

Cascade Mountain, Tom Till

Provo Canyon Scenic Byway Corridor Management Plan

Updated November 4, 2008



Produced by:



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November 4, 2008

Gael Duffy Hill
Utah Office of Tourism
Scenic Byway Coordinator
P.O. Box 332
Escalante, Utah 84726

Dear Ms. Hill:

Please consider this letter and the attached updated Corridor Management Plan for the Provo Canyon Scenic Byway as intent to apply for National Scenic Byway status.

The Wasatch County Council updated the Corridor Management plan to reflect the new scenic byway alignment along SR113 and the intrinsic qualities associated with the new alignment. This update to the Corridor Management plan and its implementation will allow the byway traveler increased scenic opportunities and places of interest. A few of the interesting places that the updated management plan highlights are; Fisherman's accesses along the Provo River, The Restored Historic Tate Barn, Soldier Hollow Olympic Venue and Golf Course, Midway's Main Street, Centennial Bridge over the Provo River, the Heber Valley Railroad Depot and Heber Cities historic Main Street.

The Wasatch County Council is proud of the recreation and scenic qualities that Wasatch County has in abundance and especially along the beautiful Provo River and is hopeful that National Scenic Byway status will increase tourism based economic development. The County Council feels that the proposal to update the corridor and seek National Scenic Byway status would help in accomplishing these efforts.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Farrell".

Steve Farrell
Wasatch County Council Chair

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The Provo Canyon Scenic Byway Corridor Management Plan

Prepared for:

The Provo Canyon Scenic Byway Corridor and Watershed Management Plan Steering Committee

**Central Utah Water Conservancy District
U.S. Bureau of Reclamation
City of Orem
Utah County Health Department
Federal Highway Administration
Utah County Planning Department
Heber Valley Chamber of Commerce
Utah Department of Transportation
Jordan Valley Water Conservancy District
Utah Division of Water Quality
Metro Water District of Salt Lake City
Utah Division of Water Resources
Mountainland Association of Governments
Utah Division of Wildlife Resources
Natural Resource Conservation Service
Utah Landmark Preservation, Inc.
North Fork Preservation Alliance
Wasatch County Health Department
Provo City Corporation
Wasatch County Planning Department
Provo River Water Users**

Prepared by:

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This document and planning process was funded in part by a grant from the U.S. Department of Transportation Federal Highway Administration.



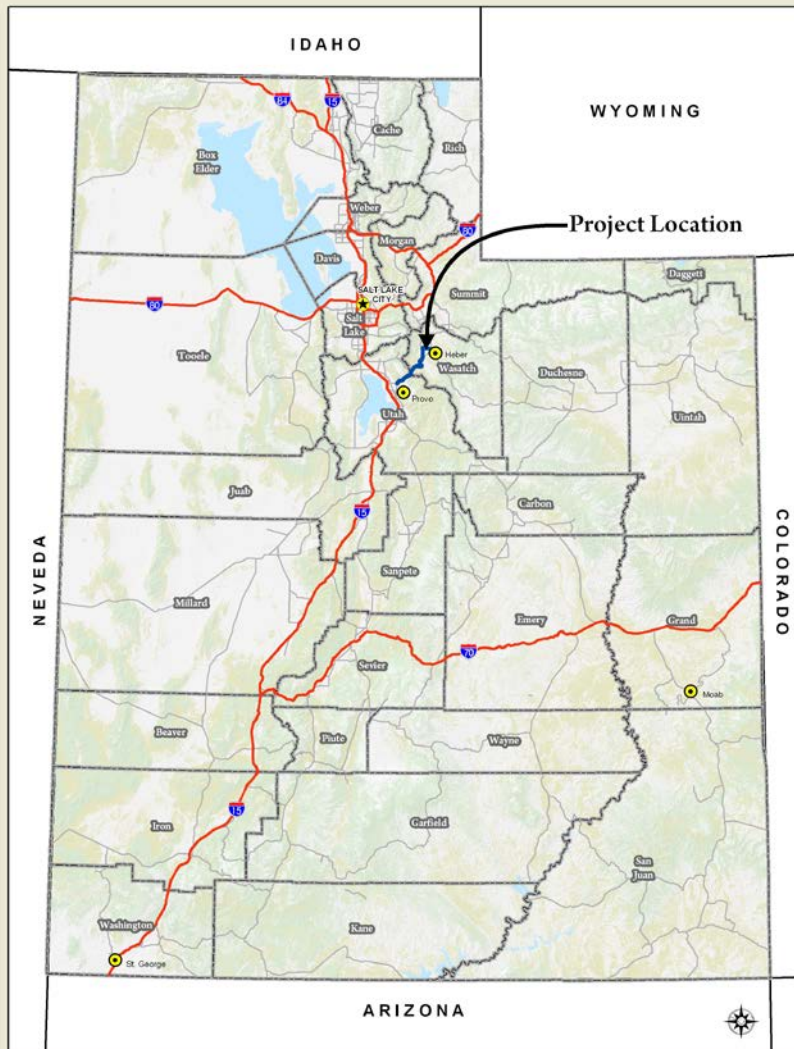
What is a corridor management plan?

A corridor management plan is a document that describes how local property owners, communities and agencies will guide the byway over time with the dual objectives of protection and promotion. The plan is a policy document in that it is not required by the Federal Highway Administration that the plan be adopted as a binding document- although some local governments do adopt the plan in some manner.

While there are a defined set of topics that must be covered in a corridor management plan (e.g., inventory of resources, visitor management strategies), there is no prescribed format for the plans. The Federal Highway Administration encourages byway groups to design plans that fit local needs.

Why prepare a corridor management plan?

A corridor management plan is a prerequisite for applying for the national scenic byway designation. Therefore, if you want national designation, you must prepare a plan.



What is the National Scenic Byway Program?

The National Scenic Byways program was created by Congress in 1991 as part of the Intermodal Surface Transportation Act. It was reauthorized in 1996 under the Transportation Efficiency Act. It is designed to provide a tool for both promoting and protecting America's special roadways. It is both an economic development tool and a community character projection tool; It cannot be used solely for just one of those purposes. The two need to be linked together. The idea is to encourage travelers to explore America and thus strengthen local economies, but to do all of this in a way that ensure that these roads and their special qualities will be available to future generations.

The National Scenic Byway program has two components: designation and grants. If a road meets the criteria and successfully completes the nomination process, it is then a National Scenic Byway. There is also a higher-status designation of All-American Road, which is given to roads that are destinations unto themselves and are prepared to handle larger numbers of visitors. As of today, there are 53 National Scenic Byways and All-American Roads in the United States. A new round of designation is underway and will be announced in the fall. Each year, the program also awards grants to state byway programs and to individual byways. The grants can be used to develop corridor management plans, for marketing activities, interpretation, resource management, signage, and visitor facilities.

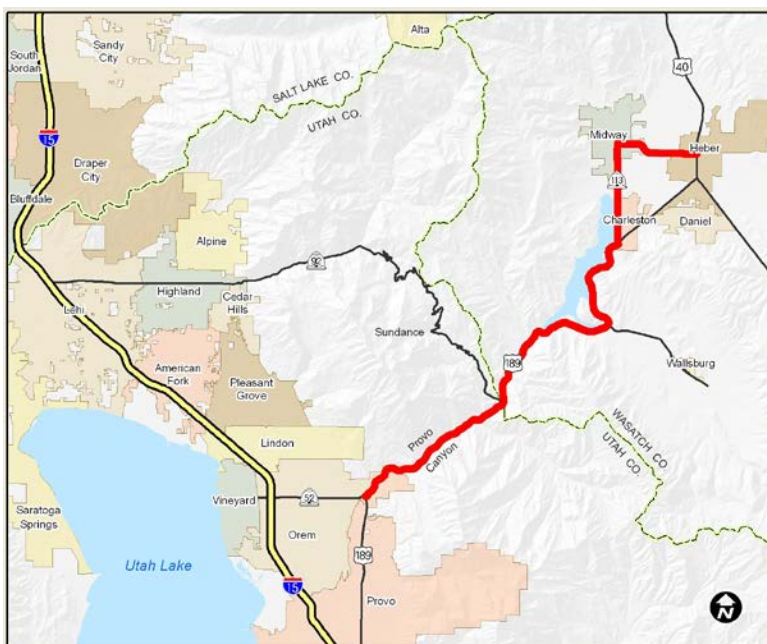


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What is a scenic byway?

A scenic byway is a road given special designation by a state and/of the federal government for its unusual qualities. Typically, these qualities are scenic in nature, but they may also be recreational, natural, historical, cultural or archeological. Once designated at the state level, the road is featured on state tourism maps. (Provo Canyon is already a Utah State Scenic Byway.)

If the road achieves National Scenic Byway status- this is the Federal designation- then the road will be marketed nationally and internationally as part of the National Scenic Byway System. State and National Scenic Byways are eligible for grants from the National Scenic Byways Program.

Most communities seeking scenic byway designation for their roads are doing this to both promote the road and to more- carefully manage the qualities that make the road special.



Overview of the Scenic Byway

The Provo Canyon Scenic Byway is 22 miles long and runs from Orem, Utah, to Heber City, Utah, on U.S. Highway 189 and SR113

Beginning in the south, the byway starts at the mouth of Provo Canyon in Orem. The landscape transitions immediately from a mixed residential and commercial area into the undeveloped beginnings of the canyon. The road curves gently as it climbs steadily from an elevation of 4,800 feet above sea level.

The byway's overall landscape consists of three basic elements: the canyon experience, the reservoir experience, and the valley experience. The first 9 miles of the road are the true canyon: the mouth to Deer Creek Dam. The next 8 miles moves between the shore of Deer Creek Reservoir and gently rolling sagebrush-covered hills. The final 5 miles currently travel along Route 113 passes through a more-varied farm landscape, past the Soldier Hollow Olympic site, through two small towns, and finally through historic residential and commercial sections of Heber City, ending in the city's historic downtown.

Hold It! What are the strings? What are the regulations?

The National Scenic Byways Program is very unusual: It has almost no strings attached. It is managed by the Federal Highway Administration and the state Departments of Transportation or Tourism. It is a grass roots program, meaning that local communities decide on whether to make a road scenic byway. The only condition for the National Scenic Byway designation is that no new billboards can be put up along a national scenic byway. There are no regulations with the program. There are no standards for how you must manage the road or the corridor. There are no regulations on the requirements on if or how you manage the landscape along the the road. To double check these statements, go to the National Scenic Byways website at www.byways.org to get program and legislative information. Or call the National Scenic Byways Resource Center in Duluth, MN, at 1-218-529-7551 or 1-800-429-9297 x5.



North view of wildflowers and mountains

Intrinsic qualities map page

3. The Corridor: An Assessment of intrinsic qualities

Intrinsic Qualities Review

Natural Qualities

The following points summarize the highlights of this byway's natural intrinsic qualities. The information presented in this section was summarized from the U.S. Highway 189 Final Supplemental Environmental Impact Statement (HNTB 1989) and the Re-Evaluation of U.S. Highway 189 Utah Valley to Heber Valley Final Supplemental Environmental Impact Statement (BIO/WEST 1995).

Topography

- The lower portion of the byway consists of a river canyon varying from 70 to 900 feet in width. Filled alluvial scars are visible in several places. The elevation begins at 4,830 feet at the canyon mouth. Canyon walls are gently sloping, with the exception of bluffs located on the northwestern side of the river near the canyon mouth.
- The quality of the canyon from the mouth at Orem to Canyon Glen Park is of a mixed landscape and topography. The lower canyon contains both the meandering river bottom and rises and hummocks that often obscure distant views.
- From Canyon Glen Park to Wildwood, the canyon walls close in and rise dramatically. As the elevation rises to 5,220 feet at Wildwood, the canyon walls draw closer to the viewer.
- From Wildwood to the Deer Creek Dam (5,400 feet) the canyon is at its narrowest with steep mountainous terrain and rocky canyon walls, indicative of recent rapid uplift and correspondingly rapid erosion and downcutting. Ridges and mountains along the highway have elevations of 7,000 to 9,000 feet
- The next portion of the byway above the dam is characterized by a broad grass-covered valley and low, rounded hills at elevations between 6,000 and 7,000 feet. Sagebrush and other high desert shrubs are the dominant species.
- The final segment of the byway runs through an irrigated and fertile farming landscape south of Heber City. The land is largely flat with occasional volcanic cones that rise 100 to 200 feet above the valley. The Timpanogos Range frames the valley landscape to the south.

Geology

- Provo Canyon's geologic history extends back 300 to 500 million years. Much of this geology can be seen in the canyon's walls and road cuts.
- The area continues to be active geologically through uplifts and faulting along with smaller scale erosion and landsliding.

- Two categories of faults occur in Provo Canyon: thrust faults and normal faults. Normal faults are dominant in the lower canyon, while thrust faults define the upper canyon. The thrust faults
- The byway opportunities related to geology are for interpretation. The canyon's geology is clearly evident from many points and there are numerous opportunities to teach western geology along the byway.

Soils

- Unconsolidated soil deposits along the byway include glacial moraines, alluvial fans, river alluvium, colluvium, terrace gravel, landslides, and mudflows.
- For the purposes of byway planning, the most important soil deposits are those that are suitable for septic systems, since the potential for development will impact both the ways in which the canyon can accommodate more visitors services (e.g., bathrooms) and more residential construction, which would affect the canyon's character. It is important to note that, according to the Soil Conservation Service's evaluation criteria, no study area soils meet this standard. There are some soil deposits in the northern reaches of the byway that have moderately suitable soils. Figure 4 indicates the general location of pockets of soil with moderate suitability. Please note that soil profiles vary greatly in the canyon and Figure 4 gives only a conceptual picture of areas with higher suitability for development.

Driving view north of Nunns Park



View driving north from Springdell



View of Provo Canyon from Squaw Peak Road



Figure 4. Project Area Sensitive Area and Development Constraints Map.

- Generally speaking, the corridor below Deer Creek Dam has few areas suitable for development while the corridor above the dam offers more potential building sites.

Water

- The Provo River's headwaters are located high in the western portion of the Uinta Range. The river empties into Utah Lake west of Orem and Provo
- The major tributaries to the Provo River are Lady Long Hollow, Cottonwood Canyon, McHenry Canyon, Tunnel Creek, Dutch Hollow, the Timpanogos Canal, the Wasatch Canal, the Westside and Middle Ditches, Snake Creek, Daniels Creek, Decker Creek, Lake Creek, Center Creek, North Fork, South Fork, and Deer Creek. Deer Creek is known as Little Deer Creek or Provo Deer Creek; in this document, it is referred to simply as Deer Creek.
- Provo River is not designated a wild or scenic river under the Wild and Scenic Rivers Act.
- There are major groundwater resources throughout the corridor. Groundwater levels are often high in the canyon and will impact the amount of development that is possible in this area.
- As noted previously, the Provo River Watershed is a major source of drinking, power, and irrigation water for the Wasatch Front. As with all western water, the allocation of water rights is complex. Numerous ditches, canals, and diversions carry the water to the legal owners of the water rights. Water rights are administered by the State Division of Water Rights with day-to-day distribution of the water being handled by the Provo River Commissioner.
- From a corridor management planning perspective, there are three key issues of importance regarding the canyon's water resources. The first is the potential to interpret the natural water system and its impact on the natural and human systems of the canyon and related areas. The second issue relates to interpretation of the western water story. The presence of the reservoir, pipes, ditches, canals, diversion facilities, power generation facilities, dams, and historic power plants all will make for an interesting story. The third issue of importance is the need to assess the constraints and opportunities offered by the water ownership system along the byway. Some areas must be off-limits to the public because of safety and water quality concerns; other areas offer the potential to provide dual uses: recreation and water diversion.

Wildlife and Fish

- Mammals: river otter, mule deer, mink, mountain goat, beaver, moose, skunks, racoons, mountain lions, bear, and elk. River otter are located along the entire river south of Deer Creek Dam. Mule deer use the north side of the canyon for winter migration and the lower canyon for winter range. Critical elk winter range is located along most of the upper canyon and around Deer Creek Reservoir.
- Birds: golden eagle, bald eagle (winter roosting), great horned owl, Coopers hawk, red-tailed hawk, sage grouse, and sandhill crane are all present along the corridor. The majority of the habitat for these species is north of Wildwood.
- Fish: The Provo River is listed as providing Critical fisheries habitat by the Utah State Division of Wildlife Resources. This designation is defined as "sensitive areas that because of limited

abundance and/ or unique qualities, constitute irreplaceable critical requirements for high interest species.” Species found in the Provo River south of Deer Creek Dam include brown, brook, cutthroat, and rainbow trout as well as June sucker and mottled sculpin. Mountain whitefish, yellow perch, and walleye, as well as the above-mentioned species, exist in the upper portions of the river. From Frazier Park north, only artificial lures may be used. Deer Creek is also rated as a Critical fishery. The South and North Forks are rated as High Priority fisheries. Deer Creek Reservoir offers a High Priority fishery with trout, largemouth bass, yellow perch, green sunfish, and walleye.

- There are no known threatened or endangered species along the corridor. However, the June sucker, an endangered fish species, is found downstream from the corridor in Utah Lake. A recovery program is being developed that may enable the June sucker to move into the Provo Canyon section of the Provo River in the future.

Vegetation

- The upland or terrestrial vegetative habitats consist of nine different habitat types including coniferous forest, deciduous forest, mixed forests, sagebrush shrub, grass land, farm land, urban land, and nonvegetated areas. From the perspective of the visitor, the most-dramatic distinction is the variation between sagebrush shrub and forested areas. This variation defines the major scenic contrasts in the canyon vegetation. In addition, the agricultural landscape of the Heber Valley provides a very distinctive landscape compared with the canyon. There are also nine types of riparian habitats along the corridor. Generally, they involve shrub and forest settings, and numerous emerging marsh habitats based on different dominant species (e.g., cattails, reed canary grass, wet pasture, knotweed, and others.)

Scenic Qualities

The byway’s scenic resources are an extension of the natural features reviewed above. An inventory of the byway’s scenic resources was conducted and the results for the inventoried viewpoints are given in Appendix A. The discussion that follows provides a summary on the overall scenic quality of the Provo Canyon Scenic Byway Corridor.

The criteria for scenic quality evaluation were as follows:

- 1 Degree of natural landscape versus presence of landscape disturbances.
- 2 View depth.
- 3 View complexity based on the full presence of foreground, middle ground, and background, as well as the overall complexity of the textures and forms.
- 4 Contrast and interest, that is, the degree of variation and interest of the specific landscape elements.

5 Drama, scale, magnitude.

Using these criteria, the major viewpoints --both from the road and from designated viewing areas -- were evaluated. Scoring was based on the following system:

A Landscape contains high quality in each of the five evaluation criteria.

B+ Landscape contains high quality in four categories and the nonqualifying category does not significantly degrade the overall experience.

B Landscape contains high quality in three categories and the nonqualifying categories do not significantly degrade the overall experience, or the landscape contains moderate quality in all five categories.

C+ Landscape contains high quality in two categories and the nonqualifying categories do not significantly degrade the overall experience, or the landscape has moderate quality in two or more categories.

C Landscape contains moderate to high quality in one category and the nonqualifying categories do not significantly degrade the overall experience

D Landscape contains low to moderate quality in all categories and the nonqualifying categories do not significantly degrade the overall experience

View north from entrance to Canyon Park.

Heber City Downtown.



View north from Orem lookout.



Through this system, four observations can be made about the scenic quality of the Provo Canyon Scenic Byway Corridor:

- First, the scenic quality for the entire byway -- if the northern segment of U.S. Highway 189 is replaced with State Route 113-- scores a B +. The reasons why the landscape does not receive an A result from the degree of landscape disturbances from two factors: unmanaged development and highway construction. As noted in Appendix A, there are several areas along the highway where either sand/gravel pits or unrestored cut/fill areas mar the scenery. Roadside pullouts that were used for construction and have not been rehabilitated are another point of landscape degradation.
- Some aspects of the landscape that typically degrade views in other areas were not an issue in Provo Canyon. The Olmstead Flowline, which is above ground for much of its run through the canyon, is generally unobtrusive and is of some interpretive interest for most viewers. As the pipeline is buried, this will certainly help improve scenic quality, but the pipeline as it exists today does not overwhelm more than two views in the canyon. Powerlines are another example of an unobtrusive landscape element. In some settings, the line can dominate and detract from a landscape; that is not the case in Provo Canyon. The main reason for this is that only wood poles are used in the canyon. There are no easily visible high power transmission lines.
- Third, the driving view of the canyon is at its best along stretches of the newly reconstructed road, not the old road as it runs up the river valley. The raised portions of the new road provide longer views, unobstructed views (i.e., no trees blocking the view), a greater variation in the direction of the view (i.e., the raised viewpoint allows for views north, south, east, west, and up and down), and finally, an easier to access view (i.e., the right travel lane of the four lane road allows the driver more leisure to

examine the landscape.) The one exception to this statement that the new road has improved the view is the use of concrete barriers along the road. In particular, their use along the road edge results in dramatically diminished foreground views of the canyon. At points along the road, their use as median barriers also degrades the scenic landscape.

- A point of distinction of this byway is that it encompasses five distinctly different landscapes. These variations in landscape are used to define the five segments around which the corridor management plan is structured.
 - (1) The lower canyon extends from the mouth to Canyon Glen Park.
 - (2) The middle canyon extends from Canyon Glen Park to Wildwood at the intersection with Route 92. This segment has dramatic peaks and cliffs and undulating geologic stratifications.
 - (3) The upper canyon extends from Wildwood to Deer Creek Dam. This segment has a narrower width and a gradually opening experience as one approaches the dam. This is the segment that will be reconstructed next.
 - (4) The high desert sage hills extends from Deer Creek Dam around Deer Creek Reservoir to the intersection with Route 113.

- (5) The settled, farmed, and almost European landscape of the Heber Valley between Charleston, Midway, and Heber City. This final landscape also benefits from having the Timpanogos Mountains as a backdrop to fields, farms, and homes.

Sign for Provo City shooting area.



North from Canyon View Park.



Recreation Qualities

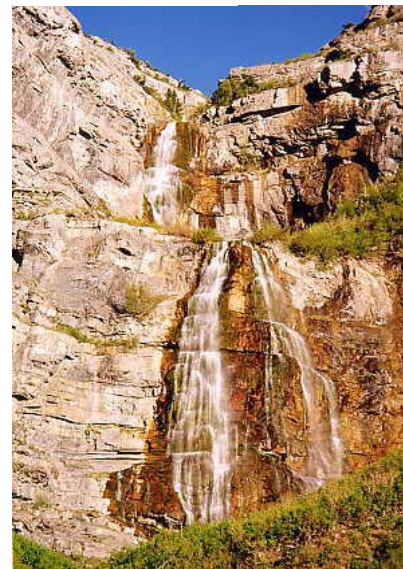
The Provo Canyon Scenic Byway offers some of the most-spectacular and high-quality outdoor recreation resources in the United States (Figure 2). Of utmost importance is the fact that it is through the combination of these resources that Provo Canyon gains its regional and national significance. No where else in the United States is there such a confluence of nationally and internationally significant outdoor recreation resources. These resources include:

- Downhill skiing - Sundance Resort, an internationally known site for skiing, sustainable living, and the arts, is located in Provo Canyon along the North Fork of the Provo River.
- Mountain Biking- There are a number of single track mountain bike trails at Sundance as well as Soldier Hollow and in Wasatch Mountain State Park.
-

Wind surfer at Resort Park Beach.



Bridal Veil Falls.



Timpanogos story telling festival

- Fly-fishing - The Provo River fishery has been rated as one of the top trout rivers in the country. The Utah Department of Natural Resources rates the entire fishery as “critical” in its statewide fisheries evaluation process.
-
- Lake Fishing - Deer Creek Reservoir, Jordanelle Reservoir, and Strawberry Reservoir offer a combined area of thousands of acres of some of the best lake fishing in Utah. Walleye, trout, and other species are present.
- Hiking - Provo Canyon hosts the intersection of the Great Western Trail with the Jordan/Provo River Trail, one of the most-extensively used and well-developed canyon trail systems in the country. The Timpanogos Wilderness, Wasatch Mountain State Park, and Uinta National Forest offer hundreds of miles of hiking trails within the Provo River Watershed. The canyon is also the portal to the High Uintas, one of the largest wilderness areas in the West.
- Walking, Rollerblading, and Recreational Trail Biking - The Provo Canyon River Trail offers 6 miles of trails for walkers, rollerbladers, joggers, and bicyclists, from the mouth of Provo Canyon to Vivian Park. This trail connects to municipal trail systems in both Orem and Provo.
- Other outdoor recreational activities available in Provo Canyon and its nearby watershed are: kayaking, rafting, archery, small arms shooting, off-road driving, mountain biking, horseback riding, jet skiing, motorboating, sailing, and golf.
- In addition, the Scenic Byway provides access to a number of resorts that offer other recreational and vacation experiences such as tennis, sleigh rides, nature interpretation, and general fitness programs.
- All of these recreational riches lie within the scenic drama of Provo Canyon. Starting at the Provo/Orem, Utah boundary, the undulating strata of the canyon’s cathedral cliffs rise one-half mile above the motorist for a distance of 12 miles before reaching the head of Provo Canyon. This part of the byway -- the canyon proper -- consists of three subareas: the lower canyon, mid-canyon, and upper canyon. From there, the landscape changes to rolling sage hills with the Deer Creek Reservoir at its center.

Rollerblader on trail opposite Squaw Peak Road.

Views in Round Valley to Wallsburg.



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- The final portion of the byway travels along the eastern shores of Deer Creek Reservoir along State Highway 113 through the small town of Charleston passing a fisherman's access and the Provo River.
- To the west of Highway 113 just north of Charleston is Soldier Hollow State Park. A cross-country ski and biathlon facility overlooking scenic Heber Valley. It was the venue for 18 events at the 2002 Salt Lake City Winter Olympics, the site of the 2000 1999 National Collegiate Athletic Association cross-country finals. The State has also opened a tubing facility with a number of runs overlooking the Heber Valley and there is groomed cross country skiing trails. In the summer there are mountain bike trails, a sheepdog festival, and 36 holes of golf. There is also a lodge as well as a golf course clubhouse.
- State road 113 runs through the small town of Midway which is adjacent to Wasatch Mountain State Park/Golf Course, the historic Homestead resort/crater and Zermatt Resort. Midway is also home to a number of bed and breakfasts and inn's.
- Exiting Midway and heading east on Highway 113 just as you enter the Heber City limits is the Heber Creeper historic railroad. The Heber Creeper provides scenic rides down the Provo Canyon to Vivian Park and back.
- The scenic byway ends at Heber City's historic Main Street. Heber City is located between the Provo River and the Jordanelle Reservoir. Along Heber's Main Street are a number of historic buildings including the Heber Tabernacle which is now home to Heber City's municipal offices as well as a museum.

One of the noteworthy qualities of Provo Canyon is the degree to which it is used by local residents. The Cities of Orem and Provo, Utah, lie at the canyon's mouth, and residents use the canyon as an urban park for both active and passive recreation daily. In addition, U.S. Highway 189 serves as the primary transportation corridor from the Central Utah Highlands to the Wasatch Front. As such, residents see Provo Canyon as a critical transportation route. The Utah Department of Transportation upgraded the lower 6 mile portion of the scenic byway to a four-lane highway and is in the design phase for the remaining 16 miles to Heber City. These modifications have already improved and will continue to improve the scenic driving experience, the quality of the roadside facilities, and the road's safety. The changes thus will benefit the majority of both residents and visitors.

- Sundance Farms - Organic farm and educational center in Charleston, Utah. Farm provides produce for Sundance Resort and other fine restaurants.

Deer Creek State Park entrance.



Entrance sign at Canyon View Park.



Wasatch Mountain State Park golf course.



Great Western Trail - this international trail runs from Canada to Mexico and passes directly across the byway at Nunns Park and Vivian Park.

- Provo River Fishery - known throughout the west as one of the premier flyfishing locales.
- Deer Creek Reservoir - established and well visited fishery for trout, smallmouth bass, largemouth bass, and walleye. The motorized boating opportunities are significant. Two marinas operate on the reservoir. The total capacity of the reservoir is 152,000 acre-feet, the surface area is 2,786 acres, and it has a maximum depth of 137 feet.
- Deer Creek State Park-camping, boating, fishing, sunbathing, and picnicking are among the varied activities provided at this area surrounding the reservoir.
- Wasatch Mountain State Park-This state park-the first established in Utah and therefore of significance - is located at the northern end of the byway. The proposed byway passes the access road to this park's mountain chalet property.
- City/County Parks-Canyon View Park, Canyon Glen Park, Nunns Park, Upper Falls Park, Vivian Park, Rotary Park - All contain picnicking, trail access, toilets, river access, and other amenities.
- Bridal Veil Falls Adventure Park - This park was leased from the City of Provo for use as a public park but the lease was terminated after the last avalanche. Day use activities only.
- Jordan / Provo River Parkway Trail - this popular canyon trail is among the most extensively developed -- with recreation amenities -- in the Intermountain West.
- Uinta National Forest - This national forest frames the corridor to both the north and the south. Thousands of acres of national forest land are accessible from the Provo Canyon Scenic Byway Corridor.
- Provo City recreation lands on Squaw Peak Road - Archery, off-road vehicle trails, recreational shooting, and scenic drives are all possible
- Provo City recreation lands on Squaw Peak Road - Archery, off-road vehicle trails, recreational shooting, and scenic drives are all possible on this property that abuts the National Forest.
- Timpanogos Cave National Monument and Timpanogos Wilderness Area - These resources -- given their designations -- are clearly of national significance. The Wilderness Area lies directly within the corridor's 1-mile radius. The cave lies 0.5 hour drive from the byway proper to the north via North Fork Road.

Ski bus sign at Canyon View Park.



Sign to National Forest on Squaw Peak road.



Jordanelle Reservoir State Park- This new reservoir is located just five miles north of the end of the byway. It provides thousands of acres of water recreation for fishing, camping, and day use activities.

- Strawberry Reservoir - This is one of the most visited and enjoyed reservoirs in all of Utah. Its immense size provides recreation opportunities for campers, anglers, ATV users, snowmobilers, crosscountry skiers, boaters, and day use recreationists. It is located 0.5 hour from Heber City.
- Campgrounds - Camping can be found within Provo Canyon at Frazier Park and Deer Creek Campgrounds. Campsites are also available at Deer Creek State Park and Wasatch Mountain State Park.
- Golf - Golf courses are located at the mouth of Provo Canyon, Wasatch Mountain State Park, and the Homestead Resort in Midway.

All in all, almost every conceivable outdoor recreation activity is accessible within the Provo Canyon Scenic Byway Corridor. Several of these resources are, in and of themselves, of national significance, but the collection of these resources stands out as being a one of a kind destination in the United States.

Cultural Qualities

The dominant cultural intrinsic qualities along the byway are the past and present stories regarding recreation, transportation, and water use. Potential cultural qualities to be interpreted include the following:

- The early development of water powered electric generation. Nunns power plant was perhaps the earliest electric power generation facility in the country. Lucien L. Nunn was a leader in this technology.
-

Approaching second pullout north of Wildwood.



West canyon mouth at pullout.



The history of water rights and use allocations along the watershed. In particular, stories to be told are the construction of Deer Creek Reservoir, the relocation of the village of Charleston to allow for the reservoir, the construction of the aqueduct carrying drinking water from the dam to the Wasatch Front, the irrigation diversions (Olmstead and Murdock) and their associated pipelines and canals, the means by which water is measured and allocated, and the organizational structures in place to manage the water resources. The watershed management portion of this study is a good example of how these various factors are coming together in the present to ensure a reliable, long-term supply of drinking water for human populations.

- The history of recreation would include the Heber Creeper Railroad's story and its one-time path through the entire canyon. The Bridal Veil Falls tram and restaurant have a history that extends back to the early part of the 20th century. Downhill skiing, scenic driving, fishing, and hiking all have histories that extend back for over 100 years.
- Secondary stories involve agricultural uses in the canyon, the present farming uses in the Heber Valley, and the settlement of the Heber Valley. In particular, visitors will have an interest in the settlement of the Heber Valley by Swiss immigrants and still-evident Swiss culture and architecture of the area. Wasatch Mountain State Park was the first state park in Utah's park system.



Historic and Archeological Qualities

Historic and archeological resources along the byway have been studied quite extensively by Brigham Young University's Museum of Peoples and Cultures. In addition, a private consulting firm evaluated the upper canyon (Weymouth et al. 1994).

The historic themes that still exist through the remaining historic resources include Native American culture, Mormon preparation for the "Utah War," the early development of electric generation, the development of secondary rail transportation, and the overall architectural development of the Heber Valley.

The following are some of the major historic and archeological resources in the canyon and their eligibility for the National Register of Historic Places. Sites are either obvious because of their name or not indicated in order to protect the resources. For readers with an interest in these sites, contact the Utah State Historic Preservation office and the above noted source materials.

- Henefer Bridge: not eligible
- Powder magazine: not eligible
- Possible prehistoric campsite: not eligible
- Various lithic scatters: not eligible
- Weeks Bench archaeological site: prehistoric site,
- Fisherman's Bridge: eligible
- Heber Creeper Overpass: eligible
- Heber Creeper Railroad: eligible
- Deer Creek Dam complex: eligible
- Provo River Timber Bridge: eligible
- Various historic residences: eligible
- Vivian Park Railroad Bridge: eligible
- Olmstead Railroad Bridge and Power Plant: eligible
- Canyon Glen Railroad Bridge: not eligible
- Nunns Power Plant: eligible
- Provo Canyon Guard Station: eligible

A business in Midway.



Historic barn preservation sign.



Environmental Issues of Significance to the Byway

There are a number of environmental issues that may impact the future of the byway corridor. The degrees to which each may affect the byway are summarized below.

Mines: There is one active gravel operation within the canyon and another north of the Highways 113/189 intersection. Each will continue to operate for many years. Each has a moderate negative impact on the byway. The re-designation of the northern portion of the byway through Midway will remove the northern pit from the visitor's path. The southern pit will remain, but is remarkably unobtrusive given its proximity to the byway. This southern part is owned by the City of Provo.

Floodplains: The Provo River floodplain impacts the entire byway. Generally speaking, it is an important development constraint that will limit all future development in the canyon.

Rock falls: Rock falls are a danger around several of the road cuts in both the new and older portions of the canyon. The corridor management plan should discourage roadside stopping in any such areas.

Wildfire: Wildfire is a potential concern throughout the canyon, but is not of sufficient concern to result in dramatic changes in the recommended recreation pattern of the byway. The one policy impact of wildfire potential is to discourage high numbers of auto visitors from traveling on roads that do not provide easy evacuation routes.

Avalanche: Avalanche danger impacts clear zones in the middle canyon. As a result, residential and commercial development should be discouraged. Any visitor, tourism or recreation development must take the avalanche risk into account during design in order to minimize danger to people and structures.

Steep slopes: Steep slopes are present throughout most of the canyon, but are not a factor along the byway north of Deer Creek Dam. As noted in the development impact discussion that follows, steep slopes should be a major constraint on future development.



North view from Squaw Peak

Wetlands: Wetlands are present along most of the byway; their impact varies with the micro-setting of the wetlands. Generally, their presence will make any type of development more difficult. Recreation management should seek to avoid directing people to wetlands with the result being habitat or physical damage to these important systems.

Wildlife migration patterns: Both mule deer, elk, mountain goats, and rocky mountain big horned sheep migration routes are located along the byway. Strategies should seek to minimize interference with these routes.

Threaten and endangered species: As noted above, there are no known threatened or endangered species along the byway.

Riparian areas: These areas are key to the byway experience. A sensitive balance must be sought between making the river accessible to visitors and protecting the river and its streambanks.

Agricultural activities: Farming and ranching is located up South Fork; grazing occurs around the reservoir; farms and ranches operate up the Round Valley; and farming, ranching, and market crop operations exist throughout the Heber Valley along the byway. Generally speaking, the agricultural operations that can be viewed from a distance by visitors without any negative impacts on the farms' daily activities and without causing risk to visitors, should be included in the interpretive experience of the byway. Operations that might be disturbed by intrusive visitors should be set off the regular visitor maps and routings. The Sundance Farm is a good example of an operation that encourages visitors within clear limits and should be interpreted and included in the byway program.

Septic tank limitations: Septic tanks and tight tanks (i.e., containers that must be pumped) are the only waste disposal methods used in the canyon today. See the watershed component of this study for a more-detailed discussion on the impacts of septic systems in the canyon.

The final characteristic that is critical to the canyon's present and future is water. This cultural intrinsic quality also has interesting historic qualities related to power generation, water capture, and water transference.

4. Maintaining and enhancing intrinsic qualities - A Vision Twenty Years into the Future

Goals and Objectives

This corridor management plan has a few very clear and direct purposes.

- The first is to step back, look at the entire corridor, and think into the future. What might be a series of steps to balance protection of the natural resources with the steadily increasing levels of use that residents and visitors will place on Provo Canyon?
- The second purpose of this plan is to assess the potential benefits that might be gained through the pursuit of National Scenic Byway status for the Provo Canyon Scenic Byway. Currently, the road is a state scenic byway, but it may have the qualities necessary for a national designation. That designation would provide more funds for byway management and construction.
- The third purpose is to identify specific projects and funding sources to improve the recreational and natural environment of Provo Canyon.

At the beginning of the planning process, an overall goal and a series of objectives for the corridor component were defined:

Goal:

To restore, conserve, and enhance the corridor's intrinsic qualities while developing consistent tourism and economic development activities along the Provo Canyon Scenic Byway.

Objectives:

- Identify and protect intrinsic qualities along the corridor within a balanced framework.
- Define management strategies for the maintenance and enhancement of the intrinsic qualities.
- Accommodate increased tourism and development of related amenities.
- Identify significant environmental issues that may affect management and development along the corridor.
- Identify existing development and how to accommodate new development while protecting resources.
- Identify problems in highway design, maintenance, or operation and recommend corrections.
- Develop a monitoring and evaluation plan to assess progress toward project goals.

- Produce tourism development and management strategies to strengthen local economies in ways that are compatible with the above objectives.

5. Responsible Agencies

The Provo Canyon Scenic Byway Corridor and Watershed Management Plan Steering Committee

Central Utah Water Conservancy District
U.S. Bureau of Reclamation
City of Orem
Utah County Health Department
Federal Highway Administration
Utah County Planning Department
Heber Valley Chamber of Commerce
Utah Department of Transportation
Jordan Valley Water Conservancy District
Utah Division of Water Quality
Metro Water District of Salt Lake City
Utah Division of Water Resources
Mountainland Association of Governments
Utah Division of Wildlife Resources
Natural Resource Conservation Service
Utah Landmark Preservation, Inc.
North Fork Preservation Alliance
Wasatch County Health Department
Provo City Corporation
Wasatch County Planning Department
Provo River Water Users

Broad Action Agenda

The following are the highest-level, most-important actions that the byway should pursue. The next part of this section presents detailed recommendations for key sites along the corridor. The information in the body of the report is augmented by the Provo Canyon Scenic Byway database, a portion of which is attached to this document as Appendix A.

- a. **Create *America's Outdoor Recreation Byway*:** Promote the Provo Canyon Scenic Byway as a destination, competition, and learning center for outdoor recreation. Establish the Provo Challenge Outdoor Recreation Institute. This nonprofit group will act as the body to organize and administer the efforts noted below and to distribute private industry funds to the appropriate projects. Each is focused on a particular outdoor recreation activity, although each would provide overlap with other recreation activities and interpretive topics about the byway.

Private industry support would be sought for facilities focusing on various sports/activities. The historic development of the sport/activity would be traced. Examples of equipment and personalities

from the sport would be profiled. Profiles would also be created of ordinary citizens who have pursued the sport with a passion. Equipment rentals and lessons would be available from each center. Each center would also sponsor yearly competitions.

As described below, each center or facility would be located on public land and operated by a public entity. Private industry support would assist with programming and operations.

The **Provo Challenge** would be a triathlon-type event that would incorporate the various featured sports along the byway (e.g., running, biking, kayaking, swimming, skiing) into one event. The byway's 24-mile-plus length makes it comparable to a marathon.

Components of this system could include the following.

- 1 **The Soldier's Hollow Skiing and Cross-Country Center:** This could be developed --post-Olympics -- as a center for multi-level cross-country skiing and cross-country running, as well as other activities. The skiing and running industry could provide materials and equipment on the development of the sport and its future. Other activities such as orienteering could be brought into the mix given the proximity of Wasatch Mountain State Park.
- 2 **The Recreational Vehicle Center:** The best site for these facilities is not clear yet, but its focus should be on four-wheelers, snowmobiles, and water-vehicles (e.g., jet skis and similar craft). Snowmobiling in the State Park and elsewhere in Wasatch County, as well as water recreation on the reservoirs, will provide for a year-round and very popular focus for these facilities.

The potential for working with private industry and exhibiting and interpreting equipment is extensive.

3 **The Deer Creek Reservoir Biking Center and Trail System:** Establish a cycling-focused visitors center/museum on a site near the reservoir and create a bike and trail system around Deer Creek Reservoir that will allow for loop touring, mountain biking in the surrounding Sage Hills area, and exploring the appropriate trails in and near Wasatch Mountain State Park and Deer Creek State Park. Arrange for private vendors to transport cyclists by boat to various points along the trail system. Work with the U.S. Department of the Interior (USDI) Bureau of Land Management and the USDI Bureau of Reclamation (BOR) to take existing roads and sign a mountain biking system through their lands.

4. **The Provo River Center:** Create a visitor and interpretive center on the land south of Deer Creek Dam that will be abandoned by U.S. Highway 189 reconstruction. The focus of this center should be on canyon river recreation (e.g., fly fishing, rafting) and the sensitive ecosystems of the upper canyon. This facility should also act as an ancillary station for the Heber Creeper Railroad. It could provide interpretation of the dam and power generation, offer wildlife viewing of the elk herds in Canyon Meadows, and act as a staging point for rafting and walking down the river to Vivian Park where the Heber Creeper could return the visitor to the Provo River Center. Establish a formal and regularly scheduled program for cyclists to begin or end their exploration of the Deer Creek

Reservoir Trails by taking the Heber Creeper Train from its new station at Deer Creek Dam. Cyclists and recreationists reaching Vivian Park could take the train to the Provo River Center - or any of the other upstream centers - and then return to Vivian Park later in the day.

5. **Riverbend Main Visitors Center:** The UDOT property opposite Vivian Park should be developed into the main visitor's center for the canyon. This site is recommended since it will pull visitors further up into the canyon before they exit their cars. This will lessen congestion on the lower part of the canyon, specifically Canyon View Park, Squaw Peak Road, and Canyon Glen Park, areas that are in heavy use by local residents. (These areas in particular, along with informal recreation sites such as the dam and pond above Canyon View Park, are sites with potentially dangerous parking areas and turning movements. Discouraging out-of-town visitors from stopping at these areas will lessen congestion and lessen the potential for accidents.) This strategy will also bring visitors up into the most dramatic scenic portions of the canyon.

Finally, using this area as the introduction/welcoming point will bring the visitor population to a nexus with the river, roads, trails, and rail line, thus allowing for a greater potential for multi-modal exploration of the byway. The main visitors center's location at Vivian Park will provide access to the river for rafting (at Frazier Park), access to the rail line, access to the Provo River Parkway trail, and access to hiking trails south and north of the site. The presence of the Jordan/ProvoRiver Parkway and the Heber Creeper will provide opportunities for visitors to loop their travels south and north from the site rather than facing long one-way routes to reach interesting destinations.

6. **Bridal Veil Falls Provo Canyon Visitors Center and Hiking and Walking Center:** The Bridal Veil Falls property should create a small-scale center on the site or a series of interpretive/ visitor services facilities in conjunction with Nunns Park. Given site constraints and hazards (i.e., avalanche, rock fall and floodplain), a series of small buildings would be preferable to a larger building. (See Nunns Park below for compatible programming concepts.)

A nonprofit group working on a Bridal Veil Falls project envisions a range of amenities for the area including:

- Bathrooms
- Restaurants
- Souvenir Shops
- Tourist Information
- Small Theater
- Train Station/Museum
- New Bridal Veil Tram
- Additional Parking Trails Landscaping

7. **Nunns Park Linear River Site:** The abandoned road, the space for parking, the former tram site, the falls, and the presence of the Great Western Trail/Provo Canyon Trail all make this site suitable for a low-infrastructure visitors center, or a series of outdoor kiosks rather than a

larger, central visitors building.

This facility will focus on trail-related activities such as walking, hiking, and cycling. Ice climbing might also be interpreted. The interpretive distinction on both hiking and walking is to broaden the potential audience and to bring in wider industry support (i.e., both hiking equipment retailers and manufacturers and the growing walking industry). Given the easy auto access to this site and to the Provo River Parkway, a part of this center's programming could look at trail use by those with disabilities. Profiles of great wheelchair racers or other athletes with disabilities would both encourage this population to recreate outdoors and raise awareness among the non-disabled population about the challenges and opportunities facing disabled persons.

8. **Low Key Promotion of the Lower Canyon:** As noted above, one reason for this strategy's focus on the mid-to-upper canyon is to lessen congestion in the lower canyon. While investments should be made in lower canyon facilities (see Secondary Recommendations below), visitors will be directed to make their first stop in the mid-to-upper canyon. Facilities such as the Parkway Trailhead, Canyon View Park, Squaw Peak Road, and Canyon Glen Park will not be heavily signed as byway-oriented facilities. Signing in the lower canyon should direct visitors to the main visitors facilities further up the canyon.
9. **Midway Town Hall Visitors Center** This site will enhance the byway traveler's experience by creating an interpretive visitor display in the lobby of the historic Midway Town Hall, which is listed on the National Register of Historic Places. The center will provide information to the traveler through various technologies such as maps, photos, videos, etc., showing places of interest, restaurants, and activities to participate in while visiting Midway. It will restore the building's rotating Glockenspiel clock tower timepiece, which includes Swiss style characters in traditional Bavarian costume. This may entice the traveler to extend their stay while traveling along the byway.

Secondary Recommendations

The following recommendations are drawn from the detailed site-specific recommendations in the Provo Canyon Scenic Byway database. That tool contains a site-by-site review of the byway's resources with action steps for the entire length of the byway. Some of the highlights by byway area are the following:

- a. **Provo/Orem Entrance:** The southern gateway needs better signing to orient the visitor, improvements to the Parkway Trailhead, and coordinated land use planning to integrate the trail into nearby commercial developments. Enhancement and National Scenic Byway funds could support trail head improvements.
- b. **Canyon View Park:** Interpretive funds should be acquired to upgrade and replace interpretive materials at the park. Kiosks and placards are already in place. Improved signing and road striping are needed for the park approach. A reclamation plan should be required for the Provo Pit gravel operation. Enhancement and National Scenic Byway funds could support interpretive improvements.

- c. **Squaw Peak Road:** This multi-use road and U.S. Forest Service property should not be heavily promoted to visitors. The road is narrow, the trails are heavily used, and maintenance funds appear stretched. This should be kept as primarily a local recreation area.
- d. **Canyon Glen Park:** As with Canyon View Park, some modest interpretive and information materials/kiosks could be provided, but this should not be promoted as a primary facility. Just north of this park, a "Welcome to Provo Canyon Scenic Byway" sign should be erected with the mileage to reach the Main Visitors Center further up the canyon. Enhancement and National Scenic Byway Funds could support interpretive improvements.
- e. **Nunns Park and Bridal Veil Falls:** As noted in the above section, this facility and Bridal Veil Falls should be targeted for major improvement funds in order to create a small-scale visitor's center and linear interpretive park at the site. Enhancement and National Scenic Byway funds could support park and interpretive improvements.
- f. **Frazier Park:** This private property and business should be encouraged to thrive. Overall byway promotion should help the business. Talks should be held with the property owner on whether interpretive facilities would be welcomed at the site or not.
- g. **Riverbend/UDOT Tract:** This could be the central visitors center for the byway. A facility on the UDOT staging area (post-road construction) could service visitor needs and its wastewater disposal system might alleviate current or potential wastewater problems in the hamlet of Vivian Park. National Scenic Byway funds could support construction of a visitors center. It should be noted that the potential for private industry support must be explored as well for all facilities that relate to the America's Outdoor Recreation Byway theme.
- h. **Angler Pullouts North of Route 92 Intersection:** Three major angler pullouts exist north of the 92 intersection. One was formally developed as a part of the Phase One road reconstruction effort. The next two facilities should be developed in a similar manner. The UDOT and Federal Highway Administration funds could support these facilities.
- i. **Old US 189 Reclaimed Roadway Recreation Area:** From the Horseshoe Bend north to just below the dam, the new road alignment will result in the abandonment of just over 1 mile of road and UDOT property. This land, combined with existing BOR land, has the potential to offer a significant linear park similar to the Nunns Park area. Much of the steep land along the road is in private ownership, so public purchase of the land is advisable. Angler parking areas, river access, and day use recreation could all be accommodated. It should be emphasized that the concept of public purchase of land does not relate to the Deer Creek Campgrounds. This facility is a valuable amenity for the byway and the design of the visitor's center and recreation area should seek to support and integrate the campground. Please see Part III for discussions concerning the need to obliterate roads whenever possible to improve water quality. The water quality issue must be balanced with this linear park concept. This area could also support a Heber Creeper stop. New land and water conservation funds, combined with Federal byway dollars, may support this effort.
- j. **Extension of the Provo River Parkway:** Efforts should continue to extend the parkway trail from Vivian Park to the BOR/Deer Creek Area. Trail funds should be sought.
- k. **Build a View Area in the Southbound Lane on or near Weeks Bench:** As the new road passes from Horseshoe Bend up across Weeks Bench, suitable southbound land should be set

aside for a scenic viewing area. The view should be directed south toward Mount Timpanogos.

- l. **Build a Reservoir Trail System:** Working with either existing trails running toward Wasatch State Park or a new trail system through BOR lands, a biking trail should be established around or in portions of the reservoir lands. As noted above, a cycling interpretive center might be part of this concept. Potentially, bikes could ride the Heber Creeper to a midpoint along the reservoir and then set off to explore nearby trails with a loop extending into the State Park trail system. Federal trail funds and private dollars could support this system.
- m. **Establish Viewing Areas along the Future Road Alignment East of the Dam:** As the future road rises up above the reservoir north of the dam, viewing areas should be provided. The accessible views should extend across the reservoir and down Provo Canyon. Federal highway funds should support these facilities.
- n. **Create an Interpretive Kiosk of the Round Valley:** Near the Route 222 intersection, an interpretive kiosk on the Round Valley and its agriculture heritage should be established. This might be placed in or near the Wallsburg Group Use Area entrance to the Deer Creek State Park. Byway funds would support this action.
- o. **Place Byway Interpretation and Information at Deer Creek Island Resort:** This facility might focus on water sports as well as the full byway experience.
- p. **Future Road Construction Should Provide Reservoir Viewing Areas:** As the road is rebuilt around the reservoir, viewing areas should be provided.
- q. **Establish a Gateway Visitors Center Just outside Heber City, near the Old Town Development:** This area will be perfect for a byway information facility. It would be developed in conjunction with the Heber Creeper Railroad or the local arts cooperative or another civic-oriented operation.

6. Maintaining intrinsic qualities while accommodating new and existing development

Visitor Management Challenges

There are five core visitor management challenges that must be addressed in this plan.

1. The lower canyon and its recreation resources already face high levels of use. Deliberately bringing more people into this portion of the system may be a mistake. The challenge is to find ways to disperse visitation.
2. This plan needs to lay out a broader vision of recreation within the Provo River watershed so that the National Scenic Byway designation will have its maximum economic impacts. Given the development constraints within the canyon proper, there can be few jobs created if the focus of

visitation is on the canyon. If, on the other hand, the byway encourages visitation to the upper portions of the byway and the surrounding recreation areas in each county, then significant increases in visitation can occur with the result being economic growth and diversification.

3. Given that U.S. Highway 189 is the major route of connection between the Heber Valley and the Wasatch Front, it must serve as a commercial and commuter route. That means visitation must be managed to avoid overuse and congestion on this road. Making use of the existing and greater potential for multi-modal transportation is one way to address this issue. Encouraging out-of-region visitors to stay for more than a day will also disperse travel and impacts.
4. The canyon and its water system are used heavily, but they have their limits beyond which water quality degradation will occur. The byway development effort must try to minimize additional stress on the water systems and discourage development in areas that might compromise water quality.
5. A final challenge is that this byway should be planned and conceived as a place to which people of all abilities and interests can come. The focus should not just be on the “hard core” outdoor recreationist. This strategy will make Provo Canyon accessible to the widest number of visitors and it will generate the most-significant economic impacts.

This section provides an overview of the sensitivity of each segment of the byway to change. The major sites on which change might occur are identified and the underlying regulatory or ownership structure that will guide that change are noted. Recommendations are offered relative to the amount of new development that appears to be generally acceptable. These concepts are confined to issues of importance to the corridor management plan. In addition to development guidelines, restoration and preservation guidelines are presented.

Land Use Overview

Land use regulation along the Provo Canyon Scenic Byway Corridor is primarily managed by the following entities:

- The City of Orem
- The City of Provo
- Heber City
- Utah County
- Wasatch County
- The U.S. Forest Service
- The Bureau of Reclamation

Beyond this, there are a number of private and public property owners that have their own set of access and use requirements (e.g., water companies and water departments manage their land very differently than City/County Park’s departments or other recreation oriented entities.)

Figure presents the current zoning along the byway. The major conclusion from Figure 6 is that there is little development within the canyon or along the byway. Generally speaking, the lower canyon contains

some homes (fewer than 50), a number of public infrastructure uses (e.g., water conveyance, storage, and measurement facilities), a gravel pit, and a number of recreation sites. The North Fork contains Sundance Resort and is the most-significant development in the canyon. The middle and upper canyon segments contain few homes (fewer than 50), water infrastructure, recreation sites, power generation facilities, and Deer Creek Dam. Above the dam, the only development along the byway to the northern end of the reservoir is Deer Creek State Park and several homes. Along State Route 113, there are farms, the hamlet of Charleston, the town of Midway, more farms, and finally, Heber City's outlying light commercial uses on Route 113 and the historic neighborhood along 100 South Street. Overall, this is a picture of a lightly developed corridor. As noted below, the potential for change is relatively low.

Figure illustrates land ownership along the byway. As can be seen from this map, the majority of the lands within the watershed are in public ownership, but a high amount of land within the immediate 1-mile-wide byway corridor is in private ownership. What is not evident from Figure 2 is that the vast majority of this private land faces extreme development constraints that will limit the potential for change.

Figure presents information on Sensitive Lands and Development Constraints. The most noticeable aspect of this map is the degree to which the Drinking Water Source Protection Management Areas and Primary

Project Area Zoning Map.

Groundwater Recharge Areas encompass the entire lower and middle canyon south of Wildwood. In addition, all areas of this map within the corridor have soils that are considered to have high septic tank limitations, with the exception of the noted areas that have slight to moderate limitations. Those areas are located along Deer Creek Reservoir and north of the reservoir. As septic systems are the only wastewater disposal method in use in the canyon today--with the exception of tight tanks in some areas where septic systems have failed--this indicates that future development based on septic systems could pose problems for water quality. It should also be noted that soil maps are broad in scale and that there may be pockets of soils suitable for septic systems. Alternative waste water disposal methods may be more suitable for the corridor and watershed than septic systems. Information on the feasibility of such systems in this setting is needed.

Figure 6 indicates the major zoning districts in place along the corridor and in the watershed. These districts' conditions most relevant to the byway are summarized below. The conditions considered relevant are those that could result in substantial development of the landscape, result in degradation of water quality (and thus the recreational experience), or could provide needed services along the byway.

Utah County Zoning

Critical Environment 1 (CE1), Utah County - This district covers the majority of the lower portion of the byway. The primary objective of this zone is to protect water quality and the watershed. Permitted uses are agriculture within limits that do not erode the soil, one-family dwellings and manufactured homes (minimum lot size of 50 acres), institutions, and public uses. Conditional uses include power generation, communication infrastructure, water and wastewater treatment, mines, public uses, campgrounds for noncommercial use, ski lifts, and planned subdivisions. Of these uses, those with the most potential to impact the byway are the large-scale projects; however, such projects would also be subject to the most review by the county and have the ability to adopt alternative wastewater disposal methods.

Critical Environment 2 (CE2), Utah County - This district covers the North Fork and the Sundance Resort. There is also a CE2 district on the South Fork. The allowed uses include agriculture, one-family dwellings and manufactured homes (20 acre minimum lot size), institutions, and public uses. Conditional uses include water facilities, communication facilities, water and sewage treatment, nursing home or similar facility, public parks, noncommercial campgrounds, planned subdivisions, mountain

Lots for sale in Vivian Park.



home developments, and recreational resorts. Of these uses, those with the most potential to impact the byway are the large scale projects; however, such projects would also be subject to the most review by the county and have the ability to adopt alternative wastewater disposal methods.

Highway Service 1 (HS1), Utah County -The one HS1 district on the byway is at Nunns Park. It covers the abandoned road above which the reconstructed road was built, and it extends up to Bridal Veil Falls. It is within this district that development at Bridal Veil Falls might occur. The permitted uses include restaurants and drive-in eating places, grocery stores, retail variety stores, gasoline service stations, automobile towing, parking facilities, parks, water infrastructure, laundering facilities, and public uses. Conditional uses include public infrastructure, parks, recreational vehicle (RV) or commercial campground, power transmission, and planned subdivisions. The minimum lot size for uses varies; for example, gas station lots are (1 acre), RV court or campground lots are (1 acre), planned subdivision lots are (2 acres), and public uses lots are (5 acres). Of critical importance in this area is the presence of the Provo River. There are no district-specific requirements regarding river setbacks, but the county's floodplain overlay district likely impacts much of this area. That provision places requirements on the construction methods used for structures and the safety measures required for mobile homes and similar structures. In addition, the Natural Hazards Overlay zone impacts portions of the canyon. This provision requires that structures be protected from collapse or severe damage and that structures holding humans not be placed in hazard areas unless the hazard is removed.

Residential Agriculture 5 (RA5), Utah County - The one RA5 district in the corridor is located on South Fork. As such, development in this area would have limited impact on the scenic quality of the corridor, but could result in impacts on traffic, services available to guests, and water quality. Permitted uses include agriculture, one-family dwellings, manufactured homes, home and premises occupations, and numerous public uses and uses required by law. The primary conditional use of relevance is the large- scale subdivisions subject to specific requirements. Potential uses in large scale projects are one-, two-, three- or multiple-family dwellings including condos and manufactured homes, institutional uses, schools, recreation uses, and agricultural uses. The minimum tract size is typically 5 acres for most large-scale projects.

Transitional Residential 5 (TR5), Utah County - There is one area within the watershed along U.S. Highway 189 in Provo City that is zoned for TR5. The basic types of allowed uses are one-family dwellings and manufactured homes, agriculture, and required institutional uses. Conditional uses include institutions, schools, public uses, and nursing homes. This district has little impact on the byway.

Wasatch County Zoning

The following are the dominant zones in Wasatch County through which the byway passes.

A-1 Agricultural - This district lies on both sides of U.S. Route 113 on its route from Midway to Heber City. The district is intended to accommodate low-density rural development and agricultural uses. The only residential uses are for farm caretaker dwellings and mandatory

group homes. The minimum lot size is 20 acres. No commercial uses, other than farm-related, are allowed in the district. This area is targeted by the county's comprehensive plan for special efforts to protect the farm landscape.

P-160 (Preservation 160-acres) - This district lies to the south of the byway from the dam eastward to the Wallsburg Road. The intent of the district is to protect grazing and forestry lands. Development is not encouraged in this district. Farm and ranch uses are allowed along with all uses accessory to those purposes. Farm caretaker dwellings and industrial caretaker dwellings are allowed. Extraction of gravel, top soil and similar materials are allowed subject to special approval by the County Commission. The minimum lot size is 160 acres. Given the combination of Federal ownership of some of this land and the zoning requirements, development is not a threat in this zone.

M (Mountain) - This district includes all of the Deer Creek State Park and some USDI Bureau of Land Management lands from the Wallsburg Road to the US189/Route 113 intersection. This district is designed to protect water supplies and allow for the development of vacation homes. Given that all of the RF-1 land along the byway is under Federal ownership, this district does not offer more development along the byway. Residential development must be done within the framework of planned recreation development of a minimum of 160 acres.

RA-1 Residential Agriculture - The RA-1 District is the dominant zone from the U.S. Highway 189/Route 113 intersection to the byway's intersection with U.S. Highway 40. It also covers the majority of the land along Route 113 outside of the municipalities of Charleston, Midway, and Heber City. This district is intended to encourage dense development near the incorporated cities within the County, while maintaining the rural atmosphere of the area. It is intended that sewer and water service be provided to these areas. This district and the incorporated areas of Charleston, Midway and Heber City, of all the areas along the byway, offer the best sites for future development of any scale. All of this land lies east of the Deer Creek Reservoir in the Heber Valley. This set of zoning guidelines, in addition to the buildability of the land, make the Heber Valley portion of the byway the most likely to develop. The minimum lot size for a dwelling unit with sewer is 1 acre, without sewer it is 5 acres.

I Industrial - There are some lands lying to the south of the byway, southeast and adjacent to Midway that are zoned I (Industrial). This zone is designed to encourage manufacturing, processing, fabrication, and warehousing goods and materials. A wide variety of industrial uses is allowed in this district. The expected development along

U.S. Highway 189 in this area and in the RA-1 district suggests that in time the scenic qualities of this portion of the road will be fully eroded.

Orem City Zoning

Orem City's zoning districts that lie within the corridor are reviewed below.

PC-2 Commercial - This small district lies to the north of the canyon mouth. It currently has a

gas station and restaurant. The PC-2 district is designed for small commercial uses and does not allow residential development. The frontage along the byway is entirely developed.

R&D-1 Commercial - This district lies on the south side of the canyon mouth. It is the proposed future site of an office park and hotel. Single family residential uses are not allowed. A wide range of business uses are allowed in this district. Given the site's location below the highway, many types of uses would be compatible with the byway as long as the site is well designed.

CM Commercial - This district lies along the west side of the road for approximately one-half mile into the canyon. It encompasses the power plant and the land on which the penstocks are located.

There is little potential for additional development on this land because of the steep slopes on the hillsides and the floodplain on the flat land. Under the allowances of the zoning district, a very broad range of commercial and industrial uses are possible.

OS-5 Open Space - This district includes the gravel pit and Canyon View Park as well as lands along the Jordan/Provo River Parkway. It is entirely made up of city owned land and as such does not pose a development threat to the byway. The proper reclamation and reuse of the gravel pit site is the most sensitive development project that this zone is likely to encounter within the canyon.

RE-12 Residential - This district lies above the byway to the west and abuts the Forest Service land on Mt. Timpanogos. Residential development is allowed in the district; however, no business uses are allowed. All of this land is within the National Forest or other Federal lands. As such, these lands pose no threat to the character of the byway.

Land Use Review by Corridor Segment

The following is a more-detailed review of the land uses and potential for change within each of the five byway segments and the two corridor gateways. Please refer to Appendix A for a detailed inventory of land uses along the road and notes on the status and recommendations for these sites.

Orem Gateway

The dominant quality to the byway's southern gateway in Orem is the highly developed nature of the area. Development is and will continue to fill most of the space up to the mouth of Provo Canyon. The result will be a full urban-suburban environment at the base of a very open, natural, and large portion of public land. Of most importance is that the enhancement of the Jordan/Provo River Parkway be a planning objective in all adjacent projects. Access should be provided under or over Route 52 from the upcoming office park project. Investments in more parking and a better trailhead are needed. Better signing is also needed. Overall, this entire area is subject to change, but most of that change is well underway.

Office park sign a Orem gateway



Gateway in Orem



Segment One: Orem to Canyon Glen Park

The first segment of the byway stretches from the canyon mouth to Canyon Glen Park (see Figure 5). This division was chosen since the character of the landscape changes from this point north. There are moderate disturbances to the landscape and a mixture of public and private land within this segment. North of this point, the road rises in elevation and the experience for the visitor is of a more pure, untouched canyon.

The land use pattern for Segment One consists of the following elements:

- Open and undevelopable lands for about a mile to Canyon View Park. The Olmstead Flowline is visible to the west.
- An active gravel pit -- City of Provo's property -- directly across from Canyon View Park. This could be redeveloped in the future.
- Undevelopable bluffs and cut areas along the byway until reaching the turn for Squaw Peak Road. The land up this road is all in public ownership.
- No additional land for roadside development along the road until Springdell. Limited room for more homes in this small subdivision. Currently there are fewer than 20 homes.
- Canyon Glen Park is opposite Springdell.

Based on this land use pattern, the potential for change is minimal. The greatest area likely for development is the eventual reclamation of the Provo Pit gravel site. There is no other potential for significant change. Potential reuse of the gravel site requires that consideration be given to design standards for the site. Consideration should also be given to public purchase of the land.

The replacement and burial of the Olmstead Flowline will require restoration work. This project has the potential to improve the scenic landscape of the lower canyon.

Segment Two: Canyon Glen Park to Wildwood

The next segment extends north of Segment One passing Nunns Park, Upper Falls Park, Frazier Park, Vivian Park, and ending at the intersection with Route 92 at Wildwood. The key landscape elements in this segment are the following:

- Open, long views of canyon from road. Land primarily in public ownership.
- Nunns Park and adjacent areas with the old Route 189 road running parallel to the river and the new road. This area has potential for expanded use.

- Bridal Veil Falls -privately owned site, for sale. Development potential limited to base of falls and land along old Route 189. Difficult wastewater challenges given floodplain, groundwater, avalanche, and surface water constraints.
- Frazier Park - privately owned campground containing sites for 16 vehicles. No tent camping. Development potential is limited because of floodplain constraints.
- Small home opposite Frazier Park. Property could be reused.
- Vivian Park - Public park and recreation land adjacent to private hamlet. Limited potential for additional development within or adjacent to hamlet, although new homes could be built up the South Fork. A large subdivision of homes is platted up South Fork Road, and the RA5 district on South Fork could be a site for a future planned development.
- The UDOT site opposite Vivian Park. Development potential is high. This site was a former mobile home park and is now used as a staging area for highway construction. Consideration should be given to how this site might be best used in the context of the byway. This site might be feasible for a visitors center with on-site wastewater treatment to assist with potential water quality problems in Vivian Park.
- Homes north of Vivian Park on east side of highway. Development potential is limited to existing units.
- Wildwood hamlet - Development potential is limited.
- Sundance Resort - This facility lies outside the 1 mile corridor, but has significant development potential.

The abandoned U.S. Highway 189 road segments have development potential. A private nonprofit group is looking at the potential to create a small commercial project at Bridal Veil Falls. Site constraints will likely limit development at Frazier Park. The UDOT site opposite Vivian Park is another area with high potential for change. Significant development could occur up South Fork and at Sundance Resort.

Segment Three: Wildwood to Deer Creek Dam

- The land north of the intersection up to Canyon Meadows Drive is in private ownership, but it is unbuildable adjacent to the road. The cuts are steep on the uphill side and the drop to the river is steep on the river side.
- At Canyon View Drive, there are three homes and accessory buildings -- these are older homes. Seventeen homes have been constructed in the Canyon Meadows subdivision, though these are not visible from the existing road. They may be visible from the new highway alignment.
- North of Canyon Meadows Drive, the next major land uses are the Deer Creek Campground (90 hookup and camping sites), the Wallsburg Substation of Utah Power, the railroad bridge for the Heber Creeper, the power generation structures beneath the dam, and the dam itself. The surrounding land is owned by the Bureau of Reclamation.

The two areas with more development potential in this segment are Canyon Meadows and the land that will be abandoned following the reconstruction of U.S. Highway 189. The new road will leave over 1 mile of abandoned road on the downslope side that could be reused for recreation and visitation purposes. Much of this land is in private and UDOT ownership. Road realignment and dam augmentation will also create available land near the west side of the dam that might be used for visitor-related development.

Segment Four: The Dam to the Route 113 Intersection

- This portion of the byway has very limited development potential because of State and Federal ownership of all the land surrounding Deer Creek Reservoir. The state park recently added more day use sites, but with that project the majority of the accessible land near the lake has been used. Additional development is unlikely.
- There is significant development potential in Round Valley, along the road to Wallsburg. Such development would not negatively impact the byway corridor.

Segment Five: The Heber Valley

- The land uses along Route 113 are rural residential in Charleston, marshland and the reservoir to the west, farmlands south of Midway, the village of Midway with a healthy local tourism oriented economy, and a final stretch of farm landscape from Midway into Heber City. At the edge of Heber City is a recreation complex and a set of historic buildings that now comprise a tourism-oriented Old Town commercial area.

Midway Gateway

- Midway intercept point, Midway historic Town hall interpretive visitor display in the lobby of the historic Midway Town Hall, which is listed on the National Register of Historic Places. The center could provide information to the traveler through various technologies such as maps, photos, videos, etc., showing places of interest, restaurants, and activities to participate in while visiting Midway. The Byway traveler is at an important information decision making point. This site acts as a visitor information center providing directions and contact information for lodging, dining and recreation activities at anyone of the city's premier destinations resorts like the Homestead, Blue Boar Inn, Zermatt, etc. This site and interpretive project could extend the visitor length of stay and expenditures in the region. These are also consistent with the economic development goal of Wasatch County and the Economic Development Districts' 2009 Mountainland Regional Consolidated Plan.
- The corridor within midway city boundary is a residential/Commercial arterial street that connects to Midway Main Street and the historic center Heber Creeper Rail road depot.

Heber Gateway

- The downtown of Heber City is the northern gateway for the byway. This is a much better introduction to Heber City. than the commercial strip that exists at the south end of town at the U.S. Highway 189 intersection. This area encourages pedestrian exploration of the community

and presents itself well with the number of historic structures in the area.

Conclusions

Based on this review, there are several points that will impact this Corridor Management Plan:

1. While there is the theoretical potential for large-scale projects to be built in the Provo Canyon Watershed, there is no potential for such development along the immediate corridor and viewshed of the byway. Much of the land is in public ownership, slopes are steep, and wastewater disposal would be problematic and costly.
2. Public land ownership along Deer Creek Reservoir removes the potential for development in Segment 4 that would degrade the byway's character.
3. Given the combination of public land ownership and distance from the view, small-scale residential projects (20 and 50 acre minimum lot sizes) along the Utah County portion of the corridor would have minimal impact on the scenic experience. Development along Segment 5 of small-scale projects would impact the visual quality of the road. Therefore, consideration should be given to farmland protection strategies.
4. Ideally, for the purposes of maintaining a high quality Scenic Byway, additional residential development in the corridor viewsheds should be discouraged.
5. Utah County's zoning district designation of Bridal Veil Falls as a Highway Services zoning district is inappropriate. The Highway Zoning district allows a wide range of commercial uses, but the site's physical limitations (floodplain, rock fall area, etc.) as well as its location near a scenic area make it inappropriate for most commercial uses.
6. The most development potential along the byway is in the South Fork and North Fork watersheds. Projects in these areas would not have a great impact on the byway directly, but indirect impacts may be a factor.
7. There may be visitor service development potential at Vivian Park (UDOT site), Nunns Park/Bridal Veil Falls, and south of the dam on abandoned land following road realignment.
8. The potential for land use changes and development along the Heber Valley portion of U.S. Highway 189 merits a recommendation for de-designation. The landscape is also not on par with Route 113.
9. The interest from Wasatch County in protecting the landscape around Midway bodes well for long-term byway management efforts and landscape preservation.

7. Public Participation:

A plan to ensure ongoing public participation in the implementation of corridor management objectives. The adoption of the corridor management plan would be done with the endorsement of

all impacted communities. Any changes to zoning or subdivision approvals would go through a public hearing process as required by State law.

Midway, Charleston, Heber and the County all approved a proposal to re-align the byway to Highway 113. This was presented to the various City and County Councils prior to approval the re-aligned State Scenic byway.

See Appendix D. for a complete list of public meeting and outreach.

8. Safety of the Byway and Deficiencies Highway Design Standards

Design Criteria

The design criteria developed for the proposed improvements to U.S. Highway 189 were compiled from a number of sources. The criteria were developed to satisfy the purpose and need for improvements defined in the 1989 Supplemental EIS (HNTB1989). The SEIS is a broad overview of all the issues involved in designing and constructing improvements through the Provo Canyon. Since the SEIS was completed, a significant amount of engineering, construction, and further studies have been performed.

The UDOT has compiled roadway design standards on current projects and placed them in their design standards drawings. To augment the UDOT design standards, the current version of "A Policy on Geometric Design of Highways and Streets" was used for design guidance (AASHTO 1994). All bridge and retaining walls will be designed per the current "Standard Specifications for Highway Bridges" (AASHTO 1994).

The design criteria defined for the "Preferred Alternative" is summarized in Table 1. Metric units were used in the design

View before median when driving north from canyon



Byway to the south of the dam



Typical Sections

The typical sections shown in Figure 3 represent two different cross-sections of the Provo Canyon roadway. The first typical section is representative of the segment of highway below Deer Creek Dam. This typical section is fairly general in the terms that there are two travel lanes in each direction and roadway shoulders on each side of the roadway. A concrete jersey barrier is shown in the middle of the road.

This barrier type may be an item for further discussion. The concrete jersey barrier or a double beam guardrail would meet safety requirements. However, the jersey barrier would provide more of a barrier, or separation, to the different travel directions.

The second typical section is representative of the segment of highway above Deer Creek Dam. This section is known as the split alignment. Because the existing hillsides in this area are so steep, the up-canyon traffic and the down-canyon traffic will be separated both horizontally and vertically to better fit into the landscape. This will help reduce the heights of the cut slopes. Because of the grade separation between the travel lane directions, standard beam guardrail was used to help vehicles avoid hazards.

DESIGN ELEMENT	PRINCIPLE ARTERIAL
DESIGN SPEED (km/h)	
	80 (50 mph)
SIGHT DISTANCE (m)	
Stopping	145 (475 ft.)
Passing	N/A
HORIZONTAL ALIGNMENT	
Minimum Radius (m)	250 (820 ft.)
VERTICAL ALIGNMENT	
Max. Grade (%)	7%
CROSS SLOPE / SUPERELEVATION	
Normal Cross Slope (%)	2
Max Superelevation Rate (e)	0.06
VERTICAL CLEARANCE	
Vertical Clearance	5.0m (16.4 ft.)
STRUCTURES	
Loading	HS 20
Width	MATCH APPROACHING ROAD WIDTH
INTERSECTIONS:	
Accel. & Decel Tapers	YES
Left Turn Lanes	YES
Traffic Signals	NO
TRAVELED WAY WIDTHS (m)	
NUMBER OF LANES	4 MINIMUM
LANE WIDTHS (m)	3.6 (12 ft.)
SHOULDER WIDTHS (m)	
INSIDE	0.6 (2ft.)
OUTSIDE	2.4 (8 ft.)
MEDIANS (m)	
Median Width	3 (10 ft.)
CLEAR ZONE	
Width (m)	6.7 (22 ft.)
Vegetation may be as close to the traffic lanes as 3.0m without a barrier provided stems are less than	
100mm in diameter	
Sideslope	1:6 (V:H)

Typ Cross

Pedestrians and Bicyclists

Pedestrians and bicyclists are accommodated along the U.S. Highway 189 corridor in Provo Canyon by the Provo River Parkway trail. This 8-foot, paved trail begins at Utah Lake and runs up the canyon to Vivian Park. The trail, which connects with two regional trails (the Bonneville Shoreline trail and the Great Western trail), has become an integral part of the canyon's attractiveness and accessibility to local residents and visitors alike. Hikers, joggers, and recreational bicyclists heavily use the present-day portion of the trail. Plans have been made to continue the trail up to Dear Creek Reservoir and then on into Midway and Heber City, following an existing railroad corridor. Plans to complete the Provo River Parkway trail should be coordinated with the expansion plans for U.S. Highway 189 and would need to have funding identified.

One concern raised about the Provo River Parkway trail involves the mix of bicyclists and pedestrians. Some of the more advanced bicyclists have begun using the shoulder area on U.S. Highway 189 to avoid potential collisions with pedestrians and other bicyclists. U.S. Highway 189 has a wide shoulder that can easily accommodate bicyclists. However, a 4-foot rumble strip in much of the lower canyon's shoulder area forces the bicyclists to ride on the border of the travel lane next to the motorized traffic. Near the tunnels, however, the rumble strip changes and allows for bicyclists to ride in the shoulder away from the motorized traffic. Future widening of U.S. Highway 189 should incorporate into the shoulder a rumble strip that would accommodate bike traffic. Presently, UDOT has been keeping the roadside shoulders swept and free of debris to help accommodate the bike traffic.

Roadway Geometry and Traffic

U.S. Highway 189 through Provo Canyon consists of a four-lane divided highway from the mouth of Provo Canyon to just past SR-92 (the Sundance turnoff) and a two-lane highway from SR-92 to Heber City. The UDOT plans to widen the remaining section of U.S. Highway 189 between SR-92 and Heber City to a four-lane divided highway, the next phase being the section from SR-92 to Deer Creek Reservoir. The widened portion of U.S. Highway 189 consists of 12-foot travel lanes, a 2-foot median shoulder, a 6-foot roadside shoulder, and is divided by at least a 6-foot median in most places. The portion of the unimproved road consists of 12-foot travel lanes, small shoulders, and a median and passing lanes in isolated locations. The lanes and shoulders are made of reinforced concrete in the improved section and asphalt in the other sections. Grades in the canyon range between 0 and 7 percent.

The current capacity of U.S. Highway 189 in the Provo Canyon ranges between 1,190 and 1,460 vehicles per hour, depending on the amount of truck traffic on the road (capacity based on the two-lane portion). A recent analysis done by Fehr & Peers (2000) shows that the growth in traffic volume along U.S. Highway 189 in Provo Canyon is correlated in a near linear fashion with the socio-economic (population and employment) growth in Utah and Wasatch Counties. The Utah Governor's Office of Planning and Budget forecasts that the average annual population growth rate for Utah and Wasatch Counties to be between 2.2 percent and 3.4 percent through the year 2020. It can be concluded that average daily traffic on U.S. Highway 189 will grow at a similar rate.

Level of service (LOS) grades are a qualitative measure of the flow of traffic in a traffic stream. They

refer to how motorists and passengers perceive traffic.

- LOS A describes complete free-flow conditions. Vehicles are virtually unaffected by the presence of other vehicles, and drivers are constrained only by the geometric features of the road and the drivers' preferences.
- LOS B the presence of other vehicles begins to be noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to maneuver.
- LOS C represents a range in which the influence of traffic density becomes marked. The ability to maneuver within the traffic stream is now clearly affected by the presence of other vehicles. The average travel speeds begin to slow down. Minor disruptions may be expected to cause serious local deterioration in service, and queues may form behind any significant traffic disruption.
- LOS D represents a range in which ability to maneuver is severely restricted because of traffic congestion. Travel speed is reduced with increasing traffic volumes. Only minor disruptions can be absorbed without the formation of extensive queues
- LOS E represents at or near capacity. Vehicles are operating with the minimum spacing needed to maintain uniform flow. Any disruptions in the traffic stream cause queues to form and service to deteriorate to LOS F. Speeds are highly variable and unpredictable within this range.
- LOS F represents breakdown. It occurs where demand exceeds capacity. Queues form at these breakdown points independent of disturbances. Vehicles are generally driving under stop-and-go conditions.

At this growth rate, U.S. Highway 189 is expected to reach capacity (LOS E = capacity F = failure) well before the 2020 design life of the existing two-lane road. Widening the road to four lanes would raise the road capacity to between 4,800 and 5,800 vehicles per hour, depending on the volume of truck traffic. The improved road will most likely induce an additional 180 vehicle trips in the design hour (an increase of 0.065 percent), based on projected off-peak travel time improvements to U.S. Highway 189 (Fehr & Peers 2000). An induced trip in this case could mean that people in Wasatch County would be more willing to seek jobs in Utah County if travel time between the counties via U.S. Highway 189 is reduced, resulting in greater traffic on Provo Canyon without a corresponding greater level of population or employment in Utah or Wasatch counties. Adding induced trips and the diverted truck trips (see Accommodating Commercial Traffic Section) into the volume forecast, the proposed four-lane cross section will remain within an acceptable level-of-service range (LOS C or D) through the year 2000.

Aesthetics and Kinesthetics

One of the fortunate outcomes of the reconstruction of the U.S. Highway 189 is that the resulting scenic driving experience is improved by the reconstruction. The historic narrow width and winding geometry of the road, combined with the high speed use of the road by trucks

Charleston Bridge Reservoir access point.



and locals as the key link to jobs and markets, meant that U.S. Highway 189 was not a pleasant scenic drive under most conditions. Utmost attention is required in the two unimproved segments of the highway to avoid oncoming traffic and prevent long lines of vehicles behind the scenic driver. With the improved road, the visitor can move more leisurely in the slower speed lane.

In addition, the movement of the road base from immediately next to the Provo River at the base of the canyon to a higher elevation means that the scenic experiences (i.e., the views) become better. As noted below, the highest-quality driving views are from the reconstructed road when it rises to a point several hundred feet above the canyon floor.

Finally, the more-gentle curvature of the road results in a more-pleasant driving experience. The feeling of how the road moves across the landscape is the kinetic experience of driving. Portions of the improved road provide the feeling of floating up the canyon. It is hoped that future reconstruction will offer similar benefits over the current alignment.

Alignments and Opportunities

The construction and improvements on U.S. Highway 189 in Provo Canyon have created and will create a set of very unusual recreation and amenity opportunities. In the lower canyon, portions of the old road were abandoned and the potential for a new park system realized (see Figure 2 from Nunns Park to Upper Falls Park.) This parallel road that moves within yards of the Provo River provides excellent access to the river and the associated trail and park system.

Similar opportunities will be created in the upper canyon. Figure illustrates the portions of the existing road that will be abandoned and the areas of land that will become available for potential public and recreational use. The direction for the use of these areas is explored in detail in each of the Sections C-F of this plan.

Other Transportation Modes

The Provo Canyon corridor is unusual in the degree to which alternative transportation modes are already in place.

Transit Services

The Utah Transit Authority (UTA) operates Ski bus service in Provo Canyon between Provo, Orem, and Sundance. Sundance Resort subsidizes the service. Service includes nine daily trips from the Provo/Orem area to Sundance starting at around 7am, with the last trip leaving the Provo/Orem area around 5:00 pm. Each trip takes approximately 40 minutes. After arriving at Sundance, the bus has a 10-minute layover before making the return trip to Provo/Orem. Ski bus service in Provo Canyon typically begins after Thanksgiving and ends between February and March, depending on the snow conditions that season and on the current need. As the population in Wasatch County increases and economic ties such as employment, education, health care etc. strengthen between the Heber Valley and Utah Valley expansion of the transit district should be analyzed and considered. This service if deployed could enhance the mobility

Trails

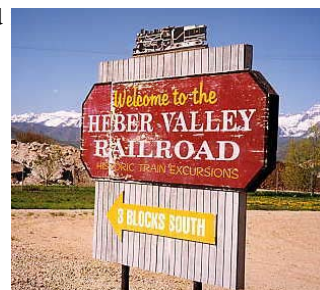
Provo River Parkway sign at Nunns Park.



In addition to these trails, there are many more hiking trails that intersect the canyon and the byway (see Figure 2). Most noteworthy of these are the Great Western Trail and Heber Valley Railroad Sign Trail. As noted, some of these trails are accessible for horseback riding and

Railroad

The Heber Creeper Railroad is owned by Wasatch County. It is based in Heber City and makes regular runs across the Heber Valley, around Deer Creek Reservoir, and down Provo Canyon to Vivian Park.



The role of the railroad should be key or integral to the overall planning for tourism in Provo Canyon. The one irony is that the railroad runs in the northern stretches of the byway while the majority of the lodging and user base is located in the southern end of the byway. It is unlikely that the rail will ever extend southward to encompass the entire canyon. Therefore, planning for tourism must take this imbalance between location of the users and the facility and encourage visitors to begin their canyon experience at a point accessible to the rail. From there, the rail can serve to reduce auto trips and give people a more-intimate experience with Provo Canyon and Deer Creek Reservoir. This concept will also help with dispersing auto travelers to portions of the canyon that are north of the primary areas used daily by local residents.

In addition, the railroad runs directly to and past the Soldier's Hollow Olympic site and the Wasatch Mountain State Park chalet facility.

Rafting and Boating

In addition to feet, rail, bikes, and cars, Provo Canyon can be experienced from the water. In the upper portion of the byway, Deer Creek Reservoir offers a wide variety of motorized boating opportunities. The Provo River through the canyon is good for canoeing, kayaking, and rafting. A rafting business operates from Frazier Park, a privately held property, just south of Vivian Park.

Buses, RVs and Vans

Consideration was given to the group and larger vehicle market during the planning and construction of most parks, parking areas, and formal viewing areas. The larger parking spaces are available in almost all of these facilities, and the lots and access roads provide adequate space for movement and turning.

9. Accommodate commerce while maintaining traffic flow

Accommodating Commercial Traffic

While some residents would like to see truck traffic prohibited from the canyon, U.S. Highway 189 is a regional thoroughfare for cross country travel.

Heavy vehicles (including commercial truck traffic) account for 3 to 5 percent of the total traffic volume in Provo Canyon, or 220-367 annual average daily truck traffic. Concern has been raised that the recommended improvements in Provo Canyon would divert long distance (interstate) trips from Parley's Canyon to Provo Canyon. Fehr & Peers (2000) reviewed this issue in a recent analysis. The results of the analysis show no measurable shift if truck traffic from I-80 (Parley's Canyon) to U.S. Highway 189 (Provo Canyon) during the reconstruction of I-15 in Salt Lake County. However, based on truck drivers' attitudes, it does appear that continued improvements to Provo Canyon as outlined in the 1989 Supplemental EIS (HNTB 1989) would result in diverted truck traffic from I-80 to U.S. Highway 189. The magnitude of these diverted truck movements is projected to be approximately 200 additional heavy trucks per day in the year 2020, or a 1.5 percent increase in total traffic volume in Provo Canyon. This estimate is consistent with the Supplemental EIS that estimated 160 additional trucks per day in the year 2010 diverted from I-80 with the proposed improvements to U.S. Highway 189 (HNTB 1989).

Presently, there are no restrictions on commercial truck traffic in Provo Canyon other than the legal load limits set by the state. Guardrails and Jersey barriers in some tight-corner locations are the only barriers to vehicles entering the river. Pursuing restrictions to certain heavy vehicles containing hazardous materials should be considered in order to reduce the risk of contaminants entering the Provo River and harming the drinking water supply and fisheries.

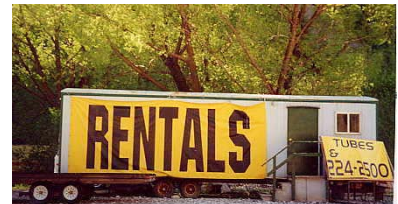
10. Minimizing intrusions to the visitor experience

Utah has adopted, by agreement, the federal laws governing outdoor advertising along scenic byways set forth in the Highway Beautification Act of 1965, Title 23 USC, Section 131, subsection (s). Under this section, the State has authority to set regulations to conform to controls laid out in the section governing advertising on the Interstate or Federal-aid primary systems for any sign, display, or device on designated scenic byways. These controls are found in subsection (c) of section 131.

This section states that signs, displays, or devices located within the right-of-way, within 660 feet of the right-of-way, or that are visible from the main, traveled way and erected with the purpose of their message being read from the traveled way, shall be limited to:

- 1 Directional and official signs and notices, such as those pertaining to natural wonders and scenic and historical attractions, as long as they are authorized by law and conform to national standards on lighting, size, number, and spacing;
- 2 Signs, displays, and devices advertising the sale or lease of property upon which they are located;
- 3 Signs, displays, and devices advertising activities conducted on the property on which they are located;
- 4 Signs determined by the State to be landmark signs including signs on farm structures or natural surfaces, or historic or artistic significance; and
5. Signs, displays, and devices advertising the distribution by nonprofit organizations of free coffee to individuals traveling on the roadway, where the term “free coffee” shall include coffee for which a donation may be made but is not required.

Frazier Park rafting business



The Utah Regulation of Roadside Advertising Act may also allow for logo advertising under certain conditions (section 27-12-136.4).

The municipalities of Provo, Orem, Heber City, Utah County, and Wasatch County have placed additional control measures on outdoor advertising signage. These measures are more restrictive than the Federal and State requirements and range from control of size and type of signs allowed to prohibiting all off-premise signs. A summary of the individual municipality sign restrictions is provided below

11. Summary of Outdoor Advertising Sign Regulations for Municipalities along the Provo Canyon Scenic Byway Corridor

Provo

Dependent upon the zone in which the sign is placed, signs shall be limited to special purpose signs (for sale, rent, or lease signs; directory signs; construction signs; open-house signs; church, quasi-public organizations, and apartment house identification signs; bus bench signs; and development promotional signs) in agricultural and residential zones and the following signs for public facilities zones:

- Name plates;
Monument signs not to exceed 32 square feet or freestanding signs not more than 5 feet in height. Freestanding signs over 5 feet are allowed only with a conditional use permit and shall not exceed 25 feet;
- Wall signs (with certain restrictions); and
- Public facility temporary promotion signs.

Provo also allows the following signs in any zone:

- Signs that display official notices;
- Directional, warning, or informational signs;
- Signs of a noncommercial nature when used to protect the health, safety, or welfare of the general public; and
- Any official flag, pennant, or insignia.

Orem

Near the mouth of Provo Canyon (800 North from Palisade Drive to U.S. Highway 189), monument signs only are allowed. No signs are allowed along U.S. Highway 189 in Provo Canyon.

Heber City

Existing signs that do not meet the current sign regulations are allowed to remain. No new billboards shall be allowed. All on-premise signs shall be limited to monument signs or, if the sign is on a pole, shall be limited to a height of 35 feet. All off-premise signs shall be limited to monument signs with a maximum area of 24 square feet.

Wasatch County

The following signs are prohibited in Wasatch County:

- Signs with inflatable balloons;
- Flashing or blinking signs or that use chaser lights or that move in any way;
- Statuary bearing the likeness or suggestion of any product or logo;
- Projecting signs;
- Wind signs;
- Snipe signs;
- Any truck, trailer, or other vehicle conspicuously, or regularly parked on- or off-premise with an advertising message or logo displayed to attract attention to a business, product, or promotion;
- Spotlights directed into the night sky;
- Off-premise signs except as specifically allowed;
- Any signs on public property;
- Portable signs and;
- Billboards

The following signs are allowed in Wasatch County:

- Directional or instructional signs;
- No Trespassing or No Dumping Signs;
- Plaques or Name Plates that are no more than 2 square feet;
- Symbols or insignia that are no more than 8 square feet;
- Institutional signs (one per driveway access) that shall be a monument sign and not more than 32 square feet;
- Flags;
- Public necessity signs;
- Holiday decoration;
- Political or campaign signs (with certain restrictions);
- On-premise real estate signs (with certain restrictions);
- On-premise home occupation signs (with certain restrictions); and
- Garage sale signs (with certain restrictions).

Utah County

Utah County allows temporary real estate signs provided the sign is no larger than 32 square feet, information signs, and political campaign signs. In addition, other signs such as name plates, signs offering on-premise seasonal agricultural products, or signs advertising current on-premise uses or activities may be allowed dependant upon the land use zone the sign is in (the three land use zones in Provo Canyon are CE-1, CE-2, or HS-1).

12. Signage plan

Working with the Utah department of transportation the byway committee will develop a detailed Regulatory, Warning, Guide and Recreation/ Cultural Interest sign plan that will involve the deconstruction of some existing signage and instillation of addition signs to be in compliance with eth Manual on Uniform Traffic Control Devices while minimizing the impact to the Byways' Intrinsic qualities especially the scenic view sheds.

13. Marketing the Scenic Byway

Market/Audience Profile

The primary audience by type and age group for the corridor can be estimated by looking at the most recent tourism research complied by the two counties with the following assumptions and qualifications. It is assumed that the primary dominate visitor to the corridor resides within the 60 mile radius which is 1.2 million urban residents. This is further supported and articulated in the Wasatch County data.

The UDOT Traffic on Utah Highways (1998) indicates a 7,355 Annual Average Daily Traffic Count

along the Provo Canyon Highway. Traffic counts number has remained relatively consistent since 1996. This could have been affected by the major reconstruction of the Phase 2, highway tunnels section during that time period.

The Utah State Tax Commission reports gross average annual transit room tax collections (3 percent on room sales less than 30 days) increased by 9.5 percent from 1993 to 1998 in Utah County, resulting in \$837,420 collected in 1998 (Cite). Wasatch County experienced a 19.2 percent average annual increase during the same period resulting in a 1998 collection of \$196,175. These impressive increases can be attributed to four factors including higher gross rack room rates, additional rooms being constructed, generally higher occupancies, and increased success in collection of taxes due.

Utah County 1996 Domestic Overnight Visitation

D.K. Shifflet & Associates (DKS&A) was commissioned by the Utah Division of Travel Development to provide a comprehensive Travel Analysis of Utah's domestic leisure tourism market for the top five visited counties and regions.

Methodology

All of the information contained in this report was derived from DKS&A's DIRECTIONS® tracking system (Cite). Mail interviews were collected through a mail panel. Each mailing was stratified to demographically match U.S. Census data. The returned sample was balanced by age, origin region, household income, household size, and gender to be representative of the U.S. population.

- Each mailing went to 25,000 different households per month, 12 months a year.
- About 60 percent of the households return the questionnaire.
- Each household reports their last three months of travel and lodging.
- Approximately 40 percent of households have traveled in the past three months.
- This results in a sample size of over 15,000 households per travel month.

Volume and Share

In 1996, 82.8 percent of Utah County's domestic visitors were traveling for leisure, while 17.2 percent traveled for business purposes. In 1996, Utah County hosted 1,380,000 domestic Overnight Leisure visitors. The following statistics are representative of this domestic overnight leisure traveler segment.

These 1.38 million visitors accounted for 81 percent of all domestic overnight leisure travel in the Mountainland Region and 12 percent of domestic overnight leisure travel to Utah as a whole. Utah's domestic overnight leisure visitation for 1996 was 11.4 million person-trips. Utah County ranked second behind Salt Lake County for visitation among top Utah Counties.

Expenditures

The average Utah County visitor spent \$44.90 per day during their stay. This average was the lowest of all the top visited Utah regions. It was also far below the average per person per day Overnight Leisure expenditures for both the State (\$67.80) and the nation (\$78.00). This very low average

expenditure can be related to the County's low visitor household income. Utah County visitors reported an average household income of \$40,100. This low income level may also be related to the age of Utah County's visitors; approximately half are between the ages of 18 and 24.

The largest shares of Utah County travel dollars were spent on transportation (30.2 percent) and food (23.9 percent). Nearly 21 percent (20.6 percent) of travel dollars were spent on shopping expenditures.

This share of shopping expenditures is the highest among top visited counties, as well as higher than both the State (15.2 percent) and national (16.4 percent) averages. Only 8.7 percent of travel dollars was spent on lodging.

Acceptability Rating

In the DKS&A DIRECTIONS® system, respondents are asked to rate their stays for Overall Satisfaction and Value-for-the-Money. Ratings are given on a scale from one to ten, where one is poor and ten is excellent. Ratings from eight to ten are considered "high" ratings.

Utah County visitors rated their stays higher for Satisfaction (7.8) and Value (8.0) than visitors to all other top Utah counties, except Iron County. Sixty-six percent of visitors were highly satisfied and 64 percent of visitors said they received a high value for the money.

Demographics

As mentioned previously, a disproportionate number of Utah County visitors were below the age of 35 (52.7 percent). In fact, visitors to Utah County were, on average, younger than visitors to the other top visited counties. The average Utah County visitor was 39 years old, lower than the average for the state (40 years old). These primarily younger Utah County visitors were some of the least affluent Utah visitors with an average household income of \$40,100. This low average income was reflected in the low daily expenditures mentioned earlier.

With the lowest visitor age and low household income, it is not surprising that Utah County reported the highest concentration of individuals

(37.6 percent) who were not privately employed or fell into the "other" category in terms of employment. This may be because of the fact that many visitors to Utah County may be students, as Utah County hosts Brigham Young University and one of the world's largest private educational facilities.

Party Composition

The largest share of visitors to Utah County were families, who represented 45.0 percent of all travel parties. Utah County had the highest share of family travel of the top counties, as well as the average for the State and nation. Couples represented an additional 24.2 percent of visiting parties.

Most interesting, however, was the high percentage of visiting parties that were composed of one adult (20.2 percent). This share was larger than all of the top counties and the State average (15.6 percent), but slightly lower than the national average (20.7 percent). This high share, coupled with the younger average age of visitors, suggests that these travel parties may be students or friends and relatives of students visiting the University.

Purpose of Stay

Almost half (48.0 percent) of all domestic leisure overnight travel to Utah County was for Visiting Friends and Relatives (VFR). Utah County's share of VFR travel was, in fact, higher than both the State (33.1 percent) and national (36.6 percent) averages.

In contrast to the high percentages of VFR travel, Utah County reported the lowest shares of travel for General Vacation (16.5 percent) and Getaway Weekends (9.3 percent). Utah County's share of General Vacation and Getaway Weekend travel were, in fact, significantly lower than the averages for the state and nation.

Activities

With sites such as Timpanogos Cave National Monument and Brigham Young University, it is not surprising that the highest ranked activities in Utah County are sightseeing at 20.3 percent and cultural activities at 18.9 percent. Utah County had the highest share of travelers engaging in cultural activities (18.9 percent) than any of the top counties, as well as more than the state (11.3 percent) and national averages (10.2 percent) for cultural activities. Brigham Young University campus has an enormous impact on the community with natural history and art museums, as well as performing arts venues.

Main Mode of Transportation

Utah County reported one of the highest shares of auto travel (81.8 percent) among the top counties. Only Washington County had a higher share of auto travel.

Another 10.6 percent of visitors traveled by air for the main portion of their trip. Air travel to Utah County was second only to Salt Lake County to the north. Coupled with the lowest Camper/RV travel (2.1 percent), these travel shares may be indicative of the more urbanized character of Utah County.

Length of Stay

The average Utah County visitor stayed an average of 4.5 days, the longest of the top visited counties and longer than the State and national averages (3.8 days each). This longer average length of stay was primarily the result of the large share of visitors who stayed 4-7 nights (23.6 percent) and 8 or more nights (14.1 percent). Thus, travelers to Utah County generally have lower income levels, are primarily visiting friends and relatives, and are staying for long periods of time.

Accommodation Type

As mentioned above, the largest share (40.2 percent) of Utah County visitors stayed with friends or relatives. This share was much higher than the State and national averages (27.2 percent each) and higher than all of the top visited counties. Hotel/Motel rooms stays in Utah County were remarkably low (33.1 percent) relative to the top counties. Low hotel/motels stays are accentuated by the lowest stays in Condos/Timeshares (0.2 percent) and Bed & Breakfast (0.6 percent) accommodations among all the top visited counties.

Origin Markets

Over a quarter (26.1 percent) of all Overnight Leisure travel to Utah County was by Utah residents. Utah County was a regional destination with the feeder states of California (20.0 percent) and Arizona (12.9 percent) contributing an additional third of travel. Other important feeder states include Idaho (10.1 percent), Nevada (6.3 percent), Washington (5.9 percent), Wyoming (4.0 percent), and Oregon (3.2 percent).

As the dominant Designated Market Area (DMA) for the state of Utah, Salt Lake City was the top feeder DMA for Utah County providing 29.5 percent of travel. Phoenix, AZ (9.1 percent), Los Angeles, CA (8.4 percent), Seattle-Tacoma, WA (5.9 percent), San Francisco-Oakland-San Jose, CA (5.5 percent), and Boise, ID (5.4 percent) were other top feeder DMA's.

Wasatch County 1995 Visitation

For Wasatch County, the primary data collection was accomplished by on-site visitor interviews and observations at several pre-selected sites. Interviews were also conducted at all major events and festivals during the 1995 travel season. General observations and contacts along with informal interviews were carried out in numerous service industry related businesses over the course of the project.

The largest percentage of visitors to the county were still from the State of Utah (36.1 percent) with 22.2 percent from the Wasatch Front. The remainder (13.9 percent) of the visitors from Utah were from locations scattered throughout the state, the bulk being from Northern and Central Utah.

Out of the top ten primary home residences after Utah, California was listed next at 14.4 percent, followed by Texas at 3.6 percent and Washington at 3.2 percent. Visitors were identified from all 50 states and 21 foreign countries, with visitors from Germany (0.8 percent) and Canada (0.7 percent) representing the two largest groups of foreign visitors.

Overall the majority of visitors to local events and festivals reside in the county. A smaller percentage of visitors have a secondary residence in the county. The remainder live within surrounding counties or are tourists who happen to be passing through the area.

Transportation

The majority of visitors to the area arrive by personal automobile or pickup (69.0 percent), followed by a variety of recreational vehicles (15.9 percent) ranging from pickups with campers to motor homes.

Purpose of Stay

As expected, the primary purpose for the visit to the area was for a vacation or pleasure and relaxation (89.4 percent), visiting friends and relatives (8.1 percent), or for business or other reasons (2.5 percent).

Accommodations

The visitors to the area primarily chose to stay in hotels or motels (80.8 percent), with 15.2 percent preferring to camp and 9.0 percent staying in a personal cabin or vacation residence.

Party Composition

The makeup of the majority of basic traveler parties consisted of two people (46.9 percent), with an overall average party size of 3.5 people. The average size for those parties attending events or festivals was 3.9 people.

Activities

Most visitors were singular in their purpose when it came to recreational activities that they participated in or attractions that they visited while in the area. If they were visiting for the purpose of attending an event or festival, few visitors participated in other recreational activities during their stay in the area. Likewise if the visitors were in the area for rest and relaxation they were content to participate in only one or two recreational activities rather than multiple activities during their stay.

The heads of the traveler parties tended to be married (87.6 percent), male (77.3 percent), and employed in a professional (30.1 percent) or managerial (8.3 percent) position or reported to be retired or semi-retired (24.3 percent). The average age of the traveler party heads was 59.3 years and they reported having an average family income of \$44,300.

There appears to be a distinct need for a creative approach to event and festival creation in the area that goes beyond what is currently occurring. The potential to develop a successful event or festival or series of events or festivals would seem to be quite high. Regardless of what type of event or festival might be undertaken, the quality factor cannot be under-rated. If it is not well run, the community is better off not even getting into a specific event or festival. A poorly run, low-quality event or festival will be a far greater detriment to the community than any limited benefit that might be gained. It would seem that there is definitely a niche to be filled regarding event and festival promotion in the area. How well that niche is filled is dependent on the creative ability and commitment to quality that a given community or area has and is willing to make. Successful events and festivals mature from year to year; they do not just happen.

Event and Festival Impact

The current event or festival visitor to the county tends to visit with a fixed itinerary. This is fairly typical when attending a specific event or festival, and is magnified somewhat in that most of the events are directed to small, local area participation. As a result, most visitation occurs in the form of half- to one-day visits. The visitor either resides in the county or the surrounding areas within a few hours drive. Thus, limited overnight stays are with family or friends or in personal vacation cabins or homes. Because of these realities, economic impact as a result of current events or festivals is minor when compared to the potential that exists.

Marketing Strategy

The overall mission and strategy of the Provo Canyon Scenic Byway corridor is to build the economic vitality of Utah, Summit, and Wasatch Counties through increased tourist and recreational opportunities.

Marketing Goals

- 1 Create and maintain a visible presence for the Byway in “Utah” promotional programs that make Wasatch and Utah counties attractive places to visit.
- 2 Increase the length of visitor stays and visitor expenditures in the counties, thereby helping build the economic base of the region.

The future potential for the area to attract tourists and related tourism and outdoor recreation business would seem highly probable given its geographic location, its proximity to major urban population bases, and its numerous natural, human-made, and water based attractions.

The corridor must first, however, determine the level of promotion, visitors influx and the resultant impacts that increased tourism will bring to the corridor that it is willing to support. Once this determination is made, with some creative effort on the part of the various county partners involved in the travel, tourism, and outdoor recreation industries, the future potential should prove to be of economic benefit not only to those individuals, but the county as a whole.

Some possible endeavors for both counties and private enterprises to draw new and return visitation could be:

- Guided outdoor learning experiences aimed at all ages, particularly the maturing population.
- Water based events, including circuit races (boats and jet skis), fishing derbies, para sailing, and water skiing competitions.
- A wilderness based learning center using the surrounding natural areas as outdoor classrooms.
- Expanding the number of events and festivals that have a wider nonresident appeal and creatively enhancing some of the exciting events and festivals to be more attractive to nonresident visitors.
- Initiate one major festival or event that runs over an extended period of time that would have the capability to draw and hold nonresidents for multiple days, (e.g., music festivals or circuit racing).
- Encourage and seek out alternative year-round lodging facilities with a catered atmosphere (e.g., yurts or winter camping experiences).
- Actively seek motor coach tour business.
- Provide evening entertainment possibilities for the motor coach tour industry.
- Investigate the potential for an ongoing musical or theatrical productions group.
- Investigate the feasibility of a county/private enterprise meeting space/retreat center.

Theoretically, as nonresident tourism and visitation to the corridor increases (at a level agreed to by the residents), the need for support services will continue to grow. These support services would be

an expansion of the traditional existing services and, depending on the implementation of any of the above-suggested endeavors, the potential for even greater need of both traditional and nontraditional support services. To facilitate marketing and promotion of the Provo Canyon Scenic Byway, National Scenic Byway designation application should be evaluated and pursued by the local steering committee, if determined to be in the best interest of the corridor.

Significant foreign tourism market share does not exist at this time. Multilingual information needs will be evaluated as additional foreign market share is targeted and acquired.

14. Future Roadway modifications and maintaining intrinsic qualities

Provo Canyon is U.S. Highway 189 is about to undergo the next phase of a road modification and construction that will transform the driving experience and create numerous corridor planning and implementation opportunities. Because of the magnitude of these changes and their impacts on all aspects of the corridor management plan, the next portion of this report reviews the planned changes for U.S. Highway 189.

Road Layout - Current and Planned

U.S. Highway 189 from the canyon mouth to Heber City, Utah, is 22 miles long. The first 6.5 miles (i.e., from Orem to Wildwood) were recently improved; the road consists of four-lanes with full turning lanes. Most of the road is divided by a median. Portions of the road are grade separated. The road is signed for 50 mph throughout this section.

The next segment of the road to be improved runs from Wildwood at mile 6.5 to the entrance of Deer Creek State Park at mile 11.5. The current road is two lanes wide with minimal turning lanes and shoulders. It hugs the banks of the Provo River in a manner similar to the previous alignment of the lower portion of the road. Figure 2 indicates the current and planned alignment after construction. The improved segment will become a four-lane divided highway, with portions grade separated.

The road from Deer Creek State Park to the Route 113 intersection is all two-lane undivided highway. Guardrails and concrete barriers protect the motorist along steep embankments and at the reservoir's edge. Given the gentle topography, the road is easy to drive and has few safety problems. The road is signed for 50 and 55 miles-per-hour (mph).

The routing along State Route 113 is two lane with an almost rural road feeling: shoulders are soft, speed limits are lower (25 to 40 mph), and it passes through historic developed areas (circa 1920s) that frame and enclose the edge of the road. The road is either straight or has broad gentle curves from Midway to Heber City. The final portion of the road in Heber City follows 100 South Street and is an urban street with curbing, sidewalks, and parallel parking lanes

Highway Safety and Design

The safety record of the old, unimproved road was not good. The same situation continues for the portions of U.S. Highway 189 that have not yet been reconstructed in the Upper Canyon. The Final

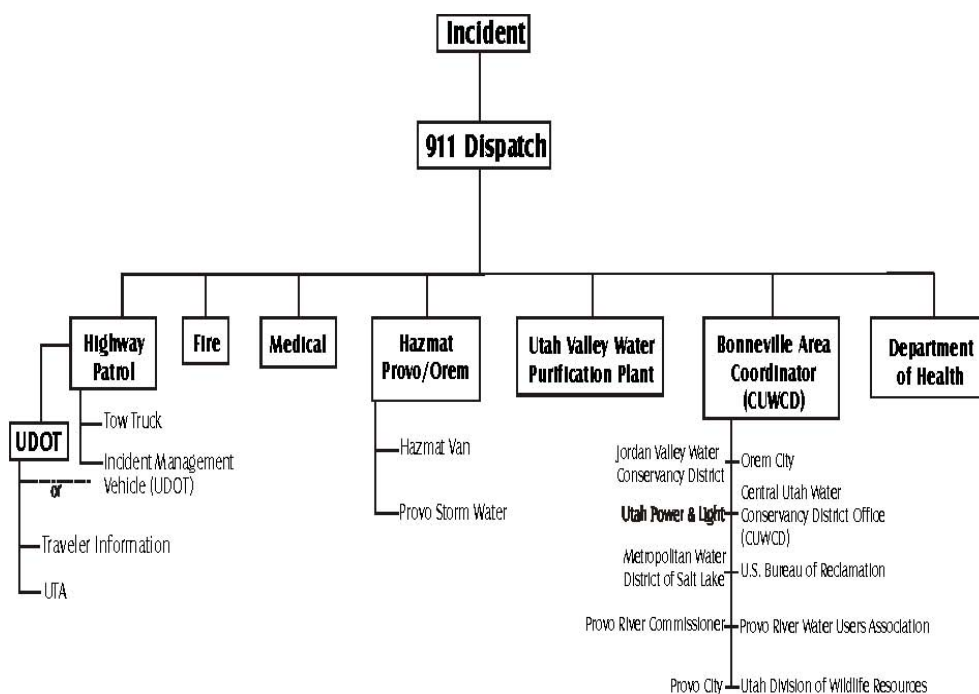
Supplemental Environmental Impact Statement (EIS) prepared for the U.S. Highway 189 project from Orem to Heber City (HNTB1989) documented the traffic hazards of the road in more detail.

Safety

Annual accident data since 1990 show that while the accident and fatality rate has decreased slightly, the number of accidents and the number of fatalities on U.S. Highway 189 is relatively unchanged. Due to the construction impacts on the road, it is difficult to determine if the proposed safety improvements are producing positive safety results. However, based on the analysis of recent accident data, the safety improvements proposed as part of the Supplemental EIS should reduce accidents.

Responding to Incidents

Responding to incidents (crashes, landslide, avalanche, fire, etc.) in a timely, efficient, and responsible way is key to reducing an incident's impact. The following flowchart shows a recommended protocol for dispatching the appropriate resources when responding to incidents.



When a call goes into 911 to report an incident, 911 informs the appropriate agencies according to the nature of the incident. For example, if hazardous materials have entered the river, 911 dispatches a hazardous materials van out of the Provo and Orem area. A call from 911 would also go out to the Utah Valley Water Purification Plant, the Bonneville Area Coordinator, and the Department of Health. The Utah Valley Water Purification Plant would decide, based on the 911 information, whether or not to shut down the flow of water into the plant. The Bonneville Area Coordinator would call and update the appropriate water agencies. Once the dispatched HAZMAT team has arrived on scene, they would keep the plant and area coordinator updated until the situation is resolved. This could be done, if needed, through 911 dispatch.

For incidents affecting traffic, UDOT's Traffic Operations Center would need to be notified. This would be done through a link set up from the Provo/Orem Traffic Control Center operated by the Utah Highway Patrol. The UDOT would then disseminate traveler information as needed to the general public using means such as variable message signs, highway advisory radio, the world wide web, traffic information briefs to the media, etc. A traffic link from UDOT's Traffic Operations Center to UTA's Transit Operations

Center would keep UTA informed of, and quickly respond to, incidents impacting transit routes. In the event of a traffic related incident, the Utah Highway Patrol would have the ability to dispatch UDOT's Incident Management Vehicles to help in quickly getting stalled or inoperative vehicles out of the traffic stream. These vehicles could also be dispatched by UDOT.

UDOT has plans to expand its Incident Management Program to include from the mouth of Provo Canyon to SR-113 (Charleston turnoff). This program would provide additional staff, incident management vehicles, training, and career development for incident management personnel beginning in 2001. In addition, a Highway Advisory Radio system and Closed Circuit TV (CCTV) cameras are proposed for Provo Canyon. Highway Advisory Radio provides localized traveler information broadcasts such as road closures, incidents, or severe weather. Provo Canyon's Highway Advisory Radio system coverage area will have a radius of approximately 3-miles from the mouth of Provo Canyon and will be supported by the UDOT Traffic Operations Center in Salt Lake City, Utah. This system is scheduled to be deployed in 2001. The CCTV cameras provide real-time video images to traffic operations personnel to support incident management notification and response, as well as traveler information dissemination. CCTV cameras are to be located in the canyon in the following three areas: the mouth of Provo Canyon, Deer Creek Dam, and SR-92. The CCTV cameras are scheduled to be deployed in 2001. A traveler information system along I-15 will also be used to warn Provo Canyon-bound motorists of traffic conditions in the canyon. This will allow motorists to choose an alternate route before exiting the freeway

New resources and technology, such as the ones listed above create a need for the incident management protocol to be updated regularly. This will make responding to incidents and disseminating advisory information to the general public quicker and more efficient. Any changes to existing incident management protocol must be coordinated with the appropriate agencies when new resources are being planned or implemented.

Seasonal Limitations

Provo Canyon experiences large amounts of snowfall during the winter. UDOT responds to winter snowstorms by sending plows and salt/ sand trucks to remove the snow and provide better traction for motorists. Runoff containing salt and sand are collected in storm drains to minimize the impact of these materials collecting in the Provo River. Concentrations of salt in the Provo River from road runoff do not appear to have significantly increased over the past several years.

Winter avalanches are a concern in several areas in the canyon. Laws Creek by Bridal Veil Falls, Slide Canyon just north of Bridal Veil Falls, and two chutes near Deer Creek Dam (one just north and one just south of the dam) experience avalanches on a regular basis. Snow and debris from the chutes just north of Deer Creek Dam and at Slide Canyon slide off the hillside onto U.S. Highway 189. The UDOT is planning a snow shed at the north Deer Creek Dam location, which would allow

snow and debris from an avalanche to pass over the road and continue on into the reservoir. The UDOT uses conventional avalanche techniques to control the avalanche threat at Slide Canyon; however there are no current plans for barricades or a snow shed at this location. The chutes below Deer Creek Dam and at Laws Creek are located on the side of the canyon opposite of U.S. Highway 189 and therefore do not pose an avalanche threat to the road. However, these avalanche sites do affect a hydroelectric power plant located at the base of Deer Creek Dam and a popular tourist spot at the base of Bridal Veil Falls. The UDOT currently works with Avalanche Control to mitigate avalanche danger by using explosives to prematurely set off avalanches before snow-pack loads build to dangerous levels. The UDOT is also working with Avalanche Control in an attempt to contain debris that may slide down onto the road in these avalanche areas.

Seasonal flooding is not a major concern along U.S. Highway 189 in Provo Canyon.

Generally speaking, the major traffic safety problems along U.S. Highway 189 will be corrected with the road's reconstruction and realignment. However, during the preparation of this plan, a number of more minor but important -- especially from the perspective of the first time visitor -- traffic safety problems were identified. These general issues are noted below. Detailed recommendations for solutions are presented in the Integrated Implementation Program section of this Plan (Part IV).

- Road directional striping is often confusing or inadequate to allow first-time drivers to safely make turns across traffic.
- Turning lanes are poorly striped and difficult to find given poor anticipatory signing.
- Advance signing for attractions and recreation resources is often poorly placed or missing.
- Informal pullouts serving anglers and other recreationists are sometimes located on dangerous curves or other locations where sight distances are inadequate and where there are no acceleration lanes.

15. Plans to interpret the significant resources of the scenic byway

Proposed Theme:

"Provo Canyon Scenic Byway: America's-Outdoor Recreation Byway"

The Provo Canyon Scenic Byway will interpret two major themes: recreation and water. As such, recreation, nature, and culture will be the intrinsic qualities that focus the application for National Scenic Byway designation.

The subthemes and topics under each major category are described below.

Recreation Theme: Experience and learn about the past, present, and future of outdoor recreation along America's Outdoor Recreation Byway.

Subtheme 1: Learn about various types of outdoor recreation activities, all within the Provo Canyon Scenic Byway Corridor. Opportunities will be present to learn from instructors on a number of activities including mountain biking, fishing, hiking, backpacking, rollerblading, boating, jet skis, ice climbing, kayaking, snowmobiling, and skiing. Topics would cover each of these sports.

Subtheme 2: Learn about the history of people recreating outdoors, the equipment and the ways that it meshed with past lifestyles such as the extended vacation or the weekend recreationist (e.g., amateur sports) or the seasonal recreationist (e.g., hunting). Topics could include museums illustrating old equipment, stories of people recreating, and the chance to try old equipment or techniques.

Subtheme 3: Learn about and experience the development of the outdoor recreation industry, the new products, the ways materials are used, the trends in how people relate to the outdoors, the rise of the citizen athlete, the Olympics, and little known professional athletes. Topics include: industrial design, interesting stories of people, and futuristic concepts on outdoor recreation.

Each of these subthemes would be woven with a message on responsible environmental use and management.

Private industry, retail, and sports associations would be encouraged to participate in this effort.

Water Theme: Learn about the water systems of the Provo River watershed and the ways in which people use and impact these waters. Develop a better understanding of the balance that exists between human's use of water and its impacts on the environment.

Subtheme 1: Learn about the formation of the river and overall geology of the watershed. Learn about the ways in which the physical shape of the watershed has influenced the development of different ecosystems. Learn how the watershed continues to change today -- from both natural and human-influenced causes. Topics include: geological formation of the Wasatch Front and Mountains, the range of habitats that are created within the range of water levels present in the canyon, how water quality is damaged, and how water quality can be studied and managed.

Subtheme 2: Learn about the ways in which Native American and subsequent European immigrants have used the water of the Wasatch Front. Topics include: water capture, water transference, reservoirs' power generation, irrigation, drinking water, western water rights, and water use statistics.

Subtheme 3: Learn how water quality along the corridor is being protected and how corridor users can help. Topics include: stream channel and riparian area protection, erosion and sediment control, revegetation of disturbed sites, stream restoration

- Funds and industry support must be found to create an outdoor recreation system that both protects Provo Canyon and generates economic opportunity.
- Funds must be found to build and maintain an interpretive system along the byway.

- Funds must be found to support improvements for the Heber Creeper Railroad.
- The Provo River Path must be extended to Deer Creek Dam and then a path/trail must be created to reach Deer Creek State Park.
- Road safety problems must be corrected.
- Existing residential hamlets and subdivisions must be protected from increased traffic and canyon use to the greatest extent possible.
- Strategies must be developed to minimize overuse of Provo Canyon resources.
- Strategies must be found to disperse visitors throughout the Provo River Watershed.
- This project and subsequent efforts must build more public support for the corridor and watershed management plan concept.

Appendix B:
Not applicable with
November 2008 Update

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