

Sand City Coastline HCP
Project Alternatives (*preliminary draft*)

Alternative 1: Preferred Project

Under this alternative, development of coastal resort facilities would be allowed on three sites on the Sand City coastline north of Tioga Avenue: MBSR, McDonald, and Sterling. Revenue generated by these developments would be used to fund public acquisition of privately-owned lands south of Tioga Avenue, to create a continuous public beach park and habitat conservation area for the western snowy plover and other species of concern stretching from Tioga Avenue to the southern Sand City city limit. These funds would also be used for habitat restoration, maintenance of public areas, development of access facilities, and employment of two full-time biological stewards to monitor sensitive species and enforce access restrictions.

Alternative 2: Reduced Development I – McDonald and Sterling Sites

Under this alternative, development of coastal resort facilities would be allowed on the Sterling site and adjacent McDonald site only, which could be combined into a single project. This would concentrate development effects to a smaller area which consists mostly of bare sand and previously disturbed land, thus lessening impacts on sensitive dune habitats. Public beach access would be focused in the area between Tioga Avenue and Playa Avenue, thereby reducing the level of impacts and disturbance of more remote beach and dune areas, including potential snowy plover nesting areas, at the north end of the Sand City coastline. Less revenue would be generated from coastal developments under this alternative, which would reduce funding for purchase, habitat restoration and management of public lands south of Tioga Avenue.

Alternative 3: Reduced Development II – MBSR Site

Under this alternative, development of coastal resort facilities would be allowed on the MBSR site only. This would concentrate development effects to a smaller area at the far northern end of the Sand City coastline, and would create the possibility to set aside the remainder of the Sand City coastline, from the MPRPD Park (former landfill) site to the southern city limit, as public land/open space and habitat conservation areas. Public access and beach visitation effects would be expected to be similar to those under the preferred project, because the undeveloped beach areas in the vicinity of Tioga Avenue and Playa Avenue would still be likely to receive heavy usage due to their high accessibility. Therefore, this alternative may not substantially reduce potential disturbance impacts to nesting western snowy plovers compared to the preferred project. As with the other reduced development alternative(s), less revenue would be generated for purchase, habitat restoration and management of public lands.

Alternative 4: No Development Alternative

Under this alternative, no large-scale private development would occur along the Sand City coastline. Public park land would continue to be operated by the CDPR and MPRPD to provide both public access and habitat conservation. Public use of beach areas, and associated impacts to

western snowy plover and other sensitive species, would still be expected to increase relative to existing conditions because of (1) increasing population; (2) increasing commercial and residential development in the project vicinity; (3) development of public access and other park facilities within and adjacent to the HCP area; and (4) improvements to roads and transportation services in the vicinity of the beach areas. No revenue would be generated by coastal resort developments, and therefore, available funding would be substantially reduced for acquisition, restoration and management of public lands along the Sand City coastline.

**Sand City Coastline HCP
Project Description (*preliminary draft*)**

The activities that comprise the "Project" to be covered by this HCP include the designation of land uses for the lands west of Highway One in the City of Sand City (herein referred to as the "Sand City coastline"), and issuance of permits by the City to allow for (1) construction of up to three visitor serving coastal resort projects; (2) limited public access and recreational use of beach and adjacent coastal areas; and (3) establishment of a permanent habitat protection area for the western snowy plover and other species of concern.

This Project is based on a Memorandum of Understanding (MOU) regarding Sand City coastal land use, which was adopted among the California Department of Parks and Recreation (CDPR), Monterey Peninsula Regional Park District (MPRPD), City of Sand City, and Sand City Redevelopment Agency on April 8, 1996. The MOU established guidelines for appropriate public and private development along the Sand City coastline that would be compatible with other beneficial objectives including: preservation of ocean views; restoration of native dune habitat; preservation of habitat corridors for endangered and threatened species; and provision of public open space and coastal access. A key element of the MOU is that a portion of the revenue generated from future coastal developments would provide a continuous source of funds for improving public access facilities, restoring dune habitat, and operating and maintaining public lands. The principal agreements contained in the MOU concerning land uses and land use areas form the basis of this HCP, and are summarized below.

Land Use Areas

For purposes of this HCP, the major parcels and tracts of land on the Sand City coastline are grouped into five areas according to ownership, land use designations, and management goals. These "land use areas" are consistent with the MOU and the Sand City Local Coastal Program (LCP), and are identified as follows (see Figure 1):

- *MBSR Site* – site of the proposed Monterey Bay Shores Resort (MBSR) project, located at the northerly end of the Sand City coastline, owned by SNG Development Company. A small privately-owned parcel (Calabrese) also borders the southern corner of the MBSR site;
- *MPRPD Dune Restoration Park* – former landfill area, recently acquired by the MRPD and converted to a dune habitat restoration area;
- *McDonald Site* – two large contiguous parcels owned by the Sand City Redevelopment Agency, located south of the MRPD park site and north of the Sterling site;
- *Sterling Site* – a large privately owned parcel located immediately north of Tioga Avenue;
- *South of Tioga* – includes the remaining portion of the Sand City coastline between Tioga Avenue and the southern City limit. This area is subdivided into numerous small lots, most of which are owned by the CDPR or MRPD, and the remainder of which are in private ownership (see Figure __, Ownership Map). This area also includes City-owned vacant street and public service easements south of Tioga Avenue and west of Sand Dunes Drive.

In addition, the *Sand City Bike Path* runs parallel to and just west of Highway One near the inland edge of each of these areas, except for the Sterling parcel and the southern portion of McDonald site. Construction of the bike path commenced in the fall of 1998 and [is scheduled to be completed by the spring of 1999].

The MOU resulted in the following major points of agreement between the signatories pertaining to land use in these areas: (1) the CDPR and MPRPD would not be limited in their ability to pursue public acquisition of privately owned parcels south of Tioga Avenue; (2) development of a hotel and visitor-serving residential project would be allowed on the McDonald Coastal site and Sterling site (which could be combined); and (3) the parties to the MOU recognized the right of SNG Development Company to pursue development on the MBSR site. The MOU thus established a framework for allowing up to three coastal resort developments on the portion of the Sand City coastline north of Tioga Avenue, and enabling public acquisition and habitat conservation on the portion south of Tioga Avenue. While not a signatory to the MOU, the California Coastal Commission recognized these main tenants by excluding these development sites from a 1996 LCP amendment allowing public parks and open space on all other areas of the Sand City coastline.

Allowable Developments

Developments proposed to be allowed under this HCP include: a 136-room hotel facility on the Sterling site (7.0 acres above the mean high tide (MHT) line); a 200 room hotel on the adjacent McDonald site (14.0 acres above MHT); and a 495 unit hotel and condominium complex on the MBSR site (32.0 acres above MHT).^{*} Project related activities on these properties would include the following:

- sand excavation, grading and slope recontouring;
- construction of residential and commercial buildings and associated infrastructure;
- installation of paved streets, sidewalks, and parking areas (including underground garages);
- landscape planting and lighting installation;
- construction of recreational and other auxiliary facilities;
- installation of pedestrian boardwalks through sensitive beach and dune areas;
- installation of coastal access pathways;
- sand deposition within and/or outside of the HCP area;
- dune stabilization, restoration, and native plant revegetation.

Site preparation activities for the development projects would include sand excavation and cut and fill activities to produce suitable grades for buildings, infrastructure, and landscaping, and enable placement of building foundations and structures below existing grades. In some areas, extensive excavation and removal of sand will likely be necessary to accommodate construction plans. Excess sand removed from the development areas would either be stockpiled for future construction use, used for on-site or off-site dune restoration, used for beach nourishment programs, or disposed of in a suitable off-site location.

^{*} This unit count may change should the Coastal Commission review a pending appeal on this project.

Building envelopes would be set back a minimum of 178 feet from the mean high water line (i.e., behind the 50-year erosion setback line) to provide a sufficient buffer between buildings and the beach zone. Maximum building and paved area coverage, excluding Sand Dunes Drive and the bike path, is estimated to be approximately ___ acres. Building heights would not exceed 45 feet from existing grades, as specified by the LCP. Driveways and parking areas would generally be confined to the inland side of building envelopes.

Auxiliary facilities contained within the development envelopes may include recreational facilities (e.g., swimming pools, tennis courts, picnic areas), and conference or educational facilities. Landscape planting and outdoor lighting would be installed around buildings, driveways and parking areas. Ornamental landscape plants and turf may be planted adjacent to building envelopes. Outside the development envelopes, landscape planting would be limited to locally native coastal dune species. Pedestrian boardwalks will be installed in and around the developed areas to minimize impacts to sensitive habitat areas, reduce sand erosion, and provide coastal access.

Dune stabilization and habitat restoration activities will be incorporated in the site plans for the developed parcels. On-site sources of sand produced from project grading, and native plant material collected on site or in the project vicinity, will be used to restore and enhance coastal dune habitat in suitable areas on the development sites.

As a component of the Project, excess sand excavated from developed areas may be used to replenish sand on beaches affected by shoreline erosion in the vicinity of the HCP area. To accomplish this, excess sand could be deposited during winter in mounds placed just above the high tide level at specific sites targeted for beach nourishment. Wave action would then suspend the sand and redeposit it vertically and laterally along the shoreline.

Public Access and Recreational Use

Public access and use of beaches and adjacent areas of the Sand City coastline comprises a major part of the Project. Each of the proposed developments would provide vertical access points to the beach, as required under Sand City LCP policies. The existing and future parklands under jurisdiction of the CDPR and MPRPD (including the future Fort Ord Dunes State Park to the north of the HCP area) will provide additional point sources of public access to the beach and adjacent dune areas. Lateral access along the shoreline is facilitated by the broad, sandy beach topography of the Sand City coastline. Consequently, both the development of visitor-serving resort facilities and establishment of public park lands will result in a substantial increase in beach visitation and lateral movement along beaches in the HCP area.

Opportunities for public access will be balanced with access restrictions to protect sensitive species and habitats, including nesting and wintering sites for the western snowy plover. As a component of the Project, access will be prohibited to certain beach and coastal strand areas designated as sensitive nesting habitat for the western snowy plover during the breeding season (March - September). These areas will remain off limits to people and pets during the entire breeding season. Beach users will be directed away from these areas by symbolic fencing, signage, and designated patrol personnel.

Habitat Protection Area

The habitat protection area would comprise the southern portion of the Sand City coastline from Tioga Avenue to the southern city limit, as well as the MPRPD Park Site north of Tioga Avenue. This area includes lands currently owned and operated by the CDPR and MPRPD, as well as 62 privately owned parcels and public rights-of-way. As a component of this HCP, funds generated by the proposed developments would be provided for acquisition of the privately owned parcels south of Tioga Avenue to consolidate public ownership of land in this area and create an uninterrupted habitat protection area.

Funding would also be provided for a permanent habitat management program for the western snowy plover and other species of concern considered in this HCP. This program would include: delineation and protection of suitable nesting areas for the western snowy plover; establishment and enforcement of access restrictions to snowy plover nesting areas during the breeding season (March - September); establishment and enforcement of pet prohibitions in the habitat area; habitat restoration activities including native plant revegetation and non-native species eradication; regular monitoring of snowy plover nesting success, habitat conditions, and threats to snowy plovers in the HCP area; and implementation of an adaptive management program to address changed circumstances and improve the long term success of the conservation plan. These activities would be carried out jointly by the CDPR, MPRPD, and the City of Sand City.

EXISTING CONDITIONS AND BIOLOGICAL DATA

The biological resources in the HCP area have been documented in several studies conducted for the City of Sand City and for previous project applications. The *Sand City Proposed Habitat Conservation Plan – Draft* (City of Sand City and Thomas Reid Associates, 1990) mapped generalized vegetation communities for all of Sand City including the HCP area, and documented occurrences of several special-status plant and animal species mostly outside of the HCP area. The *Seaside–Sand City Coastal Alignment Bike Path EIR* (EMC Planning Group 1995) provides additional information on biological resources based on studies by LSA Associates (1995) on the bike path alignment both within and outside the HCP area. The *Flora and Fauna Baseline Study of Fort Ord, California* (U.S. Army Corps of Engineers 1992) provides comprehensive documentation of biological resources for the extensive area comprising the former Fort Ord, including the portion immediately north of the Sand City coastline.

The Point Reyes Bird Observatory (PRBO) has been monitoring the breeding success of western snowy plovers on Monterey Bay, including the Sand City coastline, since 1984 (Page et al. 1997, 1998). Habitat assessments and focused surveys for the Smith's blue butterfly have been conducted on several sites throughout Sand City by Dr. Richard Arnold (1987, 1991, 1998), and by LSA Associates (1988). Surveys for the black legless lizard were conducted by Dr. Theodore Papenfuss and Robert Macy on the MBSR site in 1987 and by EIP Associates in 1988.

The most complete information available on biological resources in the HCP is for the MBSR site. Thomas Reid Associates and EIP Associates performed focused surveys for sensitive plant species on the site in 1987 and 1988, respectively. An EIR was prepared for the City of Sand City for a previous project application on the MBSR site (EIP Associates 1990). Zander Associates conducted additional field surveys in 1995 and 1997, and produced a *Habitat Protection Plan for the Monterey Bay Shores Project* (1997). The City of Sand City (1998) has subsequently prepared a Draft EIR and Final EIR for the MBSR project.

The following discussion of vegetation, habitat types, and special status species is based mostly on these previous studies. Updated information has also been provided by PRBO for nesting snowy plovers, and the CDPD and MPRPD from their ongoing habitat restoration and management activities on the Sand City coastline.

Vegetation Communities

Coastal Strand

Coastal strand communities occur immediately adjacent to the beach zone, and are characterized by vegetation adapted to the harsh environmental conditions resulting from salt spray, strong winds, shifting sand and low soil moisture. The coastal strand areas on the Sand City coastline consist primarily of bare sand with scattered pockets of sea rocket (*Cakile maritima*), beach bur (*Ambrosia chamissonis*), and a few other pioneer species that are typical of the first stage of plant succession in the bare sand.

Pioneer Dune Vegetation

Pioneer dune vegetation is characterized by scattered clusters of early successional dune species including pink sand verbena (*Abronia umbellata*), beach bur, sea rocket, beach evening primrose (*Camissonia cheiranthifolia*), and silver bush lupine (*Lupinus chamissonis*). Various non-native plant species such as New Zealand spinach (*Tetragonia tetragonioides*), ripgut brome (*Bromus diandrus*), and common sow thistle (*Sonchus oleraceus*) also occur in patches throughout this vegetation community.

Central Dune Scrub

This vegetation type consists of plant species typical of more mature dune and coastal scrub communities. Native scrub species found in these areas include mock heather (*Ericameria ericoides*), California coffeeberry (*Rhamnus californicus*), dune buckwheat (*Eriogonum parvifolium*), poison oak (*Toxicodendron diversilobum*), and sandmat (*Cardionema ramosissimum*). Many areas which historically supported this community have been gradually overtaken by ice plant (*Carpobrotus* spp.) and other non-native species. However, efforts are underway in portions of the HCP area to remove iceplant and restore native dune scrub vegetation.

Ice Plant Dominated

Several areas of dense ice plant mats occur on the Sand City coastline. Although ice plant mats usually exclude establishment of other vegetation, other plants can occasionally coexist within the matted areas. Other species observed within the ice plant dominated areas include Bermuda buttercup (*Oxalis pes-caprae*), ripgut brome (*Bromus diandrus*), and wild radish (*Raphanus sativa*).

Ruderal/Disturbed

This vegetation type is found on areas previously disturbed by construction of access roads, railroad spurs, and previous mining activities. These areas are dominated by ruderal plant species with only occasional ice plant mats. Common ruderal species in these areas include ripgut brome, red-stemmed filaree (*Erodium cicutarium*), wild radish, common groundsel (*Senecio vulgaris*) bur clover (*Medicago polymorpha*), and stock (*Matthiola* sp.).

Bare Sand

This habitat type includes most of beach zone and large portions of the interior dune areas. Some of these areas may contain occasional small patches of ice plant and native and non-native dune plants; however, because of the highly unstable shifting sands, these areas are not conducive to the establishment of vegetation.

Wildlife

The HCP area provides habitat for a variety of wildlife species adapted to the beach and coastal strand, sand dunes, and ruderal plant communities. Wildlife habitats in many portions of the HCP area have been degraded both by previous land uses and the spread of dense ice plant mats and other non-native vegetation.

The wide beach and coastal strand provides valuable habitat for a variety of shorebirds, which feed on invertebrates in the intertidal zone. Typical species found in this habitat include the California gull (*Larus californicus*), herring gull (*Larus argentatus*), and sanderling (*Calidris alba*). Bare sand areas above the intertidal zone provide little foraging value for wildlife, although some ground-nesting shorebirds may use these areas for breeding. The adjacent ocean waters provide foraging habitat for pelagic birds such as Pacific loons (*Gavia arctica*), western grebes (*Aechmophorus occidentalis*), and surf scoters (*Melanitta perspicillata*).

Pioneer dune areas can support a variety of insects and reptiles adapted to exposed areas with relatively sparse vegetative cover. The insect fauna of the sand dunes is well developed and includes several species of bees, wasps, flies, butterflies, and moths (LSA Associates 1988). Reptiles found in this habitat type include the western fence lizard (*Sceloporus occidentalis*) and northern alligator lizard (*Gerrhonotus coeruleus*). Mammals observed in these areas include the black tailed jackrabbit (*Lepus californicus*) and deer mouse (*Peromyscus maniculatus*) (EIP Associates 1990).

The central dune scrub community can provide foraging or nesting habitat for small birds such as the white-crowned sparrow (*Zonotrichia leucophrys*) and wrentit (*Chamaea fasciata*). Common reptiles such as the western fence lizard, and small mammals such as the deer mouse, are also found in this habitat type. Because the coastal scrub vegetation is relatively sparse in most areas of the Sand City coastline and is often intermixed with ice plant, this community provides relatively marginal habitat value for wildlife in most of the HCP area. However, ongoing dune revegetation activities on the MPRPD former landfill site, CDPR-managed lands south of Tioga Avenue, and other areas adjacent to the Sand City Bike path, may improve wildlife habitat value of these areas over time.

Ice plant dominated areas are highly degraded biotic communities that provide relatively low habitat value for wildlife. Ice plant provides little forage value, but burrowing rodents such as the California ground squirrel (*Spermophilus beecheyi*), valley pocket gopher (*Thomomys umbrinus*), Norway rat (*Rattus norvegicus*) and the house mouse (*Mus musculus*) can live in the dense growth of ice plant.

The ruderal/disturbed areas on the property support animal species tolerant of human disturbance. Characteristic species include the Brewer's blackbird (*Euphagus cyanocephalus*) California ground squirrel, deer mouse, and the non-native red fox (*Vulpes vulpes*). Feral cats (*Felis domesticus*) also occur in some of these areas.

HCP Target Species

For the purposes of this HCP, potential “target species” are those species of plants and animals which are Federally-listed, proposed, or candidates for listing as threatened or endangered, or those designated as “species of concern” by the U.S. Fish and Wildlife Service. The actual target species covered by this HCP include only those species in these categories which are known to occur in the HCP area, or for which suitable habitat exists and there is potential for them to occur in the HCP area, and on which the project could reasonably be expected to have a potential impact. The target species include the following:

- Primary:* Western Snowy Plover (*Charadrius alexandrinus nivosus*)
- Secondary:* Smith's Blue Butterfly (*Euphilotes enoptes smithi*)
 Monterey Spineflower (*Chorizanthe pungens* var. *pungens*)
 Burrowing Owl (*Speotyto cunicularia*)
 Black Legless Lizard (*Anniella pulchra nigra*)
 California Horned Lizard (*Phrynosoma coronatum frontale*)
 Globose Dune Beetle (*Coelus globosus*)
 Monterey Dunes Scorpion (*Pauroctonus maritimus*)
 Sandmat Manzanita (*Arctostaphylos pumila*)
 Monterey Ceanothus (*Ceanothus cuneatus* var. *rigidus*)
 Yaden's Wallflower (*Erysimum menziesii* ssp. *yadonii*)
 Sand Gilia (*Gilia tenuiflora* ssp. *arenaria*)

The western snowy plover is the primary focus of this HCP for several reasons. First, large portions of the HCP area have provided nesting habitat for this species over the past several years. Second, human-related disturbances are known to disrupt nesting by this species, and therefore, both the private development and public access components of the project are likely to result in “take” of snowy plovers. Third, while the secondary species have either been observed or could potentially occur in the HCP area, little suitable habitat presently exists in the HCP area for most of these species, and existing populations on the Sand City coastline are likely isolated, relict or transient occurrences. Therefore, even though the project could potentially result in some take of these species, effects on the secondary species are not likely to be significant from a conservation standpoint. The following sections discuss the biology of the HCP target species and their presence or potential to occur in the HCP area.

Western Snowy Plover

Status and Biology: The western snowy plover is a Federally-listed threatened species and a CDFG Species of Special Concern. This bird is a small, pale colored shorebird with dark patches behind the eyes and on either side of the upper breast. The Pacific coastal population of the species breeds on beaches from southern Washington to southern Baja California in Mexico. It typically nests on flat, barren to sparsely vegetated sandy areas including sand spits, dune backed beaches, unvegetated beach strands, and open areas around estuaries and river mouths. Other, less common nesting habitats include dry salt ponds, salt pond levees and islands, alkali

flats, abandoned sand mines, and coastal dredged spoil disposal sites. Nests consist of a shell-lined scrape frequently located near objects such as grass clumps or pieces of driftwood. The breeding season extends from March through September and most eggs are laid by mid-July. Males incubate the three-egg clutches about 10% of the time during the day and most of the night (Warriner et al. 1986). Females normally leave the hatched young within six days and the males attend the young for 29 to 47 days. Females often reneest with new mates during the same breeding season. The last chicks of the season fledge during the first or second week of September.

The Monterey Bay population of this species consists of both year-round resident and migratory (winter resident) birds. In-migration of winter residents can begin as early as July and a winter flock of 60-70 birds assembles and roosts annually on the beaches just south of the Sand City limits. Courting and pre-nesting behavior occurs at the end of the roosting season, typically in early February, followed by residents' establishment of nesting sites for the new year.

Historic records indicate that nesting western snowy plovers were once more widely distributed in coastal California, Oregon and Washington than they are currently. In coastal California, snowy plovers bred at 53 locations prior to 1970 (Page and Stenzel 1981). Since that time, no evidence of breeding birds has been found at 33 of the 53 sites, representing a 62% decline in breeding sites. Additionally, the western snowy plover breeding population has declined 17% between 1977 and 1989 (Page et al. 1991). Because of declines in the population and threats to its habitat, the Service listed the western snowy plover as a Threatened species on April 5, 1993.

Human activity is also a key factor in the ongoing decline in coastal breeding sites and breeding populations of the snowy plover. Activities such as walking, jogging, running pets, horseback riding, off-road vehicle use, and beach raking cause unintentional disturbance and trampling of eggs and chicks. This problem is particularly pronounced for the western snowy plover because its breeding season (mid-March through mid-September) coincides with the season of greatest human use on west coast beaches. Another major cause of habitat loss to coastally breeding snowy plovers has been the encroachment of European beachgrass (*Ammophila arenaria*). This non-native plant was introduced to the west coast around 1898 to stabilize dunes. The spread of European beachgrass over formerly bare sand or sparsely vegetated dune areas has reduced the amount of unvegetated area above the tideline, decreased the width of the beach, and increased its slope. The beachgrass also provides habitat for predators that historically would have been largely precluded by the lack of cover in the dune community.

The Monterey Bay area is designated as one of eight primary coastal nesting areas for the western snowy plover. In its proposed designation of critical habitat for the western snowy plover (60FR 11768, March 2, 1995), the Service proposed the beaches from former Fort Ord south to Seaside as one of the critical habitat areas for the western snowy plover.

Presence in the HCP area: The Sand City coastline is located within a distinct segment of western snowy plover breeding habitat referred by the PRBO to as "Monterey North" (from Monterey Harbor to Stilwell Hall on former Fort Ord). PRBO has been studying plover nesting in the area since 1984, and actively monitoring the Monterey North segment since 1989. During

the ten year period from 1989 to 1998, a total of 63 snowy plover nests have been observed in the HCP area.

While much of the HCP area may provide suitable nesting or brooding habitat for the snowy plover, records of nest locations over the past ten years indicate that nesting activity is concentrated in four main areas along the Sand City coastline (Figure X). Nesting data from these four areas are summarized in Table X, and characteristics of these nesting areas are described further below.

Table X: Occurrence of snowy plover nests on the Sand City coastline, 1989-1998.

<u>Sand City Coastline Areas</u>	<u>Number of Nests 1989-1998</u>
MBSR	20
McDonald (including Sterling & Granite)	14
South of Tioga, north of Bay Street	8
South of Tioga, south of Bay Street	<u>21</u>
Total	63

(data from PRBO; used with permission)

The MBSR site has supported plover nests primarily along the upper beach zone near the toe of the bluff slope, and on the inland plateau at the northern end of the site. This nesting area is relatively isolated from roads and adjacent areas to the south by a tall dune at the southeastern end of the site.

On the McDonald site, nesting activity has been concentrated mostly at the southern and central sections of the site (including one nest on the Sterling parcel immediately south) on flat to gradually-sloped open areas above the beach zone. One nest was also observed near the toe of the bluff slope on the Granite Construction parcel adjacent to the MPRPD former landfill site.

South of Tioga Avenue, nests have been located mainly on the gradually-sloped dune area directly north of the water treatment facility on the north side of Bay Street. Two nests have also been observed along the upper beach zone near the toe of the slope to the west of this facility.

From south of Bay Street to the southern Sand City limit, nesting activity has occurred throughout the gradually-sloped inland dunes above the beach zone and above the swale area near the mouth of Canyon Del Rey Creek.

These observations indicate that both the upper beach zone and the gradually-sloped dune areas above the beach zone support snowy plover nesting on the Sand City coastline. Areas utilized for nesting are characterized by bare sand or sparse cover of vegetation, and some nest sites have been located as far as 650 feet (~200 meters) inland from the mean high tide line.

Recent trends in nesting success: Comparison of data on nesting activity for the most recent five-year period (1994-1998) and the previous five years (1989-1993) indicates a downward trend in snowy plover breeding success in the HCP area. Nesting activity on the Sand City coastline has declined steadily since 1995 (Figure Y), dropping to a low of just one nest in 1998

compared with 7.8 nests per year on average from 1989 to 1994. Furthermore, breeding productivity for the entire Monterey North segment, defined as the number of juveniles fledged per nest, has also decreased on average in recent years (Page et al. 1997, 1998) (Table Y).

Figure Y: Annual nesting activity of snowy plovers on the Sand City coastline.

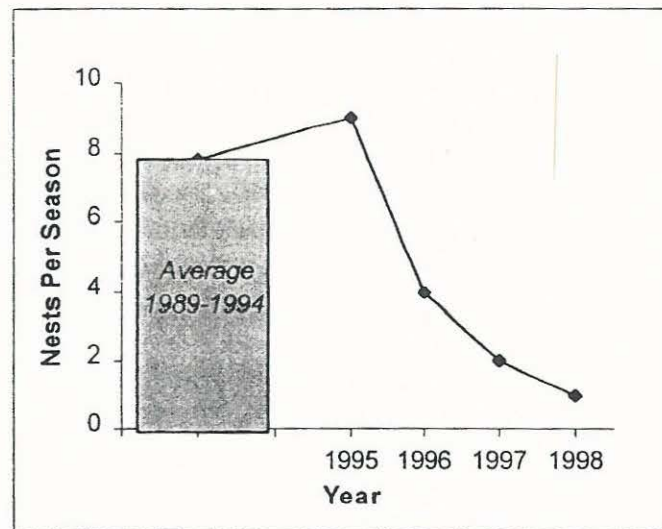


Table Y: Breeding success of snowy plovers at Monterey North, 1989-1998

<u>Monterey North Breeding Indices</u>	<u>1989-1993</u>	<u>1994-1998</u>
Number of Nests	48	45
Number of Chicks	81	76
Number of Juveniles Fledged	38	12
Juveniles Fledged per Nest	0.79	0.27

(data from Page et al. 1997, 1998; used with permission)

While these results suggest that the situation has worsened in recent years for snowy plovers in the HCP area, the causes and significance of this trend are not known. Both nesting activity and breeding success of snowy plovers are highly variable from year to year. For example, the relatively low numbers of nests at Monterey North from 1996-1998 are similar to the numbers observed during 1989-1991, but contrast sharply with several-fold greater nesting activity from

1992-1995. Similarly, breeding productivity has ranged from zero to 1.06 juveniles per nest at Monterey North over the past ten years, and shows no correlation with numbers of nests. Considering the large annual variability in nesting activity and productivity, and the numerous potential sources of nest failure, it is difficult to determine what factors may be contributing to the recent decline in snowy plover nesting success in the HCP area.

The main causes of reduced breeding success of snowy plovers on Monterey Bay beaches include nest abandonment due to disappearance of adults, predation on eggs or chicks, destruction of nests by people, and nest loss due to strong winds or high tides (PRBO 1997). Nest predation by non-native red foxes has been substantially reduced over the past few years through the implementation of a predator control program by the U.S. Department of Agriculture Wildlife Services unit (PRBO 1998). However, predation on eggs by gulls, predation on chicks and adults by birds of prey, and human-related impacts continue to affect plover breeding success.

Presence in the vicinity of the HCP area: Coastline areas adjacent to Sand City provide both wintering and breeding habitat for the western snowy plover. South of the Sand City limits, a winter flock congregates on the beach near the mouth of Canyon Del Rey Creek and provides a pool of potential breeding adults for Sand City and adjacent coastline areas. Snowy plovers have been observed nesting in the segment between Seaside Beach and Monterey Harbor as recently as 1998. North of the Sand City limits, a long undeveloped stretch of coastline extends through (future) Fort Ord Dunes State Park. The portion of the park in the vicinity of Sand City has a relatively narrow beach which terminates in a steep bluff face. This probably limits the suitability of this area as plover breeding habitat, and relatively little nesting has occurred here during the past ten years.

Further north along the Monterey Bay coastline, several beach and estuarine areas support snowy plover nesting, with the largest concentrations occurring in beach and dune areas in the City of Marina, the Salinas River National Wildlife Refuge and adjacent beaches near the mouth of the Salinas River, and managed salt ponds in the Moss Landing Wildlife Management Area at Elkhorn Slough. In contrast to the relatively low nesting success at Monterey North in recent years, several of the breeding areas further north on Monterey Bay have maintained or even increased nesting activity during this period. Most notably, the managed salt ponds have been highly productive both in terms of numbers of nests (mean = 67 nests) and breeding productivity (mean = 1.08 juveniles per nest) from 1996 to 1998. As a result of the high nesting success in these areas, the PRBO concluded that the 1997 and 1998 nesting seasons have been "very successful" for snowy plovers in the Monterey Bay region overall (Page et al. 1997, 1998).

Secondary Target Species

A. Listed Species

Smith's Blue Butterfly

Status and Biology: Smith's blue butterfly is a Federally-listed endangered species. This species is a small lycaenid butterfly which has a one-inch wingspan as an adult. The male butterflies are a luminous blue and females are brown on top, with both sexes having an orange band on the hindwing border. Larvae are slug-shaped and vary from cream to pale yellow or rose in color, changing with the color of the flowerheads on which they are feeding (USFWS 1984). This subspecies is found along the coastal dunes of Monterey County north from Marina Dunes, south to Point Gorda. More inland populations are found in Carmel Valley. The larvae (caterpillar form) feed on two species of buckwheat: the dune buckwheat, *Eriogonum parvifolium*, generally used in the southern portion of their range, and the coast buckwheat, *Eriogonum latifolium*, generally used in the northern portion of their range. Populations of Smith's blue butterfly within Sand City utilize both species of buckwheat.

Female Smith's blue butterflies lay their eggs singly on flower heads of the host plants. The larvae hatch in about a week and begin eating the flowering heads of the buckwheat. As larvae grow they molt, passing through five instars (developmental stages). Following the fifth instar the larvae pupate sometime between August and November, and then overwinter in the leaf litter at the base of the plants. As with any other lycaenids, Smith's blue butterfly larvae may have a mutualistic interaction with ants during later instars (Arnold 1983). Arnold also observed predation by spiders and occasionally heavy parasitism by wasps. The role of other species in Smith's blue population dynamics is unknown.

The Smith's blue butterfly is a weakly flying species; therefore, long distance dispersal is believed to occur only rarely. Arnold reported common dispersal of distances of up to a few hundred yards at Fort Ord and at the Marina State Beach (1983 and 1986). Flight usually occurs within one or two meters above the ground. Observations of extended flight – more than a few minutes for an individual butterfly – are rare.

Since the Smith's blue butterfly spends the majority of its time in short flights within patches of buckwheat, any area of non-habitat, such as active mining areas, bare areas, large blow-outs on sand dunes, or extensive dense patches of vegetation which do not contain buckwheat (such as ice plant), will act as barriers to dispersal. Where visual continuity of habitat, as with areas of urban development or planting of shrubs or trees, does not exist, the barrier is likely to be significant. Some dispersal may be passive, by the wind, but the typical response of adults under high wind conditions is to avoid flight altogether. Adult Smith's blue butterflies can find basic requirements (mating, nectaring, egg-laying) within a very small area (less than three acres). In locations where host plants are abundant, the local densities of Smith's blue butterflies may vary from year to year, and may shift spatially over a period of years, at least partially in response to declining buckwheat quality (Arnold 1980, 1986).

The populations of Smith's blue butterfly at former Fort Ord, Marina State Beach, Salinas River National Wildlife Refuge and the Naval Postgraduate school are considered important to the recovery of the species (U.S. Fish and Wildlife Service 1984). Densities of the buckwheat host plants in the Sand City area are substantially lower than at these higher quality habitats for the butterfly (Arnold 1991). Nonetheless, considerable improvement to the habitat quality for the butterfly in Sand City has been demonstrated at the restored Sand Dollar habitat reserve. With the implementation of restoration activities in other areas of the city (including the MBSR site,

Bike Path revegetation areas, and CDPR dune restoration areas south of Tioga Avenue), Sand City could also provide an important link in the overall recovery of the species.

Presence in the HCP area: Arnold (1987) reported observations of approximately 40 individuals of Dune buckwheat (*Eriogonum parvifolium*), one of the two host plants for the Smith's blue butterfly, on the northeastern edge of the MBSR site. Dr. Arnold revisited the site in summer 1987 and reported finding four adults and two larvae of the Smith's blue butterfly along the northern border and near the northeastern corner of the property. Because he found such a small number of adults, and only found them on two of his six visits to the site, he concluded the site was not heavily used by the species and that it probably provided habitat for transients dispersing from larger established populations to the north.

Subsequent surveys found similarly small numbers of Smith's blue butterfly in the vicinity of the MBSR site. In 1988, LSA Associates found a total of about 12 individual butterflies on six separate occasions scattered near the northeastern property boundary. In July, 1989, Dr. Arnold observed four adult butterflies in the gully along the northern property boundary. During February, 1995, Zander Associates counted and mapped the locations of host plants (dune buckwheat) on the MBSR site. Approximately 58 plants of dune buckwheat were observed on the site in 1995 and several more plants were identified offsite but immediately adjacent to the southeastern and eastern property boundary. A reconnaissance survey in 1997 confirmed that the extent and distribution of dune buckwheat on the MBSR property was essentially the same as that recorded in 1995.

At the southern end of the HCP area, a native plant revegetation program was implemented by CDPR in 1993-94 which included planting of dune buckwheat and coast buckwheat. During summer 1998, prior to construction of the segment of the Sand City Bike Path west of Sand Dunes Drive, Arnold surveyed for Smith's blue butterfly in areas of the bike path alignment that had recently become colonized by buckwheat plants from CDPR revegetation areas. Dr. Arnold found no life stages of the butterfly in nine visits to this area, and concluded that the species does not occupy the area at this time.

Based on these survey results, the occurrence of Smith's blue butterfly appears to be limited to a small, transient cluster at the northern end of the HCP area. Since most of the HCP area is relatively exposed and subject to strong onshore winds, most of the area is not expected to provide suitable habitat for the Smith's blue. However, this species could potentially colonize some of the more protected revegetated dune areas in the future.

Monterey Spineflower

Status and Biology: Monterey spineflower is a Federally-listed threatened species. This plant is a small, prostrate annual in the buckwheat family. Monterey spineflower occurs scattered on sandy soils within coastal dune, coastal scrub grassland, maritime chaparral, and oak woodland communities along and adjacent to the coast of southern Santa Cruz and northern Monterey Counties and inland to the coastal plain of Salinas Valley. Significant populations of Monterey

spineflower representing upwards of 70 percent of the range of the plant were documented at Fort Ord (U.S. Army Corps of Engineers 1992).

Monterey spineflower has a wide habitat range and tends to occur on bare sandy patches with sparse vegetation cover. The species often colonizes recently disturbed sandy soils. Within grassland communities, the plant occurs along roadsides, in firebreaks, and other disturbed sites. In oak woodland, chaparral, and scrub communities, the plants occur in sandy openings between shrubs. In dense chaparral or scrub vegetation, Monterey spineflower typically is restricted to roadsides and firebreaks through these communities. The species is threatened by residential development, agricultural land conversion, recreational use, sand mining, dune stabilization and introduction of non-native species.

Monterey spineflower is found along the coast of southern Santa Cruz and northern Monterey Counties and inland to the coastal plain of the Salinas Valley. Former Fort Ord supports the largest populations of Monterey spineflower known and these populations will be protected, managed and enhanced through implementation of the Installation-wide Habitat Management Plan for former Fort Ord.

Presence in the HCP area: Monterey spineflower has been identified in a localized patch adjacent to the northern end of the Sand City Bike Path (EMC Planning Group, 1995), and also appears to be a recent colonizer of the bare sand areas on the MBSR property. Although several studies have been completed on the MBSR property, Monterey spineflower was only recorded to occur following site surveys conducted in 1997. On the MBSR site, there are approximately 2.5 acres of low density Monterey spineflower habitat and 0.3 acre of high density habitat in the southeastern and eastern portions of the MBSR site. The spineflower patch adjacent to the bike path covers approximately 0.06 acre (LSA Associates 1995).

Yadon's Wallflower

Status and Biology: Yadon's wallflower is a Federally- and state-listed endangered species. Yadon's wallflower is an annual plant that is known only to occur on fore- to mid-dunes of the coastal strand in the Monterey Bay near the City of Marina. It is closely related to Menzies' wallflower (*Erysimum menziesii* ssp. *menziesii*) which is found in the same habitat type but typically occurs on the Monterey Peninsula near Asilomar. Yadon's wallflower usually blooms in May through September and Menzies' wallflower blooms from March to April. Because of the environmental factors prevalent in the dune and coastal strand habitats (strong winds, sand erosion, high surf and tides, etc.), documented populations of both these subspecies have disappeared and reappeared in the record.

Presence in the HCP area: Yadon's wallflower has not been previously identified in the HCP area. However MPRPD, in collaboration with CDPR and CDFG, recently introduced seeds of this species onto the former landfill site as part of their habitat restoration efforts. Yadon's wallflower plants were observed to be growing on the site in 1999 (Tim Jensen, MPRPD, pers. comm.).

Sand Gilia

Status and Biology: Sand gilia is a Federally-listed endangered species and a state-listed threatened species. Sand gilia is a member of the phlox family. It is a small annual plant approximately 5-17 cm tall, and its leaves occur in a basal rosette and are once pinnate, lobed and cobwebby. The dark purple flower of this species is usually its most identifiable feature. This plant usually occurs on Flandrian dunes in the Monterey Bay from Spanish Bay to Marina and just north of the Salinas River.

Potential Presence in the HCP area. No individuals of sand gilia were found in the HCP area during extensive surveys for this species throughout Sand City conducted in the late 1980's (Jean Ferreira, pers. comm.) and in 1993 (Joey Dorrell, pers. comm.), or on the MBSR site in 1997 (Zander Associates 1998). A large population of sand gilia is known from the East Dunes site east of Highway One adjacent to the HCP area. Because of the absence of wind-protected hind dune habitats, the HCP area does not appear to provide suitable habitat conditions for this species at the present time.

B. Species of Concern

Burrowing Owl

Status and Biology: The burrowing owl is a U.S. Fish and Wildlife Service species of concern, and is a CDFG Species of Special Concern. This medium-sized owl has sandy-colored, spotted plumage and long legs. Burrowing owls inhabit open grasslands, deserts, and arid scrublands with low-growing vegetation, but have also been observed in back-dune habitats within the City of Sand City (Zander Associates 1997). The availability of rodent burrows or other similar shelters for roosting and nesting is an essential component of this species' habitat. Burrowing owls feed mostly on insects, but may also eat small mammals, reptiles, birds, and carrion.

Potential Presence in the HCP area: The burrowing owl has not been identified on the Sand City coastline west of Highway 1. However, one burrowing owl was observed residing in the coastal dune scrub restoration area of the Edgewater Shopping Center on the east side of Highway 1 in Sand City (Zander Associates 1997). Suitable burrows and foraging habitat for this species appear to be lacking throughout most of the HCP area. However a limited amount of rodent activity and few potential nesting areas for the burrowing owl have been observed in the area. Thus, there is some potential for burrowing owls to move into the area should conditions "improve" (i.e. increased ground squirrel activity), but the available data suggest the species is not currently present.

Black Legless Lizard

Status and Biology: The black legless lizard is a USFWS species of concern and a CDFG Species of Special Concern. This subspecies was proposed for listing as threatened or endangered by the Service on August 2, 1995, but was withdrawn from proposed status on

August 12, 1998. Black legless lizards live in a number of habitats in dunes and sandy areas from immediately above high tide, the crest of sand dunes, and the edge of the hind dunes to inland sandy areas associated with oak woodlands, grasslands, maritime chaparral and other habitats (TRA 1987, Hunt and Zander 1997). They are fossorial animals that burrow in sand and leaf litter beneath plants growing in these habitats and feed on insects and other invertebrates. Some plant cover needs to be present as food for insects that, in turn, serve as food for the black legless lizards. Black legless lizards are most abundant in dune habitats where native vegetation is present (Stebbins 1985). Although legless lizards have also been found along the edges of ice plant mats within dune ecosystems, ice plant mats are not considered suitable habitat for legless lizards due to their dense root structure and lack of leaf litter (Papenfuss and Harris 1990).

Adult legless lizards feed on small insects, larvae of insects, spiders, and other small food items. They are live-bearing and 1-4 young (usually 2) are born in the fall between September and November (Miller 1944). Young and adults spend most of the time underground, but may rest just under the surface of the sand or leaf litter layer. The activity of legless lizards is dependent on temperature. The optimum temperature range is from 15 to 25° Celsius. Below 13° C the lizards are inactive, although they can tolerate temperatures as low as 4° C. The lizards bask in the warm sand during the day. They are active and feed in the afternoon and evening.

Legless lizards in the Monterey Bay area are currently regarded as belonging to a single species with two morphotypes, a widely distributed form with silver colored adults (*Anniella pulchra*) and a narrowly distributed form with black colored adults (*A. p. nigra*) (Hunt and Zander 1997). According to Jennings and Hayes (1994), "ongoing morphological and genetic studies of this taxon indicate no evidence exists for its partitioning into subspecies."

Potential Presence in the HCP area: No legless lizards were found in the HCP area during comprehensive, city-wide surveys for the species conducted in 1987. Legless lizards were also not found during a focused search on the MBSR site in 1988 (EIP Associates 1990). On March 20, 1997, Zander Associates was joined by Dr. Larry Hunt – a noted authority on the black legless lizard – and Steven Morey and Catherine McCalvin of the U.S. Fish and Wildlife Service, to evaluate potential habitat for black legless lizard on the MBSR site. Approximately four person-hours were spent aggressively raking for lizards in areas considered possibly suitable for the species. No lizards were uncovered on the MBSR property, even though black legless lizards were observed on the same day using the same techniques at both former Fort Ord and Marina State Beach. The habitat quality for black legless lizard was considered extremely marginal because of the extent of bare sand, compacted soils and predominance of iceplant in areas where vegetation occurs.

California Horned Lizard

Status and Biology: The California horned lizard is a USFWS species of concern and a CDFG Species of Special Concern. This species lives in sandy areas with sparse shrub cover, and feeds primarily on ants and other small insects. Horned lizards rely on camouflage for protection and often remain motionless at the approach of a potential predator.

Presence in the HCP area: A horned lizard was observed in the stabilized dunes south of Tioga Avenue (Kellner pers. obs. 1988, cited in LSA Associates 1995). An individual was also recently observed in the dune restoration area adjacent to the Edgewater Shopping center, just east of the HCP area (Clemens, Zander Associates pers. obs. 1998). This species could potentially occur throughout much of the HCP area, except in the beach zone and in areas with dense ice plant.

Globose Dune Beetle

Status and Biology: The globose dune beetle is a USFWS species of concern. This species lives in coastal sand dune habitats, typically inhabiting sandy beach or foredune areas containing pioneer dune vegetation. Globose dune beetles are nocturnal, tending to move on the surface at night, and burrow beneath the sand surface during the day. This species is omnivorous and feeds mostly on dead plant material.

Potential Presence in the HCP area: The closest reported occurrence of the globose dune beetle to the HCP area is at Salinas River State Beach, approximately 10 miles north of the Sand City limit. The beetle is only found in the foredune of the beach except in one location in California. No directed surveys for the globose dune beetle have been completed on the Sand City coastline; therefore, it's potential presence cannot be dismissed.

Monterey Dunes Scorpion

Status and Biology: The Monterey Dunes scorpion is a USFWS species of concern. This species inhabits dune areas with stabilized sand, including edges of ice plant clumps and dune scrub vegetation. The Monterey Dunes scorpion lives in burrows during the day, and emerges from its burrows to forage on the surface at night. Like other scorpions, they are armed with a venomous stinger on the end of their tail.

Potential Presence in the HCP area: This species is known to occur in the sand dunes north of the Monterey Beach Hotel, including those in the HCP area, and could potentially occur in suitable habitat as far north as former Fort Ord (Savary, pers. comm., cited in LSA Associates 1995). This species has also been observed in the dune restoration area adjacent to the Edgewater Shopping center, east of the HCP area (Clemens, Zander Associates pers. obs. 1998).

Sandmat Manzanita

Status and Biology: Sandmat manzanita is a USFWS species of concern. This plant is a mat- to mound-like evergreen shrub in the heath family, generally growing less than 5 feet tall. Sandmat manzanita grows on pre-Flandrian dunes in central maritime chaparral communities, only around Monterey Bay (Griffin 1978). It blooms from February to May.

Sandmat manzanita is well adapted to shifting sand habitat forming large circular mats and mounds. It appears to be an early to middle successional species in maritime chaparral following burn events or ground disturbance, eventually yielding to taller chamise and shaggy-barked manzanita in older stands. It is typically associated with cropleaf ceanothus (*Ceanothus dentatus*), Monterey ceanothus, deer weed (*Lotus scoparius*), heliotrope (*Heliotropium curassavicum*), and beach mock heather (Zoger and Pavlik 1987a). Sandmat manzanita prefers windy open areas close to the ocean's sandy soils. Reproduction occurs by seed and layering. The greatest threat to sandmat manzanita, other than development, is crowding out by noxious weeds and taller species within the maritime chaparral community.

Presence in the HCP area: Sandmat manzanita plants have been identified immediately southeast of the MBSR site (EIP Associates 1990; Zander Associates 1997). The species has not been documented elsewhere in the HCP area.

Monterey Ceanothus

Status and Biology: Monterey ceanothus is a USFWS species of concern. This species is a medium-sized evergreen shrub with pale to bright blue flowers, and is a member of the buckthorn family. Monterey ceanothus occurs on pre-Flandrian dunes and flats within central maritime chaparral and closed-cone coniferous forests in the southern Monterey Bay region (Griffin 1978). This species only occurs in the vicinity of Monterey Bay with the largest population known from former Fort Ord (U.S. Army Corps of Engineers 1992). Plant species associated with Monterey ceanothus include sandmat manzanita, beach sagewort, rippgut brome, cropleaf ceanothus, beach mock heather, and deer weed (Zoger and Pavlik 1987a). Removal of central maritime chaparral habitat for development is the primary threat to this species.

Presence in the HCP area: Monterey ceanothus plants have been observed in the railroad right-of-way east of the MBSR property, in the same general area as sandmat manzanita.

5.0 BIOLOGICAL GOALS

To establish an effective program to minimize and mitigate impacts on the western snowy plover and the other target species, the HCP defines explicit biological goals which form the guiding principles of the conservation plan. Specific objectives and performance standards for achieving these goals are presented in section 7.5. The biological goals of this HCP are as follows:

1. Avoid or minimize adverse impacts of the project on the western snowy plover and other target species in the HCP area.
2. Preserve and manage nesting, brooding, and foraging habitat for the western snowy plover to maintain a locally breeding population on the HCP area, consistent with the Service's recovery goals for this species in this area.
3. Contribute to regional conservation and recovery efforts for the western snowy plover in the Monterey Bay area.
4. Provide and maintain high quality habitat for Smith's blue butterfly at the northern end of the HCP area, and create opportunities for possible habitat expansion by this species in other suitable locations in Sand City west of Highway 1.
5. Restore degraded plant communities to improve native species composition, and increase occurrences of Monterey spineflower and other locally native plant species.
6. Maintain suitable habitat for the black legless lizard, California horned lizard, globose dune beetle, Monterey Dunes scorpion, and potential wintering habitat for the burrowing owl, in the HCP area.

The following sections evaluate the potential impacts of the project on the HCP target species, and describe the specific management measures which are intended to minimize and mitigate these impacts and achieve the goals defined above.

6.0 IMPACTS TO COVERED SPECIES

The following section analyzes potential direct and indirect effects of the proposed project on the western snowy plover and other target species in the HCP area. Section 6.2 evaluates potential impacts to the western snowy plover from a regional and cumulative perspective, and section 6.3 considers the maximum levels of incidental take of the western snowy plover and other HCP target species that could potentially result from the project.

6.1 Direct and Indirect Impacts

6.1.1 Western Snowy Plover

A. Construction and Development Impacts

Project grading and construction, and possibly beach nourishment, will affect areas that have provided nesting and brooding habitat for the western snowy plover. These activities will be scheduled and monitored to avoid take of snowy plovers during construction. Given that snowy plovers tend to avoid areas with high levels of human activity, and that appropriate controls will be placed on construction area boundaries, timing and operations (see Mitigation section), the risk of direct impacts to individual snowy plovers is expected to be negligible. However, temporary reductions of nesting activity could result from construction activities during the buildout period. Noise and human activity associated with construction could deter birds from nesting or cause nest desertion in the vicinity of these activities, and thereby affect local nesting success in the short term.

Buildout of the proposed developments north of Tioga Avenue would reduce nesting and brooding habitat for the snowy plover above the beach zone. On the MBSR property, nesting and brooding habitat would be affected in the upper plateau and adjacent sand pit. These areas have supported a total of nine nests from 1989-1998. Similarly, development of the McDonald and Sterling sites would reduce nesting habitat in areas above the beach and strand that have supported 6 to 13 nests over the past ten years, depending on the development footprint. These habitat losses are expected to be offset in part by on-site habitat restoration activities which would expand coastal strand and foredune habitats on undeveloped portions of these sites.

Sand deposition for beach replenishment could temporarily cover historical plover nesting sites on the beach and coastal strand. From 1989-1998, eleven nests were located in the beach and strand zone of the MBSR site, and one was located on the Granite Construction parcel north of the McDonald site. Sand deposition activities would take place outside of the plover breeding season, and therefore would not directly impact nesting snowy plovers. However, residual sand from these activities could alter coastal strand topography and affect the suitability of some areas to support nesting the following breeding season. These potential effects would be temporary, since the total area of beach and strand on these sites is expected to increase once the deposited sand is distributed along the shoreline by waves, wind, and tidal action.

B. Public Use Impacts

Development of both the proposed coastal resorts and public access facilities would result in a substantial increase in human visitation and recreational use of the beach and adjacent areas of the Sand City coastline. For the MBSR development, it is estimated that the number of visitors to the site and along the beach each day would increase by about 845 individuals¹ (City of Sand City 1998). For the McDonald and Sterling sites, development of hotel facilities would add an estimated 540 visitors per day to this portion of the HCP area.² Assuming 25% of the hotel and resort visitors use the beach on any given day [NEED TO VERIFY THIS ASSUMPTION], beach use on these sites can be projected to increase by approximately 345 people per day from these resorts. Additional use of this portion of the shoreline would result from public access and parking on these sites, as well as from the proposed public parking lots at Tioga Avenue and immediately north of the MBSR site.

South of Tioga Avenue, the public access points and parking lots proposed at Tioga Avenue and Bay Street are expected to result in substantial increases in beach use along this section of the coastline. At Monterey State Beach south of the HCP area, beach attendance totalled about 260,000 visitors in 1998, with an average of about 30,000 to 50,000 visitors per month during the peak months of July through October (data from K. Gray, CDPR). Assuming equivalent attendance levels for public beaches in Sand City following development of public parking and access facilities [KEN, IS THIS ASSUMPTION IS APPROPRIATE?], an estimated 1,000 to 1,700 visitors per day could be projected to use this section of the coastline during the peak summer months, with greater numbers during busy weekends and holidays.

The anticipated increases in beach use could result in a wide range effects on breeding snowy plovers, from minor disturbances of nesting birds, to nest abandonment, destruction of eggs or chicks, or avoidance of nesting in areas that receive high levels of human use. Activities such as jogging, running dogs (especially off leash), and driving vehicles on the beach can be particularly disruptive to breeding snowy plovers (Fahy and Woodhouse 1995). Since the level of disturbance response of nesting snowy plovers is related both to the type of disturbance and proximity of the activity to the nest or brood, the level of impact that would result will depend in part on the extent to which effective controls can be implemented on beach activities and access in the vicinity of nesting or brooding areas. These controls are discussed in the Mitigation section.

¹ The figure of 1,020 visitors per day was calculated for a 597-unit project in the Monterey Bay Shores Resort EIR, based on an occupancy of two per hotel room and visitor-seving unit an 80% occupancy rate, and two per residential unit at a 100% occupancy rate. The estimate provided here is adjusted for a reduced project size of 495 units.

² Based on an occupancy of two per hotel room at 80% occupancy rate for a 136-room hotel on the Sterling site and a 200-room hotel on the McDonald site.

6.1.2 *Smith's Blue Butterfly*

Development of the project would result in the removal of approximately 58 dune buckwheat plants on the MBSR site which provide habitat for the Smith's blue butterfly. Smith's blue butterfly has not been observed in any other locations in the HCP area, and habitat conditions are unsuitable for this species in most areas of Sand City west of Highway 1. However, ongoing and proposed habitat restoration activities may expand the range of suitable habitat for Smith's blue butterfly in the HCP area, and provide potential linkage to existing habitat to the north at former Fort Ord.

The removal of dune buckwheat plants on the MBSR site would temporarily reduce habitat for Smith's blue butterfly, and could result in take of individual butterfly larvae or pupae. From results of previous surveys, it is likely that these buckwheat plants support only a minimal number of adult butterflies (4 – 11 individuals) and probably serve as habitat for transients dispersing from larger established populations to the north of the HCP area. Moreover, this habitat reduction is expected to be temporary, since the project will restore native dune vegetation including dune buckwheat at the eastern end of the site. Therefore, the short term reduction of habitat for the Smith's blue butterfly and the potential take of a small number of butterfly larvae or pupae is not expected to substantially affect the species from a regional or cumulative perspective.

6.1.3 *Monterey Spineflower*

Approximately 2.6 acres of dune vegetation which includes Monterey spineflower plants will be removed for construction of the MBSR project. Of this area, about 0.2 acre supports a high density of Monterey spineflower and the remainder supports a relatively low density. Approximately 0.14 acre containing Monterey spineflower will not be affected. An additional 0.03 acre of low density Monterey spineflower occurs immediately south of the MBSR site, which could be affected by revegetation or other activities on this property. Since this species readily colonizes pioneer dune and previously disturbed sandy areas, and the project will include enhancement and restoration of native dune plant communities in several locations in the HCP area, it is expected that these activities will ultimately increase the abundance and extent of Monterey spineflower on the Sand City coastline.

6.1.4 *Other Target Species*

Burrowing Owl. Development of the project is not expected to affect the burrowing owl, because no individuals or suitable burrow habitat have been identified in the HCP area. However, development of the project could affect potential winter foraging habitat for this species during the buildout period. This temporary reduction of potential habitat would be more than offset by proposed habitat restoration and revegetation of other portions of the HCP area.

Black Legless Lizard. Project grading, removal of dune scrub vegetation, slope recontouring, and dune restoration activities could potentially affect black legless lizards. Most of the HCP

area is not likely to provide suitable habitat for the legless lizard due to the predominance of bare sand and ice plant, however areas containing dune scrub or relatively dense pioneer dune vegetation could support this species. With implementation of appropriate monitoring and take avoidance measures during construction (see Mitigation section), direct impacts to this species are expected to be minimal. Furthermore, any losses of habitat for the species are expected to be temporary, since native dune scrub vegetation will be planted on portions of the development parcels and elsewhere in the HCP area. The restored hind dune areas would provide suitable habitat for relocating any legless lizards displaced by the project.

California Horned Lizard. Project development in areas with pioneer dune, dune scrub or ruderal vegetation could directly affect individual California horned lizards or cause temporary losses of habitat for this species. With implementation of appropriate monitoring and take avoidance measures during construction (see Mitigation section), direct impacts to this species are expected to be minimal. Moreover, any losses of habitat for this species would be relatively minor, and would be offset by habitat restoration activities on the development parcels and elsewhere in the HCP area.

Globose Dune Beetle. Deposition of excess sand for beach replenishment on the MBSR site, and possibly on the McDonald and Sterling sites, would cover the existing sand surface and could bury sand-dwelling invertebrates that inhabit the site, including possibly the globose dune beetle. Depending on the depth of sand cover, this could adversely affect these animals. This potential impact will be reduced by conducting a salvage survey to capture and relocate any globose dune beetles prior to deposition of sand in the coastal strand zone (see Mitigation section).

Monterey Dunes Scorpion. Project grading, and possibly beach replenishment, could affect individual Monterey Dunes scorpions or habitat for this species. However, the amount of suitable habitat for this species that will be preserved will greatly exceed the amount affected by development. Moreover, the proposed habitat restoration activities will likely improve habitat for the Monterey Dunes scorpion. Therefore, the project is not expected to adversely affect this species.

Sandmat Manzanita. Development of the project could affect sandmat manzanita plants in the vicinity of the railroad right of way at the northeastern end of the plan area. The only known occurrences of this species in the HCP area are within the railroad right of way. However, if sandmat manzanita plants were to colonize adjacent areas outside the right of way, they could be removed. Removal of a few "volunteer" plants in this location would not substantially affect the species from a conservation standpoint. Furthermore, sandmat manzanita will be planted in suitable locations in the HCP area as part of the proposed habitat restoration activities (see Mitigation section).

Monterey Ceanothus. Development of the project could affect Monterey ceanothus plants growing within or adjacent to the railroad right of way. As with sandmat manzanita, the known occurrences of this species in the HCP area are limited to this right of way. If any individuals were to colonize areas outside the right of way, they could be removed. This would not substantially affect the species from a conservation standpoint, and Monterey ceanothus will also be planted in suitable locations in the HCP area as part of the habitat restoration program.

Yadon's Wallflower. Development of the project is not expected to affect Yadon's wallflower, since its only known occurrence in the HCP area is from recent plantings on the MPRPD former landfill site. While this species has only been introduced in a limited area, it is possible that it could spread via seed dispersal to adjacent development zones (such as the McDonald site, which is downslope and potentially downwind of the MPRPD restoration area). If this occurs, Yadon's wallflower plants could potentially be removed during development, but this would not affect any naturally occurring population of this species.

Sand Gilia. Development of the project is not expected to affect sand gilia, since neither this species nor suitable habitat conditions for the species presently exist in the HCP area.

6.2 Cumulative and Regional Impacts

Coastal development and increased public beach use in the HCP area could add incrementally to cumulative reductions or fragmentation of habitat for the western snowy plover in the Monterey Bay area. From a regional perspective, the Sand City coastline is one of several areas that have supported snowy plover breeding, and which will likely experience increases in human-related impacts over the next several years. In the vicinity of the HCP area, increases in beach use are anticipated to result from growth in local resident and tourist populations, opening of public beach access at former Fort Ord and elsewhere in the vicinity, and future development in the cities of Monterey, Seaside, and Marina. All of these factors could reduce the capacity of beaches in these areas to support breeding plovers. In addition, cumulative habitat loss in the region could result from beach erosion or other long term processes, which could reduce the area of beach and coastal strand available for nesting.

During the past five years (1994-1998), the HCP area has supported approximately five percent of the snowy plover nests on Monterey Bay beaches (data from PRBO). Coastal areas north of Sand City in the vicinity of Marina, the Salinas River mouth, and Elkhorn Slough are more important from a regional conservation standpoint, since they support a much greater proportion of the snowy plover breeding activity in the Monterey Bay area, and are farther from the urban core of the Monterey peninsula.

6.3 Take of Covered Species

6.3.1 Western Snowy Plover

To assess potential levels of take of snowy plovers that could result from the project, three take categories are defined according to severity of effect. Category 1, *low-level harassment*, includes events that elicit disturbance responses in nesting snowy plover adults or chicks, but are below the threshold for substantial disruption of nesting. Category 2, *nesting disruption or abandonment*, includes situations that cause desertion of an existing nest or brood, substantial disruption of breeding activities, or complete avoidance of nesting in a previously productive

nesting area. Category 3, *injury or death*, includes activities which directly cause death or injury to snowy plover adults or chicks, or destroy active nests.

The following assessments of maximal take are "worst-case scenario" estimates calculated from the ten year (1989-1998) average for nesting occurrences of snowy plovers on the Sand City coastline. The estimates are based on the assumptions that each nest in the HCP area represents on average between one and two breeding adults (since some nests in any given year may represent successive nesting attempts by the same female), and that the number of chicks successfully fledged averages less than or close to one per nest.

Assuming half of the breeding adults nest twice in the same year and the other half nest only once, the average of 6.3 nests per year in the HCP area would correspond to approximately eight breeding adults and six fledged chicks.³ Accordingly, a worst-case estimate of the maximum number of snowy plovers that could be affected during an average nesting season is about 14 birds per year. These effects can be further broken down for each take category as follows:

<u>Take Category</u>	<u>Maximum Number Potentially Affected Per Year</u> <u>(adults + fledgling chicks)</u>
1 - low-level harassment	14 (8 + 6)
2 - nesting disruption or abandonment	9 (5 + 4)
3 - injury or death	3 (2 + 1)

These estimates assume that the potential for category 2 take would be limited to the proposed development sites and publicly accessible beach and strand areas on the Sand City coastline, which combined have supported an average of 3.6 nests per year. The potential for category 3 take is assumed to be limited to the beach and coastal strand (supporting an average of 1.4 nests per year), since appropriate take avoidance measures will be implemented during construction on the development sites (see Mitigation section).

This analysis likely overestimates the extent of potential project effects on this species, since it relies on ten year averages and does not take into account the recent downward trend in plover nesting activity on the Sand City coastline. However, since the causes of this trend are not known, and future activity of snowy plovers in the HCP area can not be predicted, the ten year averages provide a reasonably conservative basis for estimating maximal possible take levels.

6.3.2 *Smith's Blue Butterfly*

Based on previous surveys of buckwheat plants proposed to be removed on the MBSR site, development of this site would temporarily displace between 4 and 11 adult butterflies, and would result in take of an unknown number of larvae or pupae associated with these plants.

³ Using the formula: # of breeding adults = (# of nests per season / 1.5) x 2, rounded to the nearest whole number.

6.3.3 *Other Target Species*

Development of the project could result in take of an unknown number of black legless lizards, California horned lizards, globose dune beetles, and Monterey Dunes scorpions. Population densities of these species are not known in the HCP area, and therefore it is not possible to estimate how many individuals could potentially be affected. However, since most of the proposed development areas support relatively sparse and degraded natural communities, relatively few individuals of these species are expected to be affected. In addition, specific take avoidance measures (see section 7.2) will be followed to minimize take of black legless lizards, California horned lizards, and globose dune beetles.

7.0 MEASURES TO MINIMIZE OR MITIGATE IMPACTS TO COVERED SPECIES

The conservation plan for the western snowy plover will focus on establishing and managing permanently protected habitat areas for breeding birds, and controlling public access and activities within protected habitat and breeding areas. For the Smith's blue butterfly, targeted habitat restoration activities are intended to minimize and mitigate the possible take of this species, and ultimately increase habitat for the species west of Highway 1. Additional dune restoration and replanting of native vegetation in specified areas are intended to increase abundance of Monterey spineflower and other native plant species, and to enhance habitat for target animal species that could potentially be displaced by the project.

In addition to specific management measures for the target species within the plan area, this HCP includes a mechanism for contributing to "off-site" conservation efforts for the snowy plover in prime habitat areas in the Monterey Bay region, should this be necessary to accomplish the goals of the HCP. The need for off-site mitigation, and the resulting balance of on-site and off-site measures, will be determined by the City, USFWS and other parties to the HCP through a cumulative assessment and adaptive implementation process. These mechanisms are described in sections 7.2 and 7.3 below.

The following sections describe the specific measures and management techniques that are intended to mitigate potential impacts of the project on the HCP target species. Section 7.1 identifies specific management areas for implementing the various components of the conservation plan. Section 7.2 outlines the area-wide strategies that form the core of the HCP program. Section 7.3 discusses the main elements of the plan with respect to each of the target species. Section 7.4 provides specific management prescriptions and techniques to be applied in each of the management areas. Finally, section 7.5 defines specific performance standards for the mitigation program relative to the western snowy plover, and more generalized success criteria for the other target species covered by this HCP.

7.1 Delineation and Description of Management Areas

The delineation of management areas for this HCP is based on specific habitat management and conservation objectives, as well as the proposed development and public use plans for different portions of the HCP area. Accordingly, six management areas have been designated and are shown in Figure __. Management Areas 1 and 2 are the focus of conservation measures for the western snowy plover. Management Areas 3, 4, and 5 are the focus of habitat restoration activities for the Smith's blue butterfly, Monterey spineflower and other native dune species. Management Area 6 comprises the existing and proposed developed areas. A description of each of these areas follows.

Management Area 1: Core Snowy Plover Preserve

This area includes the dunes and coastal strand between the southern Sand City limit and Bay Street, and most of the dune area north of the water treatment and south of Tioga Avenue. This management area contains over 90% of the known western snowy plover nesting locations south of Tioga Avenue, and approximately 43% of the documented snowy plover nesting locations in the entire HCP area from 1989 to 1998. The CDPR currently manages much of this area as habitat for the snowy plover and other native species.

Management Area 2: Beach and Coastal Strand/Secondary Snowy Plover Habitat

This area consists of the beach and coastal strand zone from mean high tide line inland to approximately the 20-foot elevational contour, extending from Bay Street to the northern Sand City limit. It includes both existing and proposed public use areas on CDPR and MPRPD lands, and portions of the proposed development sites. This management area has historically provided nesting habitat for the snowy plover, particularly at the northern end of the HCP area. However, both public beach use and proximity to proposed development areas create challenges with respect to habitat management for the snowy plover.

Management Area 3: Dune Restoration/Primary Smith's Blue Butterfly Habitat

This area is located along the southern and eastern portions of the MBSR site, and corresponds to Management Area 3 of the HPP for the Monterey Bay Shores Project (Zander Associates 1997). Existing habitat types are primarily ruderal/disturbed, bare sand and ice plant mats, although remnants of native dune vegetation also occur in this area. Proposed habitat restoration activities include dune recontouring and stabilization, replanting with native vegetation, and focused habitat restoration for Smith's blue butterfly in protected hind dune areas. Because of the proximity of this management area to existing Smith's blue butterfly populations to the north, it will be the primary focus of restoration efforts for the species in the HCP area.

Management Area 4: Dune Restoration/Secondary Smith's Blue Butterfly Habitat

This area comprises additional areas of existing and potential restored hind dune habitat in the inland portion of the HCP area, including areas adjacent to the recently installed Bike Path which are currently the focus of habitat management and revegetation efforts (CDPR 1998). As a component of this strategy, native plants including dune buckwheat are being installed to provide potential habitat for the Smith's blue butterfly. Other portions of this management area include the eastern edge of the McDonald and Sterling sites which currently contain bare sand, ice plant mats and ruderal/disturbed vegetation. Smith's blue butterfly does not currently occur in this management area, however habitat restoration activities may provide an opportunity for habitat expansion or a potential dispersal corridor for existing local populations of the species.

Management Area 5: Coastal Plateau and Foredune Restoration

This management area includes the zone immediately above the coastal strand on the MBSR, McDonald, and Sterling sites, the MPRPD former landfill site, and a portion of the foredune and plateau between Tioga Avenue and Bay Street. This area contains a mixture of bare sand areas, existing and restored pioneer dune vegetation, ice plant patches, concrete debris, remnant reinforcement rock, and a section of paved road (Vista Del Mar Street) between Bay Street and Tioga Avenue.

Management Area 6: Developed Areas

This area comprises the proposed development envelopes on the MBSR, McDonald and Sterling sites, as well as existing and proposed roads and parking lots, the railroad track and right of way, the Bike Path, and the Seaside Sewer Pump Station north of Bay Street.

7.2 HCP Area-wide Management Strategies

The strategies that form the core of the conservation plan include: (1) designation of biological resource stewards; (2) habitat restoration and management; (3) formation of an HCP advisory group; and (4) funding for habitat acquisition and management. A brief summary of each of these strategies is provided below, and further details with respect to specific target species and management areas are elaborated in sections 7.3 and 7.4.

7.2.1 Biological Resource Stewards

Two full time biological steward positions will be established and funded by the City and owners of the private developments. These stewards will patrol the beach daily in the HCP area, and possibly within Fort Ord State Beach, during the plover breeding season to monitor snowy plover activity and assess factors which may be affecting breeding birds. The stewards will also provide information and outreach services to the public regarding the habitat conservation program, and facilitate compliance with access controls, pet restrictions, and other measures adopted to protect nesting snowy plovers. While CDPR, MPRPD and the City of Sand City will assume primary responsibility for the enforcement of access and activity restrictions, the stewards will have an essential role in interacting with the public, identifying and providing timely solutions to any problems which may arise, and encouraging public compliance below the threshold level for enforcement action.

The biological stewards will also be responsible for conducting biological monitoring during construction to avoid or minimize impacts to sensitive species and habitats, and for performing mitigation monitoring to document the progress and success of the HCP program. The stewards may also participate as team members in the annual monitoring studies on the snowy plover conducted by the PRBO. Having the stewards onsite will facilitate implementation of a progressive response program and allow for timely solutions to problems which may arise.

7.2.2 Habitat Restoration and Management

Extensive habitat restoration activities will be undertaken both on and adjacent to the proposed development sites and on CDPR and MPRPD lands in the HCP area. These activities will be oriented to enhance or re-establish native dune vegetation and wildlife habitats in designated areas that have been degraded by previous disturbances or encroachment of exotic species, or that will be affected by development activities. Focused habitat restoration and management activities will also be implemented in designated areas to benefit the western snowy plover, Smith's blue butterfly, Monterey spineflower, and other target species of this HCP. The specific management measures and prescriptions for the habitat restoration program are provided in sections 7.3 and 7.4.

7.2.3 HCP Advisory Group

An advisory group will be formed consisting of representatives of the City, USFWS, CDFG, CDPR, MPRPD, and the biological resource stewards, to evaluate the success of the mitigation measures, enable adaptive modification of the plan, direct future management actions, and consider whether alternative measures such as off-site mitigation are needed. This group will meet at least **once a year** during the first **ten years** of the plan's execution, and whenever else circumstances dictate, to provide specific direction for implementing the plan. The City will take the lead in organizing the Advisory Group meetings and will coordinate implementation of the group's decisions. The Advisory Group will also perform a comprehensive assessment every **five years** for the first **ten years** to evaluate the success of the program in relation to the performance standards defined in section 7.5.

7.2.4 Funding for Habitat Acquisition and Management

The owners of the private resort developments and the City of Sand City will provide funding for (1) acquisition of private parcels south of Tioga Avenue for public open space and habitat management; (2) employment of the biological resource stewards; (3) implementation of habitat restoration activities; and (4) purchase of off-site mitigation lands, if necessary. Funds for these activities will be provided both through annual assessment fees and through establishment of a habitat conservation endowment to be provided by each of the proposed developments. Further details on funding and implementation of the HCP are provided in Section 8.0.

7.3 Species-Specific Mitigation Measures

7.3.1 Western Snowy Plover

The conservation plan for the snowy plover includes both an on-site mitigation program and an off-site option which may be implemented in addition to or in lieu of some of the on-site

measures. The appropriate balance of on-site versus off-site mitigation will depend on current and future breeding success of snowy plovers in Sand City and regionally (assessed over several years), the feasibility and success of particular on-site mitigation measures, and other practical considerations such as the availability of suitable off-site mitigation land. Following is a description of the specific mitigation and management measures proposed for the western snowy plover.

A. On-site Mitigation and Management Measures

Acquisition of Habitat and Open Space Lands. To facilitate the permanent protection of snowy plover habitat south of Tioga Avenue, and also enable a balance of compatible public uses and open space preservation in this area, the City will arrange for the purchase of privately owned parcels in the R-3 Area south of Tioga Avenue for transfer to the CDPR and MPRPD.

Avoidance and Protection of Primary Habitat. The area designated as Management Area 1, which includes most of the dune plateau south of Tioga Avenue plus the coastal strand zone south of Bay Street, will be protected and managed as a permanent habitat preserve for the western snowy plover. The CDPR will continue its ongoing management efforts for the snowy plover in this area with the support of the City of Sand City. As the designated primary plover habitat, this management area will be subject to more stringent public access and use restrictions than other portions of the HCP area, including closure of the core nesting area to the public during the entire plover nesting and chick rearing season, and prohibition of all dogs and cats in this area. Further details on the management of this area are provided in section 7.4.

Protection of Secondary Habitat. To maintain additional habitat and provide further protection for breeding snowy plovers in the HCP area, the beach and coastal strand zone in Management Area 2 will undergo habitat enhancement and adaptive management activities for the snowy plover. No development will occur in this area, and the extent of public access and use restrictions will depend on the presence of snowy plover nests or broods each year. Specific management measures and activity controls in areas containing snowy plover nests or chicks are described further below and in section 7.4.

Public Access Controls. Closure of the core habitat area (Management Area 1) will be in effect each year for the entire breeding season (March through September). Removable post and cable fencing will be installed on all sides of this area in late winter, prior to establishment of nests, and may be removed in fall after all chicks have fledged. At the southern boundary of the HCP area, the fencing will extend down to the wet sand line and will be marked with clearly visible signs in both English and Spanish to discourage lateral access from the Monterey Beach Hotel and adjacent beach areas to the south. The proposed parking lot and vehicle entry gate at Bay Street will be closed during critical nesting and chick rearing periods to limit public access to the core habitat area. For the beach and strand in the remainder of the HCP area (north of Bay Street to the northern Sand City limit), any areas which are determined to contain active nests will be delineated with post and cable fencing placed at a minimum 50 meter radius around nests above the mean high tide line. These fenced areas will be closed to public use for as long as nests or broods are present. Similar closure procedures will be applied to areas where unfledged chicks or pre-breeding territorial adults are observed. Access points to the beach from the private

development areas may also be closed during the nesting season if nests or broods are identified on the beach or strand in the vicinity of these access points.

Public Activity Restrictions. Additional restrictions will be placed on uses of the beach, strand and foredune areas to protect habitat and minimize disturbances to snowy plovers. No vehicles will be allowed on the beach, except for emergency and maintenance vehicles as discussed below. Fireworks will be prohibited on all beaches where plovers nest. Horseback riding and non-motorized beach vehicles will be prohibited within 50 meters of any active nesting or chick rearing area above the mean high tide line. Kite flying and other activities which could cause visual disturbance of birds from overhead will be prohibited within 200 meters of plover nests or broods.

Pet Restrictions. No pets shall be allowed in the beach and strand zone or dune areas at any time. Signs will be placed at beach access points and along the perimeter of dune habitat areas to inform the public of the pet prohibitions within these areas.

Vehicle and Maintenance Controls. Only emergency and essential maintenance vehicles will be allowed in the core plover habitat area and on the beach and coastal strand zone of the HCP area. Beach raking will be prohibited throughout the HCP area. Driving of maintenance vehicles on the beach and strand should be kept to a minimum, and should be avoided if possible during periods of active plover nesting and chick rearing. Maintenance vehicles on the beach and strand should observe a 5 mile per hour speed limit, and should be accompanied during the nesting season by a biological steward or CDPR ranger familiar with the location of active nests or broods to prevent running over of nests or chicks.

Predator Controls. If feral cats or other predators are determined to be preying on plovers in the HCP area or vicinity, the biological steward shall have the authority to request assistance from the U.S. Department of Agriculture Wildlife Services Unit or other appropriate agency in removing problem animals.

Pre-construction Surveys in Developed Areas. Prior to initiation of construction, surveys will be conducted within the areas proposed for disturbance to minimize take of western snowy plover, if present. Snowy plover surveys and monitoring on the site will be completed during the snowy plover nesting season (March through September) immediately prior to any construction-related activities on the site. If no plovers are observed using the site for a period of two consecutive months, construction may begin. If plovers are observed in any area that could be affected by the project activities, construction will not begin until September/October after all snowy plover chicks in the project vicinity have fledged and are flocking in preparation for winter roosting.

Habitat Protection and Take Avoidance During Construction. A biological resource steward will monitor site preparation and grading activities on the development sites at a suitable frequency to be determined by the steward. When grading is actively in progress, monitoring is expected to be full-time. The steward will be present to assist in minimizing effects on the snowy plover and will have the authority, in consultation with the Site Superintendent, to limit or stop construction activities if necessary to protect any snowy plovers which may be nesting or rearing chicks in the vicinity of the construction area. The steward will coordinate and oversee implementation of

habitat protection measures including installation of temporary fencing along the limits of grading, orientation of construction personnel, and compliance with operational controls to protect sensitive species and habitats. Further details on habitat protection measures to be implemented during construction are provided in section 7.4.6.

Habitat Enhancement. Portions of the coastal strand and foredune areas of the MBSR site, McDonald and Sterling sites, and south of Tioga Avenue will be enhanced to provide additional potential nesting and brooding habitat for the snowy plover. Habitat enhancement activities intended to benefit the snowy plover will include removal of ice plant and other exotic species in the coastal strand and dunes, abandonment and removal of Vista Del Mar Street, removal of concrete debris and rocks, dune recontouring, and limited replanting with native dune species. Recontouring activities will focus on forming more gradual foredune slopes between the beach and coastal plateau, and creating low mounds and depressions within the dunes to provide some visual isolation for nesting plovers. Some of these areas will be planted with sparse pioneer dune vegetation, and small vegetated islands may also be created to provide additional cover for chicks. All of these activities will be performed during the non-breeding season, and will be phased in gradually to enable assessment of their effects on snowy plovers.

Monitoring and Reporting. The biological resource stewards will monitor the success of the habitat protection and enhancement measures relative to the snowy plover for a minimum period of **ten years**. The stewards will prepare quarterly progress memoranda and annual monitoring reports to be distributed to the City, USFWS and other responsible or interested agencies. Information included in the yearly reports will include information on numbers and locations of snowy plovers nesting in the HCP area, nesting success, and factors which may have caused nesting disruption, nest failure, injury or mortality of plover adults or chicks. These reports will also evaluate the ongoing progress of the program, identify any problems which may arise, and provide recommendations for future management actions. In addition, the biological stewards, in collaboration with the other members of the HCP Advisory Group, will perform a cumulative assessment every five years which evaluates the success of the program with reference to the performance standards set forth in Section 7.5.

B. Off-site Mitigation

[We need to discuss and resolve this with the City, USFWS, and working group. One possibility could be for the City and private developers to provide an endowment at the outset which would generate interest to help fund implementation of the plan. If the opportunity arises and it is acceptable to the parties to the HCP, the endowment principal could be used for the purchase and management of an off-site mitigation area. In this case, less money would be available for implementing the on-site mitigation program, but there would be less burden placed on meeting the overall goals of the plan within the HCP area. The plan would then be restructured accordingly, for example, there could be fewer areas subject to access restrictions, less intensive patrolling, and less on-site habitat enhancement for the snowy plover.]

7.3.2 *Smith's Blue Butterfly*

The occurrence of Smith's blue butterfly appears to be limited to a small, transient cluster at the northern end of the HCP area. Even though much of the HCP area is subjected to strong onshore winds, there is potential to create additional suitable habitat for the Smith's blue butterfly on the leeward side of some of the dunes and in other wind-protected areas. Patches of the buckwheat hostplant planted in less protected areas can also provide additional nectar sources and a means for the species to travel between patches when there is less wind. The primary goals for the Smith's blue butterfly in the HCP area are to maintain the existing population in the north and establish additional suitable habitat for the species along the eastern edge of area extending north to south. Following is a description of the specific measures proposed to meet these goals.

Designation, Protection and Maintenance of Interim Habitat. All of the dune buckwheat plants on the MBSR site where Smith's blue butterfly have been observed will be removed for construction of the project. However, there are patches of dune buckwheat just north of the MBSR site and east along the railroad right-of-way that could provide suitable interim habitat for the Smith's blue butterfly if protected and maintained. SNG Development Company, the developer of the MBSR site, owns the parcel to the north (APN 11-501-004) that contains buckwheat plants. The area within the railroad easement is owned by Union Pacific Railroad, but the City has the ability to work with that landowner to protect the buckwheat plants in the area at least until suitable habitat is re-established on the MBSR site. Prior to the removal of any dune buckwheat plants on the MBSR site, an interim habitat area will be designated and measures implemented (e.g., non-native plant eradication, trash removal, etc.) to improve the habitat for the Smith's blue butterfly. Once the interim habitat areas have been improved, salvaged plant material and soil from the MBSR site will be relocated to these areas. The City will establish a mechanism to protect the interim habitat until dune buckwheat plants are re-established on the MBSR site.

Pre-construction Salvage in Developed Areas. Surveys will be conducted in March - May of the year of proposed construction for the MBSR site to identify and flag each plant of dune or coast buckwheat within the area of development. The buckwheat plants located just outside the proposed construction area will also be flagged. Prior to construction and before the buckwheat plants bloom, sand and litter around the base of each plant will be collected. Sand and litter to a depth of about 2" will be collected in an area extending from the base stem of the plant out to about 3" beyond the canopy. Any dried flower heads remaining on the plants or in the duff will also be collected. Once the sand/duff and flower heads are collected, the plants will be trimmed to the base and the stems will be removed from the area. The collected sand/duff, flower heads and stems will be relocated to the pre-determined interim habitat area.

Habitat Protection and Take Avoidance During Construction. The biological stewards funded by the City will assist in sighting and erecting temporary barriers around the dune buckwheat plants that are not within the proposed development envelope. The purpose of the barriers will be to keep equipment and crews out of these habitat areas during construction. Signs or other recognizable feature (e.g. orange fencing) will be used to distinguish the protected areas. The biological stewards will conduct a pre-construction orientation meeting with all equipment operators and field supervisors to discuss the purpose of the fences and to generally inform them

of the presence of sensitive species on and adjacent to the construction areas. The stewards will monitor construction activities to ensure that grading does not encroach beyond the protective fence and into the interim habitat areas.

Habitat Enhancement. Re-establishment of habitat for Smith's blue butterfly will occur at several sites along the eastern portion of the HCP area. The primary habitat for Smith's blue butterfly will be on the leeward slopes of the re-contoured dunes proposed on the MBSR site. Plantings proposed on these slopes consists of a palette of native coastal dune scrub species, including dune buckwheat. Buckwheat will be planted in clusters at appropriate distances to facilitate movement of the Smith's blue butterfly through the area.. Secondary habitat for Smith's blue butterfly will be created by planting clusters of dune buckwheat on the MPRPD former landfill site, in hind dune areas created on the McDonald and Sterling sites and along the bike path that runs through CDPR-managed lands south of Tioga Avenue. Specifics for the re-establishment of Smith's blue butterfly habitat in the primary and secondary areas are provided in the prescriptions for Management Areas 3, and 4, respectively (Section 7.4).

Monitoring and Reporting: Surveys to assess use by Smith's blue butterfly in the primary habitat area will be conducted each year for the first five years following installation of plantings. Data to be collected will include number of adults observed flying, location of butterfly use, plant species of use (if known), date, time, and weather conditions. Because a goal of this HCP is to increase the habitat use and perhaps population numbers of Smith's blue butterfly west of Highway 1, surveys will also be conducted in the secondary habitat area to document use. Surveys in the secondary habitat will not be as intense as those conducted in the primary habitat and will only document approximate numbers of adults observed flying. The stewards will prepare brief annual reports on behalf of the City, and cumulative monitoring reports each five years. The reports will be forwarded to the Service and other agencies, as appropriate. The reports will present the data collected and provide a discussion of observable changes in the use of the habitat areas by Smith's blue butterfly.

7.3.3 *Monterey Spineflower*

Development of the MBSR will result of the removal of most of the occupied habitat for Monterey spineflower (2.6 acres) but 0.14 acre of existing Monterey spineflower habitat will be avoided on the south-facing slope of the large dune in the southeastern corner of the site. Specific measures to mitigate this loss and to increase distribution of Monterey spineflower in the HCP area are provided below.

Pre-construction Salvage in Developed Areas. Seed will be collected from the Monterey spineflower plants that are within the proposed development envelope on the MBSR site at least one year prior to their scheduled removal. Some of the seed will be propagated and the remainder will be stored for broadcast seeding once sites are prepared. Collection of Monterey spineflower seed is typically conducted in June through August.

Habitat Restoration. The propagated plants and remaining seed collected from the MBSR site will be used to increase the current distribution of Monterey spineflower in the HCP area. Plants

will be installed and seed will be applied to areas designated for pioneer dune and coastal dune scrub restoration in Management Areas 3, 4 and 5. A minimum of 3 acres of occupied Monterey spineflower habitat will be re-established on the MBSR site. An additional 3 acres of habitat occupied by Monterey spineflower will be established throughout the remainder of the HCP area. This species of spineflower readily colonizes pioneer dune and previously disturbed sandy areas and therefore target sites for establishment include the MPRPD former landfill site, dune restoration on the McDonald and Sterling properties, the bike path right-of-way and the extension of Sand Dunes Drive.

Monitoring and Reporting. The biological stewards will monitor the areas planted or seeded with Monterey spineflower annually for a period of five years following installation. Monitoring will consist of measuring the areal extent of cover of Monterey spineflower and estimating plant density. Results of the annual monitoring will be provided to the Service and other agencies, as appropriate.

7.3.4 Other Target Plant Species

Sandmat Manzanita. There are a few plants of sandmat manzanita in the railroad right-of-way just east of the MBSR site. There are no other known occurrences of this plant west of Highway 1 in Sand City, probably because the habitat is not suitable. However, there is potential to introduce more sandmat manzanita into the area with proposed dune stabilization and restoration activities. Following completion of construction on the MBSR, McDonald and Sterling sites, a restoration specialist will determine locations suitable for sandmat manzanita. These areas are likely to be at the base of the leeward slopes on stabilized dunes. Plants will either be propagated from the local stock or purchased from a local nursery specializing in native flora.

Monterey Ceanothus. Monterey ceanothus is found in the same vicinity as the sandmat manzanita near the MBSR site and there are also no other known occurrences west of Highway 1 in Sand City. Monterey ceanothus and sandmat manzanita are found in similar habitats and so the introduction of additional plants would follow the same steps as outlined above for sandmat manzanita. Plants will either be propagated from the local stock or purchased from a local nursery specializing in native flora.

Yadon's Wallflower. MPRPD has recently planted individuals of Yadon's wallflower on the former landfill site (T. Jensen, pers. com.). The plants installed were from a nursery stock because there are no current seed sources for this species west of Highway 1 in Sand City. Additional plants of Yadon's wallflower may be included in the mix of coastal dune scrub species to be planted in the foredunes on the MBSR, McDonald and Sterling sites.

Sand Gilia. Sand gilia is not known to occur west of Highway 1 in Sand City and the habitat conditions are not suitable. Although suitable habitat for sand gilia may be created on the leeward slopes of the re-contoured dunes, this HCP does not recommend introducing it since the species does not naturally occur in the area.

7.3.5 Other Target Animal Species

Burrowing Owl. Because burrowing owls do not currently nest in the project area, no specific avoidance or mitigation measures are included for this species in this HCP. However, in the event that burrowing owls occupy the HCP area in the future, the biological steward will monitor the activity of owls in the area and will recommend specific measures if necessary to prevent take of individual owls. Such measures may include establishment of an appropriate buffer zone around any occupied burrow, and prohibition of development-related activities, public access and pets within such zones as long as owls are present.

Black Legless Lizard. Pre-construction salvage surveys for black legless lizard will be conducted in April - June of the construction year and prior to initiation of grading. Surveys will be conducted around selected shrubs within the development area and will consist of raking the leaf litter and sand at the base of the shrubs with gloved hands and hand-held forks. Raking will occur to a depth of about eight inches and will include the root zones. If lizards are captured, they will be immediately relocated to an area predetermined to be suitable habitat. If lizards are injured, they will be placed in shoe-box sized plastic containers with sand from the immediate area where they were captured and kept in captivity until they are ready for release. The biological resource steward or other qualified environmental monitor will also be present during initial site clearing and grading activities to monitor for and salvage black legless lizards if they occur in the work areas. Construction personnel will be informed prior to the start of grading activities about the procedures for minimizing impacts to black legless lizards. The monitor will have the authority to stop construction activities if necessary to capture and relocate lizards.

California Horned Lizard. The measures described above for the black legless lizard will also be implemented to minimize take of horned lizards. Salvage surveys will be performed both prior to construction and during initial site clearing and grading activities. Any horned lizards captured will be relocated to suitable habitat areas outside of construction areas.

Globose Dune Beetle. Prior to deposition of sand in the coastal strand zone for beach replenishment, a qualified biologist will conduct a salvage survey for the globose dune beetle in the sand deposition area. If any individuals of this species are found, they will be captured and relocated to suitable locations (i.e., within the coastal strand zone in areas containing pioneer dune vegetation) outside of the sand deposition area.

Monterey Dunes Scorpion. Habitat preservation and restoration activities intended for the Smith's blue butterfly and other target species are also expected to benefit the scorpion by providing habitat for insects which could serve as a prey base for this species. No specific take avoidance measures are included for this species beyond restricting development activities to within clearly defined areas. Capture and relocation of individual scorpions is not recommended because of the risks involved in handling scorpions.

7.4 Specific Techniques for Each Management Area

This section provides specific prescriptions for each Management Area and includes guidelines for applying the various species-specific management techniques described above. These management area prescriptions are intended to be guidelines from which to work, and may be modified as implementation of the HCP proceeds.

7.4.1 Management Area 1: Core Snowy Plover Preserve

Preservation and Protection of Habitat. The core snowy plover habitat area shall be preserved and maintained as habitat lands in perpetuity, under ownership and management of the CDPR, or CDPR and MPRPD jointly. Those portions of this management area on privately owned land in the coastal R-3 area in Sand City shall be acquired by the City and transferred to the MPRPD or CDPR. The core habitat area will be clearly delineated with post and cable fencing and marked with signs placed at appropriate intervals which identify it as habitat preserve for the snowy plover and other sensitive species.

Habitat Management. The CDPR, MPRPD, and biological stewards will collaborate in the implementation of management measures for the snowy plover in the core preserve area. These measures are described in section 7.2, and include installation of removable post and cable fencing around the core habitat area, placement of informational and access prohibition signs, control of entry gates and other access points, enforcement of seasonal closure and activity restrictions during the plover nesting season, and implementation of predator control measures if necessary.

Public Access Controls and Pet Prohibition. The core habitat area will be closed to the public during the snowy plover nesting season (March through September). Dogs and cats will be prohibited in the area at all times. Clearly visible signs will be posted around the perimeter of this area which state the entry and pet prohibitions in both English and Spanish, and include penalties for non-compliance. Boardwalks may be installed to direct visitors through sensitive habitat areas during the non-breeding season, but will remain closed in plover nesting areas during the breeding season.

Vehicle Restrictions. No vehicles shall be permitted in the core habitat area except for authorized emergency and maintenance vehicles. Any maintenance vehicles entering the core area during the nesting season shall observe a five mile per hour speed limit, and be accompanied by a biological steward or CDPR ranger familiar with the location of any active nests or broods. Beach raking will be prohibited in the core habitat area and on the beach and strand throughout the HCP area.

Habitat Enhancement. Habitat enhancement activities in Management Area 1 may include some dune recontouring, removal of iceplant and other exotic plant species, and limited revegetation with native dune species. These activities will be performed only during the non-breeding season (October - February). Planting of vegetation in the core plover habitat area will be limited to sparse pioneer dune vegetation and may include creation of a few vegetated islands to provide cover for snowy plover chicks. The planting palette for these areas will emphasize low growing, locally native dune species.

Monitoring and Maintenance. The biological steward(s) will monitor and report on the success of the habitat protection and enhancement measures with respect to the snowy plover, as described in section 7.3. Minor maintenance activities such as trash removal, repair or replacement of fencing, and installation of signs, will be performed by the CDPR and MPRPD so as to minimize disturbance of snowy plover nests or chicks. Potentially disruptive maintenance activities such as dune recontouring, extensive ice plant eradication, and removal of large debris will be done only during the non-breeding season.

7.4.2 Management Area 2: Beach and Coastal Strand/Secondary Snowy Plover Habitat

Habitat Management. Management of snowy plover habitat in this area will follow similar methods as for Management Area 1, but will focus on localized areas in the vicinity of nesting plovers or chicks. The location and extent of habitat management measures to be implemented will be determined each year by the biological stewards based on monitoring of pre-nesting (February) and early season (March - June) nesting activities. From their observations of pre-nesting or nest establishment activities, the biological stewards will prepare a preliminary map of areas to be targeted for closure or other access controls. This map will be reviewed by the CDPR, MPRPD, and the City, and an initial access control plan will then be agreed upon and implemented. This plan may be adjusted as necessary and by agreement of the responsible parties, depending on the results of ongoing monitoring during the breeding season.

Public Access Controls, Pet Prohibitions, and Activity Restrictions. The beach and strand in this area will be managed to accommodate public use and recreation compatible with protection of breeding snowy plovers. Year-round public access will be provided, except in designated areas within a minimum 50 meter radius around any active plover nest or brood and above the mean high tide line. These areas will be delineated with post and cable fencing and remain off limits to the public for as long as birds are present during the breeding season. Dogs and cats will be prohibited from the beach and strand at all times. Depending on the presence of nesting or brooding birds, appropriate restrictions will be placed on activities such as kite flying, horseback riding, and operation of non-motorized vehicles in the vicinity of nests or broods, as described in section 7.2. The biological stewards, CDPR, MPRPD and the City will work cooperatively to facilitate public compliance with these restrictions.

CDPR will install and operate vehicle barrier gates on Bay Street, Tioga Avenue, and at the entrance to the proposed parking lot north of the MBSR site. These gates will be closed at night to discourage nighttime public use of the beaches and dunes that otherwise would be a disturbance to snowy plovers. The gates will also be used to discourage public use when necessary to protect critical snowy plover nesting and chick rearing activities. The biological stewards will determine when gate closures are necessary and will notify the appropriate parties.

Vehicle Restrictions. No vehicles shall be permitted on the beach and strand except for authorized emergency and maintenance vehicles. Operation of maintenance vehicles in areas containing snowy plover nests or chicks shall follow the guidelines set forth for Management Area 1. Beach raking will be prohibited on the beach and strand.

Habitat Enhancement. Limited habitat enhancement activities may be conducted in portions of the beach and strand, as determined appropriate by CDPR MPRPD and the City of Sand City. These activities may include removal of concrete debris and large rocks, slope recontouring, sand deposition for beach replenishment, removal of invasive non-native plant species, and limited revegetation with native coastal strand species. Performance of these activities will be limited to the non-breeding season (October - February).

Monitoring and Maintenance. Monitoring in this area shall be performed by the biological stewards, and maintenance activities shall be performed by CDPR, MPRPD, and the City of Sand City, as described above for Management Area 1.

Permanent Protection of Habitat. The beach and coastal strand zone outside of the core plover habitat area will be designated as public open space and habitat lands, and will be managed by the CDPR and MPRPD. A public access/conservation easement shall be recorded for the beach and coastal strand areas on the MBSR, McDonald and Sterling sites, to provide long-term protection of sensitive habitats in these areas.

7.4.3 Management Area 3: Dune Restoration/Primary Smith's Blue Butterfly Habitat

Pre-construction Surveys. Prior to initiation of construction, surveys for the Smith's blue butterfly and black legless lizard will be conducted as described in sections 7.3.2 and 7.3.5.

Transplant and Salvage. Prior to land disturbance in this area, seed will be collected from dune buckwheat, Monterey spineflower, and other native plants that are within areas proposed for disturbance. In addition, prior to construction and before the buckwheat plants bloom, sand and litter around the base of each plant within the development envelope will be collected and transplanted to a pre-determined area north of the MBSR site that also contains buckwheat plants, as described in section 7.3.2.

Seed Collection. Seed will be collected from specified native plants either on site or in nearby areas at least one year prior to planting of the restoration areas to allow for propagation. Plants considered for seed collection include dune buckwheat, Monterey spineflower, sandmat manzanita, Monterey ceanothus and a full palette of other coastal strand and dune scrub species. Seed collection techniques for target species will be as follows.

Dune buckwheat: Seed will be collected from the dune buckwheat plants within the proposed development envelope. Seed collection for this species is typically conducted in late summer.

Monterey spineflower: Collection of Monterey spineflower seed is typically conducted in June through August. The entire inflorescence is collected when it appears brown and dried. It is not necessary to separate the seeds from the inflorescence.

Monterey Ceanothus: Seed collection is conducted March through May. Cuttings are not recommended because they are difficult to propagate.

Sandmat manzanita: Cuttings and seeds of this species can be collected for propagation. Seeds should be collected March through May and cuttings can be taken in fall or winter.

Propagation. Propagation of seed collected for all species will be achieved through germination in stubby supercell containers. Propagation will be the responsibility of an experienced nursery or restoration specialist under contract to the City.

Recontouring of Existing Topography. The windward face of the large dune in the southeast portion of this management area will be recontoured to approximately a 2.5:1 slope. Two additional dunes will be contoured in the northern portion of this management area.

Slope Stabilization: The leeward slopes of the large dune in southern portion of this management area, and the newly contoured leeward slopes of the dunes northern portion, will be stabilized using vertical straw mulch per the specifications described below under revegetation and habitat enhancement. The windward slopes of these same dune areas will be stabilized using a combination of hydroseeding, erosion control blankets and temporary overhead irrigation per the specifications described below under revegetation and enhancement.

Control of Exotic Species. Any iceplant mats remaining after completion of grading and recontouring activities will be removed by hand and/or through careful application of herbicide. Dead iceplant will be left in place as mulch. Ongoing control of exotic species is included as a maintenance task.

Revegetation and Habitat Enhancement. Planting will occur on the leeward slopes of the dunes in this management area to establish native coastal dune scrub vegetation, re-establish habitat for the Smith's blue butterfly, increase numbers of Monterey spineflower, and introduce sandmat manzanita and Monterey ceanothus to the project site. Coastal dune scrub elements, including dune buckwheat will be planted throughout the area. Monterey spineflower will be planted in stabilized bare sand areas on slopes with a north or east aspect. Sandmat manzanita and Monterey ceanothus will be planted at the base of the leeward slopes of the dunes. Seeds of coastal dune scrub elements will be applied to the windward slopes of these dunes per the specifications below (seed and seedling mixes provided in Table __):

1. Site Preparation

Leeward slopes: Hand apply vertical straw mulch to the windward slopes of the low dunes at 2000 lbs/acre (wheat or rice straw). Plant each handful 6"- 8" deep with 10" to 12" exposed and plant each bundle 1 - 2 feet apart. Plugging shall be completed prior to the onset of the rainy season in preparation for planting.

Windward slopes: Smooth slope surface of sharp deviations such as equipment track marks from the grading operations. Apply:

- Hydroseed mix 1 @ approximately 35 lbs/acre (1225 lbs)
- Blend of 16-20-0 (NPK) fertilizer @ 400 lbs/acre (1400 lbs)

Place erosion control mat on slopes over the hydroseed and secure onto the slope with ground fasteners or "U" shaped staples. Joints should be overlapped in accordance with the manufacturer's recommendations.

2. Planting Specifications

Broadcast seed following installation of straw mulch and just after the first rains. Install propagules following straw plugging and just after the first rains in the fall. Propagules and seeds to be installed at the following rate on the leeward slopes of the dunes:

- Seed mix number 1: apply @ 50 lbs/acre (195 lbs)
- Seedling mix number 3: 2,000 plants per acre (7,800 plts)
- Dune buckwheat: 1,000 plants per acre (3,900 plts)
- Monterey spineflower: spread seed and plant minimum of 1,000 propagules in several areas of bare sand that total 3 acres.
- Sandmat manzanita: plant 500 propagules near base of leeward slopes
- Monterey ceanothus: plant 500 propagules near base of leeward slopes

Add fertilizer (Osmocote® 14-14-14) to planting holes.

Irrigate by hand immediately following planting.

Monitoring and Maintenance. The biological resource stewards will monitor the success of the restoration efforts for a minimum period of five years. The stewards will monitor the success of the slope stabilization and habitat restoration to determine: (1) if additional stabilization techniques are necessary; (2) if further maintenance is required to remove exotic vegetation or improve the success of the plantings; or (3) if additional plantings are needed to meet the restoration goals. The monitoring and maintenance program will include the following components:

1. Monitoring Transects

Following installation of planting, permanent monitoring transects will be established and the end points of each transect will be marked using rebar. The number and placement of transects will be determined to ensure that a minimum of 5% of the total planted area will be covered by the transect(s) and that the data collected along the transect will provide sufficient information for determining if the success criteria are met. Data will be collected using the line intercept method.

2. Photo Documentation

- Two permanent photo points that capture an aerial view of the management area will be established and photos taken annually (in the spring) for comparison.
- Vertical color aerial photos will be obtained after year five to assess the success of revegetation efforts.

3. Smith's Blue Butterfly Habitat Use

Use of the habitat by Smith's blue butterfly will be monitored by conducting reconnaissance surveys of the planted buckwheat plants once every two weeks from mid-May through mid-August. Numbers of individuals and extent of areas of used will be estimated.

4. Maintenance

- Periodic irrigation through establishment period (typically 3 years) as required
- Control of exotic vegetation as needed
- Weeding and trash removal as needed.

Success Criteria. Specific objectives for Management Area 3 are as follows:

Leeward slopes:

- 75% cover of native coastal dune scrub species in the planted areas designated on the as-built planting plans
- 50% of species diversity planted successfully established
- 30% of the 75% total cover to be *Eriogonum parvifolium*
- 50% survival of sandmat manzanita propagules
- 50% survival of Monterey ceanothus propagules

Windward slopes:

- slope stability sufficient to support vegetation
- 50% cover of native coastal dune scrub species in the planted areas

Monterey spineflower:

- minimum of 3 acres occupied habitat

Smith's blue butterfly:

- documented use of the area by a minimum of 4 to 11 adult butterflies for a period of three consecutive years.

Permanent Protection of Habitat. A conservation easement will be recorded for the lands in this management area. This conservation easement will permit the use of this area only for purposes of habitat restoration, enhancement, protection, and activities consistent therewith.

7.4.4 Management Area 4: Dune Restoration/Secondary Smith's Blue Butterfly Habitat

A. Prescriptions for the McDonald and Sterling Sites

Pre-construction Surveys. Prior to initiation of construction on the Sterling and McDonald sites, surveys for the black legless lizard will be conducted as described in section 7.3.5.

Seed Collection. Seed will be collected from specified native plants either on site or in nearby areas at least one year prior to being needed for revegetation. Plants considered for seed

collection include dune buckwheat, Monterey spineflower, Monterey ceanothus, sandmat manzanita and a full palette of other coastal strand and dune scrub species.

Propagation. Propagation of seed collected for all species will be achieved through germination in stubby supercell containers. Propagation will be the responsibility of an experienced nursery or restoration specialist under contract to the City.

Recontouring of Existing Topography. There may be requirements for re-contouring the existing topography on the Sterling and McDonald sites in this management area as a component of project construction. No re-contouring is proposed to occur on the MPRPD former landfill site or the properties owned by CDPR.

Slope Stabilization. Where recontouring of the slopes is necessary, the exposed areas will be stabilized as described for Management Area 3.

Control of Exotic Species. Iceplant is the predominant exotic plant species in the HCP area. In order to expand the cover of native plant species and enhance habitat values in proposed restoration areas, iceplant will be eliminated. Several methods are available for removal of iceplant. The most efficient method is to spray with a glyphosate-based herbicide (e.g. Roundup®) and allow the iceplant to die on-site without removal. Left in place, dead iceplant will dry, providing mulch for revegetation efforts and a temporary erosion control method to hold soil in place.

Herbicides will be applied by a certified applicator at a rate consistent with label directions. Selective, low-drift spray equipment will be used to cover individual iceplants only and decrease the possibility that the herbicide will drift inappropriately. Special care is required in areas where iceplant and native plants are growing together. The applicator will be informed of the need to protect native plants in the area of spraying, and, in some cases, native plants should be flagged for avoidance. It may be necessary to remove iceplant by hand within a one- to two-foot diameter around native plants. Effectiveness of the herbicide will be monitored and, if required, additional applications will be made, but not any earlier than six weeks after the previous application. Up to three applications may be necessary to completely eliminate the iceplant.

Revegetation and Habitat Enhancement: Specific planting plans for this management area on the McDonald and Sterling sites will be required prior to project approval and are to be consistent with the goals of this HCP. Coastal dune scrub elements, including dune buckwheat shall be planted throughout the area and Monterey spineflower shall be planted in stabilized bare sand areas. If dunes are created, Sandmat manzanita and Monterey ceanothus are to be incorporated into the plantings at the base of the leeward slopes of these dunes. Site preparation and planting specifications shall be consistent with those recommended for Management Area 3 in this HCP.

Monitoring and Maintenance. The biological resource stewards will monitor the success of the restoration efforts for a minimum period of five years. The monitoring program will include establishment of monitoring transects, photo documentation, and maintenance activities as described above for Management Area 3.

Success Criteria. Criteria will need to be developed as a component of the revegetation plan prepared for the McDonald and Sterling developments. The criteria shall include plant survival and/or areal cover as well as species diversity. Smith's blue butterfly use shall be noted but shall not be a required measure of success.

B. Prescriptions for the MPRPD and CDPR Properties

Habitat Enhancement: Both the MPRPD and CDPR have been undertaking efforts to restore coastal dune scrub habitat on their lands in the HCP area. MPRPD began restoration of the former landfill in 1996 (T. Jensen, pers. comm.). The site was remediated and then capped with clean sand. The sand was stabilized with rice straw plugs and the area was seeded and fertilized. Seed was collected from local sources for this effort except for winter 1998-99, when MPRPD out-planted nursery stock of Yadon's wallflower. Although some buckwheat plants were installed on the former landfill site, creation of Smith's blue butterfly habitat was not a targeted goal of the MPRPD's restoration efforts (T. Jensen, pers. comm.). In order to meet the goals of this HCP with respect to the Smith's blue butterfly, additional plantings of dune buckwheat will be installed along the eastern portion of the MPRPD former landfill site and in other protected areas of the site determined to be appropriate for this purpose.

A native plant revegetation program was implemented by CDPR in 1993-94, which included planting of dune buckwheat and coast buckwheat at the southern end of the HCP area. As documented in the *Habitat Management Strategy for the Sand City – Seaside Coastal Bicycle Path* (1998), CDPR is also proposing to plant a band of native vegetation a minimum of 50 feet in width adjacent to and west of the bike path. This planting will include coast buckwheat and dune buckwheat to provide potential habitat for the Smith's blue butterfly. No additional plantings of coast or dune buckwheat are proposed by this HCP for CDPR lands within Management Area 4.

7.4.5 Management Area 5: Coastal Plateau and Fore-dune Restoration

Avoidance of Sensitive Habitat. Snowy plover surveys and monitoring will be completed during the prime snowy plover nesting season (March through August) immediately prior to any construction-related activities on the MBSR, Sterling and McDonald sites. If no plovers are observed using these sites for a period of two consecutive months, construction may begin. If plovers are observed in any area that could be affected by construction activities, work will not begin until September/October after all western snowy plover chicks in the project vicinity have fledged and are flocking in preparation for winter migration.

Public Access Controls and Pet Prohibitions. This area will be managed similar to Management Area 2 to accommodate public use and recreation compatible with protection of breeding snowy plovers. Year-round public access will be provided, except in designated areas within a minimum 50 meter radius around any active plover nest or brood. These areas will be delineated with post and cable fencing and remain off limits to the public for as long as birds are present during the breeding season. Boardwalks may also be installed in some areas to reduce impacts to sensitive habitats. Dogs and cats will be prohibited from this management area at all times. The

biological stewards, CDPR, MPRPD and the City will work cooperatively to facilitate public compliance with these restrictions.

CDPR will install and operate vehicle barrier gates on Bay Street, Tioga Avenue, and at the entrance to the proposed northern parking lot, as described for Management Area 2. The biological stewards will determine when gate closures are necessary and will notify the appropriate parties.

Recontouring of Existing Topography. The existing bluff and coastal plateau on the MBSR site that is included in this management area will be graded to create a more gradual slope from the beach to the development areas. Low dunes will be incorporated as microtopography and will range in height from 1 - 4 feet. The low dunes will be sparsely planted with native coastal strand vegetation. Similar topographical changes may be incorporated into development of the McDonald and/or Sterling sites. If so, similar low dune topography and sparse planting will be required in these areas.

Control of Exotic Species. Iceplant and/or European beachgrass will be kept from establishing in this management area through an active eradication program. Plants of iceplant or European beachgrass will be removed by hand or, if necessary, through careful application of herbicide.

Habitat Protection During Construction. Construction activities in this management area will be restricted in accordance with direction given by the biological stewards based on observations of western snowy plover use of the area proposed for construction and in the vicinity.

Revegetation and Habitat Enhancement on MBSR, McDonald and Sterling. The low dunes created on the MBSR site will be planted with native coastal strand vegetation per the following specifications. If low dunes are created as part of the Sterling and/or McDonald developments in the coastal plateau and foredune area, similar specifications will apply.

1. Site Preparation

Just prior to planting, the low dunes will be sprayed with water to assist in temporarily stabilizing the sand for planting.

2. Planting Specifications

Install propagules just after the first rains in the fall and following spraying of the low dunes with water. Propagules to be installed at the following rate (seedling mixes provided in Table _):

- Seedling mix number 1: applied to the windward slope of the low dune @ 800 plants/acre
- Seedling mix number 2: applied to the leeward slope of the low dune @ 1000 plants/acre.

Add fertilizer (Osmocote® 14-14-14) to planting holes.

Irrigate by hand immediately following planting.

Revegetation and Habitat Enhancement on MPRPD and CDPR Lands. The revegetation and habitat enhancement efforts of the MPRPD on the former landfill site are ongoing. MPRPD maintains the habitat area and may install additional plantings as determined appropriate by its environmental resources staff. [TIM, IS THIS APPROPRIATE?] The snowy plover has not been known to use the former landfill site for nesting or brooding, and there have been no observations of snowy plover on the site since the restoration began (T. Jensen, pers. comm.). Therefore, there are no restrictions for planting densities or visual buffers proposed for this portion of Management Area 5.

MPRPD and CDPR both own lands adjacent to Vista Del Mar Street north of the Seaside Sewer Pump Station. To improve habitat for the snowy plover in this vicinity, Vista Del Mar Street will be abandoned north of the entrance to the sewer pump station and the slope gradient will be reduced between the dunes and the beach to allow snowy plover chicks to more easily move from the beach to the dunes in this area. [KEN, CAN WE DEVELOP SPECIFIC PLANS NOW?]

Lighting Restrictions. Minimal lighting will be allowed, subject to possible seasonal limitations, along any vertical beach access boardwalks or at beach overlook points in this management area. The biological stewards in consultation with the City and the Service will determine seasonal limitations.

Monitoring and Maintenance. The biological stewards will monitor the success of the restoration efforts in this management area relative to the snowy plover for a minimum period of five years. The stewards will also monitor the success of the dune plantings and determine if additional plantings are necessary or if the density of vegetation adversely affects the breeding/nesting success of the western snowy plover. Annual reports will be prepared and submitted to the City, the Service and other appropriate agencies.

Permanent Protection of Habitat. A conservation easement will be recorded for the areas on the MBSR, McDonald and Sterling sites that are included in this management area.

7.4.6 Management Area 6: Developed Areas

Pre-construction Surveys. Prior to initiation of construction, surveys for the Smith's blue butterfly and black legless lizard will be conducted as described in Section 7.3.2 and 7.3.5. For the snowy plover, surveys and monitoring on the development sites will be completed during their nesting season (March through September) immediately prior to any construction-related activities on the site. If no plovers are observed using the site for a period of two consecutive months, construction may begin. If plovers are observed in any area that could be affected by the project activities, construction will not begin until September/October after all snowy plover chicks in the project vicinity have fledged.

Transplant and Salvage. Prior to land disturbance in these areas, transplant and salvage activities will be performed for the following activities will be conducted for Monterey spineflower and dune buckwheat plants that are within areas proposed for disturbance, as described in Section 7.3.4.

Habitat Protection During Construction. A biological resource steward will be present on site during construction activities to assist in minimizing effects on the snowy plover. The steward will have the authority, in consultation with the Site Superintendent, to limit or stop construction activities if necessary to protect any snowy plovers which may be nesting or rearing chicks in the vicinity of the construction area. The steward will coordinate and oversee implementation of the following protection measures:

1. A temporary fence will be erected no more than 10 feet beyond the limit of grading in order to assure that construction activities do not encroach into habitat areas outside the development envelopes. The steward will coordinate with the Site Superintendent on placement of these fences. Signs will be placed on the fence at appropriate intervals informing equipment operators of the presence of sensitive habitat areas and prohibition of grading in these areas. The steward will monitor activity of the snowy plover throughout the construction period. Work in the beach and strand zone will be restricted in accordance with direction given by the steward based on observations of plover use of the site and in the vicinity.
2. Prior to initiation of construction, all equipment operators and field supervisors will attend a pre-construction orientation meeting to be conducted by the steward. The purpose of the conference will be to inform equipment operators and field supervisors of the presence of sensitive species on and adjacent to the project site, conduct a site visit to show participants where grading can and cannot occur, and inform operators of appropriate protocol should they encounter western snowy plovers or other sensitive animal species during construction. All heavy equipment operators and field supervisors will sign a standard form acknowledging their understanding of the resource values on the site and the penalties they may incur if those values are disturbed.

Landscape Restrictions. Transition planting zones will be established between development areas and habitat restoration areas. The transition zones will include native species but will contain no sensitive plant species. Development areas will contain a mix of native and ornamental species compatible with the dune landscape. Species will be drought resistant, conforming to applicable local water conservation policies.

Lighting Restrictions. Lighting in the development areas will be directed away from the beach and foredune areas. Lighting fixtures that are proposed immediately adjacent to the coastal plateau or beach areas will be required to be no greater than four feet high.

Beach Access Restrictions.

- Post signs at points of vertical access prohibiting pets on the beach and strand, and requiring users to pack out what they pack in to the beach.
- Close vertical access points, as determined by the biological steward, to protect nesting or brooding snowy plovers.
- Place refuse containers with lids that tightly close at all beach access points and regularly clean refuse areas.

7.5 Performance Standards

This section identifies specific objectives and standards for evaluating the success of the program in meeting the biological goals of the HCP. The parameters to be assessed in part reflect long term and population-level processes. Therefore, performance relative to these standards will be measured cumulatively every five years for the first ten years of the project.

For the western snowy plover, goals are defined for numbers and success of breeding birds. For the Smith's blue butterfly and Monterey spineflower, performance will be measured more qualitatively in terms of persistence of these species in established restoration areas, and maintenance of a minimum acreage of suitable habitat for these species. For the remaining target species, the success of the program will be evaluated in terms of maintenance of suitable habitat conditions for these species in the HCP area. The standards are defined as follows:

Western Snowy Plover:

- minimum of eight breeding adults or six nests per year in the HCP area, on average;
- nesting success rate of at least 0.8 chicks fledged per nest, or five juveniles fledged per year from the HCP area;
- if off-site mitigation is included, the off-site and on-site areas combined to support at least an equivalent number of breeding adults or nests and chicks fledged per year, on average.

Smith's Blue Butterfly:

- minimum of 3.9 acres of native coastal dune scrub vegetation in Management Area 3;
- 75% cover of native dune scrub species in the planted areas of Management Area 3;
- 30% of the 75% total cover to be *Eriogonum parvifolium*;
- documented use of the area by a minimum of 4 to 11 adult butterflies for a period of three consecutive years;
- establishment of additional potential habitat for Smith's blue butterfly in Management Area 4 through establishment of clusters of dune or coast buckwheat in this area.

Monterey Spineflower:

- maintenance of a minimum of three acres of medium density Monterey spineflower in Management Area 3;
- increased extent of native dune plant communities containing Monterey spineflower in suitable locations in Management Areas 4 and 5, relative to baseline conditions..

Other Target Species:

- increased extent and quality of native dune vegetation providing habitat for these species in Management Areas 3, 4 and 5, relative to baseline conditions.

Possible Funding Framework for the Sand City Coastline HCP

Funding obligations for the HCP will include:

1. Initial implementation costs (I) – includes habitat restoration (dune recontouring, stabilization, planting, etc.), installation of signage, fencing, access controls, etc.; to be paid by project developers
2. Endowment for off-site mitigation (E) – provided by developers during first five years of project implementation; interest generated prior to purchase of off site habitat may be used to supplement funding for on site restoration or regional habitat management for snowy plover.
3. Biological resource stewards (S) – responsible for biological monitoring during construction, long-term monitoring/patrolling to protect snowy plover, etc.
4. Maintenance (M) – short-term and long-term maintenance of habitat management areas.

Allocation of funds and funding responsibilities for each of these categories are as follows:

Alternative 1: Project per MOU (= 2 Development Envelopes)

<i>(costs in \$1,000s)</i>	I	E	S	M	Total
0 - 5 yrs	480	1,000	2 @ 40/yr	120/yr	
5 yr Total Cost	480	1,000	400	600	2,480
5 yrs - "perpetuity"	–	–	40/yr*	20/yr*	60/yr

* During the first five years, two stewards and maintenance would be funded by developers of MBSR and Sterling/McDonald. After five years, City would continue funding one steward and maintenance of HCP area "in perpetuity." Interest from the endowment could be used to fund the second steward and/or alternative mitigation measures, until the endowment was spent on off-site mitigation (at which point only one steward would continue to be funded).

• *Alternative 2: One Development Envelope Only (MBSR or Sterling/McDonald)*

<i>(costs in \$1,000s)</i>	I	E	S	M	Total
0 - 5 yrs	240	0	1 @ 40/yr	60/yr	
5 yr Total Cost	240	0	200	300	740
5 yrs - "perpetuity"	–	–	40/yr	20/yr	60/yr

Note: In this case there would be no endowment for off site mitigation, because habitat loss resulting from development of one envelope would be mitigated by preservation of the other "developable envelope" as open space/plover habitat, as well as the plover habitat areas south of Tioga.