BSC GROUP

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Nature-Based Solutions Implementation Resource Guide

Nature-based Solution (NbS): PV Parking/Parking Awnings

Project Number per matrix: **23**

PREREQUISITES

- Approval of Agency or Landowner.
- Obtain appropriate permits.
- Coordinate with local utilities providers.

RECOMMENDED IMPLEMENTATION STEPS

- **Project Planning and Administration**
  - Assess potential erosion or habitat disruption impacts.
  - Natural features degrade more rapidly than metal structures and require a replenishment/replacement plan for this added maintenance.
  - Assess bordering threats such as proximity of water hazards, and roadways or parking.
  - Assess opportunities for coordinated habitat enhancement and education.
  - Ensure clear communication and understanding of maintenance personnel.

- **NbS Installation**
  - Evaluate the parking area's solar potential and design needs for shading and energy generation.
  - Identify the optimal locations for parking awnings that provide shade to vehicles and support solar panels.
  - Build and install the parking awnings with appropriate support structures, considering factors like wind load, snow load, and seismic requirements.
  - Integrate solar panels onto the awnings in a way that optimizes energy capture and aesthetics.
  - If the system includes parking awnings, monitor for any shading issues caused by vegetation growth or obstructions. Trim trees or other vegetation that might shade the panels.
  - Determine the energy needs the PV system will help meet i.e. powering the parking facility, nearby buildings, or feeding back into the grid.
  - Collaborate with solar engineers and designers to create a PV system layout that maximizes energy generation while integrating with the parking structure's design.
  - Determine the appropriate type of solar panels, mounting systems, and inverters for the specific project requirements.
  - Obtain the necessary permits and approvals from local authorities for installing the PV parking system, ensuring compliance with building codes and regulations.
  - Coordinate with local utility providers to establish the grid connection and any necessary net metering agreements.
  - Collaborate with architects, engineers, and solar experts to design parking awnings that blend with the overall site aesthetics and integrate solar panels seamlessly.
  - Ensure project budgets and contracts with private companies include sufficient retainage for maintenance and establishment period and coordination costs for oversight.

- **Maintenance**
  - Cleaning solar panels is important to maintain optimal energy production. Depending on the local environment, you might need to clean the panels anywhere from once a month to a few

times annually. Other service requirements could be recommended to be performed at least once a year.

NATURE-BASED SOLUTION SPECS

- Typical project size: 40’ X 90’ (20’ X 20’ minimum)

BUDGET ESTIMATE

- Typical project budget (order of magnitude): N/A
- Use the BSC Group Nature-based Solutions budget tool to develop more detailed concept budgets

SCHEDULE ESTIMATE

- 4 – 8 weeks construction.