United States Department of the Interior

FISH AND WILDLIFE SERVICE
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In Reply Refer to:
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2008-F-1082

MAY 16 2017

Ms. Lisa M. Gibson
Senior Project Manager
Sacramento District
U.S. Army Corps of Engineers
1325 J Street
Sacramento, California 95814-2922

Subject: Formal Consultation on the Greenbriar Development Project, Sacramento County, California (Corps File Number SPK-2005-00572)

Dear Ms. Gibson:

This letter is in response to the U.S. Army Corps of Engineers' (Corps) March 27, 2013, request for initiation of formal consultation with the U.S. Fish and Wildlife Service (Service) on the proposed Greenbriar Development Project (proposed project), in Sacramento County, California. Your request was received by the Service on March 28, 2013. Your initiation letter requested formal consultation on the federally-listed as threatened giant garter snake (*Thamnophis gigas*) and the valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*). The Corps also concluded that the proposed project may affect, but is not likely to adversely affect the federally-listed as threatened vernal pool fairy shrimp (*Branchinecta lynchi*) and the federally-listed as endangered vernal pool tadpole shrimp (*Lepidurus packardi*). Subsequent to the Corps' initiation request, the proposed project was substantially re-designed. On February 24, 2017, the Corps provided a revised Biological Assessment to the Service. The proposed project area is not within proposed or designated critical habitat for any federally-listed species. This response is provided under the authority of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), and in accordance with the implementing regulations pertaining to interagency cooperation (50 CFR 402).

The federal action we are consulting on is the issuance of a Clean Water Act Section 404 Permit by the Corps to the Greenbriar Project Owner, LP (applicant), for the fill of waters of the U.S. associated with the construction of a mixed-use, residential and commercial development, and associated infrastructure. We based our evaluation on the following: (1) the *Greenbriar Development Project Biological Assessment* (biological assessment), dated February 2017; (2) the *Greenbriar Project Development- Analysis of the Effects of the Greenbriar Development Project and Associated Mitigation Strategy on the Natomas Basin Habitat Conservation Plan* (Effects Analysis), dated August 2016; (3) multiple meetings between the applicant, consultants for the applicant, the Service, California Department of Fish and Wildlife, and the City of Sacramento; and (4) other information available to the Service.

The Service concurs with the Corps conclusion that the proposed project may affect giant garter snake. The Service believes that the proposed project may affect, but is not likely to adversely affect the valley elderberry longhorn beetle. There is one elderberry shrub (*Sambucus* sp.) on the proposed project site located adjacent to West Elkhorn Blvd. in a hay field. This elderberry shrub would be

removed. The shrub is isolated from other elderberry shrubs (i.e., outside of the species' known dispersal range from other elderberry shrubs that may contain this species) and not within a riparian area, where this species of beetle is more typically found. Therefore, the Service believes that it is highly unlikely that a population of valley elderberry longhorn beetle would utilize this single shrub. The Service concurs with the Corps' determination that vernal pool fairy shrimp and vernal pool tadpole shrimp are not likely to be adversely affected by the proposed project. Six seasonal wetlands totaling 0.18 acre on the Proposed Project site were determined to potentially meet the habitat requirements for vernal pool fairy shrimp and vernal pool tadpole shrimp. Consultants for the applicant conducted protocol level wet season surveys between the period of December 2012 through March 2013, and one dry season survey was conducted on August 14, 2012. No vernal pool crustaceans were detected in any of the wet season surveys, nor were any vernal pool crustacean cysts found in the dry season survey. Two occurrences of vernal pool fairy shrimp are known in the Natomas Basin. These occurrences are located near the eastern border of the Basin, over 1 mile from all properties associated with the Greenbriar project. The properties associated with the Greenbriar project are not hydrologically connected to these occupied vernal pools.

Consultation History

March 13, 2008	The Service sent a letter to the Local Agency Formation Commission (LAFCO) providing comments regarding a scheduled annexation hearing for the Greenbriar Development site in Natomas. The Service did not concur with the "Effects Analysis" presented and does not believe the conservation strategy proposed will adequately minimize and compensate the effects of the project on the snake.
May 4, 2010	The Corps emailed the Service materials relevant to the pre-application meeting scheduled for May 6, 2010. The materials included a map of the site and the vicinity, maps of the delineated waters of the U.S. and impacts to those waters, and a proposed development map/schematic.
May 6, 2010	The Service attended a pre-application meeting for the Greenbriar Development. The Service recommended completing a Habitat Conservation Plan (HCP) since the development falls outside of the permit area for the Natomas Basin Habitat Conservation Plan (NBHCP).
May 23, 2011	The Service attended a meeting regarding the proposed Greenbriar HCP. The Service emphasized that we did not agree with the snake impact acreage identified in the applicant's mitigation strategy.
December 20, 2012	The Service received the November 2012, Greenbriar Development Project: Greenbriar Project Site and Off-site Improvement Lands- Biological Resources Evaluation.
December 20, 2012	The Service received the November 2012, Greenbriar Development Project: Spangler Mitigation Site- Biological Resources Evaluation.
December 2012-February 2013	Various telephone conversations between the Service, the applicant, and the City of Sacramento about the proposed conservation strategy, Effects Analysis, and the permitting process.

March 18, 2013	The Service received via email the March 2013, draft Greenbriar Development Project Biological Assessment to review for impacts to federally-listed species.
March 28, 2013	The Service received the March 27, 2013, initiation letter from the Corps.
June 4, 2013	The Service sent a letter to the Corps requesting additional information regarding the proposed project before consultation could commence. The letter requested the Corps make a determination regarding the vernal pool crustaceans.
May 30, 2013	The Service received a reinitiation letter from the Corps detailing proposed modifications to the Spangler Compensation Site.
June 27, 2013	The Service received the June 26, 2013, *Vernal Pool Branchiopod Wet Season Survey Report, Greenbriar Project Site*, from the project proponent.
September 11, 2013	The Service received the June 2013, *Greenbriar Development Project- Analysis of the Effects of the Greenbriar Development Project and Associated Mitigation Strategy on the Natomas Basin Habitat Conservation Plan*, from the Corps.
October 15, 2015	The Service received an updated *Greenbriar Development Project- Analysis of the Effects of the Greenbriar Development Project and Associated Mitigation Strategy on the Natomas Basin Habitat Conservation Plan* from the project proponent.
August 20, 2016	The Service received an updated *Greenbriar Development Project- Analysis of the Effects of the Greenbriar Development Project and Associated Mitigation Strategy on the Natomas Basin Habitat Conservation Plan* from the project proponent.
March 16, 2017	The Service received copies of management plans for each of the proposed compensation sites from the Applicant. The Service also received the *Greenbriar Development Project Biological Assessment.*
April 13, 2017	The Service provided a draft of the "*Description of the Action*" section of the biological opinion to the project proponent.
April 20, 2017	The project proponent provided comments on the draft "*Description of the Action*" section of the biological opinion to the Service. All suggested edits have been incorporated into this biological opinion.

BIOLOGICAL OPINION

Description of the Action

All properties associated with the Greenbriar Development Project are located within the Natomas Basin, a geographic basin which lies predominantly within un-incorporated portions of Sacramento and Sutter Counties but also includes the northwest portion of the City of Sacramento. Properties associated with the proposed project consist of the Greenbriar Project Site and Off-site Improvement Lands, the Lone Tree Canal Reserve on the Greenbriar Project Site, and three Off-site reserves (the Spangler Reserve, the Moody Reserve, and the North Nestor Reserve). The Greenbriar Project Site is located within the City of Sacramento and bounded by I-5 to the south, Lone Tree

Canal to the west, W. Elkhorn Boulevard to the north, and SR 99/70 to the east. The Greenbriar Project Site encompasses 577 acres; of which approximately 517 acres would be used to create a transit-oriented residential development with commercial and retail centers, arterial and local roads, an elementary school, neighborhood parks, and a detention basin. A total of 1.6 acres in the northeast corner of the project site would be dedicated for additional SR 99/70 right-of-way for future improvements to the SR 99/70 interchange with Elkhorn Boulevard. The remaining 58.4 acres on the Greenbriar Project Site are designated for open space.

Single-family residences will be the primary development on the Greenbriar Project Site. Two multi-family residential developments will be constructed south of Meister Way, and one north of Meister Way near the eastern Greenbriar Project Site limit near the Green Line to the Airport light rail station. Commercial properties are proposed for construction in the northeast corner of the Greenbriar Project Site, and a smaller commercial property is proposed to be located south of Meister Way. An elementary school site is proposed near the southeast corner of the Greenbriar Project Site, near SR 99/70 and I-5. Neighborhood parks will be located throughout the Greenbriar Project Site – a community park is proposed near the northeast corner of the Greenbriar Project Site.

The following specific elements will be incorporated into the development on the Greenbriar Project Site:

- A main entry from W. Elkhorn Boulevard will feature two travel lanes in each direction, on-street bike lanes in each direction, a landscaped median, and sidewalks on both sides of the roadway;
- Two main streets will intersect Meister Way from the north, providing connectivity to the commercial development in the northeast, W. Elkhorn Boulevard, and Meister Way. The main streets will feature one travel lane in each direction, on-street bike lanes in each direction, and one-way frontage roads in each direction (providing access to residences) separated from the travel lanes by landscaped medians;
- Residential Street 3 will cross over the Lone Tree Canal Reserve via a 54-inch culvert, providing connectivity between the MAP property and the Greenbriar Project Site;
- Meister Way and the Green Line to the Airport light rail line will cross over the Lone Tree Canal Reserve via a 54-inch culvert;
- Linear detention basins situated throughout the Greenbriar Project Site may feature pedestrian/multi-use trails and landscaping;
- Improvements on the Greenbriar Project Site will intersect with the Lone Tree Canal Reserve. Meister Way, the Green Line to the Airport light rail line, and Residential Street 3 will cross over Lone Tree Canal, the installation of drainage structures will occur along the canal, and the engineered building pad will extend into the reserve along the eastern boundary.

As described above, several specific elements of the Greenbriar Development Project are improvements planned by other entities that have been incorporated into the design. These and other improvements on and adjacent to the Greenbriar Project Site planned by others are identified below in *Improvements by Others.*

Improvements by Others

Proposed developments and infrastructure improvements that will be constructed by other entities occur on and in the vicinity of the Greenbriar Project Site; in some cases, infrastructure improvements planned by others would benefit the Greenbriar Development Project as well as other projects. The Greenbriar Development Project has incorporated planned improvements by others on the Greenbriar Project Site and Off-site Improvement Lands, and plans to construct improvements planned by others necessary to complete the proposed project, if not constructed prior to the Greenbriar Development Project. Planned/already completed improvements by other entities on the Greenbriar Project Site and Off-site Improvement Lands include:

- The SR 99/70 southbound on-ramp right-of-way at Elkhorn Boulevard will be dedicated for future development by the County of Sacramento;
- The proposed Green Line to the Airport light rail line will be constructed by Sacramento Regional Transit along Meister Way through the Greenbriar Project Site. Through the Greenbriar Project Site, the Green Line to the Airport light rail line will parallel Meister Way along its southern boundary, and will share the bridge spanning the Lone Tree Canal Reserve;
- The MAP POA has completed the Off-site Sewer Force Main and Natomas/MAP Trunk Sewer Connection Improvements on the Greenbriar Project Site;
- The MAP Project includes extending Meister Way from its current terminus at Lone Tree Canal, through the Greenbriar Project Site, to SR 99/70. Through the Greenbriar Project Site, Meister Way will feature one travel lane in each direction, on-street bike lanes in each direction, a landscaped median, and sidewalks on both sides of the roadway. Meister Way will cross over the Lone Tree Canal Reserve via a 54-inch culvert;
- The MAP Project includes constructing W. Elkhorn Boulevard, along the northern Greenbriar Project Site boundary, from Lone Tree Canal to SR 99/70;
- One additional lane will be added to the SR 99/70 southbound and northbound Elkhorn Boulevard off-ramps by the County of Sacramento; and
- The MAP POA will widen W. Elkhorn Boulevard (not on the Greenbriar Project Site), and replace the existing pipe culvert under W. Elkhorn Boulevard with a 54-inch-diameter pipe culvert.

Off-site Improvement Lands

The Off-site Improvement Lands encompass approximately 12.76 acres, and include improvements to W. Elkhorn Boulevard and the SR 99/70 interchange at W. Elkhorn Boulevard, as well as drainage and utility improvements. The off-site improvements include:

- W. Elkhorn Boulevard is proposed to be widened along its existing alignment from Lone Tree Canal to SR 99/70, to three lanes in each direction, with on-street bike lanes in each direction, a landscaped median, and sidewalks on both sides of the roadway separated from the road by a landscaped parkway. The proposed project would include construction of three new eastbound lanes with the on-street eastbound bike lane and the associated frontage improvements along the southern edge of the roadway. The proposed project would also include construction of the landscaped median, and incorporate the existing lanes as westbound lanes. The northernmost travel lane, and the on-street bike lane, sidewalk and landscaping along the northern edge of the roadway (comprising an approximately 31.5-foot-wide corridor) will be constructed by others (see Improvements by Others);

- The SR 99/70 southbound and northbound off-ramps at Elkhorn Boulevard will be reconstructed to include one additional lane on each ramp. The improvements will be constructed along 50-foot-wide corridors adjacent to the existing ramp, within the existing right-of-way. Construction of the off-ramps is planned by others.
- An existing 30-inch-diameter pipe culvert under W. Elkhorn Boulevard at Lone Tree Canal will be replaced with a 54-inch culvert capable of conveying 100-year storm flows. Disturbance to the north side of W. Elkhorn Boulevard falls within the Off-Site Improvement Lands. Disturbance to the south side of W. Elkhorn Boulevard is within the Lone Tree Canal Reserve on the Greenbriar Project Site.
- A 30-inch-diameter water line to supply the Greenbriar Project Site will be constructed from the southern site boundary, and will pass under I-5 to tie into the existing City of Sacramento's water line at South Bayou Road. An approximately 100-square-foot area located south of I-5 will be required.

Project Timing

Construction of the proposed development at the Greenbriar Project Site is scheduled to begin in 2017 and is expected to occur in at least two phases, referred to as Phase 1 and Phase 2, over a 5 to 10-year period. Phase 1 will primarily develop land north of Meister Way as well as implement construction and restoration activities within and immediately adjacent to the Lone Tree Canal Reserve. Phase 2 will primarily develop land south of Meister Way. Single-family residences will be the primary development on the Greenbriar Project Site. Timing of construction of the proposed Meister Way overpass will be determined based on Project transportation impacts identified in the Final EIR and through the financing plan prepared for the Project, which will be prepared in consultation with the City of Sacramento. Timing for the extension of light rail service and construction of a light rail station will depend on Sacramento Regional Transit's schedule for implementation.

The Greenbriar development and related site disturbance will be phased. Phase One of the development involves permanent ground disturbance of approximately 320 acres, with up to 80 acres of additional temporary ground disturbance, including several improvements that fall within the Lone Tree Canal corridor. Prior to ground disturbing activities for Phase One, the Greenbriar project proponent would record conservation easements on the Moody and Spangler properties (total of approximately 309 acres), along with funding endowments for those properties (see *Proposed Conservation Measures*, below for a discussion of these reserve properties). The conservation easement for Lone Tree Canal would be recorded and endowed following completion of improvements within the easement area, likely within 18 to 24 months after the start of Phase One development activities, but in any event prior to beginning Phase Two of development. Prior to beginning Phase Two of project development (5 to 7 years after Phase One), the conservation easement and endowment would be in place for the North Nestor property (approximately 219 acres).

Greenbriar Conservation Strategy

The terms "Greenbriar Development Project" or "proposed project" refer to the project in its full scope, which includes construction of a mixed-use development on the Greenbriar Project Site, off-site infrastructure improvements, establishment of several habitat reserves, and implementation of the Greenbriar Conservation Strategy. The "Greenbriar Conservation Strategy" includes the establishment of reserves and implementation of other proposed conservation measures that would increase mitigation and reserve sites in the Natomas Basin and will assure that the Greenbriar

Project (with its conservation strategy) will not compromise the effectiveness of the Natomas Basin Habitat Conservation Plan (NBHCP).

The NBHCP, approved by the Service and the California Department of Fish and Wildlife (CDFW) in 2003, establishes the overall conservation program for the development of a 17,500-acre portion of the Natomas Basin. The Greenbriar Project Site where the mixed-use development would be constructed and the Off-Site Improvement Lands where off-site infrastructure improvements would occur are located within the boundaries of the NBHCP Plan Area, but are not within the City of Sacramento or Sutter County Permit Areas, as defined by the NBHCP, where take of NBHCP Covered Species was previously authorized. As a result, the potential effects of the development on the Greenbriar Project Site and Off-Site Improvement Lands were not evaluated in the NBHCP.

Because the Greenbriar Development Project would result in additional development and reserve establishment that was not addressed in the NBHCP, the Greenbriar Conservation Strategy establishes as part of the project description the following conservation measures incorporated into the Greenbriar Project to avoid and minimize impacts to giant garter snake and the other State and Federally listed species covered in the NBHCP. The Greenbriar Conservation Strategy is designed to offset the impacts of take of federally listed species resulting from the Greenbriar Project and help achieve the NBHCP's goals and objectives.

Proposed Conservation Measures

To avoid impacts to giant garter snake, the following measures will be implemented during construction activities at the Greenbriar Project Site, Lone Tree Canal Reserve, and Spangler Reserve:

1. All grading activity within giant garter snake habitat (aquatic habitat and uplands within 200 feet of aquatic habitat) shall be restricted to a period between May 1 and September 30. Because this is during the snakes' active stage, it would allow snakes to actively move away from danger and thereby reduce chances of snake mortality. Additionally, this restriction is timed to avoid grading during the snakes' breeding, dispersal, fall foraging and over-wintering periods, when they are most vulnerable to disturbance. If grading cannot be scheduled between May 1 and September 30, the project applicant shall contact the Service to determine whether additional measures are necessary to avoid and/or minimize take of giant garter snake. Grading shall only occur during the period between October 1 and April 30 upon written Service-approval.

2. A qualified biologist with experience identifying giant garter snake shall survey the construction area for the species no more than 24 hours prior to the start of construction activities. If construction activities stop for a period of two weeks or more, a new giant garter snake survey shall be completed no more than 24 hours prior to the re-start of construction activities.

3. Between April 15 and September 30, if construction is proposed to occur in irrigation ditches, canals, or other aquatic habitat, the aquatic habitat shall be completely dewatered, with no ponded water remaining, for at least 15 consecutive days prior to the excavation or filling in of the dewatered habitat. The purpose of dewatering the aquatic habitat prior to ground disturbing activities in the aquatic habitat is to compel giant garter snake to leave the area on their own. A qualified biological monitor shall ensure that dewatered habitat does

not continue to support giant garter snake prey, which could attract snakes into the area. Netting and salvage of prey may be necessary if a site cannot be completely dewatered.

4. To minimize habitat disturbance during construction of the urban development, the Lone Tree Canal Reserve shall be bordered on the outer edge with exclusionary fencing to prevent giant garter snake from entering the construction area, but that allows giant garter snake within the construction area, that may have otherwise been trapped, to cross into the canal corridor (a permanent barrier will be installed with improvements at the Lone Tree Canal Reserve).

5. Clearing and grading shall be confined to the minimum area necessary to facilitate construction activities as determined by a qualified biologist. Habitat that will be avoided shall be cordoned off, clearly flagged, and designated as an "Environmentally Sensitive Area" by a qualified biologist. To prevent giant garter snake from entering the development area during construction, the exclusionary fencing protecting the Lone Tree Canal Reserve shall be erected during the giant garter snake active season (May 1 and October 1) preceding construction when giant garter snake are less likely to occupy upland retreats on the Greenbriar Project Site, and shall remain intact for the duration of construction. The development area side of the exclusion fence shall be routinely monitored for any giant garter snake that may have potentially been stranded by the fence, not finding their way through the fence into the canal. Snakes encountered should be relocated to the nearest suitable habitat off-site by a qualified biologist.

6. All construction personnel shall receive worker environmental awareness training from a qualified biologist prior to commencing any construction-related activities. This training shall instruct workers on how to identify giant garter snake and its habitat, and what to do if a snake is encountered during construction activities.

7. A qualified biological monitor shall be present during grading activities within 200 feet of aquatic giant garter snake habitat to ensure that construction activities do not encroach into unauthorized areas.

8. If a live giant garter snake is found during construction activities, the biological monitor shall immediately notify the Service. The biological monitor shall have the authority to stop construction in the vicinity of the snake. The snake shall be monitored and given a chance to leave the area on its own. If the snake does not show signs of leaving, then the biological monitor shall slowly move toward the snake to flush it toward adjacent habitat away from the construction area. Potential escape routes for giant garter snakes shall be determined in advance of construction. If the snake does not leave on its own within 1 working day, the biological monitor shall consult with the Service to determine necessary additional measures.

9. Any giant garter snake mortality or injury shall also be reported by the biological monitor within 1 working day to the Service's Sacramento Fish and Wildlife Office. Any project-related activity that results in giant garter snake mortality shall cease so that this activity can be modified to the extent practicable to avoid future mortality.

10. Upon completion of construction activities, construction debris shall be completely removed from the site. If this material is situated near existing giant garter snake aquatic habitat, it shall be inspected by a qualified biologist prior to removal to assure that snakes are not using it for hibernaculae or temporary refuge.

11. No plastic, monofilament, jute, or similar erosion control matting that could entangle snakes shall be placed when working within 200 feet of snake aquatic or rice habitat. Acceptable erosion control methods include coconut coir matting, tackified hydro-seeding compounds, or other material approved by CDFW and the Service.

Off-site Reserves

Spangler Reserve

The Spangler Reserve will be established at a 235.4-acre site approximately 2.5 miles northwest of the Greenbriar Project Site. The Spangler site is currently in active rice cultivation and consists of rice fields with a supporting network of canals and drains, berms, and access roads. A 40.3-acre portion in the northwest of the site will remain in active rice cultivation, and the remaining 195.1 acres will be converted to wetland/upland habitat complexes through recontouring of existing rice cells. Best management practices for giant garter snake will be employed in the portion of the site that remains in active rice cultivation. Some active rice cells may be left fallow each year and planted with cover crops or native grass to provide high-quality foraging habitat for Swainson's hawk and other NBHCP-covered species.

A total of 53.1 acres in two separate areas will be converted to seasonal wetland complex containing a total of 13.2 acres of seasonal wetland in a matrix of grassland buffer. These habitats will be established by recontouring existing rice cells and removing berms to create larger contiguous areas with shallow depressions that will collect natural precipitation. Hydrology in the seasonal wetland complex will no longer be artificially managed as it currently is for rice cultivation. Grassland and seasonal wetland vegetation will be established by hydro-seeding with native seed mixes obtained from local commercial seed sources. The seasonal wetland complex will provide upland and foraging habitat for giant garter snake as well as foraging habitat for Swainson's hawk and other NBHCP-covered species.

Existing rice cells will be converted to a managed marsh complex by recontouring to create open water, bulrush (*Schoenoplectus acutus*) marsh, and upland habitats. Each habitat type will span approximately one-third of the width of the cell. Uplands will be hydro-seeded with a native grassland seed mix; shallow water habitat will be planted with bulrush; and deep water habitat will remain open water. The total area of upland will be 82.5 acres, the total area of marsh will be 49.7 acres, and the total area of open water will be 48.6 acres. The managed marsh complex will also include a total of 1.1 acre of canals and ditches for water management.

Individual managed marsh cells will be dewatered periodically for removal of excess bulrushes to maintain the design extent of open water. Approximately one-third of managed marsh cells will be dewatered in each year beginning five to 10 years after installation. Dewatered cells will be left to dry before vegetation management, to allow giant garter snake that may be present to voluntarily relocate to other, inundated cells, and to avoid damage to the bottom by equipment. Dewatering will occur only during the active season for giant garter snake to avoid harm to hibernating snakes. The managed marsh complex will provide a full range of aquatic and upland habitat for all life stages of giant garter snake. Dewatered cells will provide foraging habitat for Swainson's hawk and other NBHCP-covered species during the drying period.

Lone Tree Canal Reserve

To ensure that the project maintains habitat connectivity for giant garter snake between the southern (Fisherman's Lake) and northwestern zones of the Natomas Basin, the following measures will be implemented along Lone Tree Canal at the Greenbriar Project Site:

1. Approximately 28.3 acres along Lone Tree Canal shall be protected, enhanced, and managed as giant garter snake habitat (i.e., the Lone Tree Canal Reserve). This on-site habitat preservation shall protect a 250-foot-wide corridor that includes the canal and approximately 200 feet of adjacent uplands along the east side of the canal. Uplands within the Lone Tree Canal Reserve will be converted to, and managed as, perennial grassland as described below. Additional aquatic and upland habitat for giant garter snake shall be created along the east bank of Lone Tree Canal by recontouring the bank to facilitate the growth of freshwater marsh plants.

2. To ensure that the project does not diminish giant garter snake movement along Lone Tree Canal, the culverts used for the proposed roadways crossing Lone Tree Canal (Meister Way and Residential Street 3) shall be designed to allow passage by giant garter snake.

3. Habitat within the Lone Tree Canal Reserve shall be enhanced and managed to provide cover and refugia for the giant garter snake during the winter dormant period.

4. The east bank of the canal, which currently has a nearly vertical slope, will be recontoured to a 3:1 slope (horizontal:vertical). This will reduce the amount of maintenance required in the channel (e.g., dredging, bank repair) and facilitate the growth of freshwater marsh plants. Tule (*Schoenoplectus* sp.) as well as native sedges, rushes, and/or other emergent wetland species will be allowed to establish along the slope at the proper elevation to provide cover for the snake. The emergent wetlands along the recontoured slope will provide foraging habitat for GGS while providing cover from predators.

5. The upland areas within the Lone Tree Canal Reserve will be seeded with native perennial grasses, to provide upland habitat for the giant garter snake for cover and to provide additional refugia during the winter dormant period.

6. A masonry and metal fencing barrier shall be installed between the giant garter snake habitat buffer area and the adjacent development on the Greenbriar Project Site to ensure that giant garter snakes do not enter the development area, and to prohibit humans and pets from entering the giant garter snake habitat. The design of this barrier shall be subject to Service and CDFW review and approval. Specific requirements associated with the barrier shall be developed with the Service and CDFW, and may include the following and/or other specifications that CDFW and the Service consider to be equally or more effective:

    a. Adequate height and below-ground depth to prevent snakes or burrowing mammals from providing a through-route for snakes by establishing burrows from one side to the other;

    b. Constructed using extruded concrete or block construction extending a minimum of 36-inches above ground level; and

c. A cap or lip extending at least two-inches beyond the barrier's vertical edge to prevent snakes from gaining access along the barrier's top edge;

7. The following measures relate to management of the Lone Tree Canal Reserve:

a. The entire length of the barrier shall be maintained on the reserve side by a non-profit land trust to ensure that vegetation or debris does not accumulate near the barrier and provide opportunities for wildlife and pets to climb over the barrier. On the development side, CC&Rs shall prohibit accumulation of vegetation or debris adjacent to the barrier. Chain link fencing shall be placed at both ends of the corridor, with locked gates permitting entry only for the reserve manager for habitat monitoring and maintenance purposes and entities approved by the reserve manager including by RD 1000 and NCMWC for channel maintenance and other entities such as public utilities.

b. Maintenance to repair the barrier and to prevent the establishment of vegetation or collection of debris that could provide snakes with a climbing surface allowing them to breech the barrier;

c. Signage to discourage humans and their pets from entering the area.

8. The Lone Tree Canal Reserve shall be protected in perpetuity under a conservation easement and will be managed to sustain the value of this area for giant garter snake habitat connectivity. Compliance and biological effectiveness monitoring shall be performed and annual monitoring reports prepared. This monitoring, reporting, and adaptive management shall be performed as described in the management plan prepared for the reserve.

9. Aquatic habitat shall be maintained throughout the giant garter snake active season in Lone Tree Canal, in perpetuity. This is the responsibility and obligation of the MAP POA. The MAP HCP includes provisions for maintaining water in the canal such that the basic habitat requirements of the giant garter snake are met. If water is not provided to Lone Tree Canal by the MAP to meet the habitat requirements of giant garter snake as required by the MAP HCP and the Service exhausts its enforcement responsibilities, the Project Applicant shall assume the responsibility of providing suitable giant garter snake aquatic habitat throughout the section of Lone Tree Canal in the Lone Tree Canal Reserve. The Project Applicant shall only assume this responsibility if it has been sufficiently demonstrated to the City of Sacramento that the Service has exhausted all reasonable means to compel MAP to comply with the relevant conditions of the MAP ITP.

North Nestor Reserve

The North Nestor Reserve will be established on a 219.1-acre site near the northern end of the Natomas Basin. The North Nestor site is bounded on the north and south by existing Natomas Basin Conservancy (TNBC) reserves and links 360 acres of TNBC reserves north of the site to 1,994 contiguous acres of TNBC reserves that extend south to the Sutter – Sacramento county line. The North Nestor Reserve would be protected and managed in perpetuity as rice habitat for the giant garter snake.

Reserve Dedication and Management

The applicant will dedicate the Spangler Reserve, North Nestor Reserve, and the Moody Reserve (Note: the Moody Reserve is proposed as Swainson's hawk mitigation lands and not addressed in this biological opinion) by granting a conservation easement and/or fee title as appropriate including the structure for funding the sites to a Service-approved third party plan operator. The structure for funding the sites will be calculated by estimating enhancement, management, administration, and monitoring costs. Prior to signing the dedication agreement, the project applicant and/or the Service-approved plan operator will submit the agreement to the Service and CDFW for review and concurrence. Concurrence will be required before the agreement is final.

Site-specific management plans have been prepared for the project's reserves. These plans describe:

- Results of existing conditions biological assessments;
- Prohibited and controlled activities;
- Measures to avoid take and conflicts with Sacramento International Airport,
- Management activities including habitat management, monitoring, patrols, and rice production practices (if applicable);
- Restoration and enhancement programs; and
- Reserve water management.

Compliance and biological effectiveness monitoring shall be performed and annual monitoring reports prepared. Measures specific to management of the reserves are described in the February 2017 *Biological Assessment.*

Action Area

The action area is defined in 50 CFR § 402.02, as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the proposed project, the action area encompasses 825.16 acres, and includes the 577.0-acre Greenbriar Project Site (including the on-site Lone Tree Canal Reserve), 12.76 acres of Off-site Improvement Lands, the 235.4-acre Spangler Reserve, and the 219.1- acre North Nestor Reserve.

Analytical Framework for the Jeopardy Determination

Section 7(a)(2) of the Endangered Species Act requires that Federal agencies ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of listed species. "Jeopardize the continued existence of" means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).

The jeopardy analysis in this biological opinion considers the effects of the proposed Federal action, and any cumulative effects, on the rangewide survival and recovery of the listed species. It relies on four components: (1) the *Status of the Species*, which describes the rangewide condition of the species, the factors responsible for that condition, and its survival and recovery needs; (2) the *Environmental Baseline*, which analyzes the condition of the species in the action area, the factors responsible for that condition, and the relationship of the action area to the survival and recovery of the species; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and the effects of any interrelated or interdependent activities on the species; and (4) the

Cumulative Effects, which evaluates the effects of future, non-Federal activities in the action area on the species.

Status of the Giant Garter Snake

For the most recent comprehensive assessment of the species' range-wide status, please refer to the *Giant Garter Snake (Thamnophis gigas) 5-Year Review: Summary and Evaluation* (Service 2012). No change in the species' listing status was recommended in this 5-year review. Threats evaluated during that review have continued to act on the species since the 2012 5-year review was finalized, with loss and fragmentation of giant garter snake habitat being the most significant effect. While there have been continued losses of habitat throughout the various recovery units identified in the *Revised Draft Recovery Plan for Giant Garter Snake (Thamnophis gigas)* (Service 2015) (Recovery Plan), including the American Basin Recovery Area where the proposed project is located, to date no project has proposed a level of effect for which the Service has issued a biological opinion of jeopardy for the species.

There are 58 CNDDB records for the snake within the Natomas Basin, of which 51 are considered extant (CDFW 2017). Of the 51 snake occurrences presumed extant, 13 are within 1-mile of the Greenbriar Development Site and 26 are within 1-mile of the Spangler Compensation Site. Giant garter snakes have been documented to occur within the proposed project site, including an occurrence in 2006 in Lone Tree Canal and in the northeast corner of the proposed project site in 2000 (CNDDB 2017).

Environmental Baseline

<u>The Greenbriar Project Site and Reserves</u>

The Greenbriar Project Site is primarily used for intensive agricultural practices. Although the property contained 160-acres of active rice production in 2001, by 2005, rice production was no longer present and was replaced with other non-rice crops. The majority of the site is currently being dry farmed for grass hay. The property features a network of approximately 8.63 acres of irrigation canals no longer in use. The canals on the site previously functioned for agricultural irrigation and water was deployed by a pump. Because the site is no longer actively irrigated, the majority of the canals have colonized with disturbed upland vegetation. Canals still used to convey irrigation water (e.g., Lone Tree Canal) or canals directly connecting with water-holding canals exhibit hydrophytic vegetation. The northwest section of the site contains remnant development from a horserace track and an irrigated polo field that were in use from approximately 1980 to the early 2000s. An existing drainage structure constructed for the MAP Project and a 20-foot-wide utility easement granted to the Sacramento Regional Sanitation District are located in the northeast corner of the Greenbriar Project Site (approximately 10.1 acres of existing disturbance).

The Lone Tree Canal occurs on the Greenbriar Project site and is an indirect tributary to the Sacramento River via the West Drainage Canal. In the Natomas Basin, Lone Tree Canal collects drainage flows and runoff from adjacent properties and flows southward, where it is conveyed under I-5 through a multi-cell concrete box culvert, to the West Drainage Canal. Lone Tree Canal is the only remaining aquatic connection between the southern (Fisherman's Lake) and northwestern zones of the Natomas Basin, providing important habitat connectivity between these two areas for the giant garter snake. Upland habitat adjacent to the canal is comprised of non-native grass species. The MAP property is located on the opposite side of Lone Tree Canal from the Greenbriar Project site. The MAP property will provide a 25-foot upland buffer between the canal and development.

There are 3.21 acres of aquatic habitat within Lone Tree Canal and two minor tributaries off of Lone Tree Canal. There is an additional 32.0 acres of upland habitat within 200-feet of the aquatic habitat.

The 235.4-acre Spangler Reserve is currently in rice production, and consists of rice fields with a supporting network of agricultural drains as well as upland berms along the perimeter of the rice fields and drains. Irrigation canals and drainage ditches transect and follow the perimeter of the site, and are connected by culverts. The rice fields are laser-leveled and delineated by small levees. Land use in the vicinity of the Spangler Reserve consists primarily of active and inactive agricultural cropland (e.g., rice, grass hay) as well as habitat reserves managed by TNBC and other non-profit entities.

The 219.1-acre North Nestor Reserve is located in the northwestern portion of the Natomas Basin in an area used primarily for agricultural production. The North Nestor Reserve is an agricultural parcel currently in rice production. This reserve maintains biological connectivity between existing TNBC reserves: Lucich North reserve to the north and Nestor Reserve to the south. Lucich North consists of managed marsh. Other adjacent properties include privately-owned agricultural fields to the northeast, east, and west. Irrigation canals and drainage ditches follow the perimeter of the site, and are connected by culverts. The rice fields are laser-leveled and delineated by small levees. Access roads follow the canals/ditches, and along the tops of the levees delineating the rice fields.

Giant Garter Snakes within the Natomas Basin

The greatest populations of the giant garter snake occur in the northern half of its range, in the Colusa, Sutter, Badger and American Basins (Service 2015). The Revised Recovery Plan (Service 2015) subdivides the range of the species into nine recovery units. The Greenbriar Project site and associated reserves are within the American Basin Recovery Unit for the snake. The American Basin extends south from Oroville to the confluence of the Sacramento and American rivers. The Basin is about 376,104 acres, including portions of Butte, Yuba, Sutter, Placer, and Sacramento counties. Four management units have been defined for the American Basin Recovery Unit: District 10, Olivehurst, Nicolaus, and Natomas Basin. The action area for the proposed project is in the Natomas Basin Management Unit. The Service's 2012 5-year review of the snake indicated that although populations north of Stockton are considered relatively stable, habitat has been lost to urban development; most notably in the Natomas Basin (Service 2012). Habitat fragmentation and population isolation, flood control and canal maintenance, agricultural practices that are incompatible with giant garter snake conservation, water transfers, invasive plant species such as water primrose, invasive animal species including fish, bullfrogs, and snakes, and drought and climate change also threaten this species (Service 2012).

The Natomas Basin lies just north of the confluence of the American and Sacramento Rivers, two major river systems. Because of this, the Natomas Basin was historically subject to frequent flooding events and was characterized by abundant marshlands, small streams, and a mix of riparian, oak woodland, and grassland vegetation. The abundant marshlands likely supported an abundant population of giant garter snakes (ICF 2016). Land reclamation and reclamation facilities, canals, levees and pumping stations have allowed a significant portion of the basin to be converted to agriculture and development land uses. An assessment of giant garter snake habitat in the Natomas Basin indicated that over 45 percent of the Natomas Basin is now currently in upland agriculture and development (ICF 2016). Created marsh, the highest quality snake habitat, constituted approximately 2 percent (1,311 acres) of the Natomas Basin (ICF 2016). Rice agriculture and its supporting infrastructure of canals, which comprises 38 percent (20,796 acres) of the basin, provide the only

remaining suitable snake habitat within the basin. This is a decrease from the 24,085 acres of rice habitat in the Natomas Basin in 2004.

TNBC has monitored for giant garter snakes within the Natomas Basin since 2000 and surveys show that giant garter snakes occupy both restored marsh habitat and rice fields (ICF 2016). Surveys conducted on TNBC Reserves since 2004 have revealed the following numbers of individuals captured per year indicated: 81 in 2004, 176 in 2005, 241 in 2006, 212 in 2007, 250 in 2008, 177 in 2009, 123 in 2010, 158 in 2011, 166 in 2012, 145 in 2013, 175 in 2014, and 104 in 2015 (ICF 2016).

Effects of the Action

Direct Effects

The proposed project would result in permanent impacts to 0.36 acre of aquatic giant garter snake habitat and 7.28 acres of upland habitat (upland habitat within 200 feet of aquatic habitat) on the Greenbriar Project Site; totaling 7.64 acres of permanent impacts. Giant garter snake present during construction may be killed or injured by construction equipment, or by being trapped in burrows from earth-moving activities. Construction activities will also likely displace giant garter snakes as they leave the construction site and seek refuge in nearby adjacent areas. Displaced snakes would be expected to experience lower survivorship in new habitat with the potential for increased competition, decreased hunting success, and reduced reproductive success. Pollutants (e.g., chemicals, fuels, oil) from the construction site may enter surface water as contaminated stormwater run-off or direct discharges into the channels. Polluted or turbid water may kill or injure giant garter snakes. Discharges to surface water from the construction site will be minimized implementing best management practices, as outlined in the Stormwater Pollution Prevention Plan that will be prepared for the project. Preconstruction surveys, construction monitoring, and construction-related avoidance measures will be implemented to minimize the possibility of giant garter snake being harmed by construction activities.

Development on the Greenbriar Project Site would also result in temporary impacts to 27.63 acres of giant garter snake habitat in the Lone Tree Canal Reserve. These temporary impacts will occur during habitat-enhancing activities such as contouring the east bank of Lone Tree Canal to create a 3:1 slope, hydro-seeding the slope with native vegetation, and installing a snake wall and protective fencing. If giant garter snakes are present in the segment of Lone Tree Canal or adjacent uplands during restoration activities, those individuals could be displaced during or immediately following construction activity and seek areas of refuge elsewhere. It is anticipated that enhancement of the Lone Tree Canal Reserve would be completed within one season and the canal would provide improved upland habitat.

Habitat establishment at the Spangler Reserve would convert approximately to 195 acres of rice agriculture to managed marsh complex and seasonal wetland complex. Conversion would temporarily impact giant garter snakes, but habitat construction would result in higher quality habitat than the current rice agriculture. Giant garter snakes could be temporarily displaced at the Spangler Reserve during restoration activities. Displaced snakes would be expected to experience lower survivorship in new habitat with the potential for increased competition, decreased hunting success, and reduced reproductive success. However, disturbance to the Spangler Reserve will be temporary, lasting one season or less, and the reserve will provide significantly enhanced habitat for giant garter snake once completed that will be protected and managed in perpetuity for the benefit of the snake.

The 219.1-acre North Nestor site would continue to be used for rice production and managed marsh creation is not proposed. The site will provide rice habitat adjacent to occupied wetland habitat managed by TNBC. By preserving the North Nestor site as rice, this ensures that contiguous snake habitat exists between protected TNBC lands adjacent to the north and south, further securing large blocks of habitat that are protected and managed in perpetuity for the snake. Adverse effects from routine and ongoing rice production may occur if snakes are displaced during water drawdowns or when farming equipment is working in snake habitat. These adverse effects would be outweighed by the benefits for the snake provided by the rice fields.

Indirect Effects

The Greenbriar Project will further contribute to fragmentation of habitat within the Natomas Basin. Fragmentation of giant garter snake habitat may result from physical barriers such as the snake wall that will be built along Lone Tree Canal. Other barriers include roadways and fences. The removal of adjacent upland habitat and canals will result in discontinuous habitat (e.g., isolated habitat fragments). However, the project applicant will ensure that the canal maintains habitat connectivity for giant garter snake between the southern (Fisherman's Lake) and northwestern zones of the Natomas Basin. Two roadway crossings are planned to be constructed over Lone Tree Canal (Meister Way/Light Rail and Residential Street 3). Both roadways will cross over Lone Tree Canal via 54-inch culverts. To ensure that the project does not diminish giant garter snake movement along Lone Tree Canal, the culverts used for the proposed roadways crossing Lone Tree Canal will be designed to allow passage by giant garter snakes. The proposed crossings are not expected to alter the existing canal conditions in terms of hydrology and vegetation.

Giant garter snakes are highly sensitive to human disturbance, and will abandon otherwise suitable habitat as a result of increased human activity. Human visits into areas occupied by giant garter snakes may result in lowered snake abundance even when the visits are brief and no more than one person, once per day (Mr. Eric C. Hansen, personal communication, as cited in the Biological Assessment). Development on the Greenbriar Project Site will increase human activity within the area, likely impacting snakes using Lone Tree Canal and adjacent uplands on the Greenbriar Project Site. Increased vehicle traffic and human-related sounds may result in decreased use of the Lone Tree Canal. In addition, the proposed urban land uses will increase potential for mortality from collisions with vehicles and predation by domestic animals. It is unknown whether the conversion of land from undeveloped to developed will decrease ground squirrel populations along the Lone Tree Canal, which the giant garter snake depends on for burrows.

Cumulative Effects

Cumulative effects include the effects of future State, Tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. During this consultation, the Service did not identify any future non-federal actions that are reasonably certain to occur in the action area of the proposed project.

An undetermined number of private, state, or local projects or actions in the Natomas Basin may not require federal permits or funding. These projects may implement activities that may result in cumulative impacts on the giant garter snake. The following actions degrade habitat and/or may cause the injury or death of giant garter snake, and could result in cumulative impacts:

- Herbicide or pesticide applications
- Vegetation management along canals or drains
- Agricultural practices (e.g., types of crops being cultivated, abandonment of agricultural land)
- Discharge of contaminants into waterways
- Presence of humans along waterways or on agricultural lands
- Canal flow regimes
- Increased traffic volumes on local roads

Conclusion

After reviewing the current status of giant garter snake, the environmental baseline for the action area, the effects of the proposed Greenbriar Development Project, and the cumulative effects, it is the Service's biological opinion that the Greenbriar Development Project, as proposed, is not likely to jeopardize the continued existence of the giant garter snake. The Service reached this conclusion because the project-related effects to the species, when added to the environmental baseline and analyzed in consideration of all potential cumulative effects, will not rise to the level of precluding recovery or reducing the likelihood of survival of the species based on the following: The proposed project has been designed to minimize adverse effects to individual giant garter snakes through implementation of avoidance and minimization measures; the proposed project will maintain habitat components important to the species (e.g., retain connectivity through the Lone Tree Canal, preserving rice habitat at the North Nestor and Spangler Reserves and establishing managed marsh habitat at the Spangler Reserve); and, the proposed project offsets habitat loss at a ratio of 1:1 (i.e., for every acre of land developed, one acre is preserved in perpetuity within the Natomas Basin as managed marsh, upland, or rice) which will contribute to recovery efforts for the giant garter snake within the Natomas Basin.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harass is defined by Service regulations at 50 CFR 17.3 as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Harm is defined by the same regulations as an act which actually kills or injures wildlife. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavior patterns, including breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Corps so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, for the exemption in section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this incidental take statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental

take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR §402.14(i)(3)].

Amount or Extent of Take

Incidental take of the giant garter snake may occur as a result of implementation of the proposed project. The actions analyzed in the biological opinion could take individuals of the giant garter snake, including juveniles and adults due to direct death or injury from humans and machines, and harm and harassment though habitat modification (e.g. as a result of habitat enhancement activities at Lone Tree Canal and the Spangler Reserve, replacement of culverts at Lone Tree Canal, and other associated project activities). This incidental take is expected to be in the forms of harm (including direct fatality) and harassment resulting from the effects of the proposed action on the giant garter snake. We recognize that providing a numerical estimate of incidental take is the preferred method of measuring take and that for some animals this method is biologically defensible as the ecology of the animals lends itself to them being more detectible. However, it is impossible to quantify the number of individual giant garter snakes taken because: (1) dead or impaired individuals are almost impossible to find (and are actively consumed by predators); (2) the status of the species is changing over time through immigration, emigration, and natural loss or active creation of habitat through management (i.e., losses of giant garter snakes may be difficult to quantify due to seasonal fluctuations in their numbers, random environmental events, changes in water regime at their aquatic habitat, or additional environmental disturbances); and, (3) the species is small-bodied, well camouflaged, and can occur underwater of varying clarity, and thus individuals are difficult to detect.

It is not meaningful to provide a number for incidental take of giant garter snakes associated with this action because all a surveyor can count is what they see and there is much we cannot see under the water, in emergent vegetation, and in other hiding locations. Even in locations actually occupied by the species, it is possible for surveyors to miss giant garter snakes. All of these factors result in even the most experienced giant garter snake biologists being unable to show that any estimated numerical take occurred or did not occur at a site. If a single individual giant garter snake has been killed or injured, there is no means of equating one dead snake (assuming one was found) to a number of dead snakes not observed. In addition, it isn't always possible to directly link a dead or injured snake to an individual project.

Since we cannot estimate the number of individual giant garter snakes that will be incidentally taken for the reasons listed above, the Service is providing a mechanism (acres) to quantify when take would be considered to be exceeded as a result of the proposed project. The Service anticipates that take of giant garter snakes could occur at the following locations:

- Greenbriar Project Site: any giant garter snake within the 7.64 acres of permanently impacted snake habitat within the Greenbriar Project site will be subject to incidental take in the form of harm and harassment.
- Lone Tree Canal Reserve: any giant garter snake within 27.63 acres of temporarily impacted habitat within the reserve will be subject to incidental take in the form of harm and harassment. This covers reserve habitat management activities conducted in perpetuity and construction activities associated with the proposed project (e.g., construction of the fencing barrier, contouring the bank to a 3:1 slope, and other activities as described in the "*Description of the Action*" section of this biological opinion).
- Spangler Reserve: any giant garter snake within 235.4 acres of temporarily impacted habitat at the reserve will be subject to incidental take in the form of harm and harassment. Temporary adverse impacts could result from reserve habitat management conducted in

perpetuity (including managed marsh/wetland maintenance activities, canal and ditch maintenance, and rice production) and temporary construction activities associated with the creation of managed marsh/wetlands.

- North Nestor Reserve: any giant garter snake within 219.1 acres of temporarily impacted habitat at the reserve will be subject to incidental take in the form of harm and harassment. Temporary adverse impacts could result from reserve habitat management activities conducted in perpetuity (including rice production and canal and ditch maintenance).

Because of the avoidance and minimization measures proposed by the project proponent during implementation of the proposed project, the Service believes that actual lethal and non-lethal harm or harassment of individual snakes within the Action Area will be low and that the proposed avoidance and minimization measures will be effective at avoiding incidental take to some, but not all individuals who may be encountered during project activities. We do not anticipate that the level of take that will result from this project will eliminate all individuals that may comprise a local breeding population. Therefore, the Service is providing take coverage for 489.77 acres.
Upon implementation of the following reasonable and prudent measures, incidental take of giant garter snake associated with the Greenbriar Development Project will become exempt from the prohibitions described in section 9 of the Act. No other forms of take are exempted under this opinion.

Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species. We conclude that this level of incidental take does not place recovery of the giant garter snake at risk.

Reasonable and Prudent Measures

All necessary and appropriate measures to avoid or minimize effects on the giant garter snake resulting from implementation of this project have been incorporated into the project's proposed conservation measures. Therefore, the Service believes the following reasonable and prudent measure is necessary and appropriate to minimize incidental take of the giant garter snake:

1. All conservation measures, as described in the biological assessment and restated in the *Description of the Action* section of this biological opinion, shall be fully implemented and adhered to. Further, this reasonable and prudent measure shall be supplemented by the terms and conditions below.

Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the Act, the Corps must ensure compliance with the following terms and conditions, which implement the reasonable and prudent measure described above. These terms and conditions are nondiscretionary.

1. The conservation measures in the *Description of the Action* section of this biological opinion must be implemented as described.

2. All reserves discussed in this document (Lone Tree Canal, Spangler, North Nestor, and Moody reserves) will have Service-approved conservation easements, management and monitoring plans, and funding mechanisms for management and monitoring of reserves. All outstanding liens and taxes will be resolved to the satisfaction of the Service-approved 3rd

party easement holder. See the *Description of the Action* section of this biological opinion for discussion on phasing for these reserves and when conservation easements will be recorded.

Monitoring:

In order to monitor whether the amount or extent of incidental take anticipated from implementation of the project is approached or exceeded, the Corps (through the project proponent) shall adhere to the following reporting requirements. Should this anticipated amount or extent of incidental take be exceeded, the Corps must immediately reinitiate formal consultation as per 50 CFR 402.16.

a. When direct encounters between listed species and project workers and their equipment occurs, the Corps (through the project proponent) shall report the encounter to the SFWO' s Division Chief of the Sacramento Valley Division within 24 hours of the encounter.

b. If injured or killed giant garter snakes are found, the Corps (through the project proponent) shall follow the following steps: Injured giant garter snakes shall be cared for by a licensed veterinarian or other qualified biologist possessing a valid section 10(a)(1)(A) permit for this species; dead individuals must be placed in a sealed plastic bag with the date, time, location of discovery, and the name of the person who found the animal; the carcass will be kept in a freezer; and held in a secure location. The Corps (through the project proponent) will provide the information on the incident within twenty-four (24) hours to the SFWO's Division Chief of the Sacramento Valley Division at (916) 414-6631.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information. The Service has the following conservation recommendations:

1. The Corps should continue to work closely with the Service in recovery efforts for the giant garter snake.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Service requests notification of the implementation of any conservation recommendations.

REINITIATION—CLOSING STATEMENT

This concludes formal consultation on the proposed Greenbriar Development Project. As provided in 50 CFR §402.16, reinitiation of formal consultation is required and shall be requested by the Federal agency or by the Service where discretionary Federal agency involvement or control over the action has been retained or is authorized by law and:

(a) If the amount or extent of taking specified in the incidental take statement is exceeded;
(b) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
(c) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion; or
(d) If a new species is listed or critical habitat designated that may be affected by the identified action.

If you have any questions regarding this biological opinion for the proposed Greenbriar Development Project, please contact Rick Kuyper, Division Chief, by e-mail at richard_kuyper@fws.gov, by phone: (916) 414-6621 or at the letterhead address.

Sincerely,

Jennifer M. Norris
Field Supervisor

cc: Ryan Devore, City of Sacramento, Sacramento, California
ec:
John Stanek, Integral Communities, Newport Beach, California
Tina Bartlett, California Department of Fish and Wildlife, Rancho Cordova, California

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