdictions regarding the utilities aspect of this PDM.

### **C. Species Specific Measures**

In addition to the General Construction Measures and Project Design measures that provide sufficient avoidance and minimization actions for most species covered under the amended MSHCP, some species require additional measures. These are referred to as Species Specific Measures (SSMs). The locations in which SSMs will occur are based on the County's updated species distribution models.

The AMM Work Group had varying levels of comments and concerns about the different SSMs. There was little concern about the measures related to plants, bats, and banded Gila monster, and these measures remain similar to those originally drafted by the DCP. Substantive refinements were made regarding riparian birds, desert tortoise, and burrowing owl. The Work Group, DCP, and the Clark County Regional Flood Control District collaborated to improve the definition of areas in which measures related to riparian bird measures will apply. A change was also made to the desert tortoise fencing measure; the original AMM would have required fencing for desert tortoise in all projects in Zone B, but the Work Group believed that this requirement would be overly burdensome, costly, and would result in significant project delays. Further, it was felt that the measure would provide limited additional benefit since species clearance surveys would be conducted prior to initial ground-disturbing activities and thus the cost-to-benefit ratio was inadequate to justify its inclusion in the final AMMs.

The Work Group had extensive discussion about the processes for conducting surveys for desert tortoise and burrowing owls, with the major concern from developers being that projects are not unduly delayed. The group reached agreement on an adaptive process in which the DCP and developers will coordinate on project timing. This process will help ensure surveys are conducted as close to initial ground-disturbing activities as is feasible, allowing sufficient time for DCP to accurately detect and remove covered species on site while refraining from delaying construction.

Regarding burrowing owl, developers stated that since the owl is very common in the county, there is a high risk of surveys and relocation efforts affecting the timing of development projects. One Work Group member suggested that the burrowing owl be removed from the list of species covered in the amended MSHCP.

Following are the final Species Specific Measures. Measures related to different species apply in specific areas only. These are noted in sub-sections.

## 1. Plant Measures

### **Overview of revisions to Plant Specific Measures**

- The plant measures were re-categorized. Originally these were presented as different measures for Zone A, Zone B, and Reserve Lands. These are now categorized as: measures on BLM disposal lands, measures on private lands, and measures in the non-federal Reserve System.
- There was little discussion or concern from the group regarding the plant specific measures; their major concern was regarding weed management, which is categorized as a General Construction Measure (GCM-3).

## **Final Plant Specific Measures: Revisions and Deliberations**

Following are the final Plant Measures, with the introduction to Plant Measures and Plant Measure 2, which was the only plant-related measure discussed by the Work Group. Plant-2 applies in all locations. Plant-1 applies only on BLM lands, and Plant 3-8 apply only in the non-federal Reserve System; Plant 1 and Plant 3-8 were not revised as part of this process.

Some covered activities may occur in areas that support occurrences of Covered Plant Species. To minimize loss of genetic diversity within these rare plant taxa, seed collection will be attempted, as practicable, or if determined suitable for certain species or sites, transplantation or vegetative propagation. Seed collection protocols are described in Appendix B, and transplantation and vegetative propagation protocols will be amended to Appendix B, if these techniques are developed and approved for use. Collection locations will be prioritized based on the habitat suitability models and known occurrences for Covered Species. Clark County will coordinate species searches and seed collection by qualified personnel. Collected seeds will be stored in an appropriate facility and made available for restoration activities within the Reserve System or other restoration, propagation, or research efforts. Collected seeds will also be integrated into the Rare Plant Propagation efforts to facilitate use in responding to landscape scale disturbances such as invasive species infestations and altered fire regimes. Voucher specimens of plants from occurrences where seed has been collected will be obtained, where practicable, prior to disturbance and deposited in an appropriate facility.

**PLANT-1. Seed collection in BLM disposal lands** - This measure applies only to BLM lands, so it was not covered in AMM Work Group discussions.

**PLANT-2. Seed collection on private lands.** On private property, DCP will be notified of planned disturbance upon submittal of project plans to a Permittee for review and approval. If a project is proposed in areas likely to support occurrences of Covered Plant Species, based on habitat suitability models, the DCP will conduct seed collection prior to disturbance, as practicable due to season and climate factors such as drought years. Seeds will be collected and stored for use in restoration and/or research projects. Seed collection and storage protocols are described in Appendix B.

### *Summary of agreed revisions and deliberations:*

- Work group members discussed how the notification process for this measure would work. The group laid out a notification process for desert tortoise and burrowing owl clearance surveys (see Desert Tortoise Measures below). This would be part of that same notification process.
- There were no other suggested changes to this measure.
- Measures related to installing fences and/or signage to protect covered species may require jurisdictional code changes.

The following plant-specific measures apply only within the non-Federal Reserve System, and were not discussed as part of the Work Group (see Appendix B for full language):

PLANT-3. Plant monitoring

PLANT-4. Covered Plant Species Survey

PLANT-5. Use of Covered Plant Species

- PLANT-6. Survey and maps
- PLANT-7. Covered Plant avoidance
- PLANT-8. Covered plant impact minimization

## 2. Desert Tortoise Measures

### **Overview of revisions to Desert Tortoise Measures**

- **Removed:** The three original desert tortoise measures related to exclusion fencing (previous DTM-2, DTM-3, and DTM-4, Appendix C) were removed as it was generally felt the measures were overly burdensome, costly, and would result in significant project delays. Similarly, the measure related to a post-fence installation survey (previous DTM-5, Appendix C) was also removed as it no longer applies if additional fencing is not required here.
- **Consolidated:** Originally the measures for desert tortoise clearance surveys (previous DT-1, Appendix C) and tortoise burrow surveys (previous DT-2, Appendix C) were separate. These were combined into the current DT-1. The burrow survey happens at the same time as the tortoise survey, so this was generally felt to be a simpler approach.
- The group spent a significant amount of time discussing the overall notification process and clearance survey schedule and timing.

### **Final Desert Tortoise Measures: Revisions and Deliberations**

Following are the final Desert Tortoise Measures. These measures apply in Zone B, where suitable habitat exists according to the DCP's species distribution models.

**DT-1. Tortoise surveys and avoidance.** Survey and clearance protocols are further described in Appendix C.

- a. A survey of the entire project area shall be conducted by a MSHCP Lead Species Biologist to locate and remove desert tortoises prior to grading or actions which might result in harm to desert tortoises.
- b. If desert tortoises are found and must be handled to relocate from the project site, handling will adhere to the protocols described in Appendix C.
- c. Tortoise burrows shall be cleared of tortoises and eggs by a MSHCP Lead Species Biologist and then collapsed. Any desert tortoise eggs found will be relocated by an MSHCP Lead Species Biologist. Burrow excavation protocols and tortoise egg protocols are described in Appendix C.
- d. Tortoise burrows that occur immediately outside of the project area that can be avoided by construction activities shall be clearly marked to prevent crushing.

*Summary of agreed revisions and deliberations:*

- The Work Group discussed this measure at length. The primary focus was on finding a way to accommodate the requirement that clearance surveys are

completed no more than 30 days before grading begins. Developers expressed that this is challenging due to unpredictability of schedules, and that delays are costly. DCP's goal is to submit measures in the permit application that will be acceptable to the USFWS. DCP aims to complete surveys in the appropriate timeframe without causing delays. Through discussion the group arrived at a broadly supported notification process that allows for schedule changes to be accommodated (note this process is the same for Burrowing Owl measures):

- 1) As part of the initial application, developers notify DCP that development is planned, share parcel number, and provide estimated ground disturbance date (this would be part of an application "checklist")
- 2) 30-60 days prior to the anticipated ground disturbance date, DCP makes a "confirmation call" to the project proponent to confirm the ground disturbance date. Multiple calls would be made if construction is delayed.
- 3) Depending on the construction timeline, DCP conducts surveys within 30 days of ground disturbance.
- 4) DCP notifies developer and local jurisdiction that surveys have been completed and ESA requirements have been met.

*Considerations for implementation:*

- The specifics of the initial notification and survey process outlined above should be re-visited and further clarified. This additional description does not need to be included in the application package.

**DT-2. Tortoise response.** If tortoises are found after the clearance survey has been conducted, construction workers will be trained on what to do in the worker education session described in OUTREACH-1.

*Summary of agreed revisions and deliberations:*

- No concerns expressed or suggested revisions were expressed for this measure.

**DT-3. Vehicle inspection.** Any time a vehicle is parked, regardless of whether the engine is engaged, the ground around and under the vehicle shall be inspected for desert tortoise and other wildlife before moving the vehicle.

*Summary of agreed revisions and deliberations:*

- No concerns expressed or suggested revisions were expressed for this measure.

### 3. Banded Gila Monster Measures

There is only one measure for banded Gila monster. Reporting requirements for cases in which Gila monster are observed on site during project construction appear in GCM-4.

**GILA-1. Gila monster response.** If banded Gila monsters are spotted on a construction site, construction workers shall temporarily cease construction activities in the immediate vicinity so as to avoid harm to the Gila monster and contact the DCP. DCP will coordinate with NDOW biologists for determination of the final disposition of the animal. Current Nevada Department of Wildlife (NDOW) guidance will be followed such as capture and detainment of the Gila monster in a cool, shaded environment (<85 F) until an NDOW biologist can arrive for documentation, marking, and measurements. Construction workers will be advised not to attempt to pick-up or otherwise make contact with banded Gila monsters if encountered on construction sites during construction worker education (OUTREACH-1).

*Summary of agreed revisions and deliberations:*

- There was some concern from developers about the requirement to cease work if a Gila monster is found on site. To help address this, additional specification was added that this requirement would apply only "in the immediate vicinity" of the sighting, not the entire construction site.
- DCP shared that Gila monsters are extremely rare and very venomous; the intention is for DCP to come out the same day as called about a sighting. Developers will be able to use the online mapping tool (Plan to the Max) to see if Gila monster habitat is potentially present; partners thought this feature would be helpful.

### 4. Riparian Bird Measures

#### **Overview of revisions to Riparian Bird Measures**

- There were no overarching concerns with the Riparian Bird Measures. The only major revision was the removal of one measure related to emergency maintenance.
- Working group members expressed that it is important that "suitable riparian habitat" should be clearly defined. DCP will add this data layer to Plan to the Max.
- Re-organized and consolidated: The original Riparian Bird Measures included 5 individual AMMs. Two of these relating to bird surveys and avoidance (previous RB-1, Appendix C) and fencing/demarcation of riparian and wetland habitat during construction (previous RB-4, Appendix C) were combined into one (RB-1).
- Removed: The original measure on survey requirements when construction related to emergency maintenance will occur during the breeding season

(previous RB-2, Appendix C) was removed. The general sense was that this would be very hard to implement due to the unexpected nature of emergency situations, and there is no clear protocol for informing DCP or jurisdictions of these emergency activities.

- Removed: RB-3 (avoid nesting areas) - The County will not prevent private landowners from developing on their property; this action is included in RB-1. The measure related to avoiding nesting areas (previous RB-3, Appendix C) was removed because it would have essentially made it impossible for a private landowner to ever develop land that had previously had a riparian bird nest. The intent is to avoid active nesting areas, which is sufficiently included in RB-1.

### **Final Riparian Bird Measures: Revisions and Deliberations**

To avoid or minimize direct impacts (i.e., take of individuals) from Covered Activities on Arizona Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo, and Yuma clapper rail (collectively, riparian birds), developers will be required to implement the procedures discussed below within suitable riparian habitat along the Virgin River, Muddy River, Overton Arm, and Las Vegas Wash and surrounding 100 feet [see map in Figure X]. Suitable riparian habitat is defined by the species distribution models.

**RB-1. Riparian bird avoidance and surveys.** Avoid initial ground-disturbing activities (e.g., grubbing, clearing, grading) within suitable habitat during the breeding seasons for Yuma Ridgway's rail (February to early July), Arizona Bell's vireo (March 15 through August), southwestern willow flycatcher (May to mid-August), and yellow-billed cuckoo (June through August). Project applicants will be notified of this restriction during the development review process.

- a. Prior to mass grading, demarcate or fence all suitable habitats to be avoided to prevent disturbance of these areas by earth-moving or construction equipment.
- b. If initial ground-disturbing activities cannot be avoided during the nesting season, the project proponent may have a qualified biologist conduct surveys to detect nesting of Covered Species. If active nests of Covered Species are detected, a nest buffer will be implemented in consultation with the DCP and USFWS. If no active nests of Covered Species are detected, initial ground-disturbing activities may be conducted within the breeding season.
- c. Biologist qualifications will be submitted to the DCP for approval and USFWS survey guidelines and protocols will be followed. Survey results will be submitted to the DCP within 10 days of survey completion.

#### *Summary of agreed revisions and deliberations:*

- This measure is a consolidation of two original measures (previous RB-1 and RB-3, Appendix C).
- A primary point of discussion here was which areas would be considered "suitable riparian habitat." In particular, there was discussion about the concreted section of the Las Vegas Wash. DCP explained that suitable habitat is

based on species distribution models, and that this information will be included in the online mapping tool (Plan to the Max). Final determination of whether a project site contains suitable riparian habitat will be made when DCP receives project information as part of the development review process and the determination will be made by qualified MSHCP Species Biologists.

- Developers expressed concern that there could be delays to construction if active nests are found on a site. DCP explained that there is less flexibility here, as these measures are driven by the Migratory Bird Treaty Act (MBTA), rather than the ESA.

*Considerations for implementation:*

- Updated map layers for suitable riparian habitat should be made available on Plan to the Max.
- If changes are ever made to the MBTA the AMMs may be updated to reflect these changes.

**\*RB-2: Riparian bird conservation measures.** Project design and general conservation measures and BMPs will be implemented during construction or maintenance activities to avoid and minimize effects from possible erosion, pollution, and sedimentation to downstream riparian habitat. Project applicants will be notified of this restriction during the development review process. Design guidelines and recommended measures will be provided by DCP.

*Summary of agreed revisions and deliberations:*

- Work group members indicated that additional guidance would be needed on the BMPs (Best Management Practices) that should be used. To indicate this, language was added here to indicate that "design guidelines and recommended measures will be provided by DCP."

*Considerations for implementation:*

- This measure was identified as requiring supplemental information. Work group members felt that DCP should develop BMPs. The Las Vegas Valley BMPs under the MS-4 permit were suggested as a potential reference.
- Additional clarity is needed on the types of measures that may be suitable for minimizing effects from possible erosion, pollution and sedimentation.
- Further information is needed on how this requirement will be administered. It may become part of a "Certificate of Inclusion" which would essentially describe actions that are not part of code but must be implemented by developers in order to comply with the MSHCP permit. Follow-up discussion to develop these specifics will be helpful.

## 5. Golden Eagle Measures

There is one measure related to Golden Eagle, and it applies in only a very narrowly defined area. There were no concerns or suggested changes to this measure.

The Plan Area is outside of most areas identified as suitable nesting habitat (Figure 3-16); however, there are recorded nest sites within the Plan Area. DCP will maintain maps of nest locations to be updated annually through data coordination with other agencies such as NDOW. To minimize impacts to potential nest locations that are within the Plan Area, the following shall be implemented:

**GOEA-1: Golden eagle surveys and response.** If Covered Activities are to occur within 0.25-mile of a documented golden eagle nest and activities must occur during the nesting season, surveys will be conducted following standard methods by a MSHCP Lead Species Biologist to determine if a golden eagle nest is active within 0.25 mile.

- a. If a nest is detected and determined to be active, a 0.25-mile buffer will be established, and Covered Activities will not occur within the buffer until a MSHCP Lead Species Biologist determines the chicks have fledged or the nest is otherwise inactive.

## 6. Burrowing Owl Measures

The burrowing owl measure was the only AMM on which full consensus was not achieved. The concern raised by a representative of the National Association of Industrial Office Parks was that this measure is likely to be a large burden on developers, due to the prevalence of burrowing owls in the plan area. This could result in both delays to development projects and increased permit costs. In addition, some developers felt that the future status of federal protective measures is unclear, so coverage under the amended MSHCP could become unnecessary. The NAIOP representative suggested the burrowing owl should not be included as a Covered Species in the MSHCP. However, if all current federal policies remain in place, amending the approved MSHCP to include the burrowing owl as a covered species at a later date would be time consuming, costly, and may delay developers in obtaining needed coverage. Further, it would also increase litigation risk for the Permittees. During Work Group discussions, most members present stated that they preferred having coverage for the owl from the outset of the MSHCP Amendment rather than undergoing the process of adding burrowing owl at a later date during the 50-year plan timeframe or requiring developers to provide their own burrowing owl coverage under federal policies. The highest priority for developers was flexibility in the timing of burrowing owl surveys and relocations to avoid project delays.

Given the lack of consensus around the burrowing owl measure, the DCP will consider bringing the decision on whether to include the measure to the Board of County Commissioners (Board) in Spring 2026. Work Group members are aware of the upcoming decision and DCP staff will notify the Work Group of the Board meeting time and location.

### **Overview of revisions to Burrowing Owl Measures**

- The original burrowing owl measures included a requirement for a pre-construction site assessment to determine if burrowing owl habitat is present (previous BUOW-1, Appendix C). This measure was concluded to be unnecessary, and result in added costs to plan implementation. Instead, the determination of habitat will be made based on species distribution modeling.
- The process for notification and clearance surveys would be the same for burrowing owl and desert tortoise (see Desert Tortoise Measures above).
- Removed: The original measure related to rodent control was removed (previous BUOW-3, Appendix C), was felt to be impractical and not necessary as rodent control on project sites is not a standard/common practice for the region.

### **Final Burrowing Owl Measures: Revisions and Deliberations**

**BUOW-1. Burrowing owl surveys and response.** Burrowing owl clearance surveys will be performed by MSHCP Lead Species Biologist. If the project area is located within Zone B, the burrowing owl survey will be conducted concurrent with desert tortoise clearance surveys. Survey and burrow clearance protocols are described in Appendix D. Coordination for surveys and exclusion may begin prior to the breeding season (February 1 – August 31) and ahead of the required surveys in order to allow more time for owl removal and burrow excavation or closure ahead of the breeding season and to avoid construction delays.

- a. If burrowing owl is determined to occupy the project site and is confirmed to not be a breeding owl (outside the nesting season or determined to be a non-breeding owl), passive relocation of the burrowing owl(s) and burrow excavation may be conducted as described in Appendix D.
- b. If burrowing owls are determined to occupy the project site and are confirmed to be breeding, a 330-foot (100 meter) nest buffer will be established. Appendix D describes monitoring methods to confirm when a nest is no longer active. Once the nest is inactive, passive exclusion and burrow excavation may be conducted as described in Appendix D.
- c. If owls are to be avoided but found nesting within 165 feet (50 meters) of the project site, it is recommended that visual screens or other measures are implemented to limit disturbance of the owls without evicting them from the occupied burrows.

#### *Summary of agreed revisions and deliberations:*

- As noted, this measure was the only AMM on which there was not final agreement. The concern raised by one Work Group member was that the

requirement to cease construction in a 330' buffer around an active nest is too onerous and problematic for developers, due to the relative commonality of burrowing owl. This member suggests that instead the burrowing owl be removed from the list of covered species.

- Support for this removal was not expressed by other Work Group members. However, developer partners stated that their highest priority for burrowing owl was providing flexibility in survey timing.
- Some Work Group members preferred including the burrowing owl measure as stated above; others suggested removing the specific window of time during which surveys must be conducted; others stated that they needed time to consult with their respective teams before offering a preference.
- Following the final AMM Work Group meeting, all participants were given 14 days to provide additional feedback on burrowing owl and other AMMs. During this period, no further comments were received from Work Group members who were not present for the discussion or stated that they needed to consult others regarding burrowing owl.

## 7. Bat Measures

No concerns or revisions were suggested to the bat measures.

**BAT-1. Bat Surveys.** In areas with known roost habitat, a pre-construction survey conducted by an MSHCP Lead Species Biologist will be conducted to determine if potential roost habitat is present in areas to be impacted. If roosts are detected, the roost type will be determined: maternity, hibernation, or day/night roost not associated with maternity or hibernation. Roost information including location and roost structure type will be collected and used in updates to species habitat suitability models.

- a. If a maternity or winter hibernaculum roost site is detected, and Covered Activities will occur during the maternity or hibernation season, a follow-up survey may be necessary to determine if the roost site is occupied.
- b. If an occupied maternity or winter hibernaculum site is present, Covered Activities will not occur until the roost is vacated, or outside of the maternity or hibernation periods and bats are safely evicted as described in the following measure.

**BAT-2. Eviction methods.** If the roost has been determined to be a non-maternity and non-hibernaculum day or night roost, or it is outside of the maternity and hibernation seasons, eviction methods can be utilized to remove bats from the impact area. A MSHCP Lead Species Biologist will use safe eviction methods to remove bats if direct impacts cannot be avoided. A Bat Eviction Plan will be prepared prior to implementation. Following eviction of the bats and clearance of the roosts, Covered Activities may proceed.

## D. Outreach

Partners expressed no concerns or suggested revisions to the outreach measures. However, they did suggest that the worker education be categorized under Outreach rather than a General Construction Measure. Therefore, OUTREACH-1, Training and Certification Program, now includes the content from previous CGM-3 (see Appendix C for the original measure).

**OUTREACH-1. Training and certification program.** DCP will provide a training and certification program for all on-site personnel who are conducting Covered Activities. The program will provide training and/or outreach to construction workers to increase their awareness of desert tortoises and other Covered Species potentially encountered at the project site, and what to do if they find these species on their site. This includes appropriate handling of any desert tortoise encountered on site and procedures for calling the Clark County Wild Tortoise Assistance Line (702-593-9027) to schedule a pick-up of the tortoise.

**OUTREACH-2. AMM Outreach.** DCP will provide outreach related to required AMMs directly to developers and homebuilders, which may include activities such as targeted media campaigns, printed materials for distribution, and training events. Outreach will cover topics such as desert tortoise clearance requirements, other Covered Species measures, riparian construction seasonal restrictions, urban-wildland design guidelines, and other topics as deemed necessary by the DCP.

**OUTREACH-3. Covered Species Outreach.** It is important that citizens of Clark County value and hold an appreciation for MSHCP Covered Species and to educate the public on what to do when they see a desert tortoise in the wild, and on ways they can minimize their own impact on the desert environment. To help raise this awareness, the program will provide outreach related to Covered Species and protection of the Mojave Desert, which may include the Mojave Max program, mass media campaigns, printed materials, school programs, community science engagements, and other items as deemed necessary by DCP. Educational material and signage will also be posted in the Reserve System to inform recreational users.

## Conclusions and Recommendations

The AMM Work Group process successfully arrived at an agreed-upon, revised set of AMMs, with the one exception of how to address the burrowing owl. This lack of agreement pertained to whether burrowing owl should be included in the Covered Species List and whether a specific window of time should be specified for completing pre-construction surveys. It should be noted that the option for removal was put forth by a Work Group participant, but support for this option was not expressed by other participants in the Work Group as of the completion of this report. All other AMMS were discussed, refined as needed, and agreed.

Strengths of this process included that there was good representation across jurisdictions and developers in Work Group meetings. Even though not all the same people were able to

participate in all meetings, nearly every meeting had representation from developers and all jurisdictions. This helped to ensure that the outcomes are informed by all the relevant parties.

Additionally, the Work Group served another important purpose, which was to help educate jurisdictions and developers about the AMMs. In the beginning of the process, partners had a wide range of knowledge about both the AMMs and the MSHCP in general. Most partners did not have an in-depth understanding of the AMMs. After seven robust meetings on these topics, partners now have a deep and nuanced understanding of the final AMMs. This will support a much more streamlined process for implementing the AMMs when the time comes.

Moreover, developers, jurisdictions, utilities and DCP all learned more about the requirements and constraints that each group is working under. There is now a greater understanding amongst Work Group participants, and these relationships have been strengthened. This will have benefits throughout the final stages of plan adoption and into implementation.

Through the review process, the Work Group identified that additional work will be needed on several AMMs to develop additional details necessary for implementation. These have been identified in the final AMM document. An important next step will be to reconvene members of the Work Group at a subsequent stage to develop the supplemental documents, the Interlocal Agreement and the Certificate of Inclusion; many partners expressed interest in participating in such a process. DCP should work closely with planning departments and developers to draft this detailed guidance and education for implementing the AMMs. In addition, the broader list of interested stakeholders should be informed of the updated AMMs resulting from the Work Group.

As a result of this AMM review process, the DCP is now poised to communicate with partners about the updated AMMs, submit final suggested language to the Clark County Board of County Commissioners, and work with partners and developers to prepare for plan implementation.

## Appendix A: Work Group Participation

<b>Affiliation</b>	<b>Name - Position</b>	<b>Jurisdictions Mtg #1 (8.7.25)</b>	<b>Jurisdictions Mtg #2 (8.26.25)</b>	<b>Developers Mtg #1 (8.22.25)</b>	<b>Joint Mtg #1 (9.22.25)</b>	<b>Joint Mtg #2 (10.15.25)</b>	<b>Joint Mtg #3 (10.28.25)</b>	<b>Joint Mtg #4 (11.20.25)</b>
City of Boulder City	Brok Armantrout - Contracts and Real Estate Manager	x	x		x	x	x	
City of Boulder City	Kristol Bias - Administrative Assistant							
City of Boulder City	Michael Mays - Community Development Director							
City of Boulder City	Nakeisha Lyon - Planner	x	x		x			
City of Henderson	Andrew Powell - Long Range Planning Manager		x		x		x	x
City of Henderson	Annamarie Smith - Principal Planner	x	x		x	x	x	x
City of Henderson	Carrie Becker - Community Development	x				x	x	
City of Henderson	Diane Cottrell - Archives and Records Technician	x			x			
City of Henderson	Eddie Dichter - Director of Community Development and Service							
City of Henderson	Matthew Mallmer - Senior Permit Technician	x						
City of Henderson	Nathan Ball - Development Services							
City of Henderson	Tom McCleister - Combination Plans Examiner	x						

<b>Affiliation</b>	<b>Name - Position</b>	<b>Jurisdictions Mtg #1 (8.7.25)</b>	<b>Jurisdictions Mtg #2 (8.26.25)</b>	<b>Developers Mtg #1 (8.22.25)</b>	<b>Joint Mtg #1 (9.22.25)</b>	<b>Joint Mtg #2 (10.15.25)</b>	<b>Joint Mtg #3 (10.28.25)</b>	<b>Joint Mtg #4 (11.20.25)</b>
City of Henderson	Topher Barnes - Development Services Center	x					x	
City of Las Vegas	Fred Solis - Planning Manager							
City of Las Vegas	Marco Velotta - Planning Project Manager and Chief Sustainability Officer	x	x		x		x	
City of Las Vegas	Peter Lowenstein - Deputy Director Community Development							
City of Las Vegas	Sherri McMahon - Environmental Compliance and Enforcement Administrator				x			
City of Mesquite	Dan Catron - Senior Planner	x	x		x	x	x	x
City of Mesquite	Simon Kim - Development Services Director							
City of North Las Vegas	Brian Urga - Deputy Building Official	x	x					
City of North Las Vegas	Jason Calhoun - Senior Engineer, Flood Control	x	x		x	x	x	x
City of North Las Vegas	Johanna Murphy - Principal Planner	x	x					x
City of North Las Vegas	John Iannuzzi - Planning and Zoning Intern	x						
City of North Las Vegas	Lenny Badger - Flood Control Department	x						
City of North Las Vegas	Summer Roybal - Planner	x	x					

<b>Affiliation</b>	<b>Name - Position</b>	<b>Jurisdictions Mtg #1 (8.7.25)</b>	<b>Jurisdictions Mtg #2 (8.26.25)</b>	<b>Developers Mtg #1 (8.22.25)</b>	<b>Joint Mtg #1 (9.22.25)</b>	<b>Joint Mtg #2 (10.15.25)</b>	<b>Joint Mtg #3 (10.28.25)</b>	<b>Joint Mtg #4 (11.20.25)</b>
Clark County	Sami Real - Department of Comprehensive Planning Director	x			x	x	x	x
Clark County	Werner Hellmer - Building Department Deputy Director	x						
DR Horton	Jeff Stevens - Director of Entitlements and Forward Planning			x	x	x		
Howard Hughes	Brian Walsh - Senior VP Summerlin			x				
KB Home	Anthony DeLeon - Forward Planner					x		
KB Home	Christa Bilbrey - Director of Forward Planning					x	x	
KB Home	Paul Chao - Director of Forward Planning					x		
Kimley Horn	Eric Hopkins - Civil Engineer					x	x	
Las Vegas Chamber of Commerce	Nick Schneider - Director of Government Affairs							
Las Vegas Chamber of Commerce	Taylor Avery - Manager of Political Affairs						x	x
National Association of Industrial Office Parks	Phillip Dunning - Panattoni Development Company, Inc.				x			
Pulte Group	Rhonda Miller - Project Manager						x	
Richmond American	Angela Pinley - Director of Forward Planning			x	x		x	x

<b>Affiliation</b>	<b>Name - Position</b>	<b>Jurisdictions Mtg #1 (8.7.25)</b>	<b>Jurisdictions Mtg #2 (8.26.25)</b>	<b>Developers Mtg #1 (8.22.25)</b>	<b>Joint Mtg #1 (9.22.25)</b>	<b>Joint Mtg #2 (10.15.25)</b>	<b>Joint Mtg #3 (10.28.25)</b>	<b>Joint Mtg #4 (11.20.25)</b>
Richmond American	Erica Goff					X		
Southern NV Homebuilders Association	Jon Rudolph - Policy Director			X	X		X	X
Southern NV Homebuilders Association	Melany Quintero - Community Affairs Manager			X	X			
Southern NV Homebuilders Association	Tina Frias - Executive Director							
Southwest Gas	Andy Carlson - Energy Solutions Supervisor							
Southwest Gas	Dylan Keith - Senior Manager of Public Affairs			X	X			
Southwest Gas	Ryan Leonard - Government Affairs					X	X	X

## Appendix B: Final Avoidance and Minimization Measures

### I. General Construction Measures

#### A. Existing Regulations

General Construction Measures (GCMs) will reduce direct and indirect impacts to species during project construction activities. Several **existing regulations and standards will be followed** that already provide for avoidance and minimization of impacts to Covered Species. They are incorporated herein and described in Table 1, below.

Table 1. Existing Regulations, Permits, Ordinances, and their associated MSHCP Rationale

Existing Regulation, Permit, or Ordinance	MSHCP Rationale
Clark County Air Quality Rules, Section 94, Dust Control Operating Permits	<ul style="list-style-type: none"> <li>Provides for the regulation of fugitive dust emissions on all commercial, residential, flood control, and highway construction projects.</li> <li>Limits vehicle speeds on construction sites to 15 miles per hour</li> </ul>
Construction Stormwater Permit and Stormwater Pollution Prevention Plan	<ul style="list-style-type: none"> <li>Outlines BMPs for prevention of sediment, debris, and pollutants leaving the construction site via runoff.</li> </ul>
National Pollution Discharge Elimination System	<ul style="list-style-type: none"> <li>Regulates the direct discharge of pollutants from point sources, such as industrial facilities, sewage plants, and some construction sites, into "waters of the United States". These permits establish limits on the types and amounts of pollutants a facility can discharge to protect human health and aquatic life.</li> </ul>
City ordinances that relate to site cleanup following construction	<i>Appropriate ordinances will be identified.</i>
Las Vegas Valley Construction Site Best Management Practices Guidance Manual (Las Vegas Valley Municipal Separate Storm Sewer System (MS4))	<ul style="list-style-type: none"> <li>Provides Best Management Practices to manage site runoff on construction sites within the Las Vegas Valley.</li> </ul>
Nevada Department of Agriculture standards on insects, pests, and noxious weeds (NRS-555)	<ul style="list-style-type: none"> <li>Specifies requirements for control activities</li> </ul>
NV Department of Agriculture best management practices for noxious weeds, pest control	<ul style="list-style-type: none"> <li>Provides best management practices for weed control</li> </ul>

## B. GCMs in Urban-Wildland Buffer Area

The following GCMs apply to construction activities that occur **within the urban-wildland buffer area**, which is defined as the area where human development is within 660 feet of undisturbed natural areas as delineated by the maximum limits of potential development in each of the Permittee's jurisdictions. A map of the area is in Figure 1. These standards shall apply to all non-residential developments and residential developments of two units per acre or more.

**\*GCM-1. Night-time lighting.** Control night-time lighting at construction sites. All temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) will be directed away from adjacent natural habitats and shall be designed to minimize light pollution into adjacent habitats.

**GCM-2. Trash management.** All food items and scented trash items at construction sites will be properly disposed of in wildlife-resistant containers and removed regularly to reduce attractiveness to opportunistic predators such as ravens, coyotes, and feral dogs. Containers shall be made of durable, non-chewable materials (such as metal or heavy-duty plastic) and shall have a lid that is kept closed to secure trash items. Examples of scented trash items may include, but are not limited to cigarettes, cigars, gum wrappers, tissue, cans, paper, and bags.

**\*GCM-3. Weed management.** BMPs for weed management (including noxious weeds) shall be employed to minimize the potential to introduce weeds into the project area. Weed management will be conducted in accordance with all applicable State and county regulations and guidelines, and any applicable Weed Management Plan and/or Early Detection Rapid Response Program.

## C. GCMs for All Locations

The following GCM applies to **all construction activities, regardless of location**:

**GCM-4. Wildlife Reporting.** *(Note this GCM applies to all construction activities regardless of location.)*

- a. If desert tortoise, Gila monster, or burrowing owl are observed on-site during construction activities, all observances will be reported to the DCP as described in the worker education program (see OUTREACH-1).
- b. Take reporting. If accidental injury or death of any Covered Species occurs, workers will immediately inform the DCP as described in the worker education program (see OUTREACH-1).

## II. Project Design Measures

Project design measures will reduce indirect effects to species that result from project implementation. These measures are intended to limit edge effects in adjacent habitats and provide buffers from sensitive habitats. Implementation of these measures will meet Objective 2B of the MSHCP.

### A. PDMs in the Urban-Wildland Buffer Area

The following measures apply to the urban-wildland buffer area, which is defined as the area where human development is within 660 feet of undisturbed natural areas as delineated by the maximum limits of potential development (Figure 1). These standards shall apply to all non-residential developments and residential developments of two units per acre or more. Design guidelines and recommendations will be provided by DCP and adopted into relevant development codes by each jurisdiction. Determination of

applicable standards and appropriate locations for PDMs will be completed during the development review process.

**\*PDM-1. Barriers and access points.** The following provisions shall be included for the management of unauthorized access, illegal dumping, illegal OHV activity, and other unauthorized uses.

- a. Barriers will include installation of tortoise-proof barriers along the outer edge of the interface with wildlands.
- b. Requirements that roads not terminate at the boundary of wildlands unless there is a planned access point.
- c. Restrictions on the placement of new roads adjacent to wildlands to reduce incidence of domestic pets entering adjacent wildlands, to insulate wildlife that might enter urban areas from risk of vehicular mortality, to discourage desert dumping, and to prevent unauthorized vehicular access to wildlands.
  - i. If roads must be placed adjacent to natural areas, additional measures will be identified to minimize unauthorized access, illegal OHV use, dumping, wildlife incursions, and minimization of human-caused fire ignition. These may include, but are not necessarily limited to, the following:
    1. Fencing, including potential for tortoise fencing.
    2. Reduced speed limits.
    3. Warning signage.
- d. Restriction on the allowance of access points, except where there are existing trails, trailheads, and/or other approved public recreation areas.
- e. Prohibition on the allowance of private gates into wildlands.

**\*PDM-2. Edge effects.** The following provisions will be included to minimize edge effects onto adjacent wildlands and to protect adjacent habitat for MSHCP Covered Species.

- a. Requirements for the use of drought tolerant and non-invasive species such as those specified in the Southern Nevada Water Authority (SNWA) and Southern Nevada Regional Planning Coalition (SNRPC) Regional Plant List (2021, or subsequent updated versions). Use of native species is encouraged.
- b. Requirements for establishing vegetated landscapes along the outer edge of the urban-wildlife area.
- c. Specifications for drainage prescribing that water flows that are directed toward wildland areas incorporate appropriate filtration provisions into project designs to prevent transport of trash and debris into adjacent wildlands.
- d. All outdoor lighting shall be designed to minimize light pollution into adjacent habitats and effects on wildlife, except where a Permittee determines lighting is necessary for public safety or security.
- e. Signage to indicate that the adjacent wildlands include sensitive habitat and that unauthorized access outside of designated areas is prohibited.

**\*PDM-3. Predator subsidies.** The following provisions will be included to minimize predator (e.g., coyotes, ravens) subsidies.

- a. **Trash containers.** New developments must use wildlife-resistant refuse containers or a wildlife-resistant enclosure for all refuse. The container or enclosure shall be kept closed and secured, except when refuse is being deposited.

b. **Utilities.** All new or relocated above-ground utility infrastructure—including utility poles, lines, and cell towers—constructed within suitable desert tortoise habitat (as defined by the DCP’s species distribution model) shall include measures to mitigate impacts to the desert tortoise and other covered species. The map in Figure X illustrates the areas in which this measure applies. Specific measures will be established at the direction of the authorizing agencies, which may include:

1. Anti-perching devices or other measures to avoid/minimize their use by predatory avian species.
2. Application of current Avian Power Line Interaction Committee (APLIC) guidance for structure designs to minimize perching surfaces.

### III. Species-Specific Measures

Additional AMMs for Covered Species will be implemented when disturbance-related project activities (construction or maintenance) are conducted in areas designated as potential to be occupied by the species. Areas with potential for occupation by covered species are identified by the County; contact the Desert Conservation Program or visit the website to learn about whether covered species are anticipated to inhabit parcels or properties.

#### A. Plant Species Measures

##### 1. Plant Measures in All Locations

Some covered activities may occur in areas that support occurrences of Covered Plant Species. To minimize loss of genetic diversity within these rare plant taxa, seed collection will be attempted, as practicable, or if determined suitable for certain species or sites, transplantation or vegetative propagation. Seed collection protocols are described in Appendix B, and transplantation and vegetative propagation protocols will be amended to Appendix B, if these techniques are developed and approved for use. Collection locations will be prioritized based on the habitat suitability models and known occurrences for Covered Species. Clark County will coordinate species searches and seed collection by qualified personnel. Collected seeds will be stored in an appropriate facility and made available for restoration activities within the Reserve System or other restoration, propagation, or research efforts. Collected seeds will also be integrated into the Rare Plant Propagation efforts to facilitate use in responding to landscape scale disturbances such as invasive species infestations and altered fire regimes. Voucher specimens of plants from occurrences where seed has been collected will be obtained, where practicable, prior to disturbance and deposited in an appropriate facility.

**PLANT-1. Seed collection in BLM disposal lands.** On BLM-administered parcels that have been identified for sale/auction within disposal boundaries, DCP will coordinate with BLM to conduct seed collection when suitable habitat is indicated based on habitat suitability models prior to the land transferring into private ownership. One hundred percent of the available mature seed will be collected, as practicable due to season and climate factors such as drought years. Seeds will be collected and stored for use in restoration and/or research projects. Seed collection and storage protocols are described in Appendix B.

**PLANT-2. Seed collection on private lands.** On private property, DCP will be notified of planned disturbance upon submittal of project plans to a Permittee for review and approval. If a project is proposed in areas likely to support occurrences of Covered Plant Species, based on habitat suitability models, the DCP will

conduct seed collection prior to disturbance, as practicable due to season and climate factors such as drought years. Seeds will be collected and stored for use in restoration and/or research projects. Seed collection and storage protocols are described in Appendix B.

### **Plant Measures for the Non-Federal Reserve System**

Covered Activities on non-federal Reserve System lands are predominantly focused on restoration and habitat management. However, these activities may still result in impacts to Covered Species. Therefore, in addition to the seed collection protocols, Covered Activities on non-federal Reserve System lands shall implement the following measures.

**PLANT-3. Plant monitoring.** Baseline monitoring of vegetation shall be performed by the project proponent, their qualified consultant, or a MSHCP Lead Species Biologist prior to any project disturbance in order to document the pre-project conditions.

- a. Photo points shall be established to document the pre-construction and post-construction restoration state of the vegetation and soil.
- b. Pre-construction photos shall take place prior to any project disturbance
- c. Post-construction photos shall take place within 30 days following completion of all project activities including demobilization.

**PLANT- 4. Covered Plant Species Survey.**

- a. If a project site is within 25 feet of or within known or modeled low, medium, or high suitable habitat for Covered Plant Species, a Covered Plant Species survey shall be conducted within the appropriate survey period based on target species by a MSHCP Lead Species Biologist.
- b. Within the project site (including all areas of potential disturbance), and in a buffer zone of a minimum of 25 feet around the project site, all known and modeled habitat for covered plants shall be surveyed.
- c. Surveys shall consist of transect lines that cover 100% of known or modeled habitat.
- d. Transect lines walked and encountered plant individuals shall be recorded as GPS point features and delivered to the DCP in ESRI ArcGIS compatible files.
- e. A summary of findings shall be provided to the DCP.

**PLANT- 5. Use of Covered Plant Species.** If necessary, updated project site survey maps to change or add Covered Plant Species avoidance areas based upon Covered Plant Species survey results shall be produced and provided to the DCP.

**PLANT-6. Survey and maps.** Project crew shall have a copy of the final project site survey maps at all times.

**PLANT-7. Covered Plant avoidance.** If Covered Plant Species are detected during the surveys, these areas shall be fenced by a 25-foot buffer and signed.

- a. Signage shall indicate that no disturbance may take place within the fenced avoidance area.
- b. Avoidance area fencing shall remain in place until all project and restoration activities are completed.

**PLANT-8. Covered plant impact minimization.** If avoidance is not feasible, all available mature seeds of Covered Plant Species to be impacted shall be collected following protocols in Appendix B. Seed collection should be timed appropriately based on target species. Exceptions to seed collection may be made by the DCP for projects such as emergency maintenance on a case-by-case basis.

- a. For locations that have minor disturbance such as driving or crushing and no soil removal, following completion of all project activities including fence removal, the disturbed areas shall be reseeded with Covered Plant Species seeds collected prior to the disturbance. Seeded areas shall be raked or dragged to cover the seeds with approximately 1 inch (2.54 centimeter) of surface soil material.
- b. For locations that require soil disturbance, these additional measures will be implemented:
- c. Vertical mulch scraping and salvage prior to disturbance: Live and dead above ground vegetation materials shall be scraped and stored within the project site for future use as vertical mulch.
- d. Soil layer(s) salvage prior to disturbance: (a) the top 4 inches (10.16 centimeters) of surface soil shall be scraped and stored in uncompacted piles no more than 4 feet (1.22 meters) high within the project site and (b) to the extent practical, root crowns and roots of perennial vegetation shall be left in place to assist recovery of the area post-construction.
  1. If a depth greater than 4 inches of soil is to be disturbed, each subsurface soil layer shall be salvaged and stored separately. The salvaged top soil shall not be mixed with deeper soils as this decreases the viability of seeds found in the top soil (Scoles-Sciulla and DeFalco 2009).
- e. Following completion of project activities, (a) salvaged soil shall be replaced in proper order, mixing slightly with the top 1 inch (2.54 centimeters) of the lower layer, (b) decompact soils by ripping and/or harrowing soils in areas that were impacted and/or compacted by the project, unless that compaction is part of the approved project design, and (c) recontour soils to restore natural drainage patterns, or recontour to conform to approved project design.
- f. Replace vertical mulch and reseed: Position vertical mulch to mimic the density and vertical structure of vegetation prior to construction, burying each dead shrub or cactus partially to reduce loss to wind, and then reseed as described in PLANT-8a.

### **3. Plant Measures on the Federal Reserve System**

Overall management of the federal Reserve System lands will be described in the BLM Resource Management Plan and the Reserve Unit management plan that will be developed for each unit. These planning processes are subject to compliance with the ESA and NEPA. Activities occurring within the federal Reserve System lands are considered federal actions and are not eligible for coverage under the MSHCP.

#### **B. Desert Tortoise Measures**

The following measures **apply in Zone B**, where suitable habitat exists according to the DCP's species distribution models, to minimize impacts to desert tortoise during ground disturbance.

#### **DT-1. Tortoise surveys and avoidance.** Survey and clearance protocols are further described in Appendix C.

- a. A survey of the entire project area shall be conducted by a MSHCP Lead Species Biologist to locate and remove desert tortoises prior to grading or actions which might result in harm to desert tortoises.
- b. If desert tortoises are found and must be handled to relocate from the project site, handling will adhere to the protocols described in Appendix C.
- c. Tortoise burrows shall be cleared of tortoises and eggs by a MSHCP Lead Species Biologist and then collapsed. Any desert tortoise eggs found will be relocated by an MSHCP Lead Species Biologist. Burrow excavation protocols and tortoise egg protocols are described in Appendix C.
- d. Tortoise burrows that occur immediately outside of the project area that can be avoided by construction activities shall be clearly marked to prevent crushing.

**DT-2. Tortoise response.** If tortoises are found after the clearance survey has been conducted, construction workers will be trained on what to do in the worker education session described in OUTREACH-1.

**DT-3. Vehicle inspection.** Any time a vehicle is parked, regardless of whether the engine is engaged, the ground around and under the vehicle shall be inspected for desert tortoise and other wildlife before moving the vehicle.

### **C. Banded Gila Monster Measures**

**GILA-1. Gila monster response.** If banded Gila monsters are spotted on a construction site, construction workers shall temporarily cease construction activities in the immediate vicinity so as to avoid harm to the Gila monster and contact the DCP. DCP will coordinate with NDOW biologists for determination of the final disposition of the animal. Current Nevada Department of Wildlife (NDOW) guidance will be followed such as capture and detainment of the Gila monster in a cool, shaded environment (<85 F) until an NDOW biologist can arrive for documentation, marking, and measurements. Construction workers will be advised not to attempt to pick-up or otherwise make contact with banded Gila monsters if encountered on construction sites during construction worker education (OUTREACH-1).

### **D. Riparian Bird Measures**

To avoid or minimize direct impacts (i.e., take of individuals) from Covered Activities on Arizona Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo, and Yuma clapper rail (collectively, riparian birds), developers will be required to implement the procedures discussed below within suitable riparian habitat along the Virgin River, Muddy River, Overton Arm, and Las Vegas Wash and surrounding 100 feet [see map in Figure X]. Suitable riparian habitat is defined by the species distribution models.

**RB-1. Riparian bird avoidance and surveys.** Avoid initial ground-disturbing activities (e.g., grubbing, clearing, grading) within suitable habitat during the breeding seasons for Yuma Ridgway's rail (February to early July), Arizona Bell's vireo (March 15 through August), southwestern willow flycatcher (May to mid-August), and yellow-billed cuckoo (June through August). Project applicants will be notified of this restriction during the development review process.

- a. Prior to mass grading, demarcate or fence all suitable habitats to be avoided to prevent disturbance of these areas by earth-moving or construction equipment.
- b. If initial ground-disturbing activities cannot be avoided during the nesting season, the project proponent may have a qualified biologist conduct surveys to detect nesting of Covered Species. If active nests of Covered Species are detected, a nest buffer will be implemented in consultation with the DCP and USFWS. If no active nests of Covered Species are detected, initial ground-disturbing activities may be conducted within the breeding season.
- c. Biologist qualifications will be submitted to the DCP for approval and USFWS survey guidelines and protocols will be followed. Survey results will be submitted to the DCP within 10 days of survey completion.

**\*RB-2: Riparian bird conservation measures.** Project design and general conservation measures and BMPs will be implemented during construction or maintenance activities to avoid and minimize effects from possible erosion, pollution, and sedimentation to downstream riparian habitat. Project applicants will be notified of this restriction during the development review process. Design guidelines and recommended measures will be provided by DCP.

## E. Golden Eagle Measures

The Plan Area is outside of most areas identified as suitable nesting habitat (Figure 3-16); however, there are recorded nest sites within the Plan Area. DCP will maintain maps of nest locations to be updated annually through data coordination with other agencies such as NDOW. To minimize impacts to potential nest locations that are within the Plan Area, the following shall be implemented:

**GOEA-1.** Golden eagle surveys and response. If Covered Activities are to occur within 0.25-mile of a documented golden eagle nest and activities must occur during the nesting season, surveys will be conducted following standard methods by a MSHCP Lead Species Biologist to determine if a golden eagle nest is active within 0.25 mile.

If a nest is detected and determined to be active, a 0.25-mile buffer will be established, and Covered Activities will not occur within the buffer until a MSHCP Lead Species Biologist determines the chicks have fledged or the nest is otherwise inactive.

## F. Burrowing Owl Measures

The following measures shall be implemented in areas of potential burrowing owl suitable habitat (Figure 6-4). Potential suitable burrowing owl habitat is defined by the species distribution model.

**BUOW-1. Burrowing owl surveys and response.** Burrowing owl clearance surveys will be performed by MSHCP Lead Species Biologist. If the project area is located within Zone B, the burrowing owl survey will be conducted concurrent with desert tortoise clearance surveys. Survey and burrow clearance protocols are described in Appendix D. Coordination for surveys and exclusion may begin prior to the breeding season (February 1 – August 31) and ahead of the required surveys in order to allow more time for owl removal and burrow excavation or closure ahead of the breeding season and to avoid construction delays.

- a. If burrowing owl is determined to occupy the project site and is confirmed to not be a breeding owl (outside the nesting season or determined to be a non-breeding owl), passive relocation of the burrowing owl(s) and burrow excavation may be conducted as described in Appendix D.
- b. If burrowing owls are determined to occupy the project site and are confirmed to be breeding, a 330-foot (100 meter) nest buffer will be established. Appendix D describes monitoring methods to confirm when a nest is no longer active. Once the nest is inactive, passive exclusion and burrow excavation may be conducted as described in Appendix D.
- c. If owls are to be avoided but found nesting within 165 feet (50 meters) of the project site, it is recommended that visual screens or other measures are implemented to limit disturbance of the owls without evicting them from the occupied burrows.

### **Process for Burrowing Owl and Desert Tortoise Surveys** (Developed by AMM Work Group):

1. As part of initial application, developers notify DCP that development is planned, share parcel number, and provide estimated ground disturbance date (this is part of application checklist).
2. 30-60 days prior to the anticipated ground disturbance date, DCP makes a “confirmation call” to the project proponent to confirm the ground disturbance date. Multiple calls are made if construction is delayed.

3. Depending on construction timeline, DCP conducts surveys within 30 days of ground disturbance.
4. DCP notifies developer and appropriate local jurisdiction when surveys have been completed and Endangered Species Act requirements have been met.

## G. Bat Measures

Avoidance of riparian habitat will reduce impacts on water and foraging sources for Townsend's big-eared bat and spotted bat. DCP will maintain maps of roost locations to be updated annually through data coordination with other agencies such as NDOW. To minimize impacts to roost locations that are within the Plan Area, the following shall be implemented:

**BAT-1. Bat Surveys.** In areas with known roost habitat, a pre-construction survey conducted by an MSHCP Lead Species Biologist will be conducted to determine if potential roost habitat is present in areas to be impacted. If roosts are detected, the roost type will be determined: maternity, hibernation, or day/night roost not associated with maternity or hibernation. Roost information including location and roost structure type will be collected and used in updates to species habitat suitability models.

- a. If a maternity or winter hibernaculum roost site is detected, and Covered Activities will occur during the maternity or hibernation season, a follow-up survey may be necessary to determine if the roost site is occupied.
- b. If an occupied maternity or winter hibernaculum site is present, Covered Activities will not occur until the roost is vacated, or outside of the maternity or hibernation periods and bats are safely evicted as described in the following measure.

**BAT-2. Eviction methods.** If the roost has been determined to be a non-maternity and non-hibernaculum day or night roost, or it is outside of the maternity and hibernation seasons, eviction methods can be utilized to remove bats from the impact area. A MSHCP Lead Species Biologist will use safe eviction methods to remove bats if direct impacts cannot be avoided. A Bat Eviction Plan will be prepared prior to implementation. Following eviction of the bats and clearance of the roosts, Covered Activities may proceed.

## IV. Outreach

To minimize impacts under the MSHCP and to achieve objectives under Biological Goal 4, Clark County will raise awareness of Covered Species and required AMMs through various outreach efforts to various stakeholders such as Permittee planning departments, developers, construction workers, and the general public.

**OUTREACH-1. Training and certification program.** DCP will provide a training and certification program for all on-site personnel who are conducting Covered Activities. The program will provide training and/or outreach to construction workers to increase their awareness of desert tortoises and other Covered Species potentially encountered at the project site, and what to do if they find these species on their site. This includes appropriate handling of any desert tortoise encountered on site and procedures for calling the Clark County Wild Tortoise Assistance Line (702-593-9027) to schedule a pick-up of the tortoise.

**OUTREACH-2. AMM Outreach.** DCP will provide outreach related to required AMMs directly to developers and homebuilders, which may include activities such as targeted media campaigns, printed materials

for distribution, and training events. Outreach will cover topics such as desert tortoise clearance requirements, other Covered Species measures, riparian construction seasonal restrictions, urban-wildland design guidelines, and other topics as deemed necessary by the DCP.

**OUTREACH-3. Covered Species Outreach.** It is important that citizens of Clark County value and hold an appreciation for MSHCP Covered Species and to educate the public on what to do when they see a desert tortoise in the wild, and on ways they can minimize their own impact on the desert environment. To help raise this awareness, the program will provide outreach related to Covered Species and protection of the Mojave Desert, which may include the Mojave Max program, mass media campaigns, printed materials, school programs, community science engagements, and other items as deemed necessary by DCP. Educational material and signage will also be posted in the Reserve System to inform recreational users.

## Appendix C: Original Avoidance and Minimization Measures

[Available online - see Clark County Draft MSHCP Amendment, Section 6.2.](#)

### 6.2 Conservation Measures – Avoidance and Minimization

In compliance with federal ESA Section 10[a][2][A][ii], measures to avoid and minimize take of Covered Species are provided in this section. Project design measures are intended to reduce stressors that can result in indirect impacts to or take of Covered Species. These measures function under Objective 2B to meet Biological Goal 2 of maintaining habitat quality for Covered Species within the Plan Area. Construction measures are general measures for all construction projects to minimize impacts to habitats of and temporary stressors to Covered Species. These measures function under Objective 2B but also Objective 4D to meet Biological Goal 4 to foster community and stakeholder engagement.

Two zones, Zone A and Zone B, within the Plan Area have been designated (Figure 6-2) to guide how AMMs will be implemented. Zone A includes areas within highly urbanized and developed boundaries and are generally infill locations or vacant land adjacent to these locations with minimal potential to encounter most Covered Species including desert tortoise. The boundaries of Zone A are based upon areas with a high degree of fragmentation, substantial barriers of hazards to movement for desert tortoise, and findings from an internal 2009 analysis (DCP 2009) that 98% of desert tortoises collected in these areas between 1996 and 2009 were pet or stray animals. The Zone A boundary was revised in 2022 in consultation with the USFWS to reflect current development and disturbance areas. Zone A includes measures to minimize indirect effects through project design and construction measures, but clearance surveys are not required for most species because of the low potential to directly encounter Covered Species. The remaining portions of the Plan Area are designated as Zone B and additional species clearance surveys and measures are required.

The following definitions pertain to the AMMs discussed in the following sections:

**MSHCP Lead Species Biologist.** A person with demonstrated experience working with target species and their habitat including conducting protocol surveys. For desert tortoise, Lead Species Biologists must also have demonstrated experience locating tortoise sign, burrow excavation, and oversight of tortoise fence installation. Resumes will be submitted to the DCP for approval prior to implementing the measures. Qualifications for desert tortoise lead biologists must meet the current USFWS standards. The DCP will also develop a Species Clearance class approved by the USFWS for biologists on desert tortoise biology, clearance protocols. All MSHCP Lead Species Biologists must attend this class prior to conducting activities that may result in take covered under the MSHCP Amendment.

**MSHCP Assistant Species Biologist.** A person with demonstrated experience working with target species and their habitat including conducting protocol surveys. MSHCP Assistant Species Biologists are generally less experienced than MSHCP Lead Species Biologists and must be overseen by a MSHCP Lead Species Biologist when conducting clearance surveys or other activities approved under the MSHCP Amendment. Resumes will be submitted to the DCP for approval prior to implementing the measures. Attendance at the Species Clearance class is also required prior to conducting activities that may result in take covered under the MSHCP Amendment.

### 6.2.1 Project Design Measures

Project design measures will reduce indirect effects to species and as a result of project implementation. These measures are intended to limit edge effects in adjacent habitats and provide corridors for species movements with buffers from sensitive habitats. Implementation of these measures will meet Objective 2B. The following measures apply to both Zone A and Zone B unless specified otherwise in the measure.

PDM-1. Development standards at urban-wildland interface. Provisions will be included for the management of pets, illegal dumping, illegal OHV activity, and other unauthorized uses. The urban-wildland interface is defined as the area where human development is within 700 feet of undisturbed natural areas as delineated by the maximum limits of potential development in each of the Permittee's jurisdictions (Figure 6-3). These standards shall apply to all non-residential developments and residential developments of two units per acre or more.

a. Barriers and buffers will include fence installation along the interface, which is buried a foot deep, restrictions on the allowance of private gates into wildlands, buffers between the urban zone and natural land cover to enhance the transition to protected natural areas, and installation of interpretive signs along recreational trails to inform the public about the adjacent wildlands.

b. Developments adjacent to undisturbed land that may be developed in the future, or undisturbed land designated for multiple public uses, will be required to provide signage to indicate that the adjacent natural area may include sensitive habitat and that dumping and unauthorized access outside of designated areas is prohibited.

i. All outdoor lighting adjacent to undeveloped lands will be designed to minimize light pollution into adjacent habitats, except where a Permittee determines lighting is necessary for public safety or security. Minimization measures may include light fixture placement (e.g., as low to the ground as possible), lamp designs (e.g., shielding, low glare, or no lighting), directing light away from undeveloped land, or other means to avoid or minimize light pollution. The Project Proponent will use the best information available at the time of project design to minimize effects of light pollution on target Covered Species. The DCP shall make guidelines available for outdoor lighting use adjacent to undeveloped lands.

c. For commercial and residential developments adjacent to publicly-owned undisturbed land that will not be developed in the future, and are designated with additional environmental protections, such as SMAs, NCAs, Reserve lands, Refuge, etc., design guidelines and/or restrictions shall include more stringent requirements and design specifications, including:

- i. Reduction of the shared boundary between urban areas and adjacent wildlands.
- ii. Strong emphasis on the use of native and/or drought tolerant species for activities such as restoration and landscaping.
- iii. Requirements that roads not terminate at the boundary of wildlands unless there is a planned access point.
- iv. Restrictions on the placement of roads to reduce incidence of domestic pets entering adjacent wildlands, to insulate wildlife that might enter urban areas from risk of vehicular mortality, to discourage desert dumping, and to prevent unauthorized vehicular access to wildlands.

1. If roads must be placed adjacent to natural areas, the following additional measures to minimize unauthorized access, illegal OHV use, dumping, wildlife incursions, and minimization of human-caused fire ignition will be implemented:
  - a. Fencing, including potential for tortoise fencing.
  - b. Reduced speed limits.
  - c. Warning signage.
  - d. Minimum 15-foot setback as measured from back of curb.
- v. Permanent tortoise-proof barriers will be constructed on the perimeter of development areas. Perimeter block walls are considered effective tortoise barriers. Other barriers to tortoise movement may include block walls, decorative walls and fences at least 24 inches high that do not have openings larger than 0.5 inch below 2 feet from ground surface. Desert tortoise shade structures will be placed on the exterior (in the wildlands) of these barriers. The DCP shall make guidelines available for tortoise-proof fences, barriers and shade structures.
- vi. Signage to indicate that the adjacent wildlands include sensitive habitat and that unauthorized access outside of designated areas is prohibited.
- vii. Specifications for drainage prescribing that drainage infrastructure and roadway construction ensure urban runoff be directed away from adjacent wildland boundaries or, in the event that topography renders such an approach infeasible, that appropriate filtration provisions are incorporated into project designs to prevent excessive contaminant transport into adjacent wildlands.
- viii. Specifications for outdoor lighting, including placement away from wildland boundaries and encouragement of low intensity, focused, and directional lighting to reduce night illumination.

PDM-2. Road structure design - New public roads under the jurisdiction of Permittees and located in unincorporated areas and that are not privately owned or controlled that traverse undeveloped habitats are designed and constructed to reduce potential for injury or mortality of animals, like the desert tortoise, from road crossings. Roadside fencing or other structures, such as under-road culverts, may be utilized. If under-road culverts are determined to pose a trapping problem, it will be ameliorated.

PDM-3. Utility. Installation of new, or relocation of existing, utility poles, lines, and cell towers located within lands that are designated with additional environmental protections, such as SMAs, NCAs, Reserve lands, Refuge, etc. or within 1,000 feet of such lands will install utility poles, lines, and cell towers in conformance with Avian Powerline Interaction Committee (APLIC) standards for collision-reducing techniques, as outlined in Reducing Avian Collisions with Power Lines: State of the Art in 2012 (APLIC 2012), or any superseding document issued by the APLIC. All new/relocated poles, lines and cell towers shall be installed with anti-perching devices to avoid/minimize their use by predatory avian species.

### *6.2.2 General Construction Measures*

GCM-1. Confine and delineate work area. For projects that require a Dust Control Operating Permit the following will be required: a site map showing the project limits will be added to the Dust Control Operating Permit, signs at the boundaries of the construction site to inform workers that the area beyond the sign is not covered by their grading permit and should not be disturbed, and signs informing workers what they need to do if they find a desert tortoise on the site, are required. Travel routes outside fenced and cleared areas within undisturbed habitat

should be established and clearly marked prior to construction. Signage can be incorporated with Dust Control Permit signage as required.

GCM-2. Conduct worker education.

a. The program will provide training and/or outreach to construction workers to increase their awareness of desert tortoises and other Covered Species potentially encountered at the project site, and what to do if they find these species on their site. This effort will cover what to do when a desert tortoise or other Covered Species is encountered on a construction site anywhere in Clark County. This includes stopping work when a tortoise is spotted and calling the Clark County Wild Tortoise Assistance Line (702-593-9027) to schedule a pick-up of the tortoise. Project personnel shall be notified that they are not authorized to handle or otherwise move Covered Species encountered on the site. The Construction Worker Training will be taught either in conjunction with the Air Quality "Dust" class which is required for construction supervisors and foremen or separately at the project site in a "tailgate session" by a MSHCP Lead Species Biologist<sup>1</sup> prior to the start of construction activities. Tailgate training sessions may also be available for those construction personnel who are unable to attend the standard class. Training may also be made available in video, web or other format so that new supervisors and employees also receive desert tortoise and other Covered Species information at the start of their employment.

b. Take reporting. If accidental injury or death of any potential Covered Species occurs, workers will immediately inform the MSHCP Lead or Assistant Species Biologist (if present), site supervisor, and the DCP.

GCM-3. Within Zone B, avoid wildlife entrapment by completely covering or providing escape ramps for all excavated steep-walled holes or trenches more than 1 foot deep at the end of each construction workday.

GCM-4. Control erosion and fugitive dust. Implement Stormwater Pollution Prevention Plans (SWPPP), Clark County Dust Control Operating Permits, or other Nevada Division of Environmental Protections (NDEP) and National Pollution Discharge Elimination System (NPDES) permits as required and applicable.

GCM-5. Weed management. BMPs for weed management (including noxious weeds) shall be employed to minimize the potential to introduce weeds into the project area. Weed management will be conducted in accordance with all applicable State and County regulations and guidelines, the Weed Management Plan, and Early Detection Rapid Response Program.

GCM-6. Speed limit. During construction and within the construction site limits, a speed limit of 15 mph shall be maintained in Zone B and a speed limit of 25 mph shall be maintained in Zone A.

GCM-7. Control night-time lighting at construction sites. All temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) will be directed away from adjacent natural habitats.

GCM-8. All trash and food items will be properly disposed of in predator-proof containers with resealing lids and removed regularly to reduce attractiveness to opportunistic predators such as ravens, coyotes, and feral dogs. This trash, including but not limited to cigarettes, cigars, gum wrappers, tissue, cans, paper, and bags, shall be disposed of properly.

GCM-9. Upon completion of individual structure or activities in an area, all construction refuse, including, but not limited to, broken equipment parts, wrapping material, cords, cables, wire, rope, strapping, twine, buckets, metal or plastic containers, and boxes, shall be removed from the site and disposed of properly.

GCM-10. If desert tortoise, Gila monster, or burrowing owl are observed on-site during project implementation, all observances will be reported to the DCP as described in the worker education program (GCM-2).

### *6.2.3 Species-Specific Measures*

Additional AMMs for Covered Species will be implemented when disturbance-related project activities (construction or maintenance) are conducted in areas designated as potential to be occupied by the species. A MSHCP Lead Species Biologist may be necessary to implement some of the minimization measures described below. A MSHCP Lead Species Biologist is someone with a background and experience with the target species, its habitat, and knowledgeable on survey protocols.

#### *6.2.3.1 Plant Species*

Some covered activities may occur in areas that support occurrences of Covered Plant Species. To minimize loss of genetic diversity within these rare plant taxa, seed collection will be attempted, as practicable, or if determined suitable for certain species or sites, transplantation or vegetative propagation. Seed collection protocols are described in Appendix B, and transplantation and vegetative propagation protocols will be amended to Appendix B, if these techniques are developed and approved for use. Collection locations will be prioritized based on the habitat suitability models and known occurrences for Covered Species. Clark County will coordinate species searches and seed collection by qualified personnel. Collected seeds will be stored in an appropriate facility and made available for restoration activities within the Reserve System or other restoration, propagation, or research efforts. Collected seeds will also be integrated into the Rare Plant Propagation efforts to facilitate use in responding to landscape scale disturbances such as invasive species infestations and altered fire regimes. Voucher specimens of plants from occurrences where seed has been collected will be obtained, where practicable, prior to disturbance and deposited in an appropriate facility.

PLANT-1. In Zone A, 100% of the available mature seed will be collected during seed collection efforts from all covered plant species found on lands accessible to the DCP that may be disturbed by Covered Activities during construction. For private property, the DCP will be notified of planned disturbance upon submittal of project plans to a Permittee for review and approval. Based on the species accounts and habitat suitability models, if a project is proposed in areas likely to support occurrences of Covered Plant Species, the DCP will request landowner permission to access the property for seed collection prior to disturbance. Seeds will be collected and stored for use in restoration and/or research projects. Seed collection and storage protocols are described in Appendix B.

PLANT-2. In Zone B, DCP will coordinate with BLM to require seed collection before parcels go to auction for BLM disposal. One hundred percent of the available mature seed will be collected within the disposal boundary, as practicable due to season and climate factors such as drought years. Seeds will be collected and stored for use in restoration and/or research projects. Seed collection and storage protocols are described in Appendix B.

Covered Activities on Reserve System lands are predominantly focused on restoration and habitat management. However, these activities may still result in impacts to Covered Species, therefore, in addition to the seed collection protocols, Covered Activities on Reserve lands or in BLM SMAs shall implement the following measures. Additional measures may be described in the CMAs.

PLANT-3. Baseline monitoring of vegetation shall be performed by the project proponent, their qualified consultant, or a MSHCP Lead Species Biologist prior to any project disturbance in order to document the pre-project conditions.

a. Photo points shall be established to document the pre-construction and post- construction restoration state of the vegetation and soil.

- i. Pre-construction photos shall take place prior to any project disturbance.
- ii. Post-construction photos shall take place within 30 days following completion of all project activities including demobilization.

PLANT-4. Covered Plant Species Survey.

- a. If a project site is within 25 feet of or within known or modeled low, medium, or high suitable habitat for Covered Plant Species, a Covered Plant Species survey shall be conducted within the appropriate survey period based on target species by a MSHCP Lead Species Biologist.
- b. Within the project site (including all areas of potential disturbance), and in a buffer zone of a minimum of 25 feet around the project site, all known and modeled habitat for covered plants shall be surveyed.
- c. Surveys shall consist of transect lines that cover 100% of known or modeled habitat.
- d. Transect lines walked and encountered plant individuals shall be recorded as GPS point features and delivered to the DCP in ESRI ArcGIS compatible files. A summary of findings shall be provided to the DCP.

PLANT-5. If necessary, updated project site survey maps to change or add Covered Plant Species avoidance areas based upon Covered Plant Species survey results shall be produced and provided to the DCP.

PLANT-6. Project crew shall have a copy of the final project site survey maps at all times.

PLANT-7. If Covered Plant Species are detected during the surveys, these areas shall be fenced by a 25-foot buffer and signed.

- a. Signage shall indicate that no disturbance may take place within the fenced avoidance area.
- b. Avoidance area fencing shall remain in place until all project and restoration activities are completed.

PLANT-8. If avoidance is not feasible, all available mature seeds of Covered Plant Species to be impacted shall be collected following protocols in Appendix B. Seed collection should be timed appropriately based on target species. Exceptions to seed collection may be made by the DCP for projects such as emergency maintenance on a case-by-case basis.

- a. For locations that have minor disturbance such as driving or crushing and no soil removal, following completion of all project activities including fence removal, the disturbed areas shall be reseeded with Covered Plant Species seeds collected prior to the disturbance. Seeded areas shall be raked or dragged to cover the seeds with approximately 1 inch (2.54 centimeter) of surface soil material.
- b. For locations that require soil disturbance, these additional measures will be implemented:
  - i. Vertical mulch scraping and salvage prior to disturbance: Live and dead above ground vegetation materials shall be scraped and stored within the project site for future use as vertical mulch.
  - ii. Soil layer(s) salvage prior to disturbance: (a) the top 4 inches (10.16 centimeters) of surface soil shall be scraped and stored in uncompacted piles no more than 4 feet (1.22 meters) high within the project site and (b) to the extent practical, root crowns and roots of perennial vegetation shall be left in place to assist recovery of the area post-construction.
    - 1. If a depth greater than 4 inches of soil is to be disturbed, each subsurface soil layer shall be salvaged and stored separately. The salvaged top soil shall not be mixed with deeper soils as this decreases the viability of seeds found in the top soil (Scoles-Sciulla and DeFalco 2009).
  - iii. Following completion of project activities, (a) salvaged soil shall be replaced in proper order, mixing slightly with the top 1 inch (2.54 centimeters) of the lower layer, (b) decompact soils by ripping and/or harrowing soils in areas that were impacted and/or compacted by the project, unless that compaction is part of the approved project design, and (c) recontour soils to restore natural drainage patterns, or recontour to conform to approved project design.
  - iv. Replace vertical mulch and reseed: Position vertical mulch to mimic the density and vertical structure of vegetation prior to construction, burying each dead shrub or cactus partially to reduce loss to wind, and then reseed as described in PLANT-8a.

#### 6.2.3.2 Desert Tortoise

The following measures apply in Zone B to minimize impacts to desert tortoise during ground disturbance:

DT-1. Clearance surveys. Clearance activities are described in Appendix C and are based upon USFWS clearance survey protocol.

- a. If desert tortoises are found and must be handled to relocate from the project site, handling will adhere to the protocols described in Appendix C.
- b. If tortoises are found after the clearance survey has been conducted, construction workers will be trained on what to do in the worker education session described in General Construction Measure 2.

DT-2. Desert tortoise temporary exclusion fence. Tortoise exclusion fence and barrier construction would be overseen by a MSHCP Lead Species Biologist. The fence will be constructed prior to any land disturbance activities and removed following completion of all disturbance activities.

- a. If fence construction occurs during periods of higher desert tortoise activity (generally March 1 – October 31), a MSHCP Lead or Assistant Species Biologist shall be on-site during construction of the tortoise-proof fence to ensure that tortoises are not harmed.
- b. If the fence is constructed during periods of lower desert tortoise activity (generally November 1 – end of February), a MSHCP Lead or Assistant Species Biologist will thoroughly examine the proposed fence line and burrows for the presence of tortoises no more than five (5) days before construction.

DT-3. Temporary fence specifications. Fences should be constructed with durable materials suitable to resist desert environments, alkaline and acidic soils, wind, and erosion. Specifications for desert tortoise exclusion fencing include 1-inch horizontal by 2- inch vertical, galvanized welded wire, 36 inches in width, and meet all other standards established in coordination with the USFWS.

DT-4. Temporary fence maintenance. All fence damage shall be repaired within 72 hours after discovery during periods of higher desert tortoise activity and within 10 days during periods of lower desert tortoise activity to ensure that tortoises do not travel through damaged sections. If fence repair needs were such that a tortoise could have re-entered the excluded area, the project site shall be surveyed following repairs to ensure no tortoises are present.

DT-5. Post-fence installation survey. Following fence installation, a survey within the enclosed area shall be conducted by a MSHCP Lead Species Biologist to locate and remove desert tortoises prior to grading or actions which might result in harm to desert tortoises.

- a. Survey coverage - Unless superseded by a USFWS protocol, two complete passes of 100% coverage will be accomplished.

DT-6. Burrows. Tortoise burrows shall be cleared of tortoises and eggs by a MSHCP Lead Species Biologist and then collapsed. Burrow excavation protocols are described in Appendix C.

- a) Tortoise eggs. Any desert tortoise eggs found in the fence line will be relocated by a MSHCP Lead Species Biologist in accordance with approved protocols described in Appendix C.
- b) Tortoise burrows that occur immediately outside of the fence alignment that can be avoided by fence construction activities shall be clearly marked to prevent crushing.

DT-7. Vehicle inspection. Any time a vehicle is parked, whether the engine is engaged or not, the ground around and under the vehicle shall be inspected for desert tortoise.

#### 6.2.3.3 Banded Gila Monster

If banded Gila monsters are spotted on a construction site, construction workers shall temporarily cease construction activities and contact the DCP and Nevada Department of Wildlife (NDOW) at (702) 486-5127 for the handling and/or determination of the final disposition of the animal. Construction workers will be advised not to attempt to pick-up or otherwise make contact with banded Gila monsters if encountered on construction sites. If a DCP biologist arrives to the site prior to NDOW biologists, current NDOW guidance will be followed such as

capture and detainment of the Gila monster in a cool, shaded environment (<85 F) until NDOW biologist can arrive for documentation, marking, and measurements. The DCP shall make available any updates to this protocol, if needed, and include updated information as part of construction worker education (GCM-2).

#### 6.2.3.4 Riparian Birds

To avoid or minimize direct impacts (i.e., take of individuals) from Covered Activities on Arizona Bell's vireo, southwestern willow flycatcher, western yellow-billed cuckoo, and Yuma clapper rail (collectively, riparian birds), developers will be required to implement the procedures discussed below within potential suitable riparian habitat and surrounding 100 feet. Potential suitable riparian habitat is defined by the species habitat suitability models along the Virgin River, Muddy River, Overton Arm, and Las Vegas Wash.

RB-1. Avoid construction activities in the riparian zone during the breeding seasons for Yuma Ridgway's rail (February to early July), Arizona Bell's vireo (March 15 through August), southwestern willow flycatcher (May to mid-August), and yellow-billed cuckoo (June through August). Project applicants will be notified of this restriction by the permitting agency during the grading or other permit approval process.

- a. If construction cannot avoid the nesting season, the project proponent may have a qualified biologist conduct surveys to detect nesting of Covered Species. If active nests of Covered Species are detected, a nest buffer will be implemented in consultation with the DCP and USFWS. If no active nests of Covered Species are detected, project activities may be conducted within the breeding season.
- b. Biologist qualifications will be submitted to the DCP for approval and USFWS survey guidelines and protocols will be followed. Survey results will be submitted to the DCP within 10 days of survey completion.

RB-2. If construction related to emergency maintenance including those of public safety cannot avoid the breeding season, a MSHCP Lead Species Biologist will conduct surveys to detect nesting of Covered Species. If active nests are observed, the DCP will coordinate any additional minimization measures recommended in consultation with the USFWS.

RB-3. Avoid known nesting areas of Yuma Ridgway's rail, southwestern willow flycatcher, and yellow-billed cuckoo during construction activities regardless of time of year. DCP will maintain maps of nest locations to be updated annually.

RB-4. Prior to mass grading, demarcate or fence all riparian and wetland habitats to be avoided to prevent disturbance of these areas by earth-moving or construction equipment. Install or incorporate silt fencing as an engineering control for soil erosion and run-off, when appropriate. During worker education (GCM-2), examples and guidance to implement this measure and GCM-1 will be provided.

RB-5. Project design and general conservation measures and BMPs will be implemented during construction or maintenance activities to avoid and minimize effects from possible erosion, pollution, and sedimentation to downstream riparian habitat.

#### 6.2.3.5 Golden Eagle

The Plan Area is outside of most areas identified as suitable nesting habitat (Figure 3-16); however, there are recorded nest sites within the Plan Area. DCP will maintain maps of nest locations to be updated annually through data coordination with other agencies such as NDOW. To minimize impacts to potential nest locations that are within the Plan Area, the following shall be implemented:

GOEA-1. If Covered Activities are to occur within 0.25-mile of documented golden eagle nest and activities must occur during the nesting season, surveys will be conducted following standard methods by a MSHCP Lead Species Biologist to determine if a golden eagle nest is active within 0.25 mile.

- a. If a nest is detected and determined to be active, a 0.25-mile buffer will be established, and Covered Activities will not occur within the buffer until a MSHCP Lead Species Biologist determines the chicks have fledged or the nest is otherwise inactive.

#### 6.2.3.6 Burrowing Owl

The following measures shall be implemented in areas of potential burrowing owl suitable habitat (Figure 6-4):

BUOW-1. Within Zone A, a pre-construction assessment shall be conducted by a MSHCP Lead Species Biologist with experience in burrowing owl habitat and identification. If burrowing owl habitat is identified, measures BUOW-2 will apply. If no burrowing owl habitat is identified, no further measures are required. For private property, the DCP will be notified of planned disturbance upon submittal of project plans to a Permittee for review and approval. Notification will allow appropriate timing of the pre-construction assessment.

BUOW-2. This measure applies within Zone B and areas identified as potential habitat in the Zone A assessment (BUOW-1).

- a. Burrowing owl clearance surveys will be performed concurrent with desert tortoise clearance surveys in Zone B or within 30 days prior to initial ground disturbance within Zone A. Survey and burrow clearance protocols are described in Appendix D. Coordination for surveys and exclusion may begin prior to the breeding season (February 1 – August 31) and ahead of the required surveys in order to allow more time for owl removal and burrow excavation or closure ahead of the breeding season and to avoid construction delays.
- b. If burrowing owl is determined to occupy the project site and is confirmed to not be a breeding owl (outside the nesting season or determined to be a non-breeding owl), passive relocation of the burrowing owl(s) and burrow excavation may be conducted as described in Appendix D.
- c. If burrowing owls are determined to occupy the project site and are confirmed to be breeding, a 330-foot (100 meter) nest buffer will be established. Appendix D describes monitoring methods to confirm when a nest is no longer active. Once the nest is inactive, passive exclusion and burrow excavation may be conducted as described in Appendix D.
- d. If owls are to be avoided but found within 165 feet (50 meters) of the project site, it is recommended that visual screens or other measures are implemented to limit disturbance of the owls without evicting them from the occupied burrows.

BUOW-3. Rodent control. Rodent control will be allowed only in developed portions of a Covered Activity project site within western burrowing owl modeled low, medium and high suitability habitat (Figure 6-4).

#### 6.2.3.7 Bats

Avoidance of riparian habitat will reduce impacts on water and foraging sources for Townsend's big-eared bat and spotted bat. Although typical roost habitat for Townsend's big-eared bat is predominantly outside the Plan Area, spotted bat may roost in buildings or other human structures impacted by Covered Activities. If Townsend's big-eared bat or spotted bat are detected in buildings or structures to be disturbed by Covered Activities the following will be implemented:

BAT-1. In areas modeled as roost habitat (Figure 6-5), a pre-construction survey conducted by a MSHCP Lead Species Biologist will be conducted to determine if potential roost habitat is present in areas to be impacted. If potential roosts are detected, the roost type will be determined: maternity, hibernation, or day/night roost not associated with maternity or hibernation. Roost information including location and roost structure type will be collected and used in updates to species habitat suitability models.

- a. If a maternity or winter hibernaculum roost site is detected, and Covered Activities will occur during the maternity or hibernation season, a follow-up survey may be necessary to determine if the roost site is occupied.
- b. If an occupied maternity or winter hibernaculum site is present, Covered Activities will not occur until the roost is vacated, or outside of the maternity or hibernation periods and bats are safely evicted as described in the following measure. Eviction methods. If the roost has been determined to be a non-maternity and non-

BAT-2.

hibernaculum day or night roost, or it is outside of the maternity and hibernation seasons, eviction methods can be utilized to remove bats from the impact area. A MSHCP Lead Species Biologist will use safe eviction methods to remove bats if direct impacts cannot be avoided. A Bat Eviction Plan will be prepared for approval by the DCP prior to implementation. Following eviction of the bats and clearance of the roosts, Covered Activities may proceed.

#### *6.2.4 Outreach*

To minimize impacts under the MSHCP and to achieve objectives under Biological Goal 4, Clark County will raise awareness of required AMMs through various outreach efforts to various stakeholders such as Permittee planning departments, developers, construction workers, and the general public.

##### 6.2.4.1 Developer Outreach

Clark County will provide outreach related to required AMMs directly to developers and homebuilders, which may include activities such as targeted media campaigns and printed materials for distribution. Outreach will cover topics such as desert tortoise clearance requirements, other Covered Species measures, riparian construction seasonal restrictions, urban-wildlife design guidelines, and other topics as deemed necessary by the DCP.

#### 6.2.4.2 Wild Desert Tortoise Outreach

It is important that citizens of Clark County know what to do when they see a desert tortoise in the wild. To help raise this awareness, the program will provide outreach related to wild desert tortoise, which may include the Mojave Max program, mass media campaigns, printed materials, school programs, community science engagements, and other items as deemed necessary by DCP. Educational material and signage will also be posted in the Reserve System to inform recreational users.