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Building a wetland -- $86M job is to restore 440 acres of San Dieguito River Valley

By: ADAM KAYE - Staff Writer

DEL MAR ---- Attention coastal commuters: That fleet of heavy equipment clearing brush and digging holes in the San Dieguito River Valley at Via de la Valle is not preparing the ground for a shopping mall.

The dozers, excavators and enormous dump trucks are building a wetland.

It's a three-year, $86 million job that encompasses 440 acres on either side of Interstate 5, all the way to the ocean.

Southern California Edison is paying for the project to compensate for marine life killed by the San Onofre Nuclear Generating Station. The plant north of Oceanside sucks 2.5 billion gallons of ocean water daily through its cooling system, which accounts for the loss of marine life.

About 30 miles to the south, millions of motorists on I-5 will have watched the work when the excavation and planting between Solana Beach and Del Mar is finished.

"I call it the stadium," said Mike Furby, president of Marathon Construction Corp., of the job site.

Furby and some planners for the San Dieguito Lagoon Wetlands Restoration Project said last week that their mission is to dredge basins, build berms and create an environment where wildlife can flourish, much as it did decades ago, before highways and a railroad crisscrossed the river valley and before the Del Mar Fairgrounds, an old airfield, shopping centers and tomato fields covered the fragile ecosystem.

"We want to set the standard for lagoon restoration projects," said Hany Elwany, a coastal engineer and the project's construction manager.

Digging dirt

Restoring the wetland takes equipment as large as a house and as small as a

lunchbox.

Some of the biggest pieces are a kind of dump truck called an "articulated hauler." A horse can pull more than it can carry, and by the same principle, the hauler's cab can detach from its bed.

Last week, the haulers pulled thousands of tons of salty, soggy soil from west of the freeway to disposal sites on the east. The largest of the haulers can carry 40 tons, Furby said.

The trucks arrive empty at the edge of what Furby calls the airfield basin, an area west of I-5 where an airstrip once existed. Plans call for the 50-acre basin to remain permanently submerged at depths of up to 10 feet, depending on the tide.

Last week, a track excavator carved away at the margins of the basin, filling the haulers with scoop after scoop of dripping, black soil.

Across the freeway, and on the opposite side of the river, still more equipment performed a much different task: processing rock.

Rock is a key ingredient for building the berms planned along the river channel, but rock is rare in the river valley.

That's why the restoration project's contractor struck a deal with cohorts in San Diego, who needed to clear great quantities of rock ---- and quickly ---- to make way for a freeway interchange.

In the river valley, equipment dumped the imported rock onto screens and belts of processing machines as tall as a house. Out of the machines came everything from gravel to the quarter-ton rock needed for berm-building.

All this takes fuel. Furby said the restoration project's equipment consumes 1,200 gallons of it every workday.

On the level

In contrast to the behemoth earthmoving, rock crushing equipment is satellite-based surveying equipment that's about the size of a lunchbox ---- or smaller.

Elevation control is critical for the success of the project, planners say. Wetland plants grow at specific elevations, and 12 inches can determine whether desired or unwanted species flourish.

Some plants are adapted to make contact with the water frequently while others prefer less inundation.

To create an area where large amounts of land are touched by the sea, the blades of grading equipment are fitted with transmitters connected to satellite-based surveying devices. The transmitters enable equipment operators to sculpt the land within inches of specifications.

As carefully as planners have designed the project to take advantage of tidal flushing, the river that runs through the wetland could fill the basins with debris and sediment with one big flood, said David W. Kay, Southern California Edison's manager of environmental projects.

That's why the basins and some of the marsh lands will be flanked by nearly 8,000 feet of berms.

With berms keeping sand out of the basins, a swollen river would carry sediment right to the ocean and to the beaches, where it belongs, Kay said.

A place for everything

Keeping the many different soil types where they belong is every bit as important during construction, Furby said.

Each of the enormous piles visible from the freeway represents a specific material dug from a specific place.

Over the course of the restoration project, Furby estimates that workers will shuffle 2.1 million cubic yards of material ---- a small pickup truck can carry about 1 cubic yard of dirt ---- and none of it will be hauled away.

"It's what we in the earth work business call a balanced site," Furby said.

East of the freeway are five disposal sites for dredged material from the subtidal basins. Before the first salty truckload was dumped, however, workers scraped the top 2 feet of topsoil from the disposal sites and set it aside. The same nutrient-rich topsoil will be spread right back onto the sites from which it came before they are seeded.

Workers also have harvested the topsoil, seeds and root stock of pickerelweed, the scraggly, low-growing plant that covers the ground along the lagoon's shores.

The soil is rich with nutrients as well as salt. For that reason, workers set it aside to reintroduce it to the shores of the basin when those areas are ready for replanting.

Still another spoil of the river valley is beach-quality sand that workers will use to create raised islands for the snowy plover, an endangered and finicky bird. To meet permit requirements, the project must cap the plover nesting sites with 3

feet of white sand, and that sand must have shells, Furby said.

A measure of success

For Kay, Furby and Elwany, the success of the restoration project can be measured by the response of snowy plovers, plants and other wildlife.

"More fish in the lagoon and more birds," Elwany said. "If you provide birds with the proper habitat, they will come to the place."

For Kay, success also will be reflected by the project meeting the requirements of the state Coastal Commission's permit. The permit requires that an independent scientist count birds, plants, fish and snails at wetlands in San Ysidro, Oxnard and Carpinteria and compare those totals to counts at San Dieguito.

"Only if the habitat we create at San Dieguito, in a scientific way, is similar enough to those others will (the Coastal Commission) say we are complying," Kay said.

The Web site for the San Dieguito Lagoon Restoration Project is http://sdlagoon.com/default.htm

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Mike Furby of Marathon Construction holds some of the excavated sand rich in sea shells. This high quality sand will save a lot of cost in the restoration of San Dieguito Lagoon.

JOHN KOSTER For The North County Times

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A coastal bird already makes use of the wetlands, even as the $86 million restoration of San Dieguito Lagoon is underway.

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San Dieguito Wetland Restoration Plan