

## Chapter 2.0 – Alternatives

### 2.1 ALTERNATIVES OVERVIEW

*Over The River™* is an Artist-generated proposal for a work of art that would be removed after a 2-week exhibition period. The Artists propose to suspend a series of fabric panels from a system of cables and anchors over the Arkansas River between Cañon City and Salida, Colorado.

The Artists' core vision for OTR involves the temporary horizontal suspension of luminous fabric in a summertime river environment that offers a range of lighting conditions and a variety of landscapes to create contrasting lines, forms, colors, and textures (OTR 2008a and J.F. Sato 2007). With the natural beauty of the river as part of the temporary work of art, the Artists envisioned that the translucent fabric panels would emphasize the configuration of the river as it meanders. The creation of a temporary work of art for the free enjoyment of the viewing public is integral to the Artists' vision for OTR.

The Artists evaluated 89 rivers throughout the western U.S. before selecting the Arkansas River canyon as their preferred location for OTR. In selecting the Arkansas River, the Artists considered practical factors such as road and rail accessibility, as well as more artistic considerations such as a setting that offered "a range of lighting conditions and a variety of landscapes so as to create contrasting lines, forms, colors and textures" (J.F. Sato 2007).

OTR would be located primarily on federal land managed by the BLM. As such, the BLM must comply with NEPA, which directs federal agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal that involves unresolved conflicts concerning alternative uses of available resources..." (NEPA Section 102 (2)(E)). A NORA was published in the *Federal Register* October 31, 2008 (pages 64982-64983), beginning the process of developing BLM land use permitting alternatives to accommodate whether, where, when, and under what conditions public lands would be made available to the applicant. This EIS provides a comparison of alternatives considered for the proposed project, including the No Action Alternative, to ensure that realty-lands decisions are made from an informed perspective. This chapter briefly describes the alternatives development process, and then provides a detailed description for each alternative retained for further analysis in this EIS.

### 2.2 ALTERNATIVES DEVELOPMENT

The process of developing a range of alternatives began with a review of the Artists' proposal and public and agency scoping comments, as well as a series of Cooperating Agency meetings. Several common themes or issue areas emerged from the comments and the meetings. The following four project components, each of which could be altered in various ways to respond to known issues and concerns, formed the basis of the alternatives development process.

1. **Panel Placement**, which refers to the physical extent and specific locations where the fabric panels would be located.
2. **Transportation**, which refers to traffic management strategies and/or the inclusion of transit options to facilitate the movement of visitors through the exhibit.

3. **Visitor Management**, which addresses how visitors would be managed and the infrastructure needed to accommodate those visitors.
4. **Temporal Considerations**, which includes the timing, duration, and season of the project phases.

For each of these four project components, a comprehensive list of reasonable elements (options and variations within a project component) was developed in coordination with the BLM Interdisciplinary Team, Cooperating Agencies, and EIS Contractor Staff. For example, under the *Panel Placement* component, the potential elements included the Artists' proposed 5.9 miles of panels and various configurations of alternative mileages based on the Artists' original design and specific resource or agency concerns (see Section 2.13 Alternatives Considered but Eliminated, for more information on the alternative panel configurations).

For each project component, all potential elements were then screened against two sets of criteria: a fatal flaw analysis and relative ranking criteria. An element was considered to have a fatal flaw if adopting the action was precluded by legal or other regulatory conflicts; would potentially create a severe public safety issue; would present severe resource conflicts that could not be avoided, minimized, or mitigated; was determined to be cost-prohibitive; or was physically unattainable (further discussed in the Alternatives Technical Support Document, Appendix B). The relative ranking criteria were used to eliminate project elements that did not present fatal flaws, but were less feasible or more likely to cause environmental or other conflicts. Those project elements that survived the screening process were carried forward for further consideration.

Individual alternatives were assembled by combining one element of each project component into an alternative package. *Panel Placement* elements (e.g., 5.9 miles of panels, 4.8 miles of panels, etc.) served as the foundation for each alternative. Five basic panel configurations resulted from this methodology, including a no action scenario (0.0 miles). The resulting range of reasonable alternatives is described in Section 2.3, Alternatives Considered in the EIS and summarized in Table 2-1. (A more detailed description of the alternative development process is provided in Appendix B.)

By this process, the following alternatives were identified to reflect the range of public lands that BLM would make available for OTR based on the artistic vision and in response to issues identified by the public, BLM, and Cooperating Agencies during scoping.

## 2.3 ALTERNATIVES CONSIDERED IN THE EIS

Alternatives were assembled using the building blocks of the four project components listed in Section 2.2, Alternatives Development. The action alternatives were developed to consider and compare configurations of public lands that could be made available for artistic *Panel Placement* as well as construction, logistics, traffic planning, and visitor management. The following discussion outlines the similarities and differences between the alternatives discussed in this document. The issues that the BLM will consider in making land use decisions specific to special management areas, such as the Arkansas Canyonlands ACEC, are further discussed in Chapter 3.0, Affected Environment, and Chapter 4.0, Environmental Consequences.

Six separate action alternatives and the No Action Alternative are described and analyzed in the remainder of this EIS.

Alternative 1 represents the Artists’ proposed panel configuration of 5.9 miles. Alternative 1 includes three variations: 1a (Artists’ Proposed Action), 1c, and 1d. For the purposes of analysis, each of the Alternative 1 variations will be referred to as stand-alone alternatives. Each of the Alternative 1 variations uses the same 5.9-mile panel configuration, but contains variations on the transportation, visitor management, and temporal themes. Alternatives 2, 3, and 4 each have a unique panel configuration.

**Table 2-1. Summary of EIS Alternatives**

		No Action	Alternative 1			2	Alt. 3	Alt. 4	
			1a	1c	1d				
PANELS		5.9 miles at 8 sites	x	x	x				
		4.8 miles at 5 sites				x			
		4.1 miles at 8 sites					x		
		1.4 miles at 4 sites						x	
TRANS		No Accel/Decel Lanes at Harvey Bridge	x					x	
		Temporary Accel/Decel Lanes at Harvey Bridge		x	x	x	x		
VISITOR MANAGEMENT	Rationing	Existing boat rations	x		x	x	x	x	
		New, temporary rations*		x					
	AHRA Sites	AHRA sites open, existing uses permitted; standard SP entrance fees apply	x				x	x	x
		AHRA sites open, OTR-related rec. uses only; event-only fees applied		x					
		Close AHRA rec. sites; lump sum payment to offset revenue loss				x			
	Staging/Info	Parkdale		x	x	x	x	x	
		Texas Creek		x	x	x	x	x	x
		Vallie Bridge		x	x	x	x	x	x
		Fremont Road		x	x	x	x	x	x
		Salida		x	x	x	x	x	x
TEMPORAL	Const. Duration	Two years	x	x		x	x		
		One year			x			x	
	Viewing Window	Two weeks	x		x	x	x	x	
		Three weeks		x					
	Viewing Season	June/July					x		
		August	x	x				x	x
September				x					

\*New rations would apply during the last two weeks of blossoming, exhibition, and the first week of demobilization (5 weeks total).

The alternatives are described in detail in the remainder of this chapter. The alternative descriptions are organized as follows:

For each action alternative, a brief overview is provided at the beginning of the description to provide the reader with a high-level summary of the alternative's key elements and features. Following the overview, specific alternative elements and implementation activities are described by project phase: Installation, Exhibition, and Removal. Alternative 1a, the Artists' Proposed Action, is considered to be the base alternative. Each of the other action alternatives will denote the elements or features that are unique to that alternative relative to Alternative 1a. Alternative features, conditions, or resource protection measures that are intended to minimize, rectify, or altogether avoid impacts are described in Section 2.12, Design Features Common to All Action Alternatives.

Some of the information used in the description of alternatives, particularly the more detailed discussion of engineering and construction procedures, was derived from the 2006 *Preliminary Design Engineering Report* (Golder 2006), 2008 *Event Management Plan* (OTR 2008b), and other materials generated by or prepared for OTR Corp.

A description of other alternatives considered but eliminated from detailed analysis is provided at the end of this chapter in Section 2.13, Alternatives Considered but Eliminated. Additionally, two comparison tables are provided at the end of this chapter: a summary of project elements by alternative and a summary of anticipated impacts by alternative.

## **2.4 ACTIVITIES AND ELEMENTS COMMON TO ALL ACTION ALTERNATIVES**

Each of the action alternatives proposes some activities, operations, or management strategies that are common to all.

All of the action alternatives would be subject to the standard stipulations associated with the Land Use Permit as specified in 43 CFR 2920.7, which would include a surety bond from a federally approved source possible damages occurring from the project. These standard permit stipulations are included in Appendix A.

Table 2-2 provides a summary of key activities common to all action alternatives by project period; for a detailed description of items listed, refer to the Alternative 1a description.

**Table 2-2. Summary of Key Activities and Operations Common to All Action Alternatives\***

Project Phase	Activity, Operation, or Management Strategy Common to All Action Alternatives
Installation	<ul style="list-style-type: none"> <li>• Series of anchors, anchor transition frames (ATFs), steel cables, and carabiners</li> <li>• Five-stage installation process</li> <li>• Anchor survey</li> <li>• Anchor installation</li> <li>• Anchor Transition Frame (ATF) installation</li> <li>• Cable installation</li> <li>• Panel "blossom"/installation</li> <li>• Locally hired crews</li> <li>• Use of railroad to deliver supplies and machinery to installation sites</li> <li>• Periodic lane closures of up to 400 feet separated by a minimum of 10.0 miles</li> <li>• Local and residential traffic access maintained at all times</li> <li>• Private security team to patrol corridor and installation areas</li> <li>• Installation visitors (number varies by alternative) are anticipated to be concentrated in the week immediately prior to the Exhibition opening</li> <li>• Flaggers and appropriate signage as traffic management measures during installation</li> <li>• No visitor facilities or amenities during installation</li> </ul>
Exhibition	<ul style="list-style-type: none"> <li>• No fee event</li> <li>• Exhibition would be open 24 hours a day</li> <li>• Intended for highway and on-river viewing</li> <li>• Bicyclists permitted in corridor Monday – Thursday only</li> <li>• All pedestrian travel in corridor is prohibited</li> <li>• Temporary airspace-use restrictions</li> <li>• All pullouts within 0.5 mile of any fabric panel closed</li> <li>• Project staff/monitors and law enforcement stations throughout the corridor and at all panel areas</li> <li>• Use of rail to deliver monitors and supplies to duty stations</li> <li>• Vallie Bridge Limited Rest Stop, with limited amenities</li> <li>• Fremont Road and Salida Information Centers</li> <li>• Towing and vehicle assistance in the corridor (staging locations would vary under Alternative 4)</li> <li>• Waste management and recycling services provided in corridor (locations of receptacles would vary under Alternative 4)</li> <li>• Local and residential traffic access maintained at all times</li> <li>• Temporary speed reductions of 10mph at all panel areas</li> <li>• Medical helicopter staged at Texas Creek</li> </ul>
Removal	<ul style="list-style-type: none"> <li>• Commences immediately following Exhibition period</li> <li>• Removal of all above-ground hardware and fabric elements</li> <li>• Removal of the majority of below-ground anchors (some below-ground anchor portions would be left in place permanently)</li> <li>• Steel hardware is delivered to a steel mill or industrial recycling outlet</li> <li>• BLM approved weed-free seed mixtures used for restoration</li> <li>• Locally hired crews</li> <li>• Use of railroad to remove supplies and deliver machinery to removal sites</li> <li>• Periodic lane closures of up to 400 feet separated by a minimum of 10.0 miles</li> <li>• Local and residential traffic access maintained at all times</li> <li>• Private security team to patrol corridor and removal areas</li> <li>• Removal visitors (number varies by alternative) are anticipated to be concentrated in the week immediately following the Exhibition closing</li> <li>• Flaggers and appropriate signage traffic management measures during removal</li> <li>• No visitor facilities or amenities during removal</li> </ul>

\*This table presents a summary overview of the key actions, activities, and operations that are common to all, and is not intended to capture all common details.

## 2.4.1 Installation

Each panel display would consist of a series of ground anchors, anchor transition frames (ATF), steel cables and carabiners, and fabric panels (Figure 2-1). The installation phase would be accomplished in five progressive stages: (1) survey anchor points, (2) install anchors, (3) install ATFs, (4) install cables, and (5) install fabric panels. Each of these stages is described below.

### 2.4.1.1 Anchor Surveys and Hardware

A survey crew of three persons on foot would locate and mark anchor points in preparation for installation. The anchor surveys would not require highway closures or ground disturbing activities. Anchors would be hollow self-drilling steel bars, threaded expansion-shell "point anchors," or extendable Swellex friction anchors, depending on the actual geologic conditions at each location (Figure 2-1). The anchors would serve as secure points of attachment for the ATFs and steel cables. Anchor installation would require drilling into rock or other subsurface material.

The survey crew would set 6-inch nails where possible and use paint marks in remaining locations. The nail would be installed exactly where the drill would eventually be placed, and would be destroyed or removed during anchor installation. Where paint marks are necessary, the paint used would be a nonpermanent, biodegradable type that, depending on weather conditions, would dissipate in 2 to 4 weeks.

Each anchor site would consist of four individual anchors and anchor holes. The ATFs connect at each of these four locations as shown in Figure 2-1 (ATFs are discussed in detail later in this section).

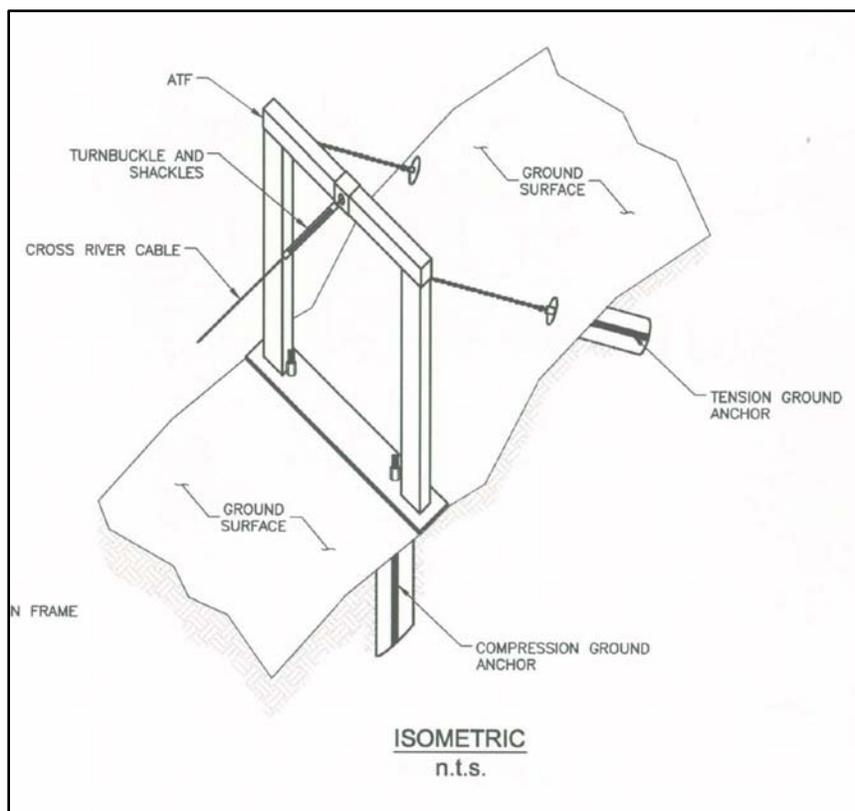


Figure 2-1. Typical Anchor Site and ATF. Source: J.F. Sato 2007

### **2.4.1.2 Anchor Installation**

Anchor installation would require the use of three large drilling units as well as several smaller machine drills and hand-held equipment, depending on conditions at each anchor location. The anchor drilling and related construction activities would require a minimum of four, four-man drilling crews working simultaneously along the US 50 and UPRR corridors, except during the peak summer season and the bighorn lambing season as described in Section 2.12, Design Features Common to All Action Alternatives. One drilling crew would be assembled around each of the three large drills, and a fourth crew would be assembled around the smaller machines and hand drills as follows:

Equipment refueling would occur at the specific work sites via mobile fuel trucks. Once the truck has refueled the respective equipment, it would be stored at the Texas Creek Staging Area. (Large quantities of fuels would therefore only be stored at the Texas Creek Staging Area.) For equipment and work on the railroad side of the river, fuel would be temporarily stored on the railroad cars.

Any servicing of equipment would occur at the Texas Creek Staging Area, except in emergency situations when drilling equipment is unable to be moved.

#### **a. Drill-1 Klemm KR 2510 hydraulic drill mounted on tracked Cat-325 excavator**

This machine is specifically designed for geotechnical foundation and rock drilling. It would be configured for cased duplex-rotary percussive drilling and self-drilling anchors, and would be able to reach anchor locations within 25 feet from the centerline of the highway edge or the railroad tracks. It is equipped with rubber-pads on the tracks to avoid scuffing or marking the highway pavement. This machine would have a full crew and support trailer that contains compressed air service, water, grouting equipment, and a supply of ground anchors.

#### **b. Drill-2 Klemm KR 2510 hydraulic drill mounted on tracked Cat-325 excavator**

This machine is the same as Drill-1, except it is configured only for percussion drilling and self-drilling anchors from a rotary carousel drill rod holder. It would be equipped with rubber-cleats on the tracks to avoid scuffing or marking the highway pavement. This machine would also have a full crew and support trailer that contains compressed air service, water, grouting equipment, and a supply of ground anchors.

#### **c. Drill-3 Klemm KR 2510 hydraulic drill mast set up for crane-supported drilling**

This has the same drilling mast as Drills 1 and 2, but would be configured to be suspended from a crane. The diesel-electric hydraulic power unit would be separately mounted on a truck, and the hydraulic hoses and controls would be connected to the mast via a suspended cable bundle. The mast would be configured for percussion drilling and self-drilling anchors from a rotary carousel drill rod holder, or for cased hole duplex-drilling as conditions warrant. The unit can be suspended from motor-cranes of different sizes to get the reach needed to access ATF locations farther down the bank than can be reached by Drills 1 and 2. This drill mast can also be suspended from a rail-mounted crane for use on the railroad side of the river. This machine would also have a full crew and support trailer that has compressed air service, water, grouting equipment, and a supply of ground anchors.

#### **d. Crew-4 Rubber-tired and rubber tracked small-size drills, hand drills, anchor testing**

The fourth crew would use a variety of small bob-cat mounted or rubber-tracked mini-excavator mounted rock drills to install anchors at locations well away from the highway or railroad. This crew would also be assigned to install anchors in limited access locations that require hand-held drilling equipment. The drills

would be transported to the work areas on small trailers pulled behind pick-up trucks. A separate support unit that contains the compressor, grouting equipment, and supply of anchor materials would be mounted on a flatbed truck equipped with a crane arm. Longer air and grout hoses would be supplied with this support unit so it could be stationed on the existing nearby access roads and serve several ATFs from the same fixed location. This same support equipment would be used with the hand-held rock drills used at some locations.

The anchors would be secured using a variety of techniques. In solid rock, a spin-lock anchor would be utilized, which does not require the use of grout but is secured in place by a mechanical expansion shell tightened in the rock hole. When setting anchors in looser materials, cement grout would be pumped to fill the "rock socket." The grout would cure in the rock socket and provide the anchorage for the bar. A variety of grout materials and techniques would be utilized depending upon specific site conditions. Grout used to place anchors would be nontoxic and contained at the site of application, and would include Portland cement and a variety of additives. Grout would be applied using a slurry grouting system capable of supplying grout at variable pressures, measured at the pump, up to 300 psi and at rates of 2cf to 15cf per minute, as required to suit the application.

It is estimated that no more than 1.8 cubic feet of soil would be disturbed at each anchor site. Excavated material resulting from anchor installation would be collected in cyclone collectors. Cyclone collectors (vacuum collection) would be used to control drill spoils or cuttings at the collar of each anchor hole, as well as air mist injection to control dust from rock drilling with the smaller machine drills, onto a vacuum truck or trailer. During drilling of each hole, a spoils collection system either on the drill or at the base of the drill (on top of the hole) would capture the spoils, the vacuum would collect the spoils in a trailer or truck body, and they would be hauled off site to a local disposal facility. The soil may be stored temporarily in commercial waste containers at the Texas Creek Staging Area prior to disposal hauling. Disposal areas may include landfills and/or other private disposal sites where fill material may be needed for other purposes.

At the completion of the project, anchor sites would be reclaimed with imported topsoil from either a commercial vendor or from a suitable borrow area. The topsoil would be weed free and of a suitable texture (loam or sandy loam) and color for use at any of the fabric panel section areas. The top 12 inches of the bore would be filled with the imported topsoil material after the anchor bolt has been unscrewed and removed. The soil would be tamped to its original contours.

Waste grout and wash water would be circulated back into waste tanks mounted on the drill support trailers; the tanks would be emptied during each shift.

#### **2.4.1.3 Anchor Transition Frame Installation**

Immediately after anchor installation is complete, the same crews would begin the ATF assembly and installation in preparation for the cable installation. ATF units consist of square-section steel tubes, a steel tube frame, cables, pins, nuts, and other attaching hardware (Figure 2-1). They are easily assembled and adjusted with simple hand tools (wrenches, pliers, hammer, alignment pins, etc.). ATFs are pre-manufactured and bundled into a package or "kit" for field assembly. On the highway side, a boom truck would deliver the ATF kits to the cable end locations. Two-man assembly teams would travel to the work areas by truck and then move on foot between the cable end locations. The crews would assemble ATFs onto the ground anchors and perform the preliminary adjustments using hand tools. On the railroad side,

ATF kits would be delivered by flatbed rail car; crew and assembly procedures would be the same as described for the highway side.

A minimum of 5% of the anchors would be randomly selected for test loading. Testing would be accomplished by applying assigned test loads with a hydraulic jack apparatus. Additionally, due to the highly variable nature of the ground conditions in which the anchors are installed, one of the four anchors at each ATF location would be test-loaded by a measured torque applied to the anchor bar nut and plate. Additional anchor test procedures would also be utilized.

#### **2.4.1.4 Cable Installation and Hardware**

Steel cables and carabiners would be strung across the river from the ATFs. Cable sizes would vary in diameter from 3/8 inch to 7/8 inch, depending on the load they are intended to support. The load and resistance factor design (LRFD) approach, consistent with US design codes, would be used for sizing cables and connections. Controlling loads to the cable system are categorized into (1) dead loads of cables, fabric, and connections, and (2) wind load. To determine the cable tensions due to wind loading, a series of wind studies were conducted. The studies consisted of statistical analysis of recorded wind speeds in the area surrounding the project and an aeroelastic model of typical section configurations. The aeroelastic model was verified by a full-scale field test of a typical section. Maximum cable forces from the preliminary aeroelastic model were determined using a 42 mph one-minute mean wind speed for two different panel configurations. Because of the variability in span and height above the river along various sections, as well as the higher wind speeds at the Red Rocks and Three Rocks sections, actual cable force design factors would vary at different locations.

Cable installation would begin approximately two months before installation of fabric panels. It is estimated that two crews would be working at the same time, one working from the east and one working from the west, on both the highway and railroad sides of the river simultaneously.

On the highway side, a cable pulling machine would be located between the highway and the ATF. The cable pulling machine is a self-contained towable unit that would be moved between installation points by a full-sized pick-up truck.

On the rail side, a hi-rail crane truck mounted with cable spools would be positioned on the rail tracks directly across the river from the cable pulling machine.

The cable installation process would occur in four steps:

- Extending a braided fishing line (estimated 130 lb. tension limit) across the river.
- Extending a nylon pulling line (estimated 2,500 lb. tension limit) across the river.
- Extending the cable puller machine leader line across the river.
- Extending the galvanized cable across the river.

A high-tensile strength fishing line (messenger line) would be delivered across the river from the highway side via a low-caliber line gun. Where necessary, temporary “goal-post” structures may be positioned near the anchor sites to physically catch the fishing line as it crosses the river and to keep the line suspended above the surface of the water. Where possible, multiple fishing lines would be delivered in immediate

succession to avoid having to shoot lines periodically throughout primary recreational use hours. For example, instead of shooting one line every hour for 6 to 8 hours, it may be possible to shoot multiple lines across early in the day, prior to heavy recreational activity on the river.

Once the messenger line is across the river and tensioned such that it would not sag below the final cable height (approx. 8 to 25 feet above the river), the fishing line would be connected to a nylon pulling line with a higher-tensile strength. The nylon rope would then be pulled across the river, under tension and at a minimum height of 8 feet above the water surface. Once across the river, the nylon rope would be connected to the cable puller machine line, the final leader line for the galvanized cable.

The cable pulling machine leader line and galvanized cable would be pulled across the river to the termination point (the ATF). Once the cable is across the river, a sling would be wrapped to the anchor and attached to a dynamometer, a come-along winch, and temporary cable grips. After the cable is attached to the temporary cable-grips, tension would be transferred from the cable pulling machine to a come-along ratchet winch for fastening from pulling machine to the anchor and sling. Tension of the cable would be monitored at all times, either by the cable pulling machine or the dynamometer.

The cable would then be fitted with the termination hardware and attached to the anchor point using turnbuckles and shackles.

#### **2.4.1.5 Panel Installation and Hardware**

The fabric panels would be made of porous polypropylene fabric that weighs approximately 0.063 lbs. per square foot, or 140 lbs. per panel on average. The fabric panels would be suspended above the river using the system of cables previously described, which attach with carabiners at pre-sown grommets. The panels would be translucent, allowing approximately 47% of natural sunlight to pass through the fabric (OTR Corp 2009). Each section would vary in width from approximately 50 to 120 feet and in length from 35 to 40 feet, depending on the planned location. The area between the fabric and the banks from the water's edge would remain open. This distance between the suspended fabric panels and the banks would vary from approximately 8 to 25 feet. The openings are intended to allow the public and wildlife access to the river and to allow sunlight to illuminate the river on both sides. Panel types and configurations were field-tested twice in 1997, once in 1998, and once in 1999 in western Colorado.

The fabric panels would be installed in three phases. First, the fabric panels would be delivered to pre-designated locations on the highway side on flatbed trucks from a central staging area, or bundled fabric panels would be delivered to panel locations on the railroad side by flatbed rail cars. In the second phase, crews would hook the fabric panels onto the cables with specially designed carabiners. The fabric panels would be bundled until the exhibition phase.

In the third phase, OTR would open or "blossom." During this phase, crews would use winches attached to the ATFs to begin pulling the fabric panels into place over the river using small pulling cables that would then be used to secure the panels into position for the exhibition phase.

#### **2.4.1.6 Installation Logistics (Schedule, Traffic Management, Workforce, etc.)**

##### **a. Equipment Staging**

During the installation phase, equipment and materials would be staged at a central location on the north side of the river (exact staging area location varies by alternative; see individual alternative descriptions).

The staging area would consist of equipment laydown areas, a storage yard, and industrial waste collection receptacles. The railroad siding would be used to move equipment and materials to panel sites.

#### **b. Communications**

During the installation phase, each construction crew would have digital trunked radios (DTRs) capable of connecting directly with local emergency service providers, which would require permission from the State of Colorado Division of Telecommunications to utilize the 800 megahertz (MHz) DTR radio system and allow communication with various federal, state, and county public safety agencies.

If permitted, emergency service communication and coordination would occur via the designated state DTR system. Exact channels and protocol would be identified prior to project implementation. OTR staff communications would take place on augmented DTR through a private lease of space on existing towers and/or cell signal boosters using portable temporary cell equipment.

#### **c. Workforce**

To the extent possible, crews would be hired from local canyon communities, Cañon City, or Salida. Nonlocal contractor staff would be housed in local communities and would be expected to carpool to the work sites. Contractor parking and staging would be concentrated at the central staging area; however, a small amount of vehicle parking may be required at various locations throughout the corridor as the work progresses. Contractors parking at AHRA fee sites would be required to have a valid State Parks pass unless an alternate method of payment is negotiated with State Parks. On the highway side, this parking would occur at existing informal pullouts as much as possible. Where not possible, work vehicles would be located within the 400-foot work/closure zone and protected in accordance with the Manual for Uniform Traffic Control Devices (MUTCD) and CDOT M & S Standards.

#### **d. Traffic Management**

Traffic management during the installation phase would consist of normal construction activity traffic management techniques and equipment. Normal traffic control activities and devices, as defined in MUTCD and CDOT's Standard for Traffic Control Plans (shown in their M & S Standards), would be utilized to facilitate closures or to notify travelers of construction activities in the corridor.

CDOT Regions 2 and 5 lane closure policies would be followed for all installation activities requiring partial or full lane closures on US 50. All methods of handling traffic and speed reductions would be submitted to CDOT for review and approval prior to beginning any work. CDOT would typically need at least 2 weeks to review submittals prior to commencing work.

No highway closures would be necessary during the anchor surveys because this work would not require immediate use of the highway; the survey crew would be working on the railroad side of the river or, when on the south side of the river, between the guardrail and the high water line. Warning signs, however, would be provided to caution drivers that a crew is working in proximity to the highway. CDOT would be consulted regarding additional safety measures.

Installation work requiring lane closures on US 50 would not be performed during the peak summer months (between Memorial Day and Labor Day). During work phases, any lane closures required on westbound US 50 for construction would be limited to one lane for up to 400 feet per activity location, and would not occur at intervals less than 10.0 miles apart. Consequently, no more than four lane closure

locations would exist on a single day between Parkdale and Salida. The duration of a single lane closure would vary depending on the nature of the equipment needed at that location, how many installations are needed at that location, and the equipment needed for the other installations. Lane closures would be accomplished through a combination of techniques, including flagging, pilot cars, and barricades, as appropriate.

For the duration of the installation, portable variable message signs (VMS) would be located near Parkdale and Texas Creek for westbound traffic and near Salida and Texas Creek for eastbound traffic. The signs would inform all US 50 travelers of daily construction activities and upcoming construction activities, their location, and expectations of delays, if any. In addition, daily activity summaries would be provided to local media for broadcast as part of their community information services.

**e. Access**

Local residential access would be maintained at all times during the construction phase.

Some informal parking pullouts used for private recreational access could be closed for short periods (1 to 2 days) during the installation phase. Due to the 400-foot maximum lane closure stipulation and the separation of installation activity areas by at least 10.0 miles, it is anticipated that no more than one pullout would be closed at any given time.

Recreational access for commercial and private rafting would continue to occur under the rules set by the BLM and State Parks during the installation phase. Angling activities would be impeded by installation of the cables and fabric panels in the latter stages of installation.

**f. Security**

OTR Corp would employ private security to patrol the installation areas and the staging and laydown area once installation begins to ensure protection of work equipment and to minimize the potential for criminal activities. Equipment and materials stored in the central staging and laydown area would be located inside a secure area to prevent theft and vandalism. A private security team would provide additional "eyes on" the corridor during the installation phase in the event of suspicious activity, accident, emergency, fire, etc., and would be able to report this activity immediately to local law enforcement or emergency service providers.

**g. Railroad Use and Upgrades**

Recent UPRR investigations of the track in the project area indicate that the track would not require extensive upgrades for the limited use planned by OTR. However, UPRR would require inspection and upgrade, if necessary, of the current rail track prior to use during any OTR project phase. If upgrades are determined to be necessary, UPRR would dictate the level of repair necessary.

**2.4.2 Exhibition**

The exhibition period would begin when installation of the art is complete; no construction or installation activities would occur during this phase of the project.

The Artists would not require or collect admission fees for viewing. However, although OTR would be a "no admission fee event," many viewers would likely experience the project from commercially operated transit buses or boating outfitters, operating independently of the Artists and OTR Corp. OTR Corp would

not organize bus tours for the exhibition phase. However, private businesses may set up and advertise bus tours during this phase. These businesses would be required to use property outside the management corridor for staging. It is expected that any private business operating bus tours in this area would need to obtain all required local, county, or state permits.

The Artists intend for visitors to view the art by raft, kayak, or other watercraft from the river, or by automobile from the highway. Pedestrian access to the exhibit would be limited to the Parkdale Viewing Center. Bicyclists would only be permitted in the corridor Monday through Thursday. Each of these viewing options and/or travel modes is discussed in detail in the following subsections.

#### **2.4.2.1 Prohibited Uses and Restricted Areas**

Pedestrian travel would not be allowed along US 50 during the exhibition period. At designated parking areas (i.e., Parkdale), event staff and signage would prevent visitors from walking along US 50.

Organized bicycle events that require a special event or use permit (i.e., guided tours or century rides) would not be allowed on US 50 in the project area during the exhibition period.

Individual bicycle travel along US 50 would be prohibited on Fridays, Saturdays, and Sundays during the exhibition. SH 9 would be the designated alternate route for bicycles on these days.

Aerial viewing of the art is not a planned or encouraged activity. Prior to the event, OTR Corp would meet with local and TRACON Air Traffic Organization officials from the Federal Aviation Administration to coordinate the issuance of a Notice to Airmen (NOTAM) (and other appropriate notice) to impose special, temporary airspace-use restrictions in the vicinity of the project site. For air safety, ground safety, and terrorism safety concerns, it is planned that sightseeing (i.e., low-level) overflights of the site would be prohibited or severely restricted.

All pullouts on US 50 and County Road (CR) 45 within 0.5 mile of any fabric panel would be closed; this includes pullouts located on the south side of the highway. The pullout closures would be designed such that the pullouts would be accessible in the event of an emergency. Vehicles would not be allowed to stop along US 50 within 0.5 mile of any fabric panel.

Dispersed camping is allowed on all BLM land in the project area. However, in the Texas Creek Travel Management Area, current policies prohibit dispersed camping more than 100 feet from existing roads. During the exhibition period, a temporary prohibition on camping would be imposed on all BLM lands located within 0.5 mile of any fabric panel.

Project staff, including staff at each of the panel sites, and law enforcement personnel stationed throughout the corridor would be responsible for enforcing these requirements.

#### **2.4.2.2 Event Visitor Information Centers and Visitor Facilities**

Generally, four event visitor information centers would be established along the corridor (Map 2-1). During the exhibition period, an appropriate number (approximately 25) of project staff would be stationed at each of these locations to distribute information and answer questions regarding the rules along US 50, fire danger and minimization, viewing opportunities, traffic conditions, and other pertinent information. Additionally, restroom facilities, water, and information would be available at Vallie Bridge.

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**Map 2-1 (placeholder)**

**Back of Map 2-1 (placeholder)**

**a. Fremont Road and Salida Information Centers**

The Fremont Road Information Center would serve as the primary capture point for visitors from the east. The Fremont Road Information Center would be located on approximately 10 acres of private land, 1.2 miles east of the SH 9/US 50 intersection (Map 2-1). The proposed site would provide parking for approximately 900 vehicles. Information about the project, current traffic conditions, viewing rules and guidelines, emergency services in the corridor, and other area attractions would be available at this location. No overnight parking or camping would be allowed at this location. Water, restroom, and waste facilities would be available. These services are discussed in further detail later in this section.

The Salida Information Center would serve as the primary capture point for visitors arriving from the west. The Salida Information Center would be located on approximately 2 acres of private land located in the US 50 corridor in or near the Salida. Although a final site has not been selected, those sites that remain under consideration have been previously disturbed, and no natural resource conflicts or impacts are expected from temporary use as an information center. The proposed information center would provide limited parking and visitor service facilities. Information about the project, current traffic conditions, viewing rules and guidelines, emergency services in the corridor, and other area attractions would be available at this location. No overnight parking or camping would be allowed at this location.

**b. Parkdale Viewing Center**

The Parkdale Viewing Center would be located on approximately 13 acres of private land on the north side of the river, immediately west of the Harvey Bridge and AHRA recreation site (Map 2-1). The proposed site would provide parking for approximately 900 vehicles. Information about the project, current traffic conditions, viewing rules and guidelines, emergency services in the corridor, and other area attractions would be available at this location. Additionally, at this viewing area, visitors would have the opportunity to exit their vehicles and walk under the panels on the upstream side of the bridge. The parking area would be signed as half-hour parking only to encourage vehicle and visitor turnover. No overnight parking or camping would be allowed at this location. Water, restroom, and waste facilities would be available. These services are discussed in further detail later in this section.

The primary access into the Parkdale Viewing Center is the one-lane Harvey Bridge over the Arkansas River. Upgrades to this bridge would be necessary to accommodate reasonable visitor and quarry traffic flows in and out of the Parkdale Viewing Center. These upgrades are discussed in further detail in the traffic management discussion for this alternative.

The Parkdale parking area would consist of a gravel or aggregate surface without delineation of individual parking spaces. Parking monitors would assess and direct parking traffic during peak visitation times.

**c. Texas Creek Limited Rest Stop**

Texas Creek would also serve as a minor event, visitor rest stop during the exhibition period. The Texas Creek Limited Rest Stop would be located on BLM lands, cooperatively managed with State Parks under the terms of a Recreation and Public Purposes lease. The site would consist of up to 56 acres on the north side of the Arkansas River and would provide parking for 30 to 40 cars. Information about the project, current traffic conditions, viewing rules and guidelines, emergency services in the corridor, and other area attractions would be available. No overnight parking or camping would be allowed. Water, restroom, and waste facilities would be available at this location. These services are discussed in further detail later in this section.

The primary access into the Texas Creek Limited Rest Stop is a one-lane bridge over the Arkansas River. No upgrades to this bridge are proposed. Ingress/egress traffic would be managed by flaggers at either end of the bridge. The Texas Creek Bridge is discussed in further detail in the traffic management discussion for this alternative.

**d. Vallie Bridge Limited Rest Stop**

One additional visitor rest stop would be provided at Vallie Bridge; however, visitor uses at this location would be limited to restrooms, waste disposal, and potable water provided by OTR (Map 2-1). Panel viewing opportunities, interpretive exhibits, and overnight parking or camping may or may not be available at this location, depending upon the preferred alternative that is selected. The Vallie Bridge Limited Rest Stop would be located at a small (<1 acre), existing AHRA recreation site. The Vallie Bridge campground would not be open to event parking. This rest stop would be staffed with approximately eight event staff to assist visitors with information and questions. This rest stop is intended for short-term use only. Visitor parking would be limited to five minutes at this site to maintain river access for commercial rafting as well as other recreational users of the corridor.

**2.4.2.3 Visitor Services (non-emergency)**

Towing and vehicle assistance personnel would be staged at several locations in the corridor during the week prior to the exhibition period and for the duration of the exhibition period. Towing services would be available at the Parkdale boat launch (downstream of the Parkdale Viewing Center), Five Points recreation site, Texas Creek and Vallie Bridge Limited Rest Stops, and at the west and east ends of the project corridor. Towing services would be available from 8 am to 8 pm daily, and would be responsible for removing disabled vehicles from traffic, providing minor assistance to visitors (e.g., gasoline, jumper cables), and removing vehicles parked in violation of the event rules and regulations. Towed vehicles would be taken to the Parkdale Viewing Center, Texas Creek Limited Rest Stop, or Salida, depending on where they were initially retrieved. Temporary secure storage areas would be provided at each of these locations. An inventory of towed vehicles would be maintained at the Texas Creek Command Post.

First aid stations would be located at each of the limited rest stops, including Vallie Bridge Limited Rest Stop, and at the west and east ends of the project corridor. These stations would be staffed by trained paramedics between 8:00 am and 8:00 pm during the 2-week exhibition period, and would be intended for minor, non-life threatening injuries.

Potable water supplies would be supplied by OTR at each of the three event visitor limited rest stops, and at the Vallie Bridge Limited Rest Stop. Existing water supply facilities (i.e., taps) are not potable; therefore, potable water would be trucked in by tanker truck on a daily or as needed basis.

Food supplies in the corridor would be limited to local restaurants in the canyon communities. Private vendors may establish temporary food stands on private lands in the corridor; however, these options are not part of the Artists' proposal.

A total of 84 portosans are proposed to be provided in the corridor during the exhibition phase as follows:

- Fremont Road Information Center – 10 portosans
- Parkdale Viewing Center – 25 portosans
- Five Points recreation site – 7 portosans

- Texas Creek Limited Rest Stop – 25 portosans
- Vallie Bridge Limited Rest Stop – 7 portosans
- Salida Information Center – 10 portosans

The Five Points portosans are intended to relieve demands on existing permanent facilities at this location. Visitors stopping at Five Points would be required to pay the AHRA park entrance fee, depending upon the preferred alternative that is selected. Ten additional portosans would be kept in reserve for necessary use, for a total of 84 portosans provided to supplement existing permanent restroom facilities at AHRA recreation sites in the corridor.

Portosans would be procured through local or regional vendors. Portosan vendors would be responsible for daily maintenance and servicing of the facilities.

Waste management and recycling services would be procured through local or regional vendors. Solid waste, trash, and recycling bins would be located at each major event visitor limited rest stop, and at the Vallie Bridge Limited Rest Stop and Five Points recreation site. In addition, smaller trash and recycling receptacles would be provided throughout each event limited rest stop and parking area. These facilities would be serviced daily. During the exhibition period, the corridor would be swept daily by project staff/monitors to collect any trash that was not properly captured in available receptacles.

#### **2.4.2.4 Event Staffing and Command Operations**

An event management Command Post would be located at the Texas Creek Limited Rest Stop warehouse. During the exhibition phase, staff from CSP, CDOT, BLM, State Parks, Chaffee County Sheriff Department, Fremont County Sheriff Department, the OTR event supervisor, and traffic maintenance contractor representatives would be on site to ensure timely decision making and response times as well as effective coordination. During the off-peak hours (8:00 pm to 8:00 am), the Command Post would be staffed with one person responsible for coordination of nighttime staff, security, and emergencies. The Command Post would also serve as a central lost-and-found repository.

Exhibition phase communications would be managed through the Command Post at Texas Creek. The general method of communication between agencies, event staff, and emergency personnel would be 800 MHz DTR or Very High Frequency (VHF) radios. At this time, CSP and ambulance providers carry this equipment. State Parks currently uses DTR equipment. Fremont and Chaffee County sheriff departments have purchased DTR equipment and use it to a limited extent at this time. Currently, only two BLM fire engines are equipped with hand-held DTR units. Due to the existing VHF radio infrastructure and the significant expense required to convert and replace this equipment, it is unlikely that the BLM will have converted to DTR systems before the exhibition period. CSP and BLM also have VHF radios in their vehicles to communicate with agencies that have not yet upgraded to DTR. However, if other local responders, such as search and rescue and fire departments, have not migrated to DTR by the start of the exhibition period, OTR Corp would provide temporary DTRs for use during the exhibition phase to ensure seamless communications. The exact communication plan would be developed with input from all providers and approval from the Pueblo Communications Center prior to the exhibition phase.

In addition to Command Post staff, supervisors and panel monitor staff would be stationed throughout the corridor. Two supervisors would be located at the Parkdale Viewing Center; one supervisor would be located at each of the other panel sites. The supervisor would be responsible for monitoring the panel

installations and traffic, emergency, or other conditions in the immediate vicinity, and reporting emergencies or concerns to the Texas Creek Command Post. The ratio of supervisors to monitor staff would be approximately 1:20. Supervisors would be equipped with DTRs capable of communicating directly with the Command Post.

Approximately 25 monitors would be stationed at each of the event limited rest stops to assist visitors with questions and information and to monitor trash.

In addition to the monitors at the event visitor limited rest stops, approximately 100-150 monitors would be stationed throughout the corridor and distributed between the fabric panel areas between 8:00 am and 8:00 pm daily. Monitors are intended to maintain surveillance of the fabric panels and would communicate with the fabric panel area supervisor in the event of an emergency or any problems. Due to traffic flow and personal safety concerns, monitors would be located on the railroad side of the river. The ratio of supervisors to monitor staff would be approximately 1:20 throughout the project corridor. Monitors would be in place from 8:00 am to 8:00 pm during the exhibition phase and would park at the Texas Creek Limited Rest Stop. From there, monitors would be transported to their location for the day via rail car.

Local resident panel monitors would be responsible for providing their own transportation to the project area on a daily basis. Parking for panel monitors would be provided at Texas Creek Limited Rest Stop. Out-of-area panel monitors would have access to a daily monitor transport shuttle to Texas Creek Limited Rest Stop. Monitors would be transported to their duty station by rail car. Event visitor information center monitors would be allowed to park at the event visitor information centers. Vallie Bridge Limited Rest Stop monitors would be taken to their duty station via a shuttle service from Texas Creek Limited Rest Stop.

Event visitor information center monitors would have access to water and restroom facilities at their duty station. Rail cars would run throughout the day to provide breaks and necessary supplies to panel monitors stationed on the railroad side of the river.

Private security would be employed to monitor all fabric panel areas, event visitor information centers, and the central staging area. Security personnel would be on duty at these locations between the hours of 8:00 pm and 8:00 am during the week prior to the exhibition phase and during the exhibition phase.

Night monitor operations on the highway side would be provided by private security contractors in roving vehicles. Night monitor operations on the railroad side would be provided by private security contractors using rail-mounted vehicles. OTR Corp would provide 24-hour security and surveillance using a combination of private security (night) and monitors (day).

#### **2.4.2.5 Traffic Management**

The majority of visitors are anticipated to arrive via passenger car from the east (traveling westbound) on US 50. Most of these visitors are expected to stop at the Fremont Road Information Center before entering the project corridor to receive information on how to proceed through the exhibits, prohibited uses or other regulations, and current conditions reports.

**a. Signage and Traffic Information**

Daily updates would be provided to local and regional media about expected traffic conditions and event activities. Any emergency messages of a corridor-wide or regional nature would be communicated to local and regional media outlets through the Command Post.

Highway advisory radios would be used to provide real-time traffic information during the event. At least three radios would be needed to communicate travel time delays, road closures, emergency evacuation information, and other traffic information.

VMS would be located in several locations in the corridor as well as in areas approaching the corridor, such as west of Salida at the intersections of US 285 and US 50, or east of Cañon City at the intersection of SH 115 and US 50. VMS would be used to communicate event information, emergency messages, and traffic conditions; and provide motorists with information about the status of parking lots at Parkdale and Texas Creek.

The operations center shall have temporary travel demand monitors placed throughout the exhibit corridor to determine vehicle progression speeds and volume to capacity ratios for individual lanes. The operations center should be able to call out law enforcement and emergency response personnel to respond to identified problems and update VMS boards.

Temporary signage would be used along the US 50 corridor to clarify special limitations and to increase adherence to existing and special limitations.

**b. Highway Use and Speed Limits**

All local highways and roads would remain open to traffic at all times unless congestion levels or a specific incident required a road closure. However, as previously described, all informal pullouts on US 50 within 0.5 mile of any fabric panel would be closed. Other pullouts along US 50 would be used for staging emergency vehicles or would remain open for use. Similarly, vehicles would not be allowed to stop along US 50 within 0.5 mile of fabric panels.

**c. Traffic Monitors and Patrols**

Uniformed traffic controllers would also be used along US 50 to prevent vehicles from stopping in inappropriate locations, to manage speeds in panel viewing areas (maximums and minimums), and to provide guidance for traffic during an incident such as a stalled vehicle.

Temporary signals would be used to manage travel demand at major intersections and recreation sites. The major intersections include Royal Gorge, SH 9, SH 69, the road to the back side of Royal Gorge, Harvey Bridge, Cotopaxi, CR 45, Pinnacle Rock, and Spikebuck. Due to the fluctuating nature of visitation, the signals shall be operated by a trained traffic technician to determine when a signal phase is activated. Intersection operations would be managed by a temporary traffic signal between 10:00 am and 4:00 pm Friday through Sunday, and as needed at other times based on traffic conditions. Off-duty police are a likely source of uniformed traffic controllers. The frequency and duration of each intersection movement allowed by the uniformed traffic controllers would be in response to actual traffic volumes, standard practices, and safety requirements.

In nonpeak hours, the temporary signal would be flashing yellow. Traffic lane delineation would be established with temporary striping for nonpeak conditions, and with cones for peak conditions at the Parkdale and Texas Creek intersections to increase traffic flow efficiency and provide clarity for motorists.

Uniformed traffic control officers with traffic law enforcement authority would be stationed throughout the greater project area to monitor and control key intersections on weekends in specific locations. The uniformed traffic control officers may be CSP personnel or may be provided by other approved sources. Throughout the corridor, temporary speed reductions of 10 mph should apply during daylight hours at all exhibition sites. For example, in exhibition areas where the current speed limit is 45 mph, the speed limit would be reduced to 35 mph. CDOT's speed limit reduction process, involving submittal of Form 568, would be processed in advance.

A median barrier (vertical panel) should be placed along the US 50 centerline at each "open" pullout between Texas Creek and Parkdale to prevent left turns into and out of these pullouts. The barriers should be installed during the exhibition on Friday before 10:00 am and should be removed by Monday at 4:00 pm. This measure would apply to approximately six pullouts.

Traffic control devices would be used at fabric panel locations along US 50 for various purposes, including preventing head-on crashes, u-turns, eastbound motorists from turning left, and pedestrian crossings at fabric panel locations. Traffic control devices would also be installed at the Harvey Bridge to prevent eastbound motorists on US 50 from turning left into Parkdale. This would help prevent long delays and safety issues that would occur if left turns were allowed.

Traffic lane limits would be established with cones at the Parkdale and Texas Creek intersections to increase traffic flow certainties and efficiencies.

The existing one-lane bridge (Harvey Bridge) at Parkdale is inadequate for the level of traffic expected to utilize the Parkdale visitor information site under Alternatives 1a, 1c, 1d, 2 and 3. Therefore, a temporary one-lane bridge would need to be constructed to provide capacity for one lane in each direction. This is required to accommodate the volume of visitor traffic expected into and out of a new parking lot at this location.

#### **d. Parking**

A 900-space public parking lot and related access roads would be constructed on the north side of the Arkansas River on the upstream side of the Harvey Bridge. Visitors would be allowed to park in the lot for up to 30 minutes. If or when the parking lot becomes full, the entrance to the parking lot at US 50 would be closed until 15% of the 900 spaces (135 spaces) become available. At this time, the entrance would be reopened. Drivers wanting to enter the parking lot during the closure would be required to bypass the entrance and continue driving along US 50. No other public parking would be constructed or allowed in the area. On-site signing, parking lot management staff, and variable message signs would be used to inform motorists of parking lot closures.

Viewing immediately prior to, during, and after sunrise and sunset is expected to be popular with visitors due to lighting conditions. For the purposes of analysis, sunrise and sunset are expected to occur at approximately 6:00 am and 8:00 pm, respectively. To meet this demand, the Parkdale Viewing Center parking lot would be open from 5:00 am to 9:00 pm daily during the exhibition period.

The primary access into the Texas Creek Limited Rest Stop is a one-lane bridge over the Arkansas River. No upgrades to this bridge are proposed. Ingress/egress traffic would be managed by flaggers at either end of the bridge. The parking lot intersection would most likely be controlled by a uniformed traffic control officer. However, the final method for intersection control would be up to the discretion of the appropriate Cooperating Agencies and could include use of temporary portable traffic signals.

A 40-space parking lot would be constructed on the north side of the Arkansas River at Texas Creek. Visitor vehicles would be allowed to park in the lot for up to 30 minutes. No other public parking would be constructed or allowed in the area. If and when the parking lot becomes full, the entrance to the parking lot at US 50 would be closed until 15% of the 40 spaces (6 spaces) are available. At this time, the entrance would be reopened. Drivers wanting to enter the parking lot during the closure would be required to bypass the entrance and continue driving along US 50.

**e. CR-45**

CR 45 generally parallels the Arkansas River and US 50 on the north side of the river between Vallie and the east end of the railroad tunnel, located approximately 8.0 miles upriver of the town of Howard. At Vallie, CR 45 intersects US 50 and crosses the Arkansas River. Bridge crossings are available at Vallie Bridge, Cherry Creek Road Bridge, and Howard Creek Bridge. Near Wellsville, CR 45 turns into a four-wheel drive road that is impassable at certain water levels and dangerous for inexperienced drivers. In the Vallie Bridge area, additional monitors would be stationed along CR 45 and the river to prohibit visitors from trespassing to view the fabric panels. Additionally, a law enforcement officer would be located along CR 45 in this area to reinforce the trespass rules.

Law enforcement personnel would be located in an informal pullout in the Tunnels area. Additional signs would be placed at either end of the four-wheel drive portion to warn drivers of the hazards.

**2.4.2.6 Emergency Services and Response**

Normal levels of emergency services staffing would be maintained for the BLM, State Parks, CSP, Fremont County Sheriff Department, and Chaffee County Sheriff Department. In addition, supplementary staff and vehicle resources and emergency services would be temporarily located in the corridor during the exhibition phase.

An ambulance and paramedics would be staged at the Parkdale Viewing Center and Texas Creek Limited Rest Stop during the week prior to and during the exhibition phase. The ambulance would be on site every day from sunrise to sunset.

A medical helicopter would be staged at the Texas Creek Command Post during the week prior to the exhibition phase and during the exhibition phase. The helicopter would be on site from sunrise to sunset during those days. The helicopter would ensure that a medical transportation option with quick response times would be available even if US 50 became congested. There are no designated landing areas in the corridor, but locations that meet an emergency helicopter's operational requirements include Five Points recreation site and the communities of Coaldale, Howard, Texas Creek, and Cotopaxi. Depending on the incident location and prevailing conditions, the helicopter would either stay at the staging area awaiting ground transport of the patient to the helicopter, or travel to a landing site agreed upon by the Command Post, on-site incident commander, and the pilot.

A total of 21 law enforcement or security vehicles and personnel would be staged in existing informal pullouts in each fabric panel area and at Parkdale, Five Points, Salt Lick, Pinnacle Rock, Texas Creek, Lone Pine, and at the west and east ends of the project corridor. Law enforcement personnel would be in position at the panel areas during the exhibition period from 8:00 am to 8:00 pm. Officers located at Parkdale, Five Points, Salt Lick, Pinnacle Rock, and Lone Pine recreation sites would ensure that private and commercial rafting operations continue unimpeded and that visitors are following the corridor rules and regulations, including no visitor stopping or parking within 0.5 mile of any fabric panel. There would also be law enforcement or security personnel at the Command Post during the week prior to the exhibition phase and during the exhibition phase. These resources are expected to be obtained from local law enforcement, other law enforcement agencies approved by local agencies, or private security contractors.

Law enforcement, security, emergency responders, and tow trucks would be active and staged in selected areas to keep traffic moving.

Fire suppression equipment would be staged at Texas Creek during the exhibition period. If necessary, OTR Corp would provide supplementary communications equipment to local fire protection agencies. Smaller caches of firefighting equipment and supplies would be located at the Parkdale Viewing Center, the Vallie Bridge Limited Rest Stop, and at the west and east ends of the project corridor. Other fire fighting resources, such as air tankers, would be provided if determined necessary by local fire commanders.

Hazardous material spill containment, mitigation, and cleanup equipment would be staged at the Texas Creek equipment laydown area. Staff trained in hazardous materials containment and mitigation would be located at Texas Creek to act as first responders in the event of a hazardous material spill.

Suspicious criminal or terrorist activity would be immediately reported to the Command Post. All criminal acts, including trespass, occurring during the event would be prosecuted to the fullest extent of the law.

There is currently no corridor evacuation plan in place for the project corridor. Prior to the event, an evacuation plan would be developed in coordination with Cooperating Agencies and local emergency management staff. It is anticipated that visitors located near the east and west ends of the exhibit would be evacuated to the towns of Salida and Cañon City, respectively. In the central portion of the canyon, SH 69 leads south out of Texas Creek and could be used to evacuate visitors to Westcliffe, Colorado.

In addition to night security operations, rail cars would be used to transport monitors to and from assigned duty stations. Rail-mounted trucks may also be used to deliver water, food, and portosans to monitors assigned to duty stations on the railroad side of the river.

### **2.4.3 Removal / Restoration**

Removal of the physical features of the work of art would commence immediately after the exhibition period and would be completed within approximately three months, weather permitting.

#### **2.4.3.1 Removal Activities**

Removal of the exhibit would consist of breaking down the temporary visitor information and viewing area facilities, and removing all above-ground hardware and fabric elements of the exhibit.

### **a. Removal of the Art**

Removal of the art itself would occur in nearly the opposite order of the installation process. First, the fabric panels would be unhooked from one side of the river and pulled across the suspended cables. Carabiners would be removed as the fabric is pulled from the cable. The fabric panels would then be gathered, folded, and loaded on a truck for transport to an out-of-area warehouse leased by OTR Corp.

The cables would then be removed by releasing the tension on the cables so they could be disconnected from each other and from the ATFs. The cables would then be pulled to one side of the river, where they would be wound onto spools mounted on a truck and then transported to the warehouse. It is estimated that 90% of the steel cables would be removed from the railroad side of the river.

The cable removal process would occur in two steps:

- Releasing tension on the galvanized cable and detaching it from the ATFs.
- Removal and recycling of the cable.

Cable removal would consist primarily of the same activities and equipment as described for the installation procedures, but activities would occur in reverse order. Spotters would be provided as needed to ensure boating safety. A cable grip and a chain hoist would be utilized to release the tension from the terminated cable at the anchor foundation on the highway side first. A nylon pulling line would then be attached to the cable, which would be tensioned by a cable pulling machine (also located on the highway side). On the other side of the river, a pulling rope would be attached to the steel cable at the safest point accessible to the river using another Cable Grip. The cable would then be winched across the water and spooled onto the truck, while maintaining tension on the pulling rope on the other side. This prevents the cable from falling into the water.

Once the galvanized cable is fully spooled onto the hi-rail crane truck on the railroad side, the nylon pulling line would be pulled across the river. This line would be in the water for up to several minutes as it is pulled to the railroad side.

The galvanized cable and attachment hardware would be returned to an industrial recycling facility.

The ATFs would be disconnected from each of the four underground anchor bolts and disassembled in reverse order of construction. The parts would be bundled together and marked with flagging for collection by a flatbed boom truck; the ATFs would be lifted onto a flatbed truck or rail car by a crane, a truck-mounted winch, or a skid-steer vehicle, and would then be transported out of the canyon to the warehouse. The steel ATF parts would eventually be taken to the steel mill in nearby Pueblo, Colorado, or other similar outlet for recycling.

Following disassembly of the ATF, the crew would perform anchor removal and reclamation (as described below) for the various anchor types and substrate conditions. All anchor bolts would be cut off a minimum of 12 inches below the ground surface.

For anchors in open holes in solid rock, the threaded rod would be loosened and the entire anchor would be withdrawn from the hole. The hole would be patched with nonshrink mortar and the original cuttings (see Installation description) would be placed into the mortar mix to blend with the surrounding rock face.

For anchors in overburden or loose rock fill and shallow bedrock or boulder fill, the upper part of the threaded rod would be loosened and removed from the top of the hole. The lower part of the anchor rod would be left in the ground permanently; this portion would be left approximately 12 inches below ground surface. The loose fill or rock debris around the collar of the hole would be allowed to settle in and fill the upper part of the hole. The fill would be tamped into place in the hole and raked and regraded to match the surrounding slope. If the collar of the hole is in solid rock or a boulder, the hole would be reclaimed as described for solid rock restoration above. The hole would be patched with nonshrink mortar and the original cuttings would be placed into the mortar mix to blend in with the surrounding rock face.

If anchors were installed in soil substrates, any soils excavated during installation were placed in numbered bags and stored outside the project area during the exhibition period (see Installation Period discussion for more information). During the removal phase, these bags of soil would be returned to the corresponding surface anchor site. After the surface anchor is removed, the bagged soils would be used to restore the ground surface to original contours and tamped to stabilize the site.

For anchors in deeper overburden or loose soils and fill with no bedrock, the upper part of the threaded rod would be loosened from the coupler and removed from the top of the hole. The upper 12 inches of grout would be broken out of the hole and removed. The lower part of the anchor rod would be left in the ground permanently; this portion would be left approximately 12 inches below ground surface. The hole would be covered with soil or loose fill and tamped or compacted and seeded. Broken grout pieces would be collected and removed from the site for disposal.

For anchors in deeper overburden or loose soils over broken or fractured bedrock, the upper part of the threaded rod would be loosened from the coupler and removed from the top of the hole. The lower part of the anchor rod would be left in the ground permanently; this portion would be left approximately 12 inches below ground surface. The loose fill or rock debris around the collar of the hole would be allowed to settle in and fill the upper part of the hole. The fill would be tamped into place in the hole and raked and regraded to match the surrounding slope. If the collar of the hole is in solid rock or a boulder, the hole would be reclaimed as previously described for solid rock. The hole would be patched with mortar and the original cuttings would be placed into the mortar mix to blend in with the surrounding rock face.

#### **b. Reclamation**

Soil surfaces would be revegetated consistent with adjacent vegetative cover and with use of BLM-approved seed mixtures using native species. OTR Corp would purchase certified, weed-free seeds or seed mixtures for use in reseeding disturbed areas as directed by the BLM.

In addition to the anchor sites, numerous footpaths, vehicle paths, pathways, parking areas, and other usage areas would be decompacted prior to seeding if compaction has occurred to a significant degree, using methods outlined in Section 2.12, Design Features Common to All Action Alternatives. At the anchor sites and pathways, seeds and seed mixtures would be spread by hand and lightly raked into the soil. The soil would be tamped by hand to complete site restoration.

#### **c. Disposal of Project Materials**

After removal, all project materials would be industrially recycled or delivered to salvage yards, including the fabric panels, steel cables, carabiners, and other supporting hardware.

Finally, cleanup crews would check all project usage areas, as well as the highway corridor overall, for trash and litter daily during the removal activities and at the end of the restoration period to ensure that all material generated by the work crews has been picked up and removed.

**d. Permanent Interpretive Exhibit**

Following the exhibition phase, a permanent interpretive exhibit related to the OTR project would be installed at the Texas Creek AHRA site. This exhibit would provide educational or interpretive information to AHRA visitors about the project. The interpretive exhibit would be funded by OTR and designed and located in cooperation with Colorado State Parks, following Colorado State Parks' construction specifications.

**2.4.3.2 Removal Logistics**

The removal period is anticipated to take approximately three months. However, complete site restoration, including re-establishment of native vegetation, may take longer.

**a. Staffing and Workforce**

The Texas Creek Command Post would be fully staffed during the first week following the exhibition phase while the fabric panels are being removed. In addition, the Texas Creek Command Post would also be staffed at a reduced level (specified within the Event Management Plan) during the cable removal phase. All removal/restoration activities would be coordinated from this Command Post. The Command Post would continue to handle emergency communications during this time.

It is estimated that three crews would work from the east and three crews from the west; each crew would consist of 12 to 15 workers and one supervisor.

**b. Communications**

The removal/restoration teams would have DTRs capable of communicating directly with emergency service providers and the Command Post. Emergency communication protocols during the first week of the removal phase would be the same as defined for the exhibition period.

**c. Schedule and Sequencing**

All fabric panels and carabiners would be removed in approximately the first 2 weeks following the exhibition period. Fabric panel removal would begin from both the east and west ends, with crews working toward the middle, from both the highway side and the railroad side.

All cables would be removed within 4 to 5 weeks of the exhibition period. The removal of cables would begin as soon as each fabric panel is removed, again with two or more crews working from east and west, to match efforts of the crews removing the fabric panels. Cables and other hardware would be loaded onto flatbed trucks and rail cars and delivered to the central staging area at Texas Creek.

The ATF and anchor removal would begin immediately after the cable removal is complete.

**d. Traffic Management**

Traffic management during the removal phase would consist of normal construction activity traffic management techniques and equipment. Normal traffic control activities and devices, as defined in

MUTCD and CDOT's Standard for Traffic Control Plans (shown in their M & S Standards), would be utilized to facilitate closures or to notify travelers of removal activities in the corridor.

CDOT lane closure policies would be followed. All methods of handling traffic and speed reductions would be submitted to CDOT for review and approval prior to beginning any work. CDOT would typically need at least 2 weeks to review submittals prior to commencing work.

Any requisite lane closures on westbound US 50 for construction would be limited to one lane for up to 400 feet per activity location, and would not occur at intervals less than 10.0 miles apart. Lane closures would be accomplished through a combination of techniques, including flagging, pilot cars, and barricades, as appropriate. It is estimated that lane closures would occur on 24 days over the three-month removal period.

Nonlocal contractor staff would be housed in local communities and would be expected to carpool to the work sites. Contractor parking and staging would be concentrated at the central staging area; however, a small amount of vehicle parking may be required at various locations throughout the corridor as the work progresses. On the highway side, this parking would utilize existing informal pullouts where parking is allowed as much as possible. Where not possible, work vehicles would be located within the 400-foot work/closure zone and protected in accordance with MUTCD and CDOT M & S Standards.

**e. Signage and Traffic Information**

For the duration of the removal period, VMS would be located near Parkdale and Texas Creek for westbound traffic and near Salida and Texas Creek for eastbound traffic. The signs would inform all US 50 travelers of daily deconstruct activities, their location, and expectations of delays, if any. In addition, daily activity summaries would be provided to local media for broadcast as part of their community information services.

**f. Access**

Local residential access would be maintained at all times during the removal phase.

Some informal parking pullouts used for recreation access could be closed for short periods (1-2 days) during the anchor removal and restoration activities. Due to the 400-foot maximum lane closure stipulation and the separation of installation activity areas by at least 10.0 miles, it is anticipated that no more than one pullout would be closed at any given time.

Recreational access to the river would be largely unimpeded; however, there may be short periods of time where a parking pullout used for recreation access is in a removal/restoration area, and therefore not available. These discreet locations would be unavailable to the public for an estimated day or two during removal/restoration activities.

**g. Security**

OTR Corp would employ private security to patrol the panel areas until all hardware is removed, and the staging and laydown areas until the removal/restoration phase is complete. Equipment and materials stored in the staging and laydown area would be located inside a secure area to prevent theft and vandalism. A private security team would provide additional "eyes on" the corridor during the

removal/restoration phase in the event of suspicious activity, accident, emergency, fire, etc., and would be able to report this activity immediately to local law enforcement and emergency service providers.

#### **h. Waste Management**

Commercial waste containers and recycling bins would be staged at the central staging area and laydown areas for the removal teams' use. These bins would be serviced weekly or as needed.

Each removal/restoration team would be trained in recognizing, containing, and mitigating the hazardous materials used in the removal phase, such as gasoline, diesel, hydraulic fluid, oil, etc. Containment equipment would be located with every team so that a hazardous materials spill could be immediately contained. Additionally, hazardous material spill containment, mitigation, and cleanup equipment would be staged at the central equipment laydown area.

### **2.5 NO ACTION ALTERNATIVE**

Under the No Action Alternative, the BLM would deny the applicants' proposal and request for a land use authorization, and would not make public lands available to install and display OTR (Map 2-2). None of the OTR project components would be installed on federal lands. It is assumed that without the use of BLM lands in the corridor, OTR would not proceed on state or other nonfederal lands.

### **2.6 ALTERNATIVE 1A – ARTISTS' PROPOSED ACTION**

#### **2.6.1 Overview of Alternative 1a**

Alternative 1a is the Artists' proposal. The project would consist of approximately 5.9 miles of luminous fabric panels horizontally suspended above the Arkansas River within a 42.0-mile stretch of the river corridor between Salida and Cañon City (Map 2-3). This alternative consists of eight areas of fabric panels (Table 2-3), selected and designed to include a number of interruptions for aesthetic reasons, technical feasibility, and environmental and human considerations.

**Table 2-3. Sequence of Alternative 1a Panel Areas from East to West**

<b>Fabric Panel Area</b>	<b>Length of Panels / Length of River</b>
Parkdale	2.5 miles over 3.0 miles of river
Spikebuck	0.9 miles over 2.1 miles of river
Three Rocks	0.5 miles over 0.6 miles of river
Maytag	0.3 miles over 0.5 miles of river
Texas Creek	0.7 miles over 0.8 miles of river
Vallie Bridge	0.3 miles over 0.4 miles of river
Tunnel	0.5 miles over 0.6 miles of river
County Line	0.3 miles over 0.6 miles of river

Source: EDAW/AECOM

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**Map 2-2 (placeholder)**

**Back of Map 2-2(placeholder)**

**Map 2-3 Placeholder**

**Back of Map 2-3 (Placeholder)**

The cable and anchor system would be installed over an approximately two-year period. The exhibition (or viewing) period would be scheduled for a 14-day period in early August. Visitor information would be available at the temporary Fremont Road Information Center, Parkdale Viewing Center, and Texas Creek Limited Rest Stop. Transportation and traffic during the exhibition stage would be managed through informal pull-out closures, increased law enforcement presence, and restricted pedestrian activities in the corridor as described in Section 2.4, Activities and Elements Common to All Action Alternatives. Following the exhibition period, the fabric panels and other above-ground elements would be removed and disturbed areas would be restored over a several-month period.

## 2.6.2 Installation

Each panel display would consist of a series of ground anchors, ATFs, steel cables and carabiners, and fabric panels. The 5.9 miles of panels proposed under Alternative 1a would require approximately 9,100 steel anchors, 2,275 ATFs, 1,275 cables of varying lengths, and 925 fabric panel segments (Table 2-4).

**Table 2-4. Hardware Counts for Alternative 1a**

Alternative 1a Hardware	Count
Anchor sites	2,275
Anchor holes	9,100
ATFs	2,275
Cables	1,275
Panels	925

Note: Numbers have been rounded to the nearest 25.  
Source: EDAW/AECOM

### 2.6.2.1 Installation Logistics (schedule, traffic management, workforce, etc.)

Installation would be scheduled to occur over a 28-month period (approximately); this timeframe includes several seasonal avoidance periods and/or nighttime construction periods to avoid resource-specific concerns (Table 2-5). These avoidance periods are discussed in Section 2.12, Design Features Common to All Action Alternatives or in the Mitigation Plan.

**Table 2-5. Alternative 1a Installation Timeframes (based on a June 2011 Record of Decision [ROD])**

Installation Stage	Duration	Est. Beginning Date
Anchor surveys	15 months	June 2011
Anchor drilling	14 months	June 2011
ATF installation	8 months	November 2012
Cable/carabiner installation	2 months	June 2013
Blossom of fabric panels	7 days	July 2013

The total level of effort for installation is estimated to be 3,000 crew work days. At a minimum, four, four-man crews would be working in the corridor during the installation phase. However, project support and management staff would also be present at the panel work sites and throughout the project area, in general. It is estimated that 20 to 30 people would be working in the project corridor for the duration of the installation phase.

It is estimated that US 50 lane closures would occur on 380 days over the 28-month installation period when crews are working on the highway side of the river. Crews would not be permitted to work on the highway side without a temporary rolling lane closure. This timeframe includes seasonal avoidance periods and/or nighttime construction periods to avoid resource-specific concerns. These avoidance periods are discussed in Section 2.12, Design Features Common to All Action Alternatives, or under Mitigation Measures.

The central staging area for this alternative would be located on the north side of the river at Texas Creek (Map 2-1 and Map 2-3). Two equipment laydown areas have been identified totaling approximately 56 acres (acreage includes visitor facilities). In addition to the laydown areas, a 4,000 sf warehouse/office building would be constructed. Upon project completion, the warehouse would be deconstructed and removed from the site. The area adjacent to the warehouse/office building would be used as a storage yard to stockpile material. The nearby railroad siding would be used to move equipment and material along the railroad from Parkdale to Texas Creek and from Texas Creek to County Line. A formal command post would not be needed during the installation phase; all installation coordination would occur from the staging area at Texas Creek.

OTR Corp would purchase all materials possible from local or U.S. sources. Materials would be brought to the Texas Creek Staging Area via two-ton flatbed trucks on the highway and Brandt 6000 Power Unit rail-mounted trucks, and would be stockpiled until needed. Two rail-mounted truck units would be used, one working eastbound and one working westbound from the Texas Creek Staging Area. Each truck is capable of pulling three to four fully loaded flatbed rail-mounted cars. Materials delivered by rail would be loaded onto rail cars from either Salida or Cañon City, depending on authorization from UPRR. It is estimated that two trips per day from the Texas Creek Staging Area would be necessary to supply active installation sites with materials. OTR Corp does not intend to deliver materials in excess of what can be installed each day.

It is estimated that the entire volume of material required for Alternative 1a would fit into 20 rail cars.

#### **2.6.2.2 Installation Period Visitation**

An estimated 36,000 viewers are expected to visit OTR during the 28-month installation period. The majority of these visitors are expected to visit during the 6- to 8-day “blossoming” period during the last stage of installation. No visitor facilities or amenities would be provided during the installation period. Restrooms and nonpotable water would be available for a fee at State Parks day use recreation areas. Exhibition phase traffic, emergency, and visitor management strategies would be in place for the one week prior to commencement of the exhibition (OTR 2008b).

#### **2.6.3 Exhibition**

The exhibition period would begin when installation of the art is complete; no construction or installation activities would occur during this phase of the project. Consistent with the Artists’ proposal, Alternative 1a would include a 2-week (14-day) exhibition period in early August. The exhibit would be open for viewing 24 hours a day for the 2-week duration.

##### **2.6.3.1 Prohibited Uses and Restricted Areas**

No prohibited uses or restricted areas are anticipated under Alternative 1a beyond those listed for all alternatives in Section 2.4, Activities and Elements Common to All Action Alternatives.

### **2.6.3.2 Visitation Projections and Arrival Patterns**

An independent visitation projection was produced for the purposes of conducting the impact comparisons presented in this document. (A detailed report of visitation projections is provided in Appendix C.) This analysis is inclusive of general tourism or other area attraction visitors, but does not include local, residential, or commercial traffic viewers. Visitation is estimated at 344,000 visitors for Alternative 1a during the 2-week exhibition period.

It is anticipated that approximately 80% of visitors would arrive from the east, travelling westbound through the corridor; the remaining 20% would travel eastbound through the corridor. The majority of visitors would arrive via private vehicles, such as passenger cars or vans.

Boating in the AHRA is managed by State Parks. State Parks uses an annual rationing plan (commercial boat use) and a private boat permit system (private boat use) based on defined carrying capacities, to establish limits on the number of commercial boats permitted down the river on specific days.

Carrying capacities have been defined on all river segments within the AHRA to protect resources and maintain a high-quality recreational experience (see also Section 3.20, Recreation Resources for more information on the rationing program). On rationed days, commercial boat permits are capped at a pre-determined number. Based on historic use, rationing is not currently imposed during the period August 1-August 15 on the Vallie Bridge-Parkdale segment. Implementation of the existing AHRA rationing plan and private boat permit system, without modifications, would allow boating usage on this segment in excess of defined carrying capacities during the exhibition period. However, for the Salida-Vallie Bridge segment, an average of 10 days during the proposed exhibition period (first half of August) would be rationed, based on historic use. Therefore, commercial boating levels on this segment would be managed within the defined carrying capacity during most of the exhibition period.

Under Alternative 1a, it is estimated that daily rafting activity during the August OTR exhibition period would increase to the level of average daily activity in July, the peak period for rafting on the Arkansas River. This equates to approximately 21,500 additional rafters on the river to view OTR. These rafters are included in the overall visitation estimate for Alternative 1a (344,000 visitors).

### **2.6.3.3 Event Visitor Information Centers and Visitor Facilities**

The Fremont Road Information Center, Parkdale Viewing Center, Texas Creek Limited Rest Stop, and Vallie Bridge Limited Rest Stop would be temporarily developed, staffed, and operated as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

In addition to the OTR event visitor information centers and the rest stop, all AHRA recreation sites in the project corridor would remain open to the public, including OTR visitors, for the duration of the exhibition period, and existing recreational activities would be permitted to continue. The standard park entrance fees would apply to all vehicles entering the AHRA (\$6.00/vehicle).

### **2.6.3.4 Visitor Services (non-emergency)**

Non-emergency visitor services would be provided as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

### **2.6.3.5 Event Staffing and Command Operations**

All event staffing and command operations would occur as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

### **2.6.3.6 Traffic Management**

Traffic management measures, such as VMS, speed reductions, pullout closures, and uniformed officer presence, would be the same as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

### **2.6.3.7 Emergency Services and Response**

All emergency services and response strategies would be provided or operated as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

## **2.6.4 Removal / Restoration**

Removal of the physical features of the work of art would commence immediately after the 14-day viewing period and would be completed within approximately three months, weather permitting. Removal activities, logistics, and schedule would be as described in Section 2.4, Activities and Elements Common to All Action Alternatives, unless otherwise noted below.

### **2.6.4.1 Removal Logistics**

Two Brandt 6000 Power Unit rail-mounted truck units would be used, one working eastbound and one working westbound from the ends of the panel displays. Materials would be transported to either Salida or Cañon City, depending on authorization from UPRR, to be loaded onto flatbed trucks and then delivered to industrial waste and recycling facilities.

Highway traffic would be affected several times per day as rolling lane closures occur every 10.0 miles to accommodate trucks that are picking up the ATF components from the highway side of the river. Two two-man crews would be walking the highway side to disconnect the cables; these workers would be transported to the next panel removal area by a crew truck. Approximately 90% of the cables would be removed from the rail side and loaded directly into rail cars for transport to flatbed trucks and ultimately, industrial waste and recycling facilities.

### **2.6.4.2 Removal Period Visitation**

An estimated 36,000 viewers are expected to visit OTR during the three-month removal period. The majority of these visitors are expected to visit during the 2 weeks immediately following the exhibition period. It is expected that visitors would continue to visit the project corridor until all panel cables have been removed (approximately 6 weeks after the exhibition period). Beyond the first 6 weeks, visitation to the project corridor is expected to fall off notably. No visitor facilities or amenities would be provided during the removal period. Restrooms and nonpotable water would be available for a fee at State Parks day use recreation areas. No special traffic management measures or visitor amenities would be implemented or provided for visitor traffic during this phase of the project.

## **2.7 ALTERNATIVE 1C**

### **2.7.1 Overview of Alternative 1c**

Alternative 1c includes the same panel arrangement as the Artists' Proposed Action (Alternative 1a). The following project components would vary from the Artists' Proposed Action for this alternative:

- Alternative 1c would impose new, temporary, or event-only commercial boat rations during the exhibition period, which would allow higher than normal levels of boating use. The new temporary rationing system would allow boating levels to occur up to the defined carrying capacity for each segment of the river without being accounted for in subsequent years' rationing. See Table 3-96 for existing boating carrying capacities.
- Under Alternative 1c, visitation to all AHRA sites located along US 50 would be open to OTR-related visitation uses only. Temporary, event-only use fees would apply.
- Alternative 1c would use a 3-week (21-day) viewing period.

These variations are being considered to evaluate whether an extended viewing window would better distribute peak traffic volumes and visitation levels during the exhibition period. Additionally, the visitor management strategies proposed under this alternative are intended to evaluate alternative, event-only State Parks management scenarios.

All other project components, including panel configuration, construction methods and time frames, event visitor information centers, traffic management, and visitor facilities would be the same as described for Alternative 1a unless otherwise noted in the following project phase descriptions.

### **2.7.2 Installation**

This alternative would have the same length of fabric panels at the same locations as previously described for Alternative 1a and shown in Map 2-3. Hardware counts would be the same as shown for Alternative 1a in Table 2-4.

#### **2.7.2.1 Anchors and Hardware**

All anchors and hardware materials and installation techniques would be the same as described for Alternative 1a.

Table 2-6 shows the duration of various activities at any one location. Although the overall duration of a given activity (e.g., anchor drilling) would extend over a 14-month period, this is the period for completing the activity at all eight panel sites throughout the canyon. At each individual panel location, however, the duration would be much shorter. At the Three Rocks panel site, for example, anchor drilling would occur over a 42-day period on each side of the river. Anchor drilling on the south and north sides of the river may or may not occur simultaneously, depending on the panel site and the specific drilling activity. Following completion of drilling activities at each site, the crews would move on to another site, leaving the site where drilling was completed inactive for several months until the next installation activity commenced.

Drilling activities would likely be concentrated within the overall timeframe at each site, rather than dispersed throughout the installation period. At each panel site, installation activities may or may not occur within multiple panel sections at one time.

**Table 2-6. Detailed Schedule of Installation and Removal Activities, by Site**

	Anchor Drilling		ATF Installation	Cable/Carabiner Installation	Fabric Blossoming	Removal
	South Side	North Side				
County Line	30 days	29 days	15 days	6 days	1 day	6 days
Tunnel	51 days	51 days	24 days	10 days	2 days	10 days
Vallie Bridge	34 days	29 days	16 days	6 days	1 day	6 days
Texas Creek	74 days	78 days	31 days	12 days	2 days	14 days
Maytag	29 days	20 days	13 days	4 days	1 day	6 days
Three Rocks	42 days	42 days	25 days	10 days	2 days	10 days
Spikebuck	81 days	77 days	31 days	15 days	2 days	19 days
Parkdale	212 days	197 days	93 days	26 days	7 days	50 days

**a. County Line**

At the County Line site, anchor installation would occur at six panel sections within an 11-month timeframe. However, within this phase there would be only 30 days of activity on the south (highway) side of the river, and 29 days of activity on the north (railroad) side of the river. ATF installation would occur over a 15 day period in November. Cable installation would last 4 days, with 2 additional days for carabiner installation in June. Fabric blossoming would be completed in one day in July. The removal of the County Line panel would last 6 days, and would directly follow the exhibition period in August.

**b. Tunnel**

Anchor drilling would occur at four panel sections within a 12-month timeframe at the Tunnel panel. In this period, there would be 51 days of activity on the south side of the river and 51 days of activity on the north side of the river. It would take 24 days (December) to install ATFs, 6 days to install cables (June), and 4 days to install carabiners (June). Blossoming would occur over 2 days in July. Removal at the Tunnel panel would last for 10 days in August and September, directly following the removal of the County Line panel.

**c. Vallie Bridge**

Anchor drilling and installation at Vallie Bridge would occur at four panel sections within an 11-month time frame. This phase would include 34 days of drilling activity on the south side of the river and 29 days on the north side of the river. ATF installation would last 16 days in January, cable installation would last for 4 days in June, and carabiner installation would last for 2 days in June. Blossoming would occur in one day in late-July. Removal of the Vallie Bridge panel would take 6 days in September, following the removal of the Tunnel panel.

**d. Texas Creek**

At the Texas Creek panel site, anchors would be drilled at eight panel sections within a 14-month timeframe. Drilling would last 74 days on the south side of the river and 78 days on the north side of the river. Installation of ATFs would occur over 31 days (January through March), and cable and carabiner installation would last 8 and 4 days in June and July, respectively. The blossoming of fabric panels would

take 2 days in July or early August. Removal activities would be completed in 14 days in September and October, directly following removal at Vallie Bridge.

**e. Maytag**

Installation at Maytag would require the least amount of activity, compared to other panel sites. Anchor drilling would occur at three panel sections within an 11-month timeframe, with 29 days of drilling on the south side of the river, and 20 days of drilling on the north side. ATF installation would be completed in 13 days in March. Cable and carabiner installation would each last for 2 days in July, and blossoming would occur in one day in late-July or early-August. Removal of the Maytag panel would take 6 days in October, and would follow the removal of the Texas Creek panel.

**f. Three Rocks**

Anchor drilling at the Three Rocks panel would occur at six panel sections within a 9.5-month timeframe. Actual anchor drilling activity would last for 42 days on the south side of the river and 42 days on the north side of the river. ATF installation would occur over 25 days in March and April, with cable installation lasting 6 days and carabiner installation lasting 4 days in July. Blossoming would last 2 days in early August. Removal of the Three Rocks panel would be completed in 10 days in October, directly following the removal of the Maytag panel.

**g. Spikebuck**

At the Spikebuck panel, anchor installation would occur at 10 panel sections within a 9.5-month time frame. Anchor drilling would last 81 days on the south side of the river and 77 days on the north side. The installation of ATFs would last 31 days, from April through June. Cable installation would take 9 days (July), carabiner installation would take 6 days (July), and blossoming would be completed in 2 days (August). Removal would take 19 days to complete in October and November, and would begin after the removal of the Maytag and Parkdale panels. Removal at the Spikebuck panel may overlap with removal at the Three Rocks panel.

**h. Parkdale**

Anchor drilling at Parkdale would occur at 30 panel sections within a 10-month timeframe. Drilling would last 212 days on the south side of the river and 197 days on the north side. ATF installation would last 93 days overall (December through April). Cables would be installed in 28 days, and carabiners would be installed in 18 days in June and July. Blossoming would last 7 days in late-July and early-August. Removal of the Parkdale panel would begin immediately after exhibition and would last 50 days (August through October). Removal at Parkdale would overlap with the removal of all panel sites except Spikebuck.

**2.7.2.2 Installation Logistics (schedule, traffic management, workforce, etc.)**

Installation would be scheduled to occur over a 28-month period; this timeframe includes seasonal avoidance periods and/or nighttime construction periods to avoid resource-specific concerns. These avoidance periods are discussed in Section 2.12, Design Features Common to All Action Alternatives or in discussion of Mitigation Measures.

All Alternative 1c installation logistics would be coordinated as described for Alternative 1a.

### **2.7.2.3 Installation Period Visitation**

An estimated 46,000 viewers are expected to visit OTR during the 28-month installation period. Visitation during installation and removal are expected to vary directly with exhibition visitation levels. Similar to Alternative 1a, the majority of these visitors would be expected to visit during the one-week “blossoming” period during the last stage of installation. No visitor facilities or amenities would be available during the installation period. Restrooms and nonpotable water would be available for a fee at State Parks day use recreation areas. Exhibition phase traffic, emergency, and visitor management strategies would be in place for the week prior to the commencement of the exhibition (OTR 2008b).

### **2.7.3 Exhibition**

As described for all alternatives, the Alternative 1c exhibition period would begin when installation of the art is complete; no construction or installation activities would occur during this phase of the project.

Alternative 1c would include a 3-week (21-day) exhibition period in August. The exhibit would be open for viewing 24 hours a day for the 3-week duration.

#### **2.7.3.1 Prohibited Uses and Restricted Areas**

Prohibited uses or restricted areas would be the same as those listed in Section 2.4, Activities and Elements Common to All Action Alternatives or under Mitigation Measures. One exception would apply to AHRA sites, which would be open to OTR-related recreational uses only.

#### **2.7.3.2 Visitation Projections and Arrival Patterns**

Under Alternative 1c, State Parks would enforce an event-only or temporary rationing plan and private boat permit system that would allow for additional commercial and private boats during the 3-week exhibition period.

A temporary event-only rationing plan and private boat permit system would be developed to allocate both commercial and private boat permits. The OTR rationing plan and private boat permit system would allow an increase of both private and commercial boats during the time period that any of the fabric panels are available for public viewing (blossoming phase / exhibition phase / removal phase). The OTR rationing plan and private boat permit system would be based on existing carrying capacities, but would not be accounted for in establishing historical use or rationing in the affected river sections in subsequent years or be carried over into a permanent private boat permit system. This amounts to an estimated 5,400 additional rafting visitors beyond what is anticipated for Alternative 1a.

The increased convenience of an additional week and weekend within the exhibition period would increase both in-state and out-of-state attendance. However, the majority of visitors who would visit during a 3-week exhibition period would also be the visitors who would make an effort to attend during the 2-week exhibition period of Alternative 1a. Therefore, it is assumed that visitation would not increase in direct proportion to the extended viewing time. It is assumed that one additional viewing week would increase visitation by half the weekly visitation under Alternative 1a, an increase of about 90,000 people.

The combination of anticipated increased visitation resulting from the implementation of temporary boat rations and the extended viewing period results in an estimate of approximately 439,000 visitors for Alternative 1c during the 3-week exhibition period. The arrival patterns of visitors to the corridor would be similar to that described for Alternative 1a.

A detailed report of the visitation projections is provided in Appendix C.

### **2.7.3.3 Event Visitor Information Centers and Visitor Facilities**

The Fremont Road Information Center, Parkdale Viewing Center, Texas Creek Limited Rest Stop, Vallie Bridge Limited Rest Stop, and Salida Information Center would be temporarily developed, staffed, and operated as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

Under Alternative 1c, visitation to all AHRA sites located along US 50 would be open to OTR-related visitation uses only. (e.g., picnicking, viewing). In lieu of a State Parks pass vehicle fee, an event-only entrance fee would apply to all OTR visitors using the AHRA sites (estimated \$1.00/person).

### **2.7.3.4 Visitor Services (non-emergency)**

Non-emergency visitor services would be provided as described under in Section 2.4, Activities and Elements Common to All Action Alternatives or under Mitigation Measures.

### **2.7.3.5 Event Staffing and Command Operations**

All event staffing and command operations would occur as described under in Section 2.4, Activities and Elements Common to All Action Alternatives.

### **2.7.3.6 Traffic Management**

Traffic management measures, such as VMS, speed reductions, pullout closures, and uniformed officer presence, would be the same as described in Section 2.4, Activities and Elements Common to All Action Alternatives or under Mitigation Measures, with the following exception:

Alternative 1c would necessitate a new 350-foot right turn acceleration lane and a 350-foot right turn deceleration lane along US 50 at the Harvey Bridge intersection along with temporary lane striping and/or delineation with standard traffic devices and appropriate signs (Figure 2-2).

### **2.7.3.7 Emergency Services and Response**

All emergency services and response strategies would be provided or operated as described in Section 2.4, Activities and Elements Common to All Action Alternatives or under Mitigation Measures.

## **2.7.4 Removal / Restoration**

Removal of the physical features of the work of art would commence immediately after the 3-week viewing period and would be completed within approximately 3 months, weather permitting.

### **2.7.4.1 Removal Activities**

Removal activities, logistics, and timeline would occur as described in Section 2.4, Activities and Elements Common to All Action Alternatives or under Mitigation Measures.

### **2.7.4.2 Removal Period Visitation**

An estimated 46,000 viewers are expected to visit OTR during the 3-month removal period. The temporal distribution pattern of visitors is anticipated to be identical to that described for Alternative 1a.

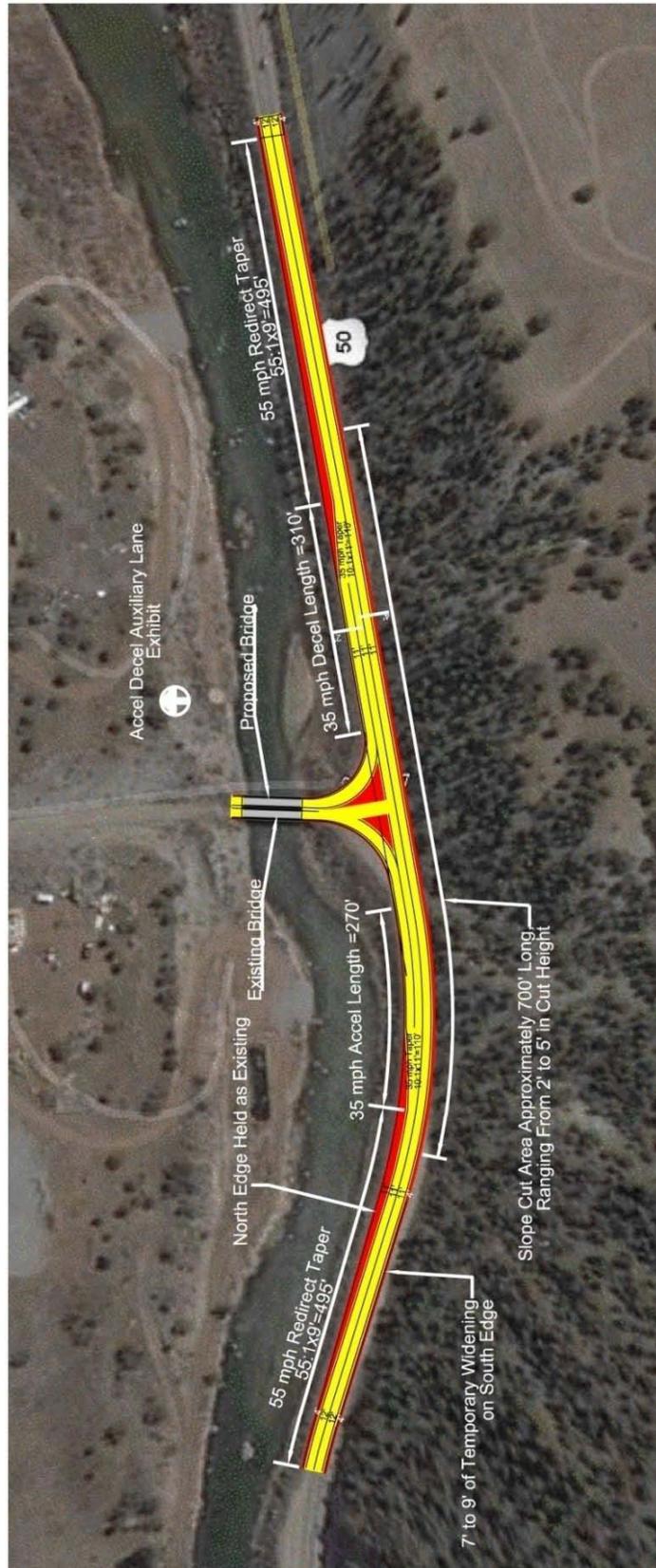


Figure 2-2. Parkdale Parking Lot Auxiliary Land Exhibit, MP 266

## **2.8 ALTERNATIVE 1D**

### **2.8.1 Overview of Alternative 1d**

Alternative 1d includes the same panel arrangement as the Artists' Proposed Action (Alternative 1a). The following project components would vary from the Artists' Proposed Action for this alternative:

- Under Alternative 1d, visitation to all AHRA sites located along US 50 would be closed to the public and/or OTR-related visitation uses. State Parks would require a lump sum payment from the applicant to offset revenue lost by closing fee areas in addition to the Special Activity Agreement fee.
- Under Alternative 1d, the 2-week viewing period would occur during early to mid-September (ending no later than September 21).
- Alternative 1d would utilize an accelerated construction schedule. Project installation would be compressed into approximately one year.

The visitor management strategies proposed under this alternative are intended to evaluate alternative, event-only State Parks management scenarios. Additionally, the later viewing period is proposed to evaluate the benefits and disadvantages of holding the exhibition period at a time when normal tourism is not at peak levels.

The accelerated construction schedule is being considered in response to BLM, Cooperating Agency, and public concerns regarding the impacts of the Artists' proposed 14-month construction period on local canyon residents, commercial traffic, and recreational uses in the river corridor.

All other project components, including panel configuration, Texas Creek Staging Area, and visitor information/viewing areas/limited rest stops would be the same as described for Alternative 1a unless otherwise noted in the following project phase descriptions.

### **2.8.2 Installation**

This alternative would have the same length of fabric panels at the same locations as previously described for Alternative 1a and shown in Map 2-3. Hardware counts would be the same as shown for Alternative 1a in Table 2-4.

#### **2.8.2.1 Anchors and Hardware**

All anchors and hardware materials and installation techniques would be the same as described for Alternative 1a.

#### **2.8.2.2 Installation Logistics (schedule, traffic management, workforce, etc.)**

Installation would be scheduled to occur over a 14-month period; this timeframe includes seasonal avoidance periods and/or nighttime construction periods to avoid resource-specific concerns. These avoidance periods are discussed in Section 2.12, Design Features Common to All Action Alternatives or under Mitigation Measures.

All Alternative 1d installation logistics would be coordinated as described for Alternative 1a.

### **2.8.2.3 Installation Period Visitation**

An estimated 23,000 viewers are expected to visit OTR during the 14-month installation period. Similar to Alternative 1a, the majority of these visitors are expected to visit during the one-week “blossoming” period during the last stage of installation. No visitor facilities or amenities would be available during the installation period. Restrooms and nonpotable water would be available for a fee at State Parks day use recreation areas. No special traffic management measures or visitor amenities would be implemented or provided for visitor traffic during this phase of the project.

### **2.8.3 Exhibition**

As described in Section 2.4, Activities and Elements Common to All Action Alternatives, the Alternative 1d exhibition period would begin when installation of the art is complete; no construction or installation activities would occur during this phase of the project.

Alternative 1d would include a 2-week exhibition period in September. The exhibit would be open for viewing 24 hours a day for the 2-week duration.

#### **2.8.3.1 Prohibited Uses and Restricted Areas**

No prohibited uses or restricted areas are anticipated under Alternative 1d beyond those listed in Section 2.4, Activities and Elements Common to All Action Alternatives or under Mitigation Measures.

#### **2.8.3.2 Visitation Projections and Arrival Patterns**

The closure of AHRA sites, coupled with the September viewing period, would diminish visitation relative to Alternative 1a. Under Alternative 1d, OTR visitation would be reduced by an estimated 10%, or 3,000 persons, due to closing of AHRA sites.

The September exhibition period proposed under Alternative 1d would decrease OTR visitation because people have generally completed their summer vacations by this point in the season and most schools are back in session. At the statewide level, September tourism and visitation is about 25% lower than that of August; and for the Royal Gorge, September visitation is about 46% lower than that of August (Longwoods International 2009). This change would result in a decrease of an estimated 117,000 visitors compared to Alternative 1a.

The closure of AHRA sites and the September viewing period greatly detract from the overall visitation projections. The net result is approximately 224,000 visitors, or approximately 120,000 fewer visitors than projected for Alternative 1a. (A detailed report of the visitation projections is provided in Appendix C.)

The arrival patterns of visitors to the corridor would be similar to that described for Alternative 1a.

#### **2.8.3.3 Event Visitor Information Centers and Visitor Facilities**

The Fremont Road Information Center, Parkdale Viewing Center, Texas Creek Limited Rest Stop, Vallie Bridge Limited Rest Stop, and Salida Information Center would be temporarily developed, staffed, and operated as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

All AHRA sites would be closed to all public and/or OTR-related uses. State Parks would require a lump sum payment from the applicant to offset revenue lost by closing fee areas. The payment amount would be determined through State Parks' permitting process.

#### **2.8.3.4 Visitor Services (non-emergency)**

Non-emergency visitor services would be provided as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

#### **2.8.3.5 Event Staffing and Command Operations**

All event staffing and command operations would occur as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

#### **2.8.3.6 Traffic Management**

Traffic management measures, such as VMS, speed reductions, pullout closures, and uniformed officer presence, would be the same as described for Alternative 1c.

#### **2.8.3.7 Emergency Services and Response**

All emergency services and response strategies would be provided or operated as described in Section 2.4, Activities and Elements Common to All Action Alternatives or under Mitigation Measures.

### **2.8.4 Removal / Restoration**

Removal of the physical features of the work of art would commence immediately after the 2-week viewing period and would be completed within approximately 3 months, weather permitting.

#### **2.8.4.1 Removal Activities**

Removal activities, logistics, and timeline would occur as described for Alternative 1a.

#### **2.8.4.2 Removal Period Visitation**

An estimated 23,000 viewers are expected to visit OTR during the removal period. The temporal distribution pattern of visitors is anticipated to be identical to that described for Alternative 1a.

## **2.9 ALTERNATIVE 2**

### **2.9.1 Overview of Alternative 2**

Alternative 2 varies from the Artists' Proposed Action (Alternative 1a) in that it would include only the Artists' proposed panels located east of Texas Creek, a total of approximately 4.8 miles of panels at five sites in the project corridor (Table 2-7). This would be a reduction of 1.1 miles and three sites relative to the Artists' Proposed Action. The panel configuration in this alternative was reduced to address Cooperating Agency concerns regarding panel placement west of Texas Creek. Specifically, the Cooperating Agencies expressed concerns regarding potential impacts to residents in more populated areas of the upper canyon during all project phases, and potential safety concerns in the Tunnel section. This option would alleviate construction disturbances and most exhibition phase traffic from populated areas in the upper canyon; however, the removal of all panels west of Texas Creek would not alleviate

commuter impacts for eastbound commuters. Additionally, under Alternative 2, the 2-week viewing period would occur sometime in the period June 21-July 14. All other design elements of Alternative 2, including installation and removal techniques and exhibition period details (viewing areas, traffic management, and transportation), would be the same as described for Alternative 1a.

**Table 2-7. Sequence of Alternative 2 Panels Areas from East to West**

Fabric Panel Area	Length of Panels / Length of River
Parkdale	2.5 miles over 3.0 miles of river
Spikebuck	0.9 miles over 2.1 miles of river
Three Rocks	0.5 miles over 0.6 miles of river
Maytag	0.3 miles over 0.5 miles of river
Texas Creek	0.7 miles over 0.8 miles of river
Vallie Bridge	None
Tunnel	None
County Line	None

## 2.9.2 Installation

The 4.8 miles of panels proposed under Alternative 2 would require approximately 7,400 steel anchors, 1,850 ATFs, 1,050 cables of varying lengths, and 750 fabric panel segments (Map 2-4 and Table 2-8). This alternative removes all panels located west of Texas Creek.

**Table 2-8. Hardware Counts for Alternative 2**

Alternative 2 Hardware	Count
Anchor sites	1,850
Anchor holes	7,400
ATFs	1,850
Cables	1,050
Panels	750

Note: Numbers have been rounded to the nearest 25.

Source: EDAW/AECOM

### 2.9.2.1 Anchors and Hardware

All anchors and hardware materials and installation techniques would be the same as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

**Map 2-4 (placeholder)**

**Back of Map 2-4 (placeholder)**

### **2.9.2.2 Installation Logistics (schedule, traffic management, workforce, etc.)**

All Alternative 2 installation logistics and operations would be coordinated as described for Alternative 1a, unless otherwise noted below.

This alternative does not include construction of the County Line, Tunnel, and Vallie Bridge panel areas. Therefore, this alternative could be completed within approximately 24 months, compared to 28 months for Alternative 1a.

The flow of equipment and operation would proceed the same as described for the 28-month project schedule. However, without construction of the panel areas west of Texas Creek, the foot, rubber tire, and rubber track drilling requirements would end 175 days earlier than Alternative 1a. Subsequently, rail side operations could begin earlier. Overall, this alternative would result in a net time savings of approximately 17% (or 145 days) over the Alternative 1a installation period.

It is estimated that lane closures would occur on 310 days over the 24-month installation period when crews are working on the highway side of the river. Crews would not be permitted to work on the highway side without a temporary rolling lane closure.

This timeframe includes seasonal avoidance periods and/or nighttime construction periods to avoid resource-specific concerns. These avoidance periods are discussed in Section 2.12, Design Features Common to All Action Alternatives.

### **2.9.2.3 Installation Period Visitation**

An estimated 38,000 viewers are expected to visit OTR during the 28-month installation period. Similar to Alternative 1a, the majority of these visitors are expected to visit during the one-week “blossoming” period during the last stage of installation. No visitor facilities or amenities would be provided during the installation period. Restrooms and nonpotable water would be available for a fee at State Parks day use recreation areas. Exhibition phase traffic, emergency, and visitor management strategies would be in place for the week prior to the commencement of exhibition (OTR 2008b).

## **2.9.3 Exhibition**

As described in Section 2.4, Activities and Elements Common to All Action Alternatives, the Alternative 2 exhibition period would begin when installation of the art is complete; no construction or installation activities would occur during this phase of the project.

Alternative 2 would include a 2-week exhibition period in late June or July. The exhibit would be open for viewing 24 hours a day for the 2-week duration.

### **2.9.3.1 Prohibited Uses and Restricted Areas**

No prohibited uses or restricted areas are anticipated under Alternative 2 beyond those listed in Section 2.4, Activities and Elements Common to All Action Alternatives or under Mitigation Measures.

### **2.9.3.2 Visitation Projections and Arrival Patterns**

Under Alternative 2, the three panel sites located west of Texas Creek would be eliminated. Those three panel sites are located a distance away from the rest of the panels, are further apart from each other than

other sites, and are the furthest away from the Front Range, the direction or area from which the majority of visitors are expected to arrive. For this reason, it is assumed that the reduction in panel sites would not reduce visitation.

A late June/July viewing period would potentially result in increased visitation to OTR, since a mid-summer exhibition would provide families greater flexibility compared to an August viewing period that would be more constrained by back-to-school activities. Historically, July is Colorado's busiest month for tourism activity; however, tourism in the last 2 weeks of July is only slightly higher (about 5%) than for the first 2 weeks of August (Alternative 1a viewing period) (Longwoods International 2009). Therefore, the July viewing period would potentially result in an estimated increase of 17,000 visitors (or 5%) compared to Alternative 1a, resulting in a total visitation estimate of 361,000. A detailed report of the visitation projections is provided in Appendix C.

Existing State Parks commercial boat rations would remain in effect and visitor arrival patterns would be similar to those described for Alternative 1a.

### **2.9.3.3 Event Visitor Information Centers and Visitor Facilities**

The Fremont Road Information Center, Parkdale Viewing Center, Texas Creek Limited Rest Stop, Vallie Bridge Limited Rest Stop, and Salida Information Center would be temporarily developed, staffed, and operated as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

All AHRA recreation sites would be managed as described for Alternative 1a, including fees.

### **2.9.3.4 Visitor Services (non-emergency)**

Non-emergency visitor services would be provided as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

### **2.9.3.5 Event Staffing and Command Operations**

All event staffing and command operations would occur as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

### **2.9.3.6 Traffic Management**

Traffic management measures, such as VMS, speed reductions, pullout closures, and uniformed officer presence, would be the same as described for Alternative 1c.

### **2.9.3.7 Emergency Services and Response**

All emergency services and response strategies would be provided or operated as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

## **2.9.4 Removal / Restoration**

Removal of the physical features of the work of art would commence immediately after the 14-day viewing period and would be completed within approximately 3 months, weather permitting.

### 2.9.4.1 Removal Activities

Removal activities, logistics, and timeline would occur as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

### 2.9.4.2 Removal Period Visitation

An estimated 38,000 viewers are expected to visit OTR during the 3-month removal period. The temporal distribution pattern of visitors is anticipated to be identical to that described for Alternative 1a.

## 2.10 ALTERNATIVE 3

### 2.10.1 Overview of Alternative 3

The Alternative 3 panel configuration would eliminate 1.8 miles of panels from the Artists' Proposed Action. This alternative would include a total of 4.1 miles of panels at eight sites in the project corridor (Map 2-5 and Table 2-9). The Alternative 3 panel configuration would eliminate selected panels throughout the corridor to reduce potential impacts to bighorn sheep populations and raptor nesting and roosting sites. Other species, including migratory birds and bats, were also considered in the development of this alternative.

All other elements of Alternative 3, including installation and removal time frame and techniques, and exhibition period details (viewing areas, traffic management, and transportation), would be the same as described for Alternative 1a, unless otherwise noted.

**Table 2-9. Sequence of Alternative 3 Panels Areas from East to West**

Fabric Panel Area	Length of Panels / Length of River
Parkdale	1.6 miles over 2.9 miles of river
Spikebuck	0.6 miles over 2.0 miles of river
Three Rocks	0.3 miles over 0.6 miles of river
Maytag	0.3 miles over 0.5 miles of river
Texas Creek	0.5 miles over 0.8 miles of river
Vallie Bridge	0.3 miles over 0.4 miles of river
Tunnel	0.5 miles over 0.6 miles of river
County Line	0.1 miles over 0.1 miles of river

### 2.10.2 Installation

The 4.1 miles of panels proposed under Alternative 3 would require approximately 6,400 steel anchors, 1,600 ATFs, 900 cables of varying lengths, and 650 fabric panel segments (Map 2-5 and Table 2-10). This alternative maintains panels at each of eight areas proposed by the Artists; however, individual panel segments have been removed due to wildlife concerns.

**Table 2-10. Hardware Counts for Alternative 3**

Alternative 3 Hardware	Count
Anchor sites	1,600
Anchor holes	6,400
ATFs	1,600
Cables	900
Panels	650

Note: Numbers have been rounded to the nearest 25.

Source: EDAW/AECOM

### **2.10.2.1 Anchors and Hardware**

All anchors and hardware materials and installation techniques would be the same as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

### **2.10.2.2 Installation Logistics (schedule, traffic management, workforce, etc.)**

Installation would be scheduled to occur over an approximately 20-month period; this timeframe includes seasonal avoidance periods and/or nighttime construction periods to avoid resource-specific concerns. These avoidance periods are discussed in Section 2.12, Design Features Common to All Action Alternatives.

All Alternative 3 installation logistics would be coordinated as described for Alternative 1a, unless otherwise noted.

This alternative includes panels at each of the eight sites proposed under Alternative 1a; however, some individual panels have been removed in response to specific resource concerns. Therefore, this alternative could be completed within approximately 20 months, compared to 28 months for Alternative 1a. Overall, this alternative would result in a net time savings of approximately 30% (or 245 days) over the Alternative 1a installation period.

It is estimated that lane closures would occur on 270 days over the 20-month installation period when crews are working on the highway side of the river. Crews would not be permitted to work on the highway side without a temporary rolling lane closure.

### **2.10.2.3 Installation Period Visitation**

Under Alternative 3, it is estimated that approximately 33,000 viewers would visit OTR during the 28-month installation period. Similar to Alternative 1a, the majority of these visitors are expected to visit during the one-week “blossoming” period during the last stage of installation. No visitor facilities or amenities would be available during the installation period. Restrooms and nonpotable water would be available for a fee at State Parks day use recreation areas. Exhibition phase traffic, emergency, and visitor management strategies would be in place for the week prior to the commencement of exhibition (OTR 2008b).

**Map 2-5 (placeholder)**

**Back of Map 2-5 (placeholder)**

### **2.10.3 Exhibition**

As described in Section 2.4, Activities and Elements Common to All Action Alternatives, the Alternative 3 exhibition period would begin when the installation of the art is complete; no construction or installation activities would occur during this phase of the project.

Alternative 3 would include a 2-week exhibition period in August. The exhibit would be open for viewing 24 hours a day for the duration.

#### **2.10.3.1 Prohibited Uses and Restricted Areas**

No prohibited uses or restricted areas are anticipated under Alternative 3 beyond those listed in Section 2.4, Activities and Elements Common to All Action Alternatives.

#### **2.10.3.2 Visitation Projections and Arrival Patterns**

Under Alternative 3, the total panel length is reduced, but the number and general location of panel areas remains similar to Alternative 1a. The reduction in panel length would diminish the interest of some potential visitors who believe that the provenance of the Artists' work has been compromised by removing portions of panel areas. For this reason, the reduced size of the artwork is anticipated to reduce visitation approximately 5% to 10%. For the purposes of this analysis, a 7% reduction to visitation estimates was applied for the Alternative 3 visitation projection. This reduction equates to a 24,100 visitor decrease, or a total visitation of approximately 320,000 visitors relative to Alternative 1a over the 2-week exhibition period. A detailed report of the visitation projections is provided in Appendix C.

Existing State Parks commercial boat rations would remain in effect and visitor arrival patterns would be as described for Alternative 1a.

#### **2.10.3.3 Event Visitor Information Centers and Visitor Facilities**

The Fremont Road Information Center, Parkdale Viewing Center, Texas Creek Limited Rest Stop, Vallie Bridge Limited Rest Stop, and Salida Information Center would be temporarily developed, staffed, and operated as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

All AHRA recreation sites would be managed as described for Alternative 1a, including fees.

#### **2.10.3.4 Visitor Services (non-emergency)**

Non-emergency visitor services would be provided as described under in Section 2.4, Activities and Elements Common to All Action Alternatives.

#### **2.10.3.5 Event Staffing and Command Operations**

All event staffing and command operations would occur as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

#### **2.10.3.6 Traffic Management**

Traffic management measures, such as VMS, speed reductions, pullout closures, and uniformed officer presence, would be the same as described for Alternative 1c.

### **2.10.3.7 Emergency Services and Response**

All emergency services and response strategies would be provided or operated as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

### **2.10.4 Removal / Restoration**

The removal of the physical features of the work of art would commence immediately after the 14-day viewing period and would be completed within approximately 3 months, weather permitting.

#### **2.10.4.1 Removal Activities**

Removal activities, logistics, and timeframe would occur as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

#### **2.10.4.2 Removal Period Visitation**

An estimated 33,000 viewers are expected to visit OTR during the 3-month removal period. The temporal distribution pattern of visitors is anticipated to be identical to that described for Alternative 1a.

## **2.11 ALTERNATIVE 4**

### **2.11.1 Overview of Alternative 4**

The Alternative 4 panel configuration varies substantially from Alternative 1a. Alternative 4 would include a total of 1.4 miles of panels at four sites in the project corridor (Map 2-6 and Table 2-11). The Artists' proposed panel configuration was reduced to eliminate panels from the Arkansas Canyonlands ACEC. The ACEC was designated "to protect, enhance, and interpret the significant scenic, historic, and archaeological values; the threatened and endangered peregrine falcon; key raptor habitat area; bighorn sheep habitat; and important fisheries," (BLM 1996).

This reduction in panel length would require less than the 28-month construction period identified for Alternative 1a. Alternative 4 assumes construction duration of approximately 14 months. Additionally, the reduction in panels is expected to result in a decrease in visitation to the project corridor, and would change viewing patterns and key visitation areas relative to those described under the other alternatives. Under Alternative 4, visitor facilities and amenities would be available at the Fremont Road Information Center, Texas Creek Limited Rest Stop, Vallie Bridge Limited Rest Stop, Salida Information Center, and at AHRA recreation fee sites. Alternative 4 would not include the Parkdale Viewing Center.

**Map 2-6 (placeholder)**

**Back of Map 2-6 (placeholder)**

**Table 2-11. Sequence of Alternative 4 Panels Areas from East to West**

Fabric Panel Area	Length of Panels / Length of River
Parkdale	0.3 miles over 0.4 miles of river
Spikebuck	None
Three Rocks	None
Maytag	None
Texas Creek	None
Vallie Bridge	0.3 miles over 0.4 miles of river
Tunnel	0.5 miles over 0.6 miles of river
County Line	0.3 miles over 0.6 miles of river

### 2.11.2 Installation

The 1.4 miles of panels proposed under Alternative 4 would require approximately 2,200 steel anchors, 550 ATFs, 300 cables of varying lengths, and 225 fabric panel segments (Map 2-6 and Table 2-12).

**Table 2-12. Hardware Counts for Alternative 4**

Alternative 4 Hardware	Count
Anchor sites	550
Anchor holes	2200
ATFs	550
Cables	300
Panels	225

Note: Numbers have been rounded to the nearest 25.

Source: EDAW/AECOM

#### 2.11.2.1 Anchors and Hardware

All anchors and hardware materials and installation techniques would be the same as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

#### 2.11.2.2 Installation Logistics (schedule, traffic management, workforce, etc.)

In general, Alternative 4 installation logistics would be similar to those described for Alternative 1d. However, due to the reduced panel configuration, workforce needs and highway closures would be reduced.

Installation would be scheduled to occur in 200 days; this timeframe includes seasonal avoidance periods and/or nighttime construction periods to avoid resource-specific concerns. These avoidance periods are discussed in Section 2.12, Design Features Common to All Action Alternatives or under Mitigation Measures.

This alternative includes panels at four of the eight sites proposed under Alternative 1a. At Parkdale, this alternative would install 10% of the panels proposed under Alternative 1a.

The flow of equipment and operations would proceed much the same as the 14-month project schedule described under Alternative 1d; however, installation would be completed in 7 months.

It is estimated that lane closures would occur on approximately 100 days over the 7-month installation period when crews are working on the highway side of the river. Crews would not be permitted to work on the highway side without a temporary rolling lane closure.

The Texas Creek Staging Area would be located and operated as described above for other alternatives.

### **2.11.2.3 Installation Period Visitation**

Under Alternative 4, it is estimated that approximately 15,000 viewers are expected to visit OTR during the 7-month installation period. Similar to Alternative 1a, the majority of these visitors are expected to visit during the one-week “blossoming” period during the last stage of installation. No visitor facilities or amenities would be available during the installation period. Restrooms and nonpotable water would be available for a fee at State Parks day use recreation areas. Exhibition phase traffic, emergency, and visitor management strategies would be in place for the week before commencement of exhibition.

### **2.11.3 Exhibition**

As described in Section 2.4, Activities and Elements Common to All Action Alternatives, the Alternative 4 exhibition period would begin when installation of the art is complete; no construction or installation activities would occur during this phase of the project.

Alternative 4 would include a 2-week exhibition period in August. The exhibit would be open for viewing 24 hours a day for the 2-week duration.

#### **2.11.3.1 Prohibited Uses and Restricted Areas**

No prohibited uses or restricted areas are anticipated under Alternative 4 beyond those listed in Section 2.4, Activities and Elements Common to All Action Alternatives or under Mitigation Measures.

#### **2.11.3.2 Visitation Projections and Arrival Patterns**

Alternative 4 represents a large reduction in overall panel length, along with a reduction in the number of panel sites. The Parkdale panel area and the other three panels would be located a distance from each other, and the major portion of the artwork would be closer to Salida than to Cañon City. Under Alternative 4, the drive time to view OTR from the Front Range would increase. Based on adjusted drive times and the reduced size of the artwork, visitation to the exhibit would be reduced by approximately 60% (almost 199,000 people) under Alternative 4. The total visitation estimated under Alternative 4 is approximately 141,000 visitors over the 2-week period. A detailed report of the visitation projections is provided in Appendix C.

Existing State Parks commercial boat rations would remain in effect, as described for Alternative 1a.

#### **2.11.3.3 Event Visitor Information Centers and Visitor Facilities**

Visitor information and basic amenities would be provided at Parkdale Viewing Center, Fremont Road Information Center, Texas Creek Limited Rest Stop, Vallie Bridge Limited Rest Stop, and Salida Information Center, as described for all previous alternatives.

At Texas Creek Information Center, all visitor facilities would be limited to areas located outside of the Arkansas Canyonlands ACEC (shown on Map 2-1).

All AHRA recreation sites would be managed as described for Alternative 1a, including fees.

#### **2.11.3.4 Visitor Services (non-emergency)**

Non-emergency visitor services would be provided as described under Alternative 1a.

#### **2.11.3.5 Event Staffing and Command Operations**

All event staffing and command operations would occur as described in Section 2.4, Activities and Elements Common to All Action Alternatives, except for the Parkdale Viewing Center/parking lot staff, which is not proposed under Alternative 4.

#### **2.11.3.6 Traffic Management**

With the exception of traffic management measures in the vicinity of Harvey Bridge, traffic management measures, such as VMS, speed reductions, pullout closures, and uniformed officer presence, would be the same as described in Section 2.4, Activities and Elements Common to All Action Alternatives or under Mitigation Measures.

The Parkdale Viewing Center is not proposed under this alternative, therefore, related traffic management measures are omitted.

#### **2.11.3.7 Emergency Services and Response**

All emergency services and response strategies would be provided or operated as described in Section 2.4, Activities and Elements Common to All Action Alternatives. Emergency services and/or response vehicles would still be staged at Parkdale.

### **2.11.4 Removal / Restoration**

Removal of the physical features of the work of art would commence immediately after the 14-day viewing period and would be completed within approximately 3 months, weather permitting.

#### **2.11.4.1 Removal Activities**

Removal activities, logistics, and timeframe would occur as described in Section 2.4, Activities and Elements Common to All Action Alternatives.

#### **2.11.4.2 Removal Period Visitation**

Removal period visitation is anticipated to be notably less than described for Alternative 1a due to the overall reduced level of interest in the project. Approximately 15,000 visitors would visit during the removal period. The distribution of visitors throughout the removal period would be similar to that described for Alternative 1a.

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**Table 2-13. Design Features Common to All Action Alternatives**

No.	Design Feature
	<b>Air Quality</b>
	Project crews (installation, removal, staff, etc.) shall utilize practicable methods and devices to control, prevent, and otherwise minimize atmospheric emissions or discharges of air contaminants during all project phases.
	Equipment and vehicles that show excessive emissions of exhaust gases due to poor engine adjustments, or other inefficient operating conditions, shall not be operated until repairs or adjustments are made.
	<b>Avian Wildlife</b>
	Avoid removing any trees that have evidence of being used as a nest tree (i.e., presence of constructed, natural, or excavated nesting cavities).
	Contact CDOW and BLM wildlife biologists if any active/inactive raptor nests are located during project implementation.
	No nighttime construction activities would occur at the County Line site during the period April 1-October 1 in order to minimize disturbance to the Townsend's big-eared bat.
	If construction occurs during the avian breeding season (roughly between March 15 and September 1), surveys would be conducted no earlier than 72 hours prior to any ground disturbing activities to ensure the project complies with the Migratory Bird Treaty Act (MBTA). Avian nesting surveys would be conducted prior to construction to ensure ground disturbing activities do not result in the "take" of an active nest or migratory bird protected under the MBTA.
	Nest area no-activity buffer zones, winter roosting buffer zones, and hunting perch buffer zones would be developed consistent with CDOW's 2008 Recommended Buffer Zones and Seasonal Restrictions for Colorado Raptors around any active raptor nest (CDOW 2008b).
	Prior to the fabric panel installation ("blossoming") and removal, flight diverters would be installed on all over-river cables to minimize the risk of avian collision.
	<b>Aquatic Wildlife</b>
	(Refer to the Design Features listed for the Hydrology and Soils resources.)
	<b>Cultural and Historic Resources</b>
	Project crews would be informed of the need to cease work in the location if cultural resource items are discovered.
	Construction activities would be monitored or sites flagged to prevent inadvertent destruction of any location that should be avoided.
	Construction activities would be monitored to prevent vandalism or unauthorized removal or disturbance of cultural artifacts or materials from sites.
	Heavy trucks and other equipment would not drive across historic properties when unimproved access roads are wet.
	If any cultural resources that were not discovered during pre-project inventories are encountered during construction, ground disturbance activities at that location would be suspended until the provisions of the NHPA, 36 CFR 800 regulations, and the BLM-Colorado Protocol Agreement have been carried out.
	<b>Fire Risk Management and Response</b>
	All cutting and welding activities would be limited to the staging and laydown areas or would be performed off site.
	Vehicles that would be used off of existing roadways would be equipped with heat shields, and other equipment would have spark arrestors.
	All work crews would be trained in quick response wildfire suppression techniques. Fire suppression equipment, such as extinguishers, shovels, sand, pulaskis, etc., would be provided to each work team.
	Fire suppression equipment, including a water truck, would be located at Texas Creek. Each work crew would be equipped with DTRs, capable of communicating via dispatch with emergency service providers.
	Caches of hand-held firefighting equipment would be located at Parkdale and Vallie Bridge.
	<b>Hazardous Materials</b>
	All petroleum products and other hazardous materials used for installation purposes would be handled and stored to prevent accidental spillage or other harm to the project area.

No.	Design Feature
	Each installation/removal team would be trained in recognizing, containing, and mitigating the hazardous materials used in the installation, such as gasoline, diesel, hydraulic fluid, oil, etc.
	Containment equipment would be located with every team so that a hazardous materials spill can be immediately contained to minimize any environmental damage.
	Spill mitigation materials and equipment would be placed at the staging and laydown area so they are available quickly.
	Hazardous materials, including chemicals, fuels, and lubricating oils, would be stored at least 100 feet from a wetland or other waterbody.
	<b>Hydrology</b>
	Avoid soil-disturbing actions during periods of heavy rain or wet soils. This includes times where severe puddling or runoff occurs along trails and roads, or obvious tracks or ruts can be seen following passage. Periods of heavy snowmelt should also be considered. Apply travel restrictions to protect soil and water during these times.
	<p>Procedures would be developed and training would be provided to limit the potential for any leaks and/or spills during equipment refueling activities. This includes:</p> <ul style="list-style-type: none"> <li>• To the extent possible, refueling equipment at least 100 feet away from any waterbody or wetland area.</li> <li>• Providing spill kits at all job sites so that immediate response to any spills can occur.</li> <li>• Providing leak/spill response training to installation crews.</li> <li>• To the extent possible, when storing equipment overnight at work sites, equipment should be moved more than 100 feet away from any waterbody or wetland area.</li> </ul>
	<b>Public Safety</b>
	An evacuation plan would be developed as part of the event management planning process for the US 50 corridor in conjunction with local agencies and emergency management staff. Sufficient law enforcement personnel, emergency service providers, and event visitor information centers/signs would be available in the corridor during the exhibition phase to implement the corridor evacuation plan that is adopted.
	<b>Recreation</b>
	No installation activities would be permitted on the highway side of the river during the summer months (June, July, and August). However, activities would continue outside of wildlife seasonal avoidance periods on the railroad side during the summer months.
	OTR Corp and contractor crews would conduct a weekly on-site job briefing with State Parks' staff to identify active work locations and potential hazards. This briefing would include a Job Site Specific Hazard Analysis.
	Signage and notices would be posted at various boat put-in areas to advise commercial and private boaters of construction activities and progress.
	<p>A minimum of six spotters would be positioned up- and downstream of the active installation locations. Two spotters, located on opposite river banks, would be located at least 200 yards upstream to warn boaters of activities downriver; exact locations would be chosen to allow safe stopping of boaters if required. A second set of two spotters, located on opposite river banks, would be located upstream within 200 yards of the active installation sites. The third set of two spotters, located on opposite river banks, would be located immediately downstream of the active installation site. All spotters would be equipped with signage, PA microphones, and radios. Spotters would be responsible for notifying oncoming boat traffic of construction activities as well as notifying the cable pulling crews of boat traffic. Spotters would be provided as needed to ensure boating safety during the removal phase.</p>
	<b>Soils and Geology</b>
	Rubber mats and treads would be used to minimize surface disturbance where possible.
	Disturbed soils and work areas would be covered during off-work periods.

No.	Design Feature
	<p>At a minimum, the following Best Management Practices (BMPs) would be utilized at all staging, information, and parking areas to control stormwater runoff, provide sediment control, and aid in soil stabilization.</p> <ul style="list-style-type: none"> <li>• Harden soil surfaces at high use areas with compaction equipment.</li> <li>• Install sediment fence downgradient from loose or exposed soils.</li> <li>• Install temporary drainage diversion features.</li> <li>• Cover exposed piles of soil or construction materials with plastic sheeting to prevent contact with rainwater.</li> <li>• Where the soil surface would be hardened, the use of road fabric is recommended. Road fabric is a permeable woven geotextile that allows water on the surface to flow through the gravel to the soil beneath, but is strong enough to reduce rutting and restrict subgrade soil particles from working up into the gravel surface. This dramatically reduces the amount of gravel necessary to keep the trafficked area in service.</li> </ul>
	<p>The following criteria would apply for restoration of all heavily impacted areas, such as parking and staging areas, unless otherwise agreed to by the land management agency or landowner:</p> <ul style="list-style-type: none"> <li>• Remove gravel and geotextile fabric from soil surface (if applied) and dispose of properly.</li> <li>• Decompact compacted areas by cross-ripping large areas or subsoiling to the depth of compaction.</li> <li>• Recontour to the original land contours.</li> <li>• Seed with native seed mix.</li> <li>• Mulch with certified weed-free straw.</li> <li>• Install sufficient traffic barriers to prevent trespass and allow for recovery.</li> </ul>
	<p>Equipment would only be operated when soils are dry (below the plastic limit to a depth of 6-8 inches or more) or frozen. If rutting over 3 inches in depth occurs, soil is too wet to operate and detrimental soil mixing and a reduction in soil productivity may occur.</p>
	<p>In large, heavily disturbed areas (i.e., staging areas or visitor information centers), soil shall be returned to any excavated area in the order it was removed. This would ensure the nutrient and biologically rich topsoil would stay at the surface. Excess subsoil/soft bedrock excavated for foundations beyond 14 inches in depth should be disposed of with construction debris.</p>
<p><b>Sound Resources / Noise Management</b></p>	
	<p>To avoid nuisance conditions due to construction noise, all internal combustion engines used in connection with construction activity shall be fitted with an approved muffler and spark arrester.</p>
	<p>Acoustical shrouds would be used to the greatest extent feasible when in proximity to residences and/or recreation sites.</p>
<p><b>Terrestrial Wildlife</b></p>	
	<p>A seasonal restriction on all project activities would be implemented on the railroad side of the river between Cleora and Wellsville and between Texas Creek and Parkdale during the big horn sheep lambing period (April 15-June 30).</p>
<p><b>Transportation and Traffic</b></p>	
<p><b>Installation and Removal/Restoration Periods</b></p>	
	<p>Work requiring lane closures on US 50 would not be performed during the peak summer months.</p>
	<p>During work phases, any closures required on US 50 for construction would be limited to one lane for up to 400 feet per activity location, and activity locations would not occur at closer intervals than 10.0 miles apart.</p>
	<p>MUTCD and CDOT's Standard for Traffic Control Plans shown in M &amp; S Standards would be utilized.</p>
	<p>Portable VMS would be located to advise motorists during the exhibition phase only. VMS would be used in two locations for the westbound direction and two for the eastbound direction. The VMS would be remotely controlled by the operations center during the exhibition.</p>
	<p>Local residents, recreation users, commercial operators, visitors, and normal traffic utilizing the corridor would be accommodated with as little impact as possible.</p>

No.	Design Feature
	When necessary, lane closures shall be accomplished in accordance with CDOT Regions 2 and Region 5 Lane Closure Strategy technical documents published in 2008. These documents provide guidance on when lane closures are allowed on CDOT highways, including any time of day and day of week restrictions when lane closures are not allowed on US 50. Within the 2008 published documents, no time of day or day of week restrictions are outlined for US 50 in the project area.
	All highways and roads would remain open to traffic at all times unless congestion reaches unacceptable levels. If congestion reaches unacceptable levels and CSP and/or CDOT determined that these conditions present safety or other problems, closures, diversions, detours, and/or other measures would be implemented. The details would be determined by CDOT and CSP based on their standards and policies and the situation experienced.
	An Incident Management Plan would be prepared as part of the event management planning process that establishes the protocol and steps to be taken under specifically defined conditions for the preferred alternative.
	<b>Exhibition Period</b>
	All pullouts on US 50 within 0.5 mile of any fabric panel would be closed and vehicles would not be allowed to stop on US 50 within these limits. Other pullouts along US 50 would be used for staging emergency vehicles or would remain open for use.
	Pedestrian travel would not be allowed along US 50 within the exhibition corridor at any time. Bicycle travel along US 50 would be prohibited on Friday, Saturday, and Sunday during the exhibition. SH 9 would be the designated alternate route for bicycles. Early and effective notice describing event restrictions would be distributed to cyclists.
	Intersection operations at Parkdale and Texas Creek would be managed by uniformed traffic controllers or traffic signals as appropriate between 9:00am-5:00pm Friday through Monday, and as needed at other times based on traffic conditions. The frequency and duration of each intersection movement allowed by the uniformed traffic controllers would be in response to actual traffic volumes, standard practices, and safety requirements. Temporary signals controlled by uniformed traffic control officers could also be considered, depending on the preference of the CSP or other uniformed traffic controllers.
	Flaggers and event staff would also be used along US 50 to prevent vehicles from stopping in inappropriate locations, to manage speeds in panel viewing areas (maximums and minimums), and to provide guidance for traffic during an incident such as a stalled vehicle. Posted speed limit reductions of 10 mph would be applied at all exhibition sites.
	Law enforcement, security, emergency responders, and tow trucks would be active and staged in selected areas to keep traffic moving. Additional details would be provided in the Incident Management Plan for the preferred alternative.
	Temporary traffic control devices would be installed at Parkdale to prevent eastbound motorists on US 50 from turning left into Parkdale. This is necessary to prevent long delays and safety issues that would occur if left turns were allowed.
	Temporary traffic control devices would be used in select locations along US 50 for various purposes, such as reduction of head-on crashes or for prohibiting unsafe turning movements. Traffic lane delineation would be established with cones at the Parkdale and Texas Creek intersections to increase traffic flow efficiency and provide clarity for motorists.
	Temporary signals would be used to manage travel demand at major intersections and recreation sites. The major intersections include Royal Gorge, SH 9, SH 69, the road to the back side of Royal Gorge, Harvey Bridge, Cotopaxi, CR 45, Pinnacle Rock, and Spikebuck. Due to the fluctuating nature of visitation, the signals shall be operated by a trained traffic technician to determine when a signal phase is activated.
	<b>Vegetation</b>
	Best efforts would be made throughout installation, viewing, and removal to preserve the native vegetation and minimize human impact on the river corridor.
	It is expected that bare ground would be exposed by project activities. If erosion becomes a concern for the BLM or any of the Cooperating Agencies, construction of water bars, spreading mulch, brush piles, and/or seeding with a native or sterile cover crop would be required during post-project restoration.
	All revegetation would be accomplished using native species and/or a sterile cover crop. All seed would be certified weed-free via the All-States Exam. Species lists for revegetation would be developed in consultation with the BLM botanist or the botanical representative.
	All seed used would be tested for noxious weed seed using an All States Exam by a federally approved facility. Results would be provided to the BLM prior to seeding.

No.	Design Feature
	Presence of any seed that is either prohibited or restricted under the Colorado Weed Seed Act would result in the seed lot being rejected and replaced by the project proponent at proponent's cost. Replacement seed would be retested.
	All mulch would be certified weed-free.
	All project crews and staff would follow a "clean vehicle policy." Equipment would be clean and clear of mud or vegetative debris when brought on site in an effort to minimize the spread of noxious weeds. An inspection program would be implemented and vehicle cleaning would occur off site.
	OTR Corp would be required to reclaim all disturbed areas as soon as practical after hardware removal, and would implement a weed control program (developed in consultation with the BLM and Cooperating Agencies) if the project causes the spread of weeds.
	OTR Corp would be required to develop and implement a noxious weed management plan to minimize the spread of noxious weeds within the Project Area and to mitigate potential impacts to wildlife forage and habitats.
	Known rare plant sites would be avoided where possible.
	If hazard trees must be felled, they would be hand-cut and directionally felled away from rare plant individuals.
	No machinery would be operated within a rare plant population occurrence unless agreed upon in writing by the BLM or landowner.
	A biological site monitor, familiar with the sensitive species detected on site, would be present when work is initiated at documented sites for these species. Individual populations of special status plants would be marked and avoided if practicable during the construction process.
	If new site information regarding threatened, endangered, proposed, sensitive, or rare species is located, the BLM botanist or botanical representative would be notified immediately.
	<b>Visual Resources</b>
	All above-ground hardware would be removed during the removal period.
	Color-matched grout mixed with original rock cuttings would be used for repairing exposed bedrock anchor locations to blend with the surrounding rock face.
	<b>Wetlands and Riparian Areas</b>
	If construction in floodplains and wetlands were to cause soil compaction or ruts, long-term impacts to wetland vegetation could occur. To avoid this impact, OTR Corp would limit construction in floodplains and wetlands to periods when soils are dry or frozen, and/or use measures to support construction equipment (e.g., oversized treads on equipment, tracked equipment, matting) to avoid compacting soils and creating ruts.
	Equipment would not operate in streams, riparian areas, or in wetlands.

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## 2.12 DESIGN FEATURES COMMON TO ALL ACTION ALTERNATIVES

Design features are management practices or project requirements that can minimize or eliminate adverse effects of project implementation. Design features common to all action alternatives are shown in Table 2-13. Design features specific to one alternative only are discussed within the respective alternative description.

Design features and monitoring requirements have been incorporated into the action alternatives to respond to relevant issues raised. They are not intended to replace or substitute BLM management policies, but to support where resource management direction is absent or outdated. They are intended to ensure compliance with the RMP and to avoid, minimize, or compensate for any potential adverse impacts of the proposed project. Design features include specific monitoring requirements for the avoidance of unexpected resource effects and the completion of project design and implementation. The effectiveness of all design features and monitoring activities will be assessed in more detail in Chapter 4.0, Environmental Consequences.

## 2.13 ALTERNATIVES CONSIDERED BUT ELIMINATED

Various alternatives and alternative elements were considered but eliminated from further analysis because they did not meet the purpose and need of the project; were not feasible due to project area constraints; or would have resulted in unacceptable resource impacts. Alternatives and alternative elements considered but eliminated are described below. For each element, the rationale for elimination is briefly provided.

### 2.13.1 Panel Placement

**10.4 miles of panels at 9 sites** (*Artists' original proposal*) – The OTR proposed work of art was originally designed to include 10.4 miles of fabric panels suspended over the Arkansas River at 9 different areas within a 46.0-mile stretch of river. This design included longer areas and an additional area at Five Points/Sheep Basin. Based on information and guidance provided by the BLM and CDOW, the area at Five Points/Sheep Basin was identified as a major sheep watering hole, and fabric panels were eliminated to avoid potential impacts to bighorn sheep (J.F. Sato 2007, Section 4.3.6).

**7.7 miles of panels at 7-9 sites** (*Artists' modified proposal*) – To minimize impacts to bighorn sheep, the OTR proposed work of art was redesigned to include only 7.7 miles of fabric panels. The Artists agreed to further reduce this design to address recreation and public safety concerns at locations where rescues frequently occur. Elimination of these fabric panels enhances water rescue efforts. In addition, because of public safety concerns, several sections of fabric panels were eliminated near County Line, where it was determined that overhead power lines presented a potentially hazardous situation (J.F. Sato 2007, Section 4.3.6).

### 2.13.2 Transportation Considerations

**Unmanaged personal vehicle access** – Visitors would use US 50 without changes or roadway management. This option leaves current roadway and operational conditions along US 50 unchanged during the exhibition period. Anticipated traffic demands during the event and the unusual driving conditions created by a roadside attraction would create unacceptable capacity and safety conditions

without special efforts to manage travel on US 50. Therefore, this option was eliminated from further consideration.

**Add new lanes to US 50** – This option considered the potential of building additional lanes and/or new pavement to expand US 50 to provide “viewing” lanes in panel locations. This option was eliminated due to topographic constraints to construction of additional lanes along US 50, construction costs, and the potential for various adverse environmental effects. The monetary and environmental costs for these long-term improvements would be substantial and inconsistent with the short-term need created by the project. Therefore, this option was eliminated from further consideration.

**Close US 50 to through traffic during event** – This option would close US 50 to through traffic, allowing exclusive visitor access to the exhibition via personal vehicles. Measures would be included to allow access to landowners, residents, and local business operators, but vehicles used for commercial interstate transport of goods would be excluded. US 50 is a major federal facility and important east/west travel corridor. Closure of US 50 and the use of lengthy detours for a short display period of 1 to 4 weeks would present potential conflicts with federal laws and regulations associated with interstate transportation and commerce. Closure of US 50 would substantially delay and limit mobility and access in the project corridor. The use of lengthy detours for commercial traffic would increase safety risks on local roads. Upgrading these roads is anticipated to be too costly to include as a part of this option. This option was therefore excluded from further analysis in this document.

**One way (westbound) US 50 during event** – This option would limit US 50 to one lane westbound from Parkdale (Junction Fremont CR 3) to Texas Creek (Junction SH 69). US 50 would be closed to eastbound traffic and restriped to allow US 50 to operate as a westbound only facility. Detours would be set up for vehicles wanting to travel eastbound from Texas Creek to Parkdale. Eastbound detours would use FCR 1A, SH 69, SH 96, and SH 67 via Florence. This option would not allow daily access from the east to landowners, residents, and local businesses for the duration of the exhibition period. Additionally, closure of one lane of US 50 and the use of lengthy detours for a short display period of 1 to 4 weeks would present potential conflicts with federal laws and regulations associated with interstate transportation and commerce. Closure of US 50 would substantially delay and limit mobility and access in the project corridor. The use of lengthy detours for local and through traffic on roads not designed for such traffic would increase safety risks, and upgrades to those roads are anticipated to be too costly to include as a part of this option. This option was not further analyzed within this document.

**Exclusive transit access only** – This option would implement a system where project visitors must use transit to view the exhibition. Visitors would board a bus or train in a designated area and be shuttled to and from predetermined viewing areas. This option presents similar conditions to the Close US 50 alternative. Restricting access to a federal/state highway would present potential conflicts with federal laws and regulations associated with interstate transportation and commerce. Therefore, this option was eliminated from further consideration.

**Pilot car system (all vehicles)** – This option would provide visitors with an opportunity to see the exhibition from their personal vehicle, escorted by pilot cars leading and following platoons of vehicles starting and ending at designated areas. The pilot cars would lead the platoon through the corridor to and from predetermined viewing areas. Local traffic and visitors would be allowed open access to the corridor, but each platoon would get exclusive access to certain locations. Vehicle occupants would be permitted to get out of their vehicles at selected stopping points for limited time periods. Based on estimated visitation, platoons would need to be over 200 vehicles long to accommodate visitor demand

in the peak hour. This length would be unmanageable at the starting, stopping, and end points of the pilot car service. Optimizing platoon performance by limiting the length to a manageable number of vehicles (500-600 feet, which would accommodate 20-25 vehicles at 20 to 30-minute intervals) would limit visitor access to about 190 persons (assuming 2.5 passengers per vehicle) per hour (75 cars per hour), or about 5.7% of peak hour travel demand (1,300 vehicles per hour). This benefit is insufficient to reach acceptable levels of service on US 50. Therefore, this option was eliminated from further consideration.

**Wave starts/viewing windows** – This option would provide visitors with a designated window of time when they could be released from the Parkdale parking lot in their personal vehicles to view the art in the corridor, while holding westbound through traffic during the release of visitors. This approach provides some separation of visitors and through traffic, and manages travel out of the Parkdale area. Wave starts are a lot like a pilot car system without the support of a pilot car in front and in the back of the platoon of vehicles. As with pilot cars, wave starts would limit the amount of visitors that are allowed to use US 50 within any given window of time or wave. This would spread the peak demand over a longer time of the day compared to unmanaged visitor departure. The wave start concept would operate in a manner similar to work zones, where through traffic is required to stop for an extended period of time while construction activities (such as blasting) or opposite direction traffic is allowed to pass. A wave start duration of 20 minutes with 5-minute separation was used because that is the common wait time CDOT uses in construction situations. There is an operational consequence of this concept. The consequence is that the capacity of the road available to serve the demand would be significantly reduced. It was determined that the capacity would be 9,800 vehicles per day, far less than the anticipated demand of 15,000 vehicles per day. This gap would cause peak period demand to exceed wave capacity, causing queuing at Parkdale. Therefore, this option was eliminated from further consideration.

**Passenger rail through project area** – This option would allow visitors to see the exhibition from rail cars with an extension of the Royal Gorge passenger rail system to the western end of the exhibition. Project visitors would be allowed to view the project from their rail car only. (See also Passenger rail up to Pinnacle Rock.) Passenger rail service extending the existing Royal Gorge service to Salida would require a third party to modify their ongoing passenger rail service from Cañon City through Royal Gorge to a location further up the Arkansas River canyon. Consultation with UPRR indicates that track bed, rail, signal, and other improvements and corresponding permitting would need to be completed before the anticipated route would be ready for service.

The passenger rail option to Salida has been eliminated from further consideration because the improvements from the current turnaround to Salida would include substantial track bed, rail, and signal upgrades that would be cost prohibitive, especially since there would be substantial difficulties securing permission from UPRR to use these tracks for long -tem passenger rail service.

The passenger rail option to Salida is problematic for two primary reasons: (1) rough estimates define the cost for these improvements at \$40,500,000, and (2) the use of the rail for viewing is not expected to substantially change traffic levels on US 50.

**Passenger rail up to Pinnacle Rock** – This option would limit the rail extension described previously to Pinnacle Rock located approximately 3.0 miles from the point where the existing service changes directions. The Pinnacle Rock option would allow visitors to see the Parkdale area only. The rough cost estimate for this option would be \$2,700,000. This cost is substantially lower than an extension to Salida

and would result in far lower ticket price increases. However, it would also provide a limited view of the exhibition, thereby, increasing the potential number of rail visitors who might ride the train and choose to see the remaining areas via personal vehicle trips on US 50. Therefore, this option was eliminated from further consideration.

**Organized air/helicopter tours** – This option would allow visitors to view the entire project by helicopter or aircraft, consistent with existing aviation requirements. Air tours are feasible, but would not handle a meaningful number of visitors relative to peak period visitor demand. A transportation service of this sort is not precluded nor would it be relied upon to make a difference during the exhibition period. Therefore, this option was not further analyzed for the purposes of this document.

**Unmanaged bicycle use** – This option would allow bicycle use during the exhibition period. Anticipated traffic demand during the event and the unusual driving conditions created by a roadside attraction would create unacceptable bicycle safety conditions. Therefore, this option was eliminated from further consideration.

**Managed bicycle events** – This option would provide specific dates and times for exclusive bicycle access along US 50 and the exhibition areas. Bicycles would be allowed access to predetermined viewing areas. Local motorized traffic would not be allowed access to the corridor during the bicycle events. Bicycle use during one or more special events may be feasible if the events occur at off -peak hours and on off-peak days. Bicycles can use US 50 under normal circumstances. As exhibition traffic increases, the conflicts between bicycles and motor vehicles would proportionately increase. A bicycle event would not have a meaningful effect on vehicle travel because most cyclists and/or their traveling companions would travel to and from the event corridor in a motor vehicle, and could still elect to view the exhibition by car before, during, or after the bike event. Therefore, this option was eliminated from further consideration.

### 2.13.3 Visitor Management Strategies

**Allow pedestrian use of UPRR** – This option would allow visitors to use the inactive UPRR rail line paralleling the Arkansas River as a hiking trail to view the project. However, UPRR has indicated they would not allow this use of their rail line due to liability concerns. It was therefore eliminated from further consideration.

**Allow use of informal pull -outs for viewing**– This option would allow passenger vehicles to pull off US 50 into informal pull -outs on the highway shoulder. There are multiple pull -out areas along US 50 that are used to access the river for fishing and other recreational activities. Allowing vehicles to park in these areas would increase the likelihood of viewers walking from these points along the highway shoulder to view the panels, thus increasing the potential for accidents. In addition, the movement of vehicles in and out of these areas would have a major adverse effect on traffic flow. Therefore, this option was eliminated from further consideration.

**Create parking areas for viewing using passing lanes (with pilot cars)** – Where passing lanes exist on US 50 (creating a third lane), this option would construct temporary concrete barricades to section off these lanes for visitors to stop, exit their vehicles, and view the art with the assistance of lead and rear pilot cars. The passing lanes on US 50 serve an important function. Closing them to traffic movement during the display period would likely increase congestion and make movement of emergency vehicles more difficult. Therefore, this option was eliminated from further consideration.

**Provide event visitor information center at Parkdale with no bridge upgrade (Artists' Original Proposed Action)** – The Artists considered proposing a staging area/event visitor information center on private land in the Parkdale area that would accommodate up to 900 vehicles without an upgrade of the Harvey Bridge. However, CDOT expressed concern that vehicles entering the lot from US 50 may stack up and congest westbound traffic, even if limited to a right turn access only, due to the one-lane bridge access to this area. Because US 50 is a two-lane road in this area, there is no opportunity to create a turn lane at this location. Therefore, this option was eliminated from further consideration.

**Provide event visitor information center at Parkdale, on alternative site(s)** – Provide temporary staging area and event visitor information on the south side of the Arkansas River in the vicinity of Parkdale. Access to the Parkdale Viewing Center would not require a river crossing. This option was developed to provide an alternative to crossing the one-lane bridge at Parkdale. However, a site on the south side of the river would require westbound traffic to turn left into the visitor information center, a movement that is more difficult to accomplish and that would likely result in unacceptable congestion and increased safety hazards. Therefore, this option was eliminated from further consideration.

**Provide event visitor information center at Texas Creek, rebuild bridge or install temporary bridge** – Provide temporary staging area and event visitor information center on the north side of the Arkansas River at Texas Creek. Access to the Texas Creek visitor information center would require crossing the river via a new or temporary bridge. It was determined, however, that the site at Texas Creek is constrained by topography and adjacent land uses. A new or temporary bridge at this location would be difficult to construct, costly, may require modifications to US 50, and would likely result in unacceptable resource damage. Therefore, this option was eliminated from further consideration.

**Provide staging area/event visitor information center at Texas Creek, on alternative site(s)** – Provide temporary staging area and visitor information on the south side of the Arkansas River in the vicinity of Texas Creek. Access to the Texas Creek event visitor information center would not require a river crossing. This option modifies the Artists' Proposed Action to address concerns regarding the one-lane bridge and associated congestion on US 50. However, there is no suitable terrain on the south side of the river for an alternative staging area/event visitor information center. Therefore, this option was eliminated from further consideration.

**Texas Creek Panel Viewing Area** – An expanded visitor facility was considered at Texas Creek, one that would include a large parking area and a walking path to a panel area overlook. However, an expanded visitor facility would require replacing the existing Texas Creek Bridge with a two-lane bridge, or providing a temporary bridge. As discussed previously, both of these options were determined to be infeasible. Therefore, this option was eliminated from further consideration.

**Removal of all boat rations** – The removal of all commercial boat rations during the exhibition period was considered to minimize complications for managing boating limits in future years, and to evaluate potential revenue benefits for State Parks. However, the likelihood of boating use reaching levels far beyond defined carrying capacities, the potential for increased risk to boater safety, and the potential for resource damage was judged to be too great to carry this alternative forward for further analysis.

#### **2.13.4 Temporal Considerations**

**Extended viewing period (consider total exhibition duration of >3 weeks)** – Extending the length of time the panels are in place would increase the potential for adverse effects to aquatic resources and other

habitats. For example, a longer display period would increase the potential for avian collisions, prolong the barrier effect (if any exists) for sheep movement, and extend the period of potential shading vegetation and aquatic habitat. Although congestion may diminish somewhat with an extended viewing period, it would be offset by the increased length of time when residents would need to contend with increased traffic and visitation. As such, this option does not offer any unique solutions to issues identified by the public, Cooperating Agencies, or the BLM.

**Compressed viewing period (consider total exhibition duration of <2 weeks)** – This option was eliminated due to an increased potential for traffic congestion. Visitors would be forced to concentrate within a limited viewing period, potentially resulting in a similar number of visitors attempting to experience the project within an abbreviated period.

## **2.14 COMPARISON OF ALTERNATIVES**

Table 2-14 provides a comparison of the impacts of all alternatives.

**Table 2-14. Impact Summary Table**

Impact Summary By Project Phase	No Action	Alt 1a (Artists' Proposed Action)	Alternative 1c	Alternative 1d	Alternative 2	Alternative 3	Alternative 4
<b>BIOLOGICAL RESOURCES</b>							
<b>Terrestrial Wildlife and Habitat</b>							
Installation*	No impact.	Installation activities have the potential to disperse bighorn sheep from primary habitat requirements such as water, cover, and forage within the Analysis Area. If in the short-term over 200 sheep are unable to adapt to installation activities and disturbances in the Analysis Area, population dynamics, fecundity, and survivorship of individuals, as well as the overall herd, may be moderately-significantly affected over the long-term. 6.0 acres would be directly disturbed.	Same as Alternative 1a.	Same as Alternative 1a.	The area of disturbance associated with installation activities would be reduced by this alternative, resulting in approximately 4.0 acres of direct disturbance compared to Alternative 1a. The elimination of panels and construction activities west of Texas Creek would reduce impacts to the Brown's Canyon herd of bighorn sheep. In particular, this alternative would lessen impacts at the County Line panel site, which is a high use site for bighorn sheep. The overall level of impact on bighorn sheep would remain moderate-significant.	The area of direct disturbance would be reduced to 4.2 acres compared to Alternative 1a. Eliminating construction activities at key locations, such as frequent watering areas or other concentration areas, may allow bighorn sheep and other wildlife to access the river with lower levels of stress, thus reducing long-term impacts. The overall effect on bighorn sheep would be reduced to a moderate level of impact.	The area of direct disturbance would be reduced to 1.6 acres compared to Alternative 1a. The removal of all panels within the ACEC and elimination of any construction activities within that area would substantially reduce impacts to wildlife in the lower canyon, including bighorn sheep and a variety of other species. The overall degree of impact would be reduced to a minor level for all species as a result of a greatly reduced panel configuration and greatly shortened installation period.
Installation*	No impact.	Installation activities have the potential to disperse mule deer from primary habitat requirements such as water, cover, and forage within the Analysis Area. If in the short-term deer are unable to adapt to installation activities and disturbances in the Analysis Area, population dynamics, fecundity, and survivorship of individuals, as well as the overall herd, may be moderately affected in the long-term.	Same as Alternative 1a.	Same as Alternative 1a.	The elimination of construction activities above Texas Creek would reduce disturbance to other species and their habitat within this area, including the mule deer crossing area between MM 234 and 235.	Same as Alternative 1a.	The overall degree of impact would be reduced to a minor level for all species as a result of a greatly reduced panel configuration and greatly shortened installation period.
Installation*	No impact.	Impacts to bat species would result from increased collisions with cables and panels, and resulting mortality. If bats can detect and avoid the cables, there would be minor to moderate, short-term impacts on bats.	Same as Alternative 1a.	Same as Alternative 1a.	The elimination of construction activities above Texas Creek would reduce disturbance to other species and their habitat within this area.	Same as Alternative 1a.	The overall degree of impact would be reduced to a minor level for all species as a result of a greatly reduced panel configuration and greatly shortened installation period.
Exhibition*	No impact.	The exhibition phase of the project would result in a moderate-significant effect on bighorn sheep as a result of restricted access to water and increased stress.	Overall effect would be the same as Alternative 1a. Extending the exhibition period by one week would slightly increase the length of time that bighorn sheep would be displaced from portions of their habitat. Negligible to minor short-term effects are anticipated as a result of modified boat rations.	Same as Alternative 1a.	This alternative would have a somewhat lower level of impact on wildlife. The elimination of panels above Texas Creek would reduce the obstacles for bighorn sheep and other species to utilize water and riparian areas in the upper portions of the river corridor. A June/July viewing period is closer to the bighorn lambing season and the installation period would likely have greater impacts to lambs and lambing. Overall level of impact would remain moderate-significant.	The breaks in panels proposed under this alternative have been designed to provide bighorn sheep improved access to water resources and would have a reduced level of impact. Exhibition would result in a moderate level of impact on bighorn sheep.	Same as Alternative 1a, except no panels would be present in the ACEC, reducing the level of impact to minor.
Exhibition*	No impact.	Depending on bat detection and avoidance, collision with fabric panels would be a minor to moderate impact. If bats detect the panels but are unwilling to fly under them to feed or obtain water, impacts would be substantially greater.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	A reduction in the length of panels at strategic sites would lower the risk of bat collisions to a minor level.	Same as Alternative 1a, except no panels would be present in the ACEC, reducing the level of impact to minor.
Demobilization*	No impact.	The effects of demobilization activities would be similar to those described for the installation period, but they would occur over a much reduced time period (3 months). New areas of disturbance would not result from this phase of the project; the primary effect of this project phase would be a continuation of the noise and other activities that would add to the stress of bighorn sheep and other species.	Same as Alternative 1a.	Same as Alternative 1a.	No demobilization activities would occur above Texas Creek reducing the obstacles for bighorn sheep and other species to utilize water and riparian areas in the upper portion of the river corridor.	Reduced demobilization activity in key locations may allow bighorn sheep and other wildlife to access the river with lower levels of stress, thus reducing localized impacts.	The extent of disturbance would be greatly reduced and impacts would be reduced to minor. No demobilization activities or effects would occur within the ACEC.
<b>Avian Wildlife and Habitat</b>							
Installation*	No impact.	Installation activities can be expected to result in a moderate to significant impact to golden eagles, depending on how project activities influence nesting success at Vallie Bridge.	Same as Alternative 1a.	Same as Alternative 1a.	No construction west of Texas Creek would eliminate impacts to the Vallie Bridge golden eagle nest site.	A reduced panel configuration would allow improved access to the river for avian foragers to feed and drink. This would reduce stress levels on individuals and groups.	No construction within the ACEC would significantly reduce impacts to avian wildlife in the lower canyon.

Impact Summary By Project Phase	No Action	Alt 1a (Artists' Proposed Action)	Alternative 1c	Alternative 1d	Alternative 2	Alternative 3	Alternative 4
Installation*	No impact.	Increased risk factors and potential for disturbance and mortality for raptor species would be a moderate to significant impact, depending on how raptors in the project vicinity respond to installation activities.	Same as Alternative 1a.	Same as Alternative 1a.	No construction west of Texas Creek would eliminate impacts birds in the western portion of the Analysis Area.	A reduced panel configuration would allow improved access to the river for avian foragers to feed and drink. This would reduce stress levels on individuals and groups.	No construction within the ACEC would significantly reduce impacts to avian wildlife in the lower canyon.
Installation*	No impact.	Installation would result in a moderate level of impact on passerines, waterfowl, and shorebirds, primarily resulting from nest disturbance and collision with cables and panels.	Same as Alternative 1a.	Same as Alternative 1a.	No construction west of Texas Creek would eliminate impacts birds in the western portion of the Analysis Area.	A reduced panel configuration would allow improved access to the river for avian foragers to feed and drink. This would reduce stress levels on individuals and groups.	No construction within the ACEC would significantly reduce impacts to avian wildlife in the lower canyon.
Exhibition*	No impact.	The overall level of impact during Exhibition would be moderate to significant, depending on the rate of mortality resulting from bird strike/entanglement and habitat displacement.	Extending the exhibition period by one week would increase the probability of avian wildlife collisions and entanglement. The primary impacts to wildlife occur as a function of the numbers of visitors, presence of cables and panels, and increased activity in suitable habitat areas. Negligible to minor short-term effects are anticipated as a result of modified boat rations.	Increased human activity in areas removed from the main highway-river corridor may result in short-term, minor disturbances to avian wildlife.	A June/July viewing would impact breeding birds that are not yet at fledging stage. An earlier exhibition period would result in an increased level of impact on many species that breed within the Analysis Area. These impacts would be partially offset by the reduced panel configuration, resulting in a moderate level impact.	A reduction in the amount of panel would lower the risk of avian collisions and reduce the barriers to on-water feeding.	It is anticipated that fewer visitors would leave the immediate viewing areas for alternative vantage points. The potential for disturbances to avian wildlife on slopes, cliffs, or in suitable ground-nesting habitat areas removed from the corridor is reduced under this alternative. The overall level of impact would be reduced to the minor level.
Demobilization*	No impact.	Demobilization activities would impact birds in the same way as the installation phase. An additional 3-5 years could be necessary to restore the habitat to its existing condition. During that time frame there would be additional impacts to wildlife from restoration teams stabilizing soils and replanting impacted areas and from lower quality habitat conditions that may exist while native forage species are being reestablished.	Same as Alternative 1a.	Same as Alternative 1a.	Below Texas Creek, impacts on avian wildlife would be the same as for Alternative 1a. No demobilization activities would occur above Texas Creek.	Same as Alternative 1a.	The extent of disturbance would be greatly reduced and impacts would be reduced to minor. No demobilization activities or effects would occur within the ACEC.
<b>Aquatic Wildlife and Habitat</b>							
Installation and Demobilization*	No impact.	Effects of surface disturbance on aquatic habitat from potential sedimentation include: Disturbance to drainage area along 5.9 river miles. Minor level impact from sedimentation on aquatic habitat during a 28-month period.	Same as Alternative 1a.	Disturbance area would be the same as Alternative 1a. Low-level impact on aquatic habitat from sedimentation during a shorter construction period (14 months) compared to Alternative 1a.	Disturbance to drainage area along 4.8 river miles. Minor impact to aquatic habitat from sedimentation.	Disturbance to drainage area along 4.1 river miles. Minor impact to aquatic habitat from sedimentation.	Disturbance to drainage area along 1.4 river miles. Sedimentation impact would be considered low. However, the magnitude would be reduced compared to Alternative 1a due to shorter timeframe (14 months) and reduced disturbance area.
Installation and Demobilization*	No impact.	Effects of noise and human activity include: Moderate-level impact during a 28-month period along 5.9 river miles.	Same as Alternative 1a.	Same as Alternative 1a.	Moderate-level impact during a 28-month period along 4.8 river miles.	Moderate-level impact during a 28-month along 4.1 river miles.	Moderate-level impact during a 14-month period along 1.4 river miles.
Exhibition*	No impact.	Effects of noise and human activity include: Moderate-level impact due potential physiological effects that could persist beyond the exhibition period.	Moderate to significant-level impact of noise and human presence on trout populations due to extension of viewing period and removal of boat rationing.	Moderate-level impact on trout populations from noise and human presence from increased rafting.	Same as Alternative 1a but viewing period would occur in June or July.	Moderate-level impact along 4.1 miles of panels.	Moderate-level impact along 1.4 miles of panels.
<b>Wetlands, Floodplains, and Riparian Habitat</b>							
Installation*	No impact.	Some wetland and riparian habitat would be trampled as part of the installation phase including anchor survey, and vegetation clearing. Cutting or trimming wetland and riparian vegetation may be required to set up survey equipment or to provide clear lines of sight. The drill operations would directly impact some riparian vegetation at some of the anchor locations.	Same as Alternative 1a.	Same as Alternative 1a.	Impacts to wetland, floodplain, and riparian habitat by trampling would be less for the installation activities.	Impacts to wetland, floodplain, and riparian habitat by trampling would be less for the installation activities.	Impacts to wetland, floodplain, and riparian habitat by trampling would be less for the installation activities. Alternative 4 installation activities would have no effect on native wetland, floodplain, and riparian habitat within the Arkansas Canyonlands ACEC.
Exhibition*	No impact.	Incidental impacts to wetland, floodplain, and riparian habitat associated with high recreational use, such as dispersed camping and cross-country hiking, would affect the existing wetland, floodplain, and riparian habitat, mostly through incremental trampling and related off-shoulder parking. Trampling impacts to wetland, floodplain, and riparian habitat could range from short-term minor impacts to long-term significant impacts, depending upon the behavior of the visitors.	The increased number of visitors and extended exhibition duration would likely increase the amount and intensity of the wetland, floodplain, and riparian habitat trampled outside of the monitored and patrolled area.	Same as Alternative 1a.	Same as Alternative 1a, except effects to wetland and riparian habitat outside of the active exhibit area are likely to increase due to less restricted access to lands along the river.	Same as Alternative 1a.	No viewing activities would occur within the ACEC. Therefore, the incidental trampling of wetland, floodplain, and riparian habitat by visitors wanting to view panels and hardware would likely be altogether eliminated in the ACEC. Parking impacts and viewing area impacts would be less with Alternative 4, reducing wetland, floodplain, and riparian habitat impact.

Impact Summary By Project Phase	No Action	Alt 1a (Artists' Proposed Action)	Alternative 1c	Alternative 1d	Alternative 2	Alternative 3	Alternative 4
<b>Vegetation and Plant Communities</b>							
Installation and Demobilization*	No impact.	A total of 5.5 acres would be disturbed by the drilling activities.	Same as Alternative 1a.	Same as Alternative 1a.	The Alternative 2 footprint is reduced to 4.1 acres.	The Alternative 3 footprint is reduced to 3.9 acres.	The Alternative 4 footprint is reduced to 1.6 acres. Alternative 4 installation activities would have no effect on native vegetation within the Arkansas Canyonlands ACEC.
Installation and Demobilization*	No impact.	A total of 84 acres would be disturbed at the Texas Creek staging area and other visitor sites.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Area disturbed would be reduced to 73 acres.
Installation and Demobilization*	No impact.	No trees are expected to be removed as part of this project. However, trees that obstruct anchor or cable installation activities would be trimmed.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Exhibition*	No impact.	Incidental impacts to vegetation associated with high recreational use, such as dispersed camping and cross-country hiking, would affect the existing native vegetation, most likely through incremental trampling and related off shoulder parking. Trampling impacts to vegetation could range from short-term minor impacts to long-term significant impacts, depending upon the behavior of the visitors.	The increased number of visitors and extended exhibition duration would likely increase the amount and intensity of the vegetation trampled outside of the monitored and patrolled area, compared to alternative 1a.	Same as Alternative 1a.	Effects to vegetation outside of the active exhibit area (e.g., Texas Creek) are likely to increase due to less restricted access to lands along the river.	Same as Alternative 1a.	No viewing activities would occur within the ACEC. Therefore, the incidental trampling of vegetation by visitors wanting to view panels and hardware would likely be altogether eliminated in the ACEC. Parking impacts and viewing area impacts would be less with alternative 4, reducing vegetation impact to 18.7 acres and would not include the Fremont Road Information Center.
<b>Noxious Weeds and Invasive Species</b>							
Installation*	No impact.	At each panel location, disturbance by the installation activities including the removal of native vegetation, trampling, and disturbance of soil could provide opportunities for invasive and noxious weeds to become established. A total of 5.5 acres of vegetation would be disturbed by the drilling and anchor installation activities and become more susceptible to weed invasion. Impacts would be minor and short-term.	Same as Alternative 1a.	Same as Alternative 1a.	The Alternative 2 footprint is reduced to 4.1 acres and therefore creates a smaller opportunity for the establishment of weeds. All other incremental trampling of vegetation would create opportunities for invasive and noxious weeds to become established but would be less than Alternative 1a.	The Alternative 3 footprint is approximately 3.9 acres and therefore the opportunities for invasive and noxious weeds to establish would be less.	The Alternative 4 footprint would be reduced to 1.6 acres and therefore the opportunity for weed establishment would be less. Alternative 4 installation activities would not increase the expansion of weeds within the Arkansas Canyonlands ACEC.
Installation*	No impact.	The soil disturbance at the 55.7 acres Texas Creek Staging Area would also be susceptible to invasion by weeds. Impacts would be minor and short-term.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Exhibition*	No impact.	Increased soil disturbance and loss of vegetation due to trampling resulting from beaching or anchoring boats, hiking, picnicking, or other on-shore activities would provide opportunities for weeds to become established on the riverbanks. Weed seed deposition along the riverbanks, particularly below the high water line, can be problematic if spring high flows flush weed seeds downstream.	The increased number of visitors and extended exhibition duration would likely increase the amount and intensity of the invasive and noxious weeds trampled outside of the monitored and patrolled area, compared to Alternative 1a. Trampling of vegetation by boating is also expected to increase the opportunity for the establishment of weeds compared to Alternative 1a. These impacts would be relatively short-term and minor.	Same as Alternative 1a.	Similar to Alternative 1a, except effects to invasive and noxious weeds outside of the active exhibit area are likely to increase due to less restricted access to lands along the river.	Same as Alternative 1a.	Similar to Alternative 1a, except no viewing activities would occur within the ACEC. Therefore, expansion of weeds within the ACEC would not occur.
<b>Range Resources</b>							
Installation*	No impact.	Range resources would be impacted by the loss of forage at specific installation sites, such as anchor locations and staging areas. Additionally, livestock grazing on active allotments at the time of installation may be disturbed by increased human activity and noise. These impacts are expected to be minor and short-term.	Same as Alternative 1a.	Same as Alternative 1a.	The impacts to vegetation would be reduced from 4.6 to 3.3 acres, compared to Alternative 1a. Traffic and trampling impacts would be similar to Alternative 1a, but slightly reduced.	Loss of range forage associated with drilling operations and anchor installation would be reduced from 4.6 to 3.3 acres, compared to Alternative 1a. Traffic and trampling impacts would be similar to Alternative 1a, but slightly reduced.	Loss of range forage associated with drilling operations and anchor installation would be reduced from 4.6 to 1.5 acres, compared to Alternative 1a. Forage loss associated with the development of the Texas Creek Staging Area would be reduced from 55.7 to 44.2 acres. Traffic and trampling impacts would be similar to Alternative 1a, but slightly reduced. No installation work would occur within the ACEC, therefore there would be no impacts to range resources within the ACEC.
Exhibition*	No impact.	Increased traffic in the project vicinity would likely affect ranching operation during the two week period of exhibition.	Same as Alternative 1a.	Same as Alternative 1a.	Traffic impacts would be similar to alternative 1a, but slightly reduced.	Traffic impacts would be similar to alternative 1a, but slightly reduced.	Traffic impacts would be similar to alternative 1a, but slightly reduced.

Impact Summary By Project Phase	No Action	Alt 1a (Artists' Proposed Action)	Alternative 1c	Alternative 1d	Alternative 2	Alternative 3	Alternative 4
Exhibition*	No impact.	Trampling of range forage would cause the temporary loss of forage and provide opportunities for weeds to become established.	Same as Alternative 1a.	Same as Alternative 1a.	Trampling impacts would be similar to alternative 1a, but slightly reduced.	Trampling impacts would be similar to alternative 1a, but slightly reduced.	Trampling impacts would be similar to alternative 1a, but slightly reduced. No exhibition would occur in the ACEC, therefore there would be no impacts to range resources within the ACEC.
Exhibition*	No impact.	The development of the Fremont, Vallie Bridge, and Parkdale aid stations would result in the temporary seasonal loss of 26.91 acres of range forage.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Forage loss from the temporary development of the aid stations would be reduced since the Fremont Road Information Center is dropped from this alternative reducing the loss of forage from 26.9 to 18.7 acres.
<b>Threatened, Endangered, and Sensitive Species</b>							
<b>Wildlife Species</b>							
Installation*	No impact.	Bat species: Construction activities around roost locations have a potential to disturb bat feeding, drinking, or mating behavior. If bats can detect and avoid the cables during project installation, there would be a minor to moderate, short-term impact.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	For all T&E and sensitive species, the intentional breaks in panel continuity would not result in any measurable differences from Alternative 1a. Although the panel break represent slightly less impact on avian hunters, the overall impact is still adverse.	The removal of all panels in the ACEC would represent a substantial reduction in impacts for T&E and sensitive species, particularly avian hunters and migratory birds, from Alternative 1a. Alternative 4 would remove all impediments to avian hunting and bat echo location in the ACEC. It is assumed that all impacts would be the same as described for Alternative 1a, with the exception of panel sites in the ACEC. No direct impacts to habitat would occur within the ACEC under this alternative.
Installation*	No impact.	Bald Eagle: Displacement from preferred habitat due to construction activities would be a moderate, short-term impact.	Same as Alternative 1a.	Same as Alternative 1a.	By removing all panels and installation activities west of Texas Creek, the potential for impact to known winter roost sites is nearly eliminated with this alternative.		
Installation*	No impact.	Mexican Spotted Owl: Minor risk of collision. Potential indirect effects from noise and increased human presence would be short-term, and minor.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.		
Installation*	No impact.	Peregrine Falcon: Cable collisions or panel entanglement could be considered a "taking" under the MBTA. Any mortality to this species from collision would be a moderate to significant impact to a species with limited numbers in the state.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.		
Exhibition*	No impact.	Bat species: The primary potential impacts to this species during the Exhibition Period are the risk of being entangled in the fabric panels and colliding with the cables. Although bats have difficulty detecting fine grain objects, such as a mist net, the fabric used on the project would have a more solid quality that is more likely to be detected by bats. Still, the risk of entanglement cannot be fully determined at this time. If entangled occurs at an incidental to low rate, this would be a minor to moderate effect. The risk is largely limited to the 2-week Exhibition Period. In addition, the presence of large fabric panels may inhibit feeding during the Exhibition Period.	The primary impacts to wildlife occur as a function of the numbers of visitors, presence of cables and panels, and increased activity in suitable habitat areas. The addition of one week to the viewing period could add a significant impact from collision related mortality and entanglement to increased timing of stress to T&E wildlife.	Increases human activity in areas removed from the main highway-river corridor may result in short-term, minor disturbances to wildlife.	The June/July viewing would impact breeding T&E species and juvenile T&E species that have not yet reached adult stage by the exhibition period. For breeding pairs and juveniles, an earlier exhibition period would result in localized, short-term direct impact on many species in the Analysis Area. These effects would consist of higher stress levels, dispersal, or modified behaviors that may be moderate to significant in the short-term and potentially minor to moderate in the long-term.	Same as Alternative 1a.	The impacts of the exhibition period will be the same as in Alternative 1a, except for exhibition period activities in the ACEC. Although visitors would still pass through the ACEC, human disturbances would be extremely limited under this alternative as most visitors would bypass the lower canyon since relatively few panels are visible below Texas Creek.
Exhibition*	No impact.	Gunnison's Prairie Dog: Only minor, short-term impacts to the Gunnison's prairie dog, should they be present within the analysis area, would result from increased human activity during the exhibition phase.					
Exhibition*	No impact.	Mexican Spotted Owl: This species may be disturbed by off-river recreational activities and increased visitation to suitable habitat areas adjacent to the river. Indirect impacts from increases in camping and hiking in the nearby side canyons related to the visitation estimate is a potential moderate but short term impact. Any mortality to this species from collision or entanglement would be a significant impact.					
Exhibition*	No impact.	Northern Goshawk/Peregrine Falcon: May be disturbed by off-river recreational activities and increased visitation to suitable habitat areas adjacent to the river. Indirect impacts from increases in camping and hiking in the adjacent forest related to the visitation estimate is a potential moderate but short term impact. Any mortality from collision or entanglement would be a moderate to significant impact.					

Impact Summary By Project Phase	No Action	Alt 1a (Artists' Proposed Action)	Alternative 1c	Alternative 1d	Alternative 2	Alternative 3	Alternative 4
<b>Plant Species</b>							
Installation and Demobilization*	No impact.	The installation associated with Alternative 1a would have a footprint of 5.5 acres with 4.6 acres being vegetated and are included in the four PCAs (County Line, Badger Creek Tunnel, Vallie, and McIntyre Hills) for fendler's false cloak fern and Arkansas Canyon stickleaf.	Same as Alternative 1a.	Same as Alternative 1a.	Impacts to sensitive plant species would be slightly less due to the reduced panel footprint, and there would be no direct effects to sensitive plant populations located west of Texas Creek.	The impacts to sensitive plant species would likely be less due to the smaller footprint.	The impacts to sensitive plant species would likely be less due to the smaller footprint. No installation work would occur within the ACEC, therefore there would be no impacts to sensitive plant populations within the ACEC.
Installation and Demobilization	No impact.	Fendler's false cloak fern: During the installation, above ground stems and leaves may be disturbed, but the rhizomes and adventitious roots may be protected in the granite crevices. Therefore, installation activities are not anticipated to affect population viability in the long-term.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Installation and Demobilization*	No impact.	Arkansas Canyon stickleaf: Overall, impacts to this species are anticipated to be minor to moderate in both the short- and long-term, primarily as a result of ground disturbing activities.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Exhibition*	No impact.	Fendler's false cloak fern: Trampling prior to dispersing reproductive spores would disrupt its reproductive cycle, but this impact would be relative short lived, since the perennial plant would resprout the following year if the rhizomes remain intact.	Same as Alternative 1a.	Same as Alternative 1a.	The impacts to sensitive plant species would likely be less due to the smaller footprint. Trampling impacts to sensitive populations west of Texas Creek would be greatly reduced, if not altogether eliminated.	The impacts to sensitive plant species would likely be less due to the smaller footprint.	The impacts to sensitive plant species would likely be less due to the smaller footprint. No exhibition activities would occur within the ACEC, therefore there would be no impacts to sensitive plant populations within the ACEC.
Exhibition*	No impact.	Arkansas Canyon stickleaf: Trampling would likely have a minor effect on the Arkansas stickleaf and could provide a short-term beneficial opportunity for this species to thrive with reduced perennial competition. However, this benefit assumes that no additional competitive annuals are introduced and that individuals and population viability are not severely jeopardized by installation activities.	Same as Alternative 1a.	Same as Alternative 1a.	The impacts to sensitive plant species would likely be less due to the smaller footprint. Trampling impacts to sensitive populations west of Texas Creek would be greatly reduced, if not altogether eliminated.	The impacts to sensitive plant species would likely be less due to the smaller footprint.	The impacts to sensitive plant species would likely be less due to the smaller footprint. No exhibition activities would occur within the ACEC, therefore there would be no impacts to sensitive plant populations within the ACEC.
<b>PHYSICAL RESOURCES</b>							
<b>Atmosphere, Air Resources, and Air Quality</b>							
All Project Phases*	No impact.	Minor, short term increases in fugitive dust, green house gases and other emissions.	Same as Alternative 1a.	Same as Alternative 1a.	Less than Alternative 1a.	Less than Alternative 1a.	Same as Alternative 1a.
<b>Water Resources</b>							
Installation and Demobilization*	No impact.	Increases in sedimentation or fluid spills would create negligible to significant, short-term, local reductions in water quality. Moderate to significant local flood damages would occur at the proposed Texas Creek CSA location. Implementation of recommended additional measures would reduce impacts to negligible or minor.	Same as Alternative 1a.	Same as Alternative 1a.	Similar to Alternative 1a, but smaller extent of impacts.	Similar to Alternative 1a, but smaller extent of impacts.	Similar to Alternative 1a, but much smaller extent of impacts.
Exhibition*	No impact.	The potential for displays to limit clearance over the river water level may create short-term, local impacts on beneficial water uses (notably recreation) or modify local flow and bank erosion conditions. Implementation of recommended additional measures would reduce impacts to negligible or minor.	Same as Alternative 1a.	Same as Alternative 1a.	Similar to Alternative 1a, but greater chance of impacts from higher flows or storms.	Same as Alternative 1a.	Same as Alternative 1a.
<b>Soil Resources, Geologic Substrate, and Terrain</b>							
<b>Soil Resources</b>							
Installation and Demobilization*	No impact.	Increases in erosion or fluid spills would create negligible to significant, short-term, local reductions in soil quality. Implementation of recommended additional measures would reduce impacts to negligible or minor.	Same as Alternative 1a.	Same as Alternative 1a.	Similar to Alternative 1a, except spatially the magnitude of impacts would be less.	Similar to Alternative 1a, except spatially the magnitude of impacts would be less.	Similar to Alternative 1a, except spatially the magnitude of impacts would be less.
Exhibition*	No impact.	The potential for displays modify local flow and bank erosion conditions. Implementation of recommended additional measures would reduce impacts to negligible or minor.	Similar to Alternative 1a, except duration of impacts would increase.	Similar to Alternative 1a, except may see increased use of open pullouts along the river leading to an increase in compaction, runoff, and erosion.	Similar to Alternative 1a, except spatially the magnitude of impacts would be less.	Similar to Alternative 1a, except spatially the magnitude of impacts would be less.	Similar to Alternative 1a, except spatially the magnitude of impacts would be less.

Impact Summary By Project Phase	No Action	Alt 1a (Artists' Proposed Action)	Alternative 1c	Alternative 1d	Alternative 2	Alternative 3	Alternative 4
<b>OTHER RESOURCES</b>							
<b>Environmental Justice/Protection of Children</b>							
All Project Phases	No impact.	No disproportionate effects to minority or low income populations; No disproportionate effects to the health or safety of children, any impacts to the health or safety of children would be short-term and negligible.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
<b>Socioeconomics, Social Impacts, and Public Safety</b>							
<b>Socioeconomics and Social Impacts</b>							
Installation* and Demobilization*	No impact.	OTR expenditures (wages, materials, other): \$31 million.	Same as Alternative 1a.	Same as Alternative 1a.	OTR expenditures: \$25.1 million.	OTR expenditures: \$21.8 million.	OTR expenditures: \$7.5 million.
Installation* and Demobilization*	No impact.	Net visitor spending: \$3.65 million.	Net visitor spending: \$4.66 million.	Net visitor spending: \$2.33 million.	Net visitor spending: \$3.85 million.	Net visitor spending: \$3.34 million.	Net visitor spending: \$1.52 million.
Installation* and Demobilization*	No impact.	Local and state tax revenue generated: \$476,000 (negligible).	Local and state tax revenue generated: \$522,000 (negligible).	Local and state tax revenue generated: \$415,000 (negligible).	Local and state tax revenue generated: \$427,000 (negligible).	Local and state tax revenue generated: \$370,000 (negligible).	Local and state tax revenue generated: \$145,000 (negligible).
Installation* and Demobilization*	No impact.	Fishing industry revenues reduced by \$110,000 (minor to moderate).	Fishing industry revenues reduced by \$118,000 (minor to moderate).	Fishing industry revenues reduced by \$73,000 (minor to moderate).	Fishing industry revenues reduced by \$102,000 (minor to moderate).	Same as Alternative 1a.	Fishing industry revenues reduced by \$58,000 (minor to moderate).
Installation* and Demobilization*	No impact.	Rafting industry revenues increased by \$118,000 (minor).	Rafting industry revenues increased by \$148,000 (minor).	Rafting industry revenues increased by \$59,000 (minor).	Same as Alternative 1a.	Rafting industry revenues increased by \$108,000 (minor).	Rafting industry revenues increased by \$49,000 (minor).
Installation* and Demobilization*	No impact.	Hunting industry revenues reduced by \$192,000 (minor).	Same as Alternative 1a.	Hunting industry revenues reduced by \$127,000 (minor).	Same as Alternative 1a.	Same as Alternative 1a.	Hunting industry revenues reduced by \$127,000 (minor).
Installation* and Demobilization*	No impact.	Total tourism and other economic output: \$71.3 million.	Total tourism and other economic output: \$73.3 million.	Total tourism and other economic output: \$68.8 million.	Total tourism and other economic output: \$59.6 million.	Total tourism and other economic output: \$51.6 million.	Total tourism and other economic output: \$18.5 million.
Installation* and Demobilization*	No impact.	Total employment: 313 full-time equivalents (FTEs) (minor).	Total employment: 334 full-time equivalents (FTEs) (minor).	Total employment: 286 full-time equivalents (FTEs) (minor).	Total employment: 272 full-time equivalents (FTEs) (minor).	Total employment: 236 full-time equivalents (FTEs) (minor).	Total employment: 89 full-time equivalents (FTEs) (minor).
Installation* and Demobilization*	No impact.	Personal income generated: \$13.7 million (minor).	Personal income generated: \$14.3 million (minor).	Personal income generated: \$12.9 million (minor).	Personal income generated: \$11.6 million (minor).	Personal income generated: \$10.1 million (minor).	Personal income generated: \$3.7 million (minor).
Installation* and Demobilization*	No impact.	Local residents would experience increased travel time on U.S. 50 (negligible).	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Installation* and Demobilization*	No impact.	The demands for services, including water, sewage and medical services would be met.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Installation* and Demobilization*	No impact.	All impacts would be short-term.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Exhibition*	No impact.	OTR expenditures (wages): \$312,000.	OTR expenditures: \$468,000.	Same as Alternative 1a.	OTR expenditures: \$253,000.	OTR expenditures: \$219,000.	OTR expenditures: \$76,000.
Exhibition*	No impact.	Net visitor spending: \$24.2 million.	Net visitor spending: \$33.2 million.	Net visitor spending: \$12.5 million.	Net visitor spending: \$26.1 million.	Net visitor spending: \$21.6 million.	Net visitor spending: \$3.6 million.
Exhibition*	No impact.	Local and state tax revenue generated: \$1.39 million (negligible to minor).	Local and state tax revenue generated: \$1.92 million (negligible to minor).	Local and state tax revenue generated: \$704,000 (negligible to minor).	Local and state tax revenue generated: \$1.50 million (negligible to minor).	Local and state tax revenue generated: \$1.24 million (negligible to minor).	Local and state tax revenue generated: \$205,000 (negligible to minor).
Exhibition*	No impact.	Fishing industry revenues reduced by \$34,000 (minor).	Fishing industry revenues reduced by \$51,000 (minor to moderate).	Fishing industry revenues reduced by \$64,000 (minor to moderate).	Fishing industry revenues reduced by \$28,000 (minor).	Same as Alternative 1a.	Same as Alternative 1a.
Exhibition*	No impact.	Rafting industry revenues increased by \$1.5 million (moderate).	Rafting industry revenues increased by \$1.9 million (moderate).	No change in rafting industry revenues.	No change in rafting industry revenues.	Same as Alternative 1a.	Same as Alternative 1a.
Exhibition*	No impact.	Hunting industry revenues reduced by \$1,500 (negligible).	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Exhibition*	No impact.	Total tourism and other economic output: \$50.0 million.	Total tourism and other economic output: \$69.0 million.	Total tourism and other economic output: \$25.3 million.	Total tourism and other economic output: \$53.9 million.	Total tourism and other economic output: \$44.5 million.	Total tourism and other economic output: \$7.0 million.
Exhibition*	No impact.	Total employment: 1.1 million hours (moderate).	Total employment: 1.5 million hours (moderate).	Total employment: 541,000 hours (minor).	Total employment: 1.2 million hours (moderate).	Total employment: 956,000 hours (moderate).	Total employment: 149,000 hours (minor).
Exhibition*	No impact.	Personal income generated: \$15.1 million (moderate).	Personal income generated: \$20.9 million (moderate).	Personal income generated: \$7.6 million (minor).	Personal income generated: \$16.3 million (moderate).	Personal income generated: \$13.4 million (moderate).	Personal income generated: \$2.1 million (minor).
Exhibition*	No impact.	Local residents would experience up to 10.5 minutes of increased travel time on U.S. 50 (minor to moderate).	Same as Alternative 1a.	Local residents would experience up to 9.5 minutes of increased travel time on U.S. 50 (minor to moderate).	Same as Alternative 1d.	Same as Alternative 1d.	Same as Alternative 1a.
Exhibition*	No impact.	The demands for services, including water, sewage and medical services would be met.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
<b>Public Safety</b>							
Installation*	No impact.	Moderately heavier traffic caused by construction delays may impede emergency response times.	Same as Alternative 1a.	The shortened installation schedule would result in slightly less health and safety impacts than Alternative 1a.	The smaller size of the display would result in less construction and associated health and safety impacts than Alternative 1a.	The smaller size of the display would result in less construction and associated health and safety impacts than Alternative 1a.	The smaller size of the display and a compressed installation schedule would result in less construction and associated health and safety impacts than Alternative 1a.
Installation*	No impact.	Rafters would face a potential short-term safety risk during the cable stringing process.	Same as Alternative 1a.				
Installation*	No impact.	Construction workers would be endangered from potential rockfall hazards.	Same as Alternative 1a.				

Impact Summary By Project Phase	No Action	Alt 1a (Artists' Proposed Action)	Alternative 1c	Alternative 1d	Alternative 2	Alternative 3	Alternative 4
Exhibition*	No impact.	Increased congestion caused by approximately 14,320 vehicle trips on a weekend during the viewing period may impact emergency response times should an emergency occur.	An increase in visitor and boating numbers as well as a longer three week viewing period would result in slightly greater health and safety impacts than Alternative 1a.	The smaller footprint of this alternative as well as the later summer timing (avoidance of severe summer storms) would result in reduced impacts compared to Alternative 1a; however, there would be an increase in rafters and subsequent rafting associated impacts.	This alternative would generate roughly the same visitation as Alternative A; however, fewer boaters would result in slightly less health and safety impacts than Alternative 1a.	This alternative would generate roughly the same visitation as Alternative A; however, fewer boaters would result in slightly less health and safety impacts than Alternative 1a.	The smaller size of the display, the corresponding decrease in visitor numbers and boaters would result in less health and safety impacts than Alternative 1a.
Exhibition*	No impact.	Natural disturbances such as summertime flash floods, rockfall, hail and lightning, erratic winds and localized micro-bursts, as well as the risk of fire would cause potential impacts, heightened by the congested project area.					
Exhibition*	No impact.	Panel failure during the exhibit may impact rafters and inhibit rescue attempts.  Additional boaters would increase boating accidents and consequently the need for swift water rescues.					
Exhibition*	No impact.	Visitors may endanger themselves by attempting to see the display outside the designated viewing area.					
Exhibition*	No impact.	Heat-related illness may result if visitors are not able to stay hydrated or treated in time if heat related illness were to occur.					
Exhibition*	No impact.	Emergency response agencies may experience short-term impacts to budgets as well as staffing.					
Demobilization*	No impact.	Impacts would be similar to slightly less than impacts associated with installation due to the shorter-time period of 3 months for demobilization compared to 28 months for installation.	Same as Alternative 1a.	Similar to Alternative 1a; however, the later timing of this phase may result in construction crews encountering severe winter weather and subsequent winter weather related accidents.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
<b>Transportation and Traffic</b>							
Installation*	No impact.	Lane closures would create short-duration minor delays in various locations distributed geographically and over time (two years).	Similar to 1a with higher visitation.	Similar to 1a except that the time period where the project delays motorists would be one year rather than two. This would double the frequency of the delays during the Installation phase.	Similar to 1a with highest visitation.	Similar to 1a with lower visitation.	Alternative 4 would considerably reduce the number of days of lane closures and generate fewer visitors.
Exhibition*	No impact.	Vehicles exiting the Parkdale parking lot would be significantly delayed (almost 75 minutes without mitigation (acceleration/ deceleration lanes).	The benefit from the acceleration/deceleration lanes would be an overall travel time savings of 10 minutes and inconsequential delays at the Parkdale intersection relative to 1a.	The benefit from the acceleration/ deceleration lanes would be an overall travel time savings of 10 minutes and inconsequential delays at the Parkdale intersection relative to 1a.	The benefit from the acceleration/ deceleration lanes would be an overall travel time savings of 10 minutes and inconsequential delays at the Parkdale intersection relative to 1a.	The benefit from the acceleration/ deceleration lanes would be an overall travel time savings of 10 minutes and inconsequential delays at the Parkdale intersection relative to 1a.	Alternative 4 would offer improved traffic operations and performance relative to 1a, including no facilities or delay at Parkdale.
Exhibition*	No impact.	Intersections in the project area would be congested and normal performance standards would not be met during the peak period(s) on peak day(s) (Saturday and Sunday from about 10:00 AM to 4:00 PM).	Same as 1a for the first two weeks, plus effects during a third week of Exhibition would occur. These effects would be similar to those during the first week, but the intensity of those temporary effects would be substantially reduced making them moderate rather than significant effects.	Expected to generate 120,000 fewer visitors than 1a. Peak weekends in September are likely to attract a far higher proportion of visitors relative to weekdays than the same comparison during the summer vacation season.  Although the September weekends would be busy, the traffic volumes and associated effects on weekdays are expected to be substantially less than those calculated for Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Alternative 4 would offer improved traffic operations and performance relative to 1a.
Exhibition*	No impact.	Short-term, significant travel time increases in the corridor would be expected. The overall increase in westbound travel time between Fremont Road (CR 3A) to the County Line Panel Section would be approximately 20 minutes without mitigation  Westbound queues on US 50 would be almost 2 miles in length. This would equate to significant through movement delays reaching approximately eight or more minutes.  With acceleration and deceleration mitigation, the westbound delay would be 10 minutes.  Heavy traffic conditions would result in Cañon City and Salida decreasing LOS at most intersections during peak periods. This impact would be considered moderate and temporary.	Similar to 1a, but with 10 minutes of delay due to the proposed commitment for acceleration and decelerations at Parkdale.	Same as Alternative 1c.	Same as Alternative 1c.	Same as Alternative 1c.	Alternative 4 would offer improved traffic operations and performance relative to 1a.
Exhibition*	No impact.	If vehicle crashes or other incidents such as a rock fall, flooding, or hail occur that require emergency response, minor to significant delay would be expected along US 50 under peak period and nonpeak periods.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Alternative 4 would offer improved traffic operations and performance relative to 1a.

Impact Summary By Project Phase	No Action	Alt 1a (Artists' Proposed Action)	Alternative 1c	Alternative 1d	Alternative 2	Alternative 3	Alternative 4
Exhibition*	No impact.	No school bus delay would occur	Same as Alternative 1a.	Some school bus transit service delay would be anticipated with the exhibition occurring in September.	Same as Alternative 1a.	Same as Alternative 1a.	Alternative 4 would offer improved traffic operations and performance relative to 1a.
Exhibition*	No impact.	The project would create minor to moderate, short-term safety risks that would be offset to some degree by slower travel speeds and a high level of monitoring and law enforcement.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Alternative 4 would offer improved traffic operations and performance relative to 1a.
Demobilization*	No impact.	Lane closures would create short-duration minor delays in various locations distributed geographically and over time.	Similar to 1a with higher visitation.	Similar to 1a, but with a minor reduction in the level of effects because the demobilization activities would occur after the summer peak traffic period.	Similar to 1a with higher visitation.	Similar to 1a with lower visitation.	Same as Alternative 1a.
<b>Hazardous Materials</b>							
All Project Phases	No impact.	Negligible, short-term for all hazardous materials-related activities with one exception. The potential impacts associated with the overnight parking and refueling of equipment used for installing cable anchors were analyzed to be short-term, but to range from moderate to significant. With the inclusion of appropriate mitigation measures (WATER-3), these impacts are reduced to a negligible level.	Same as or less than Alternative 1a.	Same as or less than Alternative 1a.	Same as or less than Alternative 1a.	Same as or less than Alternative 1a.	Same as or less than Alternative 1a.
<b>Waste (Nonhazardous)</b>							
All Project Phases*	No impact.	Negligible, short-term for all nonhazardous waste related activities.	Same or less than Alternative 1a.	Same or less than Alternative 1a.	Same or less than Alternative 1a.	Same or less than Alternative 1a.	Same or less than Alternative 1a.
<b>Realty Authorizations and Land Use</b>							
Installation and Demobilization*	No impact.	Presence of construction crews surveying anchor points, installing anchors, ATFs and cables, and conducting other installation activities would lead to a temporary disruption of people's ability to enjoy the rural lifestyle within the Arkansas River corridor. These impacts would be minor, and short-term.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Installation*	No impact.	Approximately 60 acres of BLM lands would be directly affected by construction activities. The largest single area of effect would be Texas Creek, where approximately 56 acres would be affected by staging areas, parking area improvements, and other construction activities. All of this effect would have moderate, short-term impacts on BLM lands.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a, except the amount of area affected by installation activities and panel placement would be slightly reduced.	Same as Alternative 1a, except the amount of area affected by installation activities and panel placement would be slightly reduced.	Same as Alternative 1a, except the amount of area affected by installation activities and panel placement would be reduced.
Installation*	No impact.	The presence of construction crews, vehicles, and equipment would create temporary and minor disruption of access to approximately two dozen mining claims present within the Analysis Area.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Installation*	No impact.	The total area of private land directly affected would be approximately 13 acres at Parkdale Viewing Center and 10 acres at Fremont Road Information Center. These effects would be short-term and both sites would likely return to their previous use after the project was completed.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Exhibition*	No impact.	No significant impacts to existing land use on private lands would occur during the installation phase. Any effects would be short-term, minor, and not likely to result in any land use changes within the Project Area.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
<b>Recreation Resources</b>							
Installation*	No impact.	An increase in travel time would have a minor effect on recreation travel during installation.	Same as Alternative 1a.	Similar to Alternative 1A, except the compressed installation schedule could result in more intensive construction activities in the Project Area and may cause greater impacts to some recreation resources and uses.	Same as Alternative 1a.	Same as Alternative 1a.	Similar to Alternative 1A, except, as fewer visitors would be present in the Project Area, the intensity of visitor-related impacts, including vehicle traffic, on all recreation activities would be reduced.
Installation*	No impact.	Interruptions of boating movements associated with cable installation and other installation activities during the peak use season would result in minor, short-term effects on boating in the Project Area.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.

Impact Summary By Project Phase	No Action	Alt 1a (Artists' Proposed Action)	Alternative 1c	Alternative 1d	Alternative 2	Alternative 3	Alternative 4
Installation*	No impact.	Interference of project activities with angling access and equipment would result in short-term, significant impacts to angling.	Same as Alternative 1a.	Similar to Alternative 1A, except the late blossoming period, occurring during peak angling season, would result in greater than average numbers of boaters at this time of year, which would result in significant impacts to boating and angling. These impacts would be short-term and regional in extent.	Similar to Alternative 1A, except an earlier blossoming would reduce impacts to angling in the Project Area. Localized impacts would not occur in the County Line, Tunnel, and Vallie Bridge areas. The extent of Project Area-level impacts may be reduced, as well.	Same as Alternative 1a.	Similar to Alternative 1A, except, localized impacts would not occur in the Texas Creek, Maytag, Three Rocks, and Spikebuck areas, including the McIntyre Hills WSA. Localized impacts at the Parkdale panel would be reduced to the 0.3-mile segment at the eastern end of the panel site.
Installation*	No impact.	The effects of installation on OHV use could be significant at Texas Creek as a result of staging area activities and crowding on the trails. Impacts would be minor throughout the rest of the Project Area, with minor displacement occurring at a regional level.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Installation*	No impact.	The impacts of installation on placer mining would be similar to those described for angling, and would be localized at Point Barr and other placer mining sites within the Project Area and moderate in intensity.	Same as Alternative 1a.	Same as Alternative 1a.	Similar to Alternative 1A, except localized impacts to placer mining would not occur at the Point Barr AHRA site, reducing the overall level of impact to placer mining.	Same as Alternative 1a.	Same as Alternative 1a.
Installation*	No impact.	Depending on the timing of project activities in relation to river festivals and other events, impacts to festivals and events including FIBArk could be significant, short-term and regional during installation.	Same as Alternative 1a.	Same as Alternative 1a.	Similar to Alternative 1A, except an earlier blossoming could overlap and interfere with the FIBArk river event.	Same as Alternative 1a.	Same as Alternative 1a.
Installation*	No impact.	Installation would overlap with various hunting seasons, resulting in moderate impacts throughout this phase. The blossoming period would not coincide with hunting seasons.	Same as Alternative 1a.	Similar to Alternative 1A, except the late blossoming and increased visitor presence would coincide with various hunting seasons and cause a greater level of impact.	Similar to Alternative 1A, except a configuration of fewer panels would reduce the extent and intensity of impacts to hunting during installation. The earlier blossoming would result in reduced impacts to hunting as well.	Same as Alternative 1a.	Similar to Alternative 1A, except a configuration of fewer panels would reduce the extent and intensity of impacts to hunting during installation.
Exhibition*	No impact.	Increased visitor presence, traffic and travel time would impact all recreational activities.	Similar to Alternative 1a, except this extended exhibition would increase the duration of all exhibition impacts on recreation resources, access and the experience. A greater overall level of impacts would accompany the longer viewing period.	Same as Alternative 1a.	Similar to Alternative 1a, except the earlier exhibition would result in overall impacts of project visitation that are greater for Alternative 2 than for Alternative 1a.	Same as Alternative 1a.	Similar to Alternative 1a, except lower project visitation would result in reduced related impacts.
Exhibition*	No impact.	Increased boating traffic, restricted access to put-ins and take-outs and the closure of informal pullouts typically used for boating access would result in short-term, significant impacts to boating in the Project Area. Moderate regional displacement of boaters would likely occur.	Similar to Alternative 1a, except the extended viewing period and temporary rations would allow for more boating opportunities and could be accompanied by additional boating traffic on the river, resulting in greater impacts to boating.	Similar to Alternative 1a, except the closure of AHRA recreation sites to all forms of recreation would temporarily and significantly impact boating, in addition to causing the same impacts as described for other activities in Alternative 1c. The later exhibition would occur after peak boating season and during peak angling season, leading to increased boating traffic at a regional level and a greater likelihood of conflict between user groups.	Similar to Alternative 1a, except a configuration of fewer panels would lead to concentrated boating use between Texas Creek and Parkdale, with lower boating use on the Salida-Texas Creek segment. The additional number of boaters associated with an earlier exhibition would cause increased crowding on the river, which would temporarily diminish boating access and the quality of the experience, create additional safety issues, and lead to increased conflicts between user groups on the river. This would result in greater overall boating impacts.	Similar to Alternative 1a, except fewer pullout closures and additional breaks between panel sections could allow for more access to riverbanks for boaters, particularly between Salt Lick and Parkdale, which could increase boater safety. The shorter overall mileage of panels could result in reduced impacts to boating.	Similar to Alternative 1a, except the altered panel configuration would result in an overall decrease in impacts to boating access and experience, as overall interest and beneficial impacts to the boating experience would likely be reduced. No localized impacts would occur at the Canyon Trading Post, Lone Pine, Five Points, and Maytag locations, and the McIntyre Hills WSA for all recreational uses.
Exhibition*	No impact.	The panels would create an added attraction that enhances the river experience for boaters. The added attraction would benefit boating outfitters that operate on the Arkansas River by creating extra demand for trips. This impact would be beneficial and potentially significant.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Exhibition*	No impact.	Additional boating traffic on the river, high visitation and vehicle traffic, and the closure of informal pullouts that serve as primary access points for angling would result in significant short-term impacts to angling in the Project Area. Significant angler displacement would occur.	Similar to Alternative 1a, except the extended viewing period and temporary rations would significantly impact angling, as boating use would extend into peak angling season. Impacts would likely be similar for placer mining. The closure of AHRA sites to angling use would greatly reduce access and cause significant, short-term impacts to angling.	Similar to Alternative 1a, except event-only commercial boating rations would significantly impact angling access and the quality of the experience during peak angling use, and could result in increased conflict between anglers and boaters.	Similar to Alternative 1a, except a configuration of fewer panels, reduced pullout closure, and an earlier viewing period would reduce the extent and intensity of impacts to angling, particularly between Salida and Vallie Bridge.	Similar to Alternative 1a, except fewer pullout closures would slightly increase access for angling. The shorter overall mileage of panels could result in reduced impacts to angling.	Similar to Alternative 1a, except fewer informal pullout closures would considerably reduce impacts to boating and angling between Vallie Bridge and Parkdale. No localized impacts would occur at the Canyon Trading Post, Lone Pine, Five Points, and Maytag locations, and the McIntyre Hills WSA for all recreational uses.

Impact Summary By Project Phase	No Action	Alt 1a (Artists' Proposed Action)	Alternative 1c	Alternative 1d	Alternative 2	Alternative 3	Alternative 4
Exhibition*	No impact.	Visitor presence and crowding on trails would result in significant short-term impacts to OHV use, concentrated in the Texas Creek Travel Management Area and other OHV trails in the Project Area.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Exhibition*	No impact.	Exhibition would result in significant short-term impacts to bighorn sheep hunting in the Project Area.	Similar to Alternative 1a, except the closure of AHRA sites would greatly reduce access and cause significant, short-term impacts to hunting. Exhibition would overlap with most of the bighorn sheep season, resulting in greater impacts to hunting.	Similar to Alternative 1c, except exhibition would coincide with bighorn sheep, deer, elk and black bear hunting seasons, which would greatly increase impacts to hunting.	Similar to Alternative 1a, except an earlier exhibition would reduce impacts to wildlife viewing, bird watching, and hunting.	Similar to Alternative 1a, except the altered panel configuration would minimize impacts to wildlife and birds in the Project Area, reducing impacts to hunting.	Similar to Alternative 1a, except the altered panel configuration and reduced visitor presence and project activity would reduce overall impacts to hunting.
Exhibition*	No impact.	Exhibition would lead to significant short-term impacts to recreational placer mining. These impacts would be limited to Project Area, and localized at Point Barr, in particular.	Similar to Alternative 1a, except the extended viewing period would increase the duration of impacts to placer mining. The closure of AHRA sites would greatly reduce access and cause significant, short-term placer mining.	Similar to Alternative 1c.	Similar to Alternative 1a, except the removal of the Tunnel panel would result in reduced overall impacts to placer mining.	Similar to Alternative 1a, except fewer pullout closures would slightly increase access for angling and placer mining.	Same as Alternative 1a.
Demobilization*	No impact.	Interference of project activities with angling access and equipment would result in short-term, significant and primarily localized impacts to angling, with a moderate to significant level of displacement occurring at a regional scale during removal, due to the overlap of activities with peak angling season.	Same as Alternative 1a.	Same as Alternative 1a.	Similar to Alternative 1a, except as a result of the earlier removal period, Alternative 2 would result in the least overall impact to angling of all action Alternatives.	Same as Alternative 1a.	Same as Alternative 1a.
Demobilization*	No impact.	Impacts to OHV use could be moderate at Texas Creek Travel Management Area during demobilization, as a result of removal activities and crowding on trails.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
<b>Visual/Aesthetic Resources</b>							
Installation*	No impact.	The scale of visual change (5.9 miles in 8 sites), and the project's visibility adjacent to US 50 and the Arkansas River with a long viewing duration (over 8 minutes for viewers traveling 45.0 miles per hour) within a recreational corridor over a 2-year period would result short-term, significant visual impacts.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Fewer panel locations in the Project Area would reduce the extent and intensity of impacts from installing and demobilizing anchor points, ATFs, and cables within the Project Area.
Exhibition*	No impact.	Exhibition would significantly and temporarily transform the characteristic landscape and attract attention at a regional or global scale of importance.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a, except no activities would occur west of Texas Creek. Fewer panel locations in the Project Area would reduce the extent of impacts within the Project Area, with no localized impacts at the County Line, Tunnel, and Vallie Bridge locations.	Fewer panel displays within each panel location would reduce the intensity and extent of impacts; however, activities would still occur at all eight panel locations.	Fewer panel displays at Parkdale, and elimination of Spike Buck, Three Rocks, Maytag, and Texas Creek panel locations would reduce the intensity and extent of impacts. At Parkdale, only one panel display would be visible or partially visible from KOPs.
Exhibition*	No impact.	From boats on the Arkansas River, the rhythmic and sequential panel displays would dominate the view and be the major focus of viewer attention. All panel displays, including anchor points and ATFs, where not screened by vegetation, would be visible to boaters.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Exhibition*	No impact.	Impacts from the use of exterior lighting for nighttime safety and security during the exhibition phase may contribute substantially to ambient nighttime lighting conditions and views from US 50 and AHRA sites in the short-term.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
Demobilization*	No impact.	Public awareness of the project combined with local tourism retailers and interpretive exhibits highlighting the project's legacy would heighten viewer sensitivity and awareness towards any remaining physical traces.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.
<b>Wild and Scenic Rivers</b>							
All Project Phases*	No impact.	No effect on the free-flowing characteristics of Arkansas River Segments #3 and #4.	Same as Alternative 1a.	Same as Alternative 1a.	Given that there would be no panels located in Arkansas River Segment #3 (Salida to Vallie Bridge), there is no potential for effect to free-flowing characteristics, ORVs, suitability, or designation considerations for this segment under Alternative 2. No effect on the free-flowing characteristics of Arkansas River Segment#4.	Same as Alternative 1a.	Given that there would be very limited panel installation along Arkansas River Segment #4 (approximately 0.25 miles of panels), there is little or no potential for effect to free-flowing characteristics, ORVs, suitability, or designation considerations for this segment under Alternative 4. No effect on the free-flowing characteristics of Arkansas River Segment#3.

Impact Summary By Project Phase	No Action	Alt 1a (Artists' Proposed Action)	Alternative 1c	Alternative 1d	Alternative 2	Alternative 3	Alternative 4
<b>Wilderness and Special Management Areas</b>							
All Project Phases*	No impact.	No direct effects to lands within the WSA and no potential to impair the WSA's suitability for future designation. No conflict with management objectives for the WSA.	Same as Alternative 1a.	Same as Alternative 1a.			
Installation*	No impact.	The Arkansas Canyonlands ACEC would be directly affected by ground disturbing activities, the installation and presence of above-ground elements, and increased human activity for the duration of the installation period. Each of these defining ACEC values would be affected in the short-term. The degree of impact varies by resource.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Alternative 3 would have slightly less impact on bighorn sheep populations, a defining characteristic of the ACEC.	No direct effects to habitat, watering areas, breeding grounds, or refugia areas would occur within the ACEC boundary.
Exhibition*	No impact.	The Arkansas Canyonlands ACEC would be directly affected during the viewing period. Each of these defining ACEC values would be affected in the short-term by the influx of visitors and traffic; the intensity of short-term impacts to the ACEC's defining characteristics varies by resource value. Long-term effects would generally be limited to wildlife resources.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Alternative 3 would have slightly less impact on bighorn sheep populations, a defining characteristic of the ACEC.	No direct effects to ACEC resources or defining characteristics. The potential for long-term impacts to the ACEC as a result of the project are extremely remote and limited to indirect impacts such as increased recreational use and human presence in the ACEC by OTR visitors traveling through the corridor. No direct effects to habitat, watering areas, breeding grounds, or refugia areas would occur within the ACEC boundary.
Demobilization*	No impact.	The Arkansas Canyonlands ACEC would be directly affected during the removal period. Specific effects, such as potential disturbances to bighorn sheep, scenic values, or other defining ACEC characteristics, would be similar to those described for the installation period. Although scenic values would be affected by removal activities, there would be no long-term effects to scenery within the ACEC.	Same as Alternative 1a.	Same as Alternative 1a.	Same as Alternative 1a.	Alternative 3 would have slightly less impact on bighorn sheep populations, a defining characteristic of the ACEC.	No direct effects to ACEC resources or defining characteristics. The potential for long-term impacts to the ACEC as a result of the project are extremely remote and limited to indirect impacts such as increased recreational use and human presence in the ACEC by OTR visitors traveling through the corridor. No direct effects to habitat, watering areas, breeding grounds, or refugia areas would occur within the ACEC boundary.
<b>Cultural, Historic, and Paleontological Resources and Native American Cultural Concerns</b>							
Installation*	No Impact.	Seventeen historic properties would be directly or indirectly impacted by construction activities. The level of effect will be determined following Section 106 consultation and application of appropriate mitigation measures.	Same as Alternative 1a.	Same as Alternative 1a.			
Exhibition*	No Impact.	Ten historic properties would be indirectly impacted by general use.	Same as Alternative 1a.	Same as Alternative 1a.			
Demobilization*	No Impact.	Same as installation phase.	Same as Alternative 1a.	Same as Alternative 1a.			