

NEW MEXICO STATE ROAD 14 FROM MADRID TO LONE BUTTE

THE CONTEXT

New Mexico State Road 14, classified as a major rural collector, provides access to the communities of Golden, Madrid, Cerrillos, and other developing communities. Madrid is a historic mining town of about 400 residents located just south of the project limits. Cerrillos is a village of about 300 residents; about two thirds of whom live in the historic village one-half mile west of NM 14; the remainder live adjacent to NM 14. San Marcos is located near the northern end of the project and contains predominantly low-density single family residences offset from NM 14. Artist studios and galleries exist along the roadway.

The highway is used by residents for commuting to the Santa Fe and Albuquerque metropolitan areas and is also traveled by tourists and bicyclists. Tourists are attracted to this highway for its scenic qualities, including distance views of several mountain ranges, close up views of unique geologic formations such as the Garden of Gods, and remnants of old mining towns.

The Turquoise Trail Association completed a Corridor Management Plan in 1999, during the development of this project, enabling the Turquoise Trail to receive designation as a National Scenic Byway from the National Scenic Byways Program in 2000.

EXISTING CONDITIONS

Existing NM 14 through the corridor was a two-lane highway with narrow or no paved shoulders. The existing pavement and subgrade were exhibiting signs of severe deterioration. Three bridge structures were also in need of replacement. The portion of NM 14 within the project limits had a relatively high number of crashes that were clustered in areas with sharp curves and/or limited sight distance.

THE PROCESS

Public involvement activities began with three public information meetings that were held at the onset of the study in 1994. People generally agreed that safety improvements to the road were needed, but debated the extent and type of improvements. There was concern that construction would degrade the visual quality of the area, and there was opposition to removal or disturbance of roadside vegetation during construction.

In 1996, the New Mexico Highway Commission received a petition with 500 signatures from NM 14 residents and users supporting a No-Build Alternative. The CSS process was initiated to obtain community input while also educating the community, thus facilitating buy-in and ownership of the design of the project. The NMDOT formed the Citizen's Advisory Committee (CAC) in response to this strong public reaction. This committee was made up of representatives from the communities the project passes through.

HISTORIC AND CULTURAL RESOURCES

A cultural resources survey identified three historic/cultural properties, 23 archeological sites or historic buildings, and 76 isolated occurrences within the project areas. An ethnographic study was conducted in late 1994 to identify properties of traditional cultural or religious importance. Consultations with 19 Native American groups identified three areas currently or formerly associated with Native American traditional practices.

NATURAL ENVIRONMENT RESOURCES

The project was successful in identifying and saving numerous existing plants immediately adjacent to the roadway. A replacement wetland was completed as part of the mitigation requirements to offset three small wetlands that were impacted by the project. Three

SUMMARY

This project covers a portion of NM 14 — the Turquoise Trail — which has cultural, historic, and visual features that are significant for the community. Reconstruction of the roadway and three bridges was necessary due to deteriorated conditions and safety hazards posed by sharp curves, inadequate shoulders, and limited sight distance. Following some initial controversy, New Mexico Department of Transportation (NMDOT) took a CSS approach and involved the community extensively throughout the process, including construction, to ensure that the design solution met the transportation needs as well as the community's desire to minimize visual and environmental impacts from the roadway and maintain the rural and scenic nature of the area.



Existing NM 14 and San Maracos
Arroyo Bridge

strategies were employed during design to minimize impacts to visual resources: (1) minimize the difference between the elevation of the new roadway and the elevation of the existing roadway to reduce the amount of cut and fill necessary; (2) minimize the horizontal offset between the existing roadway and the new roadway; (3) offset the new roadway towards areas that had already been impacted by the construction of the existing highway where feasible, to reduce the amount of additional disturbance. The Visual Prioritization Process (VPP) was used to inventory and analyze the design based on six criteria: distance from the viewer, angle of view, duration of view, magnitude, silhouette, and aspect.

DESIGN SOLUTION

From the onset of the project, the community expressed its concern to keep the NM 14 corridor true to its character as a rural route and to ensure the project was designed to maintain and enhance its status as a scenic route. The CAC developed the “14 Goals for NM 14” which helped focus design elements throughout project development. The table below shows how the design responded to each of the CAC’s “14 Goals for NM 14.”

CAC Goal	Design Response
1. NM 14: Scenic, safe, and design of the project will serve as an example.	1. Design of new roadway follows existing horizontal and vertical alignment.
2. Design standards (scenic, design speed, do not exceed AASHTO criteria nor accommodate irresponsible drivers).	2. Follow AASHTO Design Standards, apply flexible design, and adhere to EA document commitments for roadway typical section.
3. Ban or limit truck traffic and oversized trucks.	3. At this time no commitment can be made to change truck traffic.
4. Preserve natural and cultural features. Administer contractor penalties and/or incentives to ensure preservation and adherence to design.	4. Marked trees before construction, strict construction management.
5. Budget for effective native re-vegetation and provide water during establishment of plants.	5. Included in the re-vegetation plan.
6. Infiltrate all road runoff within ROW. Erosion control, no non-planted riprap lining.	6. Addressed during the design.
7. Retaining walls shall match existing surroundings aesthetically, using local materials.	7. Retaining wall options match surroundings.
8. Design bridge railings to be graceful, un-obstructive, and as see-through barriers.	8. Bridge railings were see-through.
9. Follow existing roadway grade and width to minimize disturbance both visually and ecologically. Only widen in areas where accident data shows a necessity for a wider roadway section.	9. Design followed existing horizontal/vertical alignment to the greatest extent possible. Roadway reconstructed following “3R” Process. Commitments were included in the EA document for typical roadway section.
10. Provide pedestrian/equestrian/bike crossings at each main intersection and bridges. Utilize medians for artwork.	10. Pedestrian area was provided on west side of Galisteo Bridge. A wider shoulder was provided at the railroad bridge and the San Marcos Crossing. No budget was available for artwork.
11. Traffic calming Lone Butte area. No installation of lighting.	11. Traffic calming measures were implemented in the design. No lighting was included in current design.
12. Consolidate driveways where possible.	12. Was implemented in the design where possible.
13. Keep roadway width to a minimum. Use permeable shoulders and eliminate /reduce extra taper.	13. Follows #9.
14. Notify public of detours and minimize construction delays.	14. Was part of the contract and was followed by the contractor.

NMDOT communicated the design options and changes that were made to accommodate stakeholders using a variety of methods. During construction, cultural resource professionals and landscape architects from the design team provided continuous construction oversight and monitoring of the project. Representatives from the CAC were invited to attend weekly construction meetings,

CSS — THE BOTTOM LINE

At the second-phase project meeting, the public gave the project team a round of applause for the results of the first phase. This reaction was a major milestone, especially since the community had been skeptical of the NMDOT and the project team.