Oklahoma Route 66 Roadbed Documentation Project (1926-1970)
Part 2: Priorities and Management Strategies

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For

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CHAPTER ONE
INTRODUCTION

The Oklahoma Historical Society, State Historic Preservation Office (OK/SHPO) and Archaeological Research, Inc., have entered into a cooperative agreement to prepare a document titled "Route 66 Roadbed Documentation Project (1926-1970), Part 2: Priorities and Management Strategies." The Scope of Work indicated that the document must contain the following components:

> (1) A list must be developed that prioritizes road segments into a three-tiered system. Only segments and integral structures eligible for National Register Nomination are to be included on this list.
>
> (2) A set of criteria must be developed in order to prioritize segments and integral structures.
>
> (3) The document must identify threats to the segments and integral structures.
>
> (4) The document must outline preservation and management strategies for these eligible segments that balance preservation and user safety.

This document is intended to be a companion to the ***Oklahoma Route 66 Roadbed Documentation Project (1926-1970) Part I: A Survey of Roadbed and Integral Structures*** prepared by the Oklahoma Route 66 Association. The authors of that document identified 114 historic properties. This document, or Part 2, will focus on 45 from these that are either already listed on the National Register of Historic Places or determined eligible by the Oklahoma SHPO. Table One below lists these 45 properties and notes their survey number from the ***Part 1*** study along with some preliminary information on status, jurisdiction, and resource type.

Field Inspection Dates and Methods

David Keene of Archaeological Research, Inc., and John Vogel of Heritage Research, Ltd., composed the two-member field team for this investigation. Field inspection and documentation took place between March 7 and 12, 2002 and July 8 and 9, 2002. Additional field inspections were provided by Jim Gabbert, architectural historian, State Historic Preservation Office of the Oklahoma Historical Society, in December, 2002

All resources were photographed with a digital camera. In addition a video camera was used to document the teams observation of each resource. Finally 35 mm film photography was used in order to make sure all resources were documented as best as possible in as many formats as possible.

The following chapters reflect the team's field inspections, examination of the photo and video documents, and discussion with the State Historic Preservation Office staff and various interested parties along Historic Route 66 in Oklahoma.

Table One: Route 66 Matrix of Eligible Resource Examined in this Study

Segment Name	Resource Types	Status	Survey Property Number	Ownership/Agency jurisdiction/ ownership
Miami Original Nine-Foot Section of Pavement	Roadbed	Listed	5	Ottawa County
Horse Creek Bridge	Bridge	Listed	8	Oklahoma Department of Transportation
Eleventh Street Arkansas River Bridge	Bridge	Listed	22	City of Tulsa
Bridge No. 18 at Rock Creek	Bridge	Listed	26	Creek County
Arcadia Route 66 Roadbed	Bridge	Listed	54	Oklahoma County
US 281 Spur known as the Bridgeport Section	Roadbed	Eligible through consensus process	69	Canadian County
Roadbed South of Narcissa	Roadbed	Eligible	6	Ottawa County
Roadbed northeast of Afton	Roadbed	Eligible	7	Ottawa County
Bridge #1860-0724X over Little Cabin Creek	Bridge	Eligible	10	Craig County
Pryor Creek Bridge	Bridge	Eligible	12	Rogers County
Foyil Roadbed	Roadbed	Eligible	14	Rogers County
Bridge over Bird Creek	Bridge	Eligible	15	Oklahoma Department of Transportation
Bridge over Spunky Creek #66E0570N4080006	Bridge	Eligible	18	Rogers County
Roadbed west of	Roadbed	Eligible	27	Creek County

Segment Name	Resource Types	Status	Survey Property Number	Ownership/Agency jurisdiction/ ownership
Supulpa				
Tank Farm Loop Roadbed		Eligible	31	Creek County
Tank Farm Loop Roadbed		Eligible	32	Private
Little Deep Fork Bridge	Bridge	Eligible	37	Creek County
Bridge over Salt Creek	Bridge	Eligible	43	Lincoln County
Ozark Trail Marker		Eligible	46	Lincoln County
Bridge over Dosie Creek #41E0890N3520007	Bridge	Eligible	47	Lincoln County
Bridge over Captain Creek #4124-0157X	Bridge	Eligible	50	Lincoln County
Lake Overholser Bridge	Bridge	Eligible	56	Oklahoma City
Rock Island Line Viaduct	Viaduct/ Bridge	Eligible	61	ODOT
Pedestrian Underpass		Eligible	63	Town of El Reno
Rail Road Trestle	Trestle	Eligible	64	Rock Island Rail Road
Roadbed west of El Reno		Eligible	65	Canadian County
Concrete Drain Box		Eligible	66 (within 65)	Canadian County
Bridge over Powder Face Creek	Bridge	Eligible	67(within 65)	Canadian County
Bridge over Creek	Bridge	Eligible	68 (within 65)	Canadian County
20 mile segment of Roadbed beginning on the east side of Canadian River		Eligible	70	Caddo County
Bridge over Canadian	Bridge	Eligible	71 (within 70)	ODOT

Segment Name	Resource Types	Status	Survey Property Number	Ownership/Agency jurisdiction/ ownership
River				
Bridge over unnamed Creek	Bridge	Eligible	72 (within 70)	Caddo County
Bridge .75 miles west of Hinton Jct.	Bridge	Eligible	73 (within 70)	Caddo County
Bridge 1.4 miles west of the Bridgeport town turnoff	Bridge	Eligible	74 (within 70)	Caddo County
Bridge over White Canyon Creek	Bridge	Eligible	75 (within 70)	Caddo County
Bridge over Dead Woman Creek	Bridge	Eligible	76 (within 70)	Caddo County
Bridge over unnamed Creek	Bridge	Eligible	77 (within 70)	Caddo County
Bridge over Cedar Canyon Creek	Bridge	Eligible	78 (within 70)	Caddo County
Bridge 1.3 miles east of Hydro Town turnoff	Bridge	Eligible	79 (within 70)	Caddo County
Bridge 1.4 miles west of the Hydro Town turnoff	Bridge	Eligible	80 (within 70)	Caddo County
Trestle east of Weatherford	Railroad Trestle	Eligible	81 (within 70)	Unclear
Roadbed east of I-40 in Custer County	Roadbed		85	Custer County
Roadbed west of I-40 in Custer County	Roadbed	Eligible	96	Custer County
Roadbed west of Elk City	Roadbed	Eligible	108	Beckham County
Tiber Creek Bridge	Bridge	Eligible	109	Beckham County

CHAPTER TWO
THREATS TO HISTORIC SEGMENTS OF ROUTE 66 IN OKLAHOMA

Objective

The objective of this section is to develop a comprehensive list of threats to eligible segments and integral structures along Route 66 in Oklahoma. It has been the experience of our team as well as others that threats to historic highways come from a number of sources. The most obvious are threats to all highways - not just historic. These include wear and tear from motor traffic and the normal weathering processes.

There are also threats above and beyond usage and weathering. Many of the threats to the historic highway fabric come from highway maintenance activities. These can include otherwise benign activities like patching and crack filling to severe effects like resurfacing and structure replacement. The most dangerous threat to historic highways, however, is neglect.

Known Working Model

In his book *Saving Historic Roads: Design & Policy Guidelines* Dan Marriott (1998) explores in more detail some of the causes of neglect of historic highways. He draws a distinction between physical threats that erode the integrity of historic roads and the attitudes of decision makers that give rise to these threats. The physical threats can be grouped into four categories: realignment, destruction, replacement, and regional threats. The attitudes crystallize around three "issues:" Safety, liability, and ignorance.

Though Marriot's model deals with all types of historic roads, it does provide us with a heuristic device in which to frame our discussion of threats to historic segments of Route 66. For

the purpose of this discussion it will be useful to quote his definition of each of the four types of physical threat to the integrity of historic highways (Marriott 1998:25-29).

Realignment	Realignment refers to the adjustment or movement of the path of the current road. Realignment means that the beginning and ending points of the proposed work tie back into the existing road – in other words, a segment of roadway is to be rebuilt in a different location. Realignment may be as simple as a shift in the lanes to soften a sharp curve or as destructive as several miles of new road abandoning the original alignment. Often realignment is a response to real safety problems – the straightening of a curving stretch of road associated with a high accident rate, for example. But sometimes realignment is a reaction to perceived safety problems – the same straightening based on an undocumented belief that such curves are unsafe. Occasionally realignment can be due to other factors such as a change in vehicle use, speed, or volume necessitating a wider or more level road.
Destruction	Destruction refers to the complete removal of a historic roadway or roadside element. There are two key types of destruction that you may encounter – complete or incremental. The loss of an entire historic road at one time would be *complete destruction.* It is possible that the same destruction could occur over a period of years or even decades through systematic changes, destroying or modifying portions of the original road – for example, the widening or travel lanes, addition of shoulders, or removal or trees – to a point at which the entire road is lost. Such *incremental destruction* can be the result of a concerted policy to rebuild the historic road, or it can occur simply through responses to seemingly unrelated events and policies that, taken in total, lead to the loss of the historic resource.
Replacement	The replacement of road and roadside features deserves careful attention. A historic road is actually a collection unique details – cobbled gutters, brick pavement, stone bridges, art deco lighting, signs, wooded areas, stone outcroppings and exquisite concrete balusters. These are all details that, taken in total, provide the richness of the experience. Occasionally, time, wear, or even accidents may necessitate the replacement of an element or elements of a historic road. Every effort should be made to replace roadway and roadside elements with like materials, constructions, and forms in their original locations. The replacement of any historic road feature with one of inferior aesthetic quality, material, or finish chips away at the historic integrity of the route (incremental destruction).

Regional Threats	Regional threats and issues address the broader landscape and community associated with the historic road. What is the nature of the landscape through which the road passes? Is it wooded? Urban? Suburban? Does the historic road wind along a river gorge or pass though the Great Plains? Are nearby billboards impacting the visual integrity of the route? Is a new highway planned to cross or pass over or under your historic road? Regional threats may originate well beyond the actual historic road itself. Has a sudden increase in populations generated increased traffic on the historic road? Does the historic road provide direct and easy access to a new employment area, thus generating commuter traffic? Is a new facility adjacent to the historic road going to visually impact the historic road or generate an increase in traffic? Are historic view or vistas threatened by any changes?

According to Marriott there are three "driving forces" behind these threats to the historic integrity of Historic Roads. These forces create an attitude or climate in which the four physical threats outlined above can flourish. These forces or "issues," as he characterizes them, are *safety*, *liability*, and *ignorance*.

Safety is not a new issue to historic preservation. It is often invoked to speed up the condemnation process and demolition of historic buildings in marginal urban neighborhoods and business districts. In the case of historic roads, transportation agencies often invoke "public safety," when they plan to destroy or modify an old road or historic highway that is perceived as unsafe. The issue, however, is whether the safety issue is *real* or *perceived*. Replacing a two lane historic road with a updated two lane or a four lane road may, in fact, increase both traffic and traffic speed. This often results in more traffic accidents than with the original road (Marriott 1998:23). Restoring and maintaining the original cross-section and alignment should be one of the alternatives or options in a planning document or feasibility study.

Riding on the tail of safety is *liability*. According to Marriott (1998:24) historic bridges are particularly vulnerable to this issue. Where lane width is narrower than is acceptable by

current standards or the bridge structure supports lighter loads than its modern replacements government agencies often move toward demolition to avoid potential litigation.

The issue of *ignorance* needs little explanation. Most destruction and neglect of historic roads, as with other historic resources, is due to a lack of understanding of their value. Often, transportation and planning agencies are unaware that these historic resources powerful legacies that give meaning to our lives. The public does not become aware of this fact until a resource is lost.

Oklahoma Route 66 Experience

The model provided by Marriott provided us with some background in which to frame our experience along Route 66 in Oklahoma. This study is more ethnographic than longitudinal in nature. In other words we are only taking a snap shot in time and not studying the effects of various forces on the historic resources over time.

The methods we used in gathering information were simple. Between March 7 and 11, 2002, and December 18, 2002 we inspected each of the 45 listed or eligible properties along Route 66 in Oklahoma. We took photographs and videos of each resource and documented their condition. In addition, with the assistance of Melvena Heisch, Jim Gabbert, and Charles S. Wallis, we developed a list of individuals to contact concerning their observations of conditions along Route 66.

During the course of our investigation we encountered a number of physical threats to the eligible segments that would compromise the historic integrity of each. We developed a matrix to summarize our observations and to lay the groundwork a management plan. This matrix can be found in Table 2. The following discussion will focus on the elements of that matrix.

Explanation of Matrix Elements

The "*road is the resource"* and all the eligible segments and integral structures along route 66 in Oklahoma (except the Ozark Trail Obelisk, the pedestrian underpass in El Reno, and the railroad trestle east of Weatherford) were paved with either concrete, asphalt, brick, or in the case of one bridge, wood decking. In a number of instances we encountered pavement deterioration. In almost all situations this was due to some form of weathering that was not being addressed by maintenance. In one situation the maintenance procedures contributed to the deterioration of the historic roadbed.

We developed a number of categories on our Matrix of Threats in which to document these conditions. The following discussion is intended to explain the categories in the Matrix of Threats in more detail.

Observed Traffic Volume

Ironically, this is most likely the biggest threat to any road or bridge. Though built for traffic, vehicles traveling on the road degrade the resource. The scope of this study did not call for a detailed evaluation of traffic volume. Though various people interviewed suggested that some count data for portions of the road did exist we were unable to obtain them during the course of this study. The reader should note that we do recommend that accurate traffic counts be taken in the future on portions of the route where listed or eligible segments exist. Since traffic volume is a significant threat to any historic highway and its integral structures we did consider traffic volume in this study.

As mentioned above this is not a longitudinal study. The study team spent only a few days on historic Route 66 and made observations. Consequently, the impressions logged under "Observed Traffic Volume" are anecdotal at best, but they did help us in making important observations about traffic volume patterns.

There is a distinct difference in traffic volume along signed segments of historic route 66 in Oklahoma between the portion of the highway east of Oklahoma City and that portion west of Oklahoma City. East of Oklahoma City the designed historic route 66 runs almost parallel to Interstate 44. Interstate 44, however, is also a toll road through most of this area. Traffic volume is considerably higher along this segment. This may be due to the fact that many vehicles are taking the old four-lane Route 66 to avoid tolls. However, it is more likely that traffic is very heavy along this transportation corridor. Oklahoma's two largest cities, Oklahoma City and Tulsa, are located along this corridor. Commercial traffic is heavier in this part of the state. Thus the historic road functions as alternative route when traffic is heavy on the interstate.

Route 66 west of Oklahoma City also runs parallel to Interstate 40. Municipalities along this stretch of highway are much smaller than along the eastern portion of the route. The interstate here is no longer a toll road and all traffic uses it freely. In addition, the route designated as historic Route 66 is a two-lane highway throughout its entire length. This in contrast to the eastern portion which contains numerous four lane segments.

Though we were unable to obtain traffic count data for any segments of Route 66 under its jurisdiction we did enquire if the Department of Tourism had any information on the amount of tourists who travel Route 66. At this time they had no system set in place to evaluate tourism volume along the historic route. It should be noted, however, that the Route 66 Museum in Clinton takes daily counts of visitors. This provides some insight into a "threshold" count for traffic on Historic Route 66.

In examination of Table 2: "The Matrix of Threats" the reader will notice that the investigation team rated traffic on resources along a continuum from "none" (as in the case of the Eleventh Street Bridge over the Arkansas River in Tulsa) to "extremely heavy" (as in the case of the Horse Creek Bridge in Afton). These ratings are based upon our impressions as we documented and photographed each resource. Consequently, they are purely subjective.

One last observation, except for Horse Creek Bridge and the twin bridges over Bird Creek, all other eligible resources along the portion of historic Route 66 east of Oklahoma City were on early segments of Route 66. They are not on the main line that is used as an alternate to Interstate 44. Consequently, traffic on these resources was light. Horse Creek Bridge and the twin bridges however, are on the main line and thus experience considerably more traffic. This bridge has very narrow lanes. Though in good condition overall, it would not surprise this team if there were plans in the future to replace this structure.

Threats Particular to Roadbeds and Decking

As mention earlier the road is the primary resource of any historic highway. There are three primary characteristic of a roadway: alignment, profile, and cross-section. In the case of historic roads a fourth can be added: fabric. Alteration or damage to any one of these basic characteristics of a road could be considered a threat. A brief description of each is necessary here.

Alignment	The general route of a road fixed on the landscape is considered its *alignment*. This includes its curves, intersections, and straight sections
Profile	The way a road or highway changes grade along its alignment is known as its *profile.* The profile follows the centerline of the highway and is a record of the change in grade. This includes hills, valleys, and any change in elevation of the road surface.
Cross-section	The horizontal placement of road elements is considered the *cross-section*. The cross-section extends from the right of way through the shoulder and pavement across the road into the opposite right of way. It includes pavement elements like the apron, shoulder, road surface and subsurface materials. It can also include drainage systems features as well as signs, markers, and guard rails.
Fabric or pavement	The material that makes up the roadway itself. For example, gravel, stone, planks, concrete, bricks, or asphalt (asphalt). Our experience of Route 66 in Oklahoma we found gravel, concrete, brick, asphalt, and in the case of the "Little Deep Fork Bridge" decking – planks.

Threats to these resources include realignment, replacement, and total destruction. Our investigation of the Forty-five historic resources under consideration in this study suggests that two addition threats should be included: cracking pavement and improper maintenance.

During this investigation we encountered a number of threats and threatening conditions that were placing the historic road and bridge decks in jeopardy. These can be seen in Table Two: "Matrix of Threats to Route 66 Resources" in the column entitled "Threats Particular to Roadbeds and Decking."

The dominant observation of roadbed and decking on eligible segments was that the pavement was cracking. Cracking of pavement can be caused by a number of factors. There are two primary ones, however, one caused by nature and one caused by human activity. Weathering is a natural process in which differential freezing and thawing of water collected in minute cracks and seams during the winter and summer season will cause any type of fabric or pavement to crack. Excessive heat can also cause buckling of the pavement.

Vehicular traffic, in particular heavy commercial vehicles, are the major cause of cracking of pavement even in modern highways. This cracking in conjunction with weathering can result in rapid deterioration of the existing fabric or pavement.

Improper maintenance can cause both cracking and deterioration of the existing fabric. One case in particular stands out here. The "Miami Original Nine Foot Segment" has been covered with gravel. This segment of original nine-foot wide roadway is paved with Portland cement. It appears to maintenance crews have decided to widen the cross section by grading an apron on each side of the roadbed and pouring gravel over both dirt apron and cement pavement. Vehicles driving upon this narrow segment of road exacerbate the situation by grinding the gravel into the pavement.

Threats Particular to Bridges

Bridges have the same basic design characteristics as does the roadbed. In other words, basic design characteristics of a bridge include alignment, profile, cross-section and fabric. In this study 25 of the 45 resources under investigation were bridge structures. In our observations we encountered some *threats* we considered *particular to bridges*. These we organized into three basic categories: threats to substructure and supports; threats to superstructure members (in most cases truss elements); and finally threats to rails and safety elements.

The most common threat to elements in all three of these categories was rust. The most severe case of rust affecting all elements was found on Bridge No. 18 over Rock Creek in Sapulpa. The second most severe was the Pryor Creek Bridge near Chelsea.

Besides rust substructure elements appear to be subject to erosion problems. The shifting of creek beds and seasonal fluctuation of water levels appears undermine some bridge structures. One bridge in particular – Resource 77 over an unnamed creek is in serious condition. The concrete pylons which support the bridge supports are being undermined and exposed by erosion from the currents in the creek.

We also encountered a number of bridges in which the guard or safety rails were either rusting away or damaged by traffic accidents. The bridge just east of the town of Hydro (Resource 79) is an excellent example of this. Though the rails are concrete, they appear badly damaged by traffic accidents.

Threats Particular to all Resources

The study team encountered three basic *threats particular to all resources* during the course of this investigation. This first is vandalism. A number of resources were covered with graffiti. One resource in particular – the Ozark Trail Marker was covered extensively with

various colors of paint. In addition the concrete base appears to be chipped – presumably the result of being struck by a motor vehicle.

The second generalized threat we refer to as "modern applications." It appears that bridges in particular are often used as supports for utility lines and pipelines. A good example of this is the Bridge over the Canadian River where a number of pipeline presumably containing electrical or phone wiring is attached to the south face of the deck supports. Other modern applications include barbed wire fencing to restrain cattle and riprap to shore up eroding creek and riverbanks, and the removal of bridge support members as in the case of the Tiber Creek Bridge. It appears that the portal struts were removed presumably to provide clearance for modern semi tractor-trailer trucks.

The final generalized threat we encountered was flooding. In one case, "Bridge No. 18 at Rock Creek" in Sapulpa, appears to be subjected to periodic flooding. The adjacent railroad bridge has a deck and track supports higher than the vehicular traffic bridge. The substructure members beneath the railroad bridge were filled with tree branches and other debris suggesting recent flooding. Examination of Table Two shows that this bridge has extensive damage in all areas.

Threats to Unique Resources

There are some resources that need special attention. The Ozark Trail Marker (Resource 46) on a section of the original alignment of Route 66 between the towns of Chandler and Stroud is a particular case in point. This resource is located in a small triangular patch of ground where the intersection of two roads forms a "T". In this case the "T" configuration is more like a ∇ configuration with the Tail Marker in the center. The roads that form this intersection have a sand and gravel surface. They are local county roads and the Trail Marker is within the right of way.

Inquiries into the ownership of this resource proved interesting. The Lincoln County Assessor, Randy Wintz, was very familiar with the resource and its peculiar location. He informed us that all private property lines run down the center of local roads. The county, however, has control and responsibility for the right-of-way. It was not clear to him who would actually own the Trail Marker, or who would hold sole responsibility for its welfare. Historic documents collected by local residents suggest that Lincoln County owns this landmark. Confusion, over jurisdiction and ownership among county officials can result in damage or destruction of the resource.

Table Two: Matrix of Threats to Eligible Resources on Route 66 in Oklahoma

Segment	**Survey Property Number**	**Observed Traffic Volume**	**Threats Particular to Roadbeds and decking**	**Threats particular to Bridges**			**Threats Particular To all Resources**	**Maintenance Conditions**	**Comments**
				Threats to Substructure and Supports	Threats to Superstructure Members	Threats to Rails and Safety Features			
Miami Original Nine-Foot Section of Pavement	5	Light	Cracking due to weathering frost, vegetation, gravel being graded over the existing road					Gravel / minimal maintenance	Concern for tenuous nature of pavement
Horse Creek Bridge	8	Extremely Heavy	Weight of commercial vehicles using this bridge						Narrow Width, 24 foot wide pavement, no shoulders
Eleventh Street Arkansas River Bridge	22	None, Closed to vehicular and pedestrian traffic	Cracking pavement, weeds growing in cracks					No apparent maintenance	No longer used for traffic, needs reuse options
Bridge No. 18 at Rock Creek	26	Moderate	Brick pavement cracking	Flood waters can cover deck	Rusting supports and structure	Extensive Damage	Utility Pipeline attached to deck support members	No apparent maintenance, lower chord of sway bracing hit by high water	Narrow 18 foot pavement, constraints on height clearance
Arcadia Route 66 Roadbed	54	Light	Cracking due to frost, vegetation and weathering					Minimal maintenance	Note difference between “Bates modified” and “Bates original” segments
US 281 Spur, Roadbed known as the Bridgeport Section	69	Light	Cracking and weathered pavement, with some asphalt patches					Concrete pavement with asphalt patches	Original concrete, note lip in pavement at edges
Roadbed South of Narcissa	6	Light	Cracking due to weathering frost, vegetation, gravel being graded over the existing road					Gravel / minimal maintenance	Concern for tenuous nature of pavement
Roadbed northeast of Afton	7	Light	Cracking due to weathering frost, vegetation, gravel being graded over the					Gravel / minimal maintenance	Concern for tenuous nature of pavement

Segment	Survey Property Number	Observed Traffic Volume	Threats Particular to Roadbeds and decking	Threats particular to Bridges			Threats Particular To all Resources	Maintenance Conditions	Comments
				Threats to Substructure and Supports	Threats to Superstructure Members	Threats to Rails and Safety Features			
			existing road						
Bridge #1860-0724X over Little Cabin Creek	10	Medium							22 foot deck width; Overall good condition
Pryor Creek Bridge	12	Light	Cracking and neglected					Rust needs paint	18 foot width, has both height and weight limits
Foyil Roadbed	14	Light	Cracking due to weathering frost, vegetation, gravel being graded over the existing road					minimal maintenance	Concern for tenuous nature of pavement
Bridge over Bird Creek	15	Heavy			Members rusted and in need of paint			Twin bridges overall good condition; need paint	
Bridge over Spunky Creek #66E0570N4080006	18	Light	Deteriorating wooden planks	Some wooden supports damaged	Members rusted and cracking	Rails worn and damaged by traffic	Appears to be damaged by periodic flooding	Wooden deck covered in gravel and in need of repair and attention	Single land 12 foot wide deck; need immediate attention
Roadbed west of Supulpa	27	Light	Cracking due to weathering frost, vegetation, gravel being graded over the existing road					minimal maintenance	Concern for tenuous nature of pavement
Tank Farm Loop Roadbed (County control)	31	Light	Cracking and neglect					Asphalt patches	18 foot wide pavement
Tank Farm Loop Roadbed (private)	32	Light	Cracking and vegetation						18 foot wide pavement
Little Deep Fork Bridge	37	Somewhat remote, not on the regularly traveled sections	Deteriorating wooden planks		Members rusted and cracking	Rails worn and damaged by traffic	Appears to be subject to floods	Wooden Deck with gravel on top	Could support only light-weight vehicles, single lane 14 feet wide.
Bridge over Salt Creek	43	none	Cracked pavement and deterioration at road/deck seam						Deck width 20 feet; no longer used for traffic; one end barricaded
Ozark Trail Marker	46						Extensive graffiti		Remote location

Segment	Survey Property Number	Observed Traffic Volume	Threats Particular to Roadbeds and decking	Threats particular to Bridges			Threats Particular To all Resources	Maintenance Conditions	Comments
				Threats to Substructure and Supports	Threats to Superstructure Members	Threats to Rails and Safety Features			
Bridge over Dosie Creek #41E0890N3520007	47	Light	Deteriorating wooden planks		Members rusted and cracking	Rails worn and damaged by traffic		Wooden deck covered in gravel and in need of repair and attention	Deck 16 feet wide; one wooden lane
Bridge over Captain Creek #4124-0157X	50	Medium	Cracked pavement and deterioration at road/deck seam						Deck 22 feet wide; 10 foot wide lanes
Lake Overholser Bridge	56	Medium	Cracked pavement due to weathering		Members painted and in good condition	Good condition		Concrete deck with asphalt overlay	Narrow lanes, 2 ten foot wide lanes, no shoulders
Rock Island Line Viaduct	61	Medium	Cracked and deteriorating pavement	Supports giving way		Rails badly damaged			Very poor condition
Pedestrian Underpass	63						Graffiti and dumping of garbage in tunnel	Needs periodic cleaning	good condition
Rail Road Trestle (Rock Island Line)	64							Well maintained	Active trestle in good condition
Roadbed west of El Reno	65	Light							Generally in good condition, two 10 ft wide lanes, concrete pavement no overlay.
Concrete Drain Box	66 (within 65)	Medium	Asphalt overlay on deck severely cracked			Damaged concrete rails	Cattle fencing applied to drain	Rails need immediate attention	Basically in good condition, needs immediate maintenance, stamped 1928 date of construction.
Bridge over Powder Face Creek	67 (within 65)	Medium				Damaged concrete rails		Concrete deck in good condition	Construction dates 1932 stamped on bridge
Bridge over Creek	68 (within 65)	Medium					Barbed wire attached to bridge	Concrete deck in good condition	Construction dates 1932 stamped on bridge, deck supported by six I-beams
20 mile segment of Roadbed beginning on the east side of Canadian River	70	Light	Cracking and weathered pavement, with some asphalt patches					Concrete pavement with asphalt patches	Some bridges removed and replaced with culverts like structures and drains

Segment	Survey Property Number	Observed Traffic Volume	Threats Particular to Roadbeds and decking	Threats particular to Bridges			Threats Particular To all Resources	Maintenance Conditions	Comments
				Threats to Substructure and Supports	Threats to Superstructure Members	Threats to Rails and Safety Features			
Bridge over Canadian River	71 (within 70)	Light					Utility and pipelines attached to bridge, some graffiti	Asphalt deck well maintained	25 foot wide deck, no shoulders
Bridge over unnamed Creek	72 (within 70)	Medium	Narrow deck		I-beam supports sporadic rust			Concrete deck in good condition	30 foot-wide deck, initial approach spans supported by concrete uprights while center of bridge supported by fabricated metal posts
Bridge .75 miles west of Hinton Jct.	73 (within 70)	Medium	Asphalt patches on deteriorating seams					Concrete deck in with asphalt patches	Four spans, seven I-beam deck beams, 27 foot-wide deck
Bridge 1.4 miles west of the Bridgeport town turnoff	74 (within 70)	Medium			Rusting I-beam deck supports				27 foot wide deck
Bridge over White Canyon Creek	75 (within 70)	Medium				Some damage to concrete rails			Excellent condition, 27 foot wide deck
Bridge over Dead Woman Creek	76 (within 70)	Medium				Rusting members			22 foot wide deck, 4 deck beams, 6 deck stingers, concrete abutments
Bridge over unnamed Creek	77 (within 70)	Medium		West abutment undermined by creek erosion					22 foot wide deck
Bridge over Cedar Canyon Creek	78 (within 70)	Medium			Rusting members			Concrete deck with asphalt patching	Overall good condition, needs paint, 1930 date in abutment, 22 foot wide deck
Bridge 1.3 miles east of Hydro Town turnoff	79 (within 70)	Medium			I-beams supporting deck rusting	Concrete rails damaged by traffic accidents	Modern riprap abuts substructure	Damaged rails need attention	Deck and structure in good condition, six I-beams, 22 foot wide deck
Bridge 1.4 miles west of the Hydro Town turnoff	80 (within 70)	Medium			All members show some rusting		Concrete structures from adjacent I-40	Members in need of paint	Overall good condition, needs paint, 22 foot wide

Segment	Survey Property Number	Observed Traffic Volume	Threats Particular to Roadbeds and decking	Threats particular to Bridges			Threats Particular To all Resources	Maintenance Conditions	Comments
				Threats to Substructure and Supports	Threats to Superstructure Members	Threats to Rails and Safety Features			
							abut concrete substructure		deck, bridge stamped 1930
Trestle east of Weatherford	81 (within 70)	None, appears abandoned	Vegetation growing between rails and ties, rotting timber sub-deck upon which gravel deck with ties and track sits		Rusting I-beam supports		Concrete supports and deck supports contain graffiti	Track appears abandoned	This spur appears to be abandoned, timbers rotting
Roadbed east of I-40 in Custer County	85	Light	Cracking and weathered pavement, with some asphalt patches					Concrete pavement with asphalt patches	
Roadbed west of I-40 in Custer County	96	Light	Cracking and weathered pavement, with some asphalt patches					Concrete pavement with asphalt patches	
Roadbed west of Elk City	108	Light	Cracking and weathered pavement, with some asphalt patches					Concrete pavement with asphalt patches	
Tiber Creek Bridge	109	Medium	Very narrow roadway				Portal struts removed to facilitate larger vehicles; Graffiti on some members	Appears to have been recently painted	Good condition, 18 foot wide deck

CHAPTER THREE
DEVELOPMENT OF CRITERIA

In the *Introduction* to this study we note that the **Scope of Work** requires us to develop a set of criteria that allows us to sort road segments and integral structures into a three-tiered "triage" system. This ranking will provide those responsible for these resources with a tool to prioritize maintenance and repair needs for these historic resources. Only the 45 segments and integral structures already listed or eligible for National Register Nomination provided by the Oklahoma State Historic Preservation Office are to be included in the system outlined in this chapter. It should be noted, however, that the team developed this system so that it could be used to sort or triage other roadbed and related resources along Route 66 in Oklahoma as they are found to be eligible.

Table Three outlines a three tiered classification system in which historic properties under consideration in this study can be placed in one of three categories; Immediately Threatened, Moderately Threatened, or Least Threatened. To the right of each one of these categories are a set of criteria that when applied to a resource will assist in the classification. As the reader examines the criteria s/he will note that these take into account the threats outlined in the previous chapter.

Table Three. Three-tiered Classification System

	Resources in this category exhibit the following characteristics:
Immediately Threatened	1) Experience heavy traffic volume. 2) Resource (including roadway paving and bridge decking) is experiencing structural deterioration. 3) Appear to have very little maintenance, which contributes to

	Resources in this category exhibit the following characteristics:
	the destruction or deterioration of the resource. 4) Unsympathetic Maintenance is contributing to the destruction or deterioration of the resource. 5) Any bridge with deck 20 feet wide or less.
Moderately Threatened	1) Experience moderate to light traffic volume. 2) Are not being used for their intended purpose. 3) Nominal deterioration appears to be evident. 4) Bridges with deck 22 feet to 28 feet in width. 5) Pavement and decking threatened with substantive overlay.
Least Threatened	1) Experience light traffic volume. 2) No or nominal maintenance (at this time) other than some paint and cleaning. 3) Pavement and decking in good condition 4) Minimal amount of rusting supports or truss members (bridges). 5) Bridges with decks 30 feet wide or wider. 6) No or nominal overlays on original pavement.

Classification of Bridges

Of the 45 resources examined for this project, 25 were bridges. As a result, the project team spent a great deal of time examining bridges and working through a rational for developing the criteria above that would give consideration to the special needs of bridges. It is important to note that the categories into which the bridges are placed do not correspond in any way to AASHTO standards. Rather the ranking system simply acknowledges each structure, as it exists today and considers its parameters within the general context of *historical significance*.

The primary criterion for ranking a bridge rests on its pavement or deck width. Accordingly, bridges with pavement 20-foot wide or less were considered to be immediately threatened. This means that they have 10-foot wide lanes or less. And in most cases, they have only one-foot shoulders, if any at all. Should a car stop on such a bridge, one lane of traffic

would be halted. Cars would have to pass it by turning into the opposing lane of traffic, an action that can be dangerous to other vehicles and the bridge alike. Additionally, should a vehicle veer from its lane on such a bridge, it would immediately hit a guardrail, thus threatening the integrity of the historic structure.

Structures with a width greater than 20 feet but no more than 28 are ranked in the moderately threatened category. The width of two lanes on these bridges in most cases is either 20 or 22 feet, with the remaining width attributable to the construction of shoulders. Clearly, passing a car that stops on such a bridge is still dangerous and will require at least partially changing lanes–especially on structures that are 25 feet wide or less. But there is at least a nominal shoulder that would permit a vehicle to partially withdraw from traffic. A safer situation for driver, vehicle, and historic structure alike, but it is still one that can threaten the viability of a structure.

And finally, the least threatened structures are those with decks, the width of which exceeds 28 feet. Given the fact that 11-foot lanes account for only 22 feet, that means more space is available for the shoulder and thus for a disabled car. The vehicle would still be partially in traffic, but those passing it could stay, at least partially, in their lane in order to do so. Additionally, there would be a nominal recovery zone for a car to correct its path should a driver veer out of his lane. These are clearly subjective categorizations, but ones nevertheless that attempt to acknowledge that wider structures, while endangered, are not as threatened as narrower ones.

Roadbeds

The distinguishing factor in classifying roadbeds was the condition of the original pavement. If the original roadbed was receiving unsympathetic treatment, e.g., gravel placed upon the original concrete or asphalt surface in an attempt to widen the current surface, we considered this an immediate threat. Such treatments hasten the deterioration of the original roadbed surface. Similarly, if patching or overlay was of unsympathetic material, e.g., asphalt

patching of a concrete deck or roadbed, we considered this a moderate threat. Though tolerable for a short time, the long-term effect of this type of patching is deterioration of the resource.

It should be noted that David Keene and Melvena Heisch made extensive inquiries over various "list serves" on the internet to investigate if anyone in the United States had explored the issue of patching and maintaining the pavement on historic roads and highways. They received only one response. This response was from a civil engineer who was returning to school to finish his Ph.D. after 20 years of practice. This student spent some time investigating the civil engineering literature and well as conferring with his contacts. Though he himself is interested in the subject he found no examples to assist us. We thank Fred Rutz of Colorado for his time and interest in our questions.

CHAPTER FOUR
THE RANKING

Table Four is the result of applying the criteria developed in Chapter Three to each of the resources. In most cases the ranking of a resources is clear. In the case of bridges, pavement width was the determining factor. The following discussion will attempt to clarify the ranking of particular resources.

Table Four: Ranking of Resources

	Resource Name	Resource Number
Immediately Threatened	Miami Original Nine Foot Segments	5
	Original Roadbed South of Narcissa	6
	Original Roadbed northeast of Afton	7
	Horse Creek Bridge	8
	Bridge over Spunky Creek	18
	Bridge over Rock Creek	26
	Little Deep Fork Creek Bridge	37
	Bridge over Dosie Creek	47
	Rock Island Line Viaduct	61
	Bridge over unnamed Creek	77
Moderately Threatened	Bridge over Little Cabin Creek	10
	Pryor Creek Bridge	12
	Eleventh Street Arkansas River Bridge	22
	Roadbed west of Supulpa	27
	Bridge over Salt Creek	43
	Ozark Trail Marker	46
	Bridge over Cabin Creek	50
	Arcadia Road Bed	54
	Tank Farm Loop (County)	31
	Tank Farm Loop (private)	32
	Lake Overholser Bridge	56
	Concrete Box Bridge	66

	Canadian River Bridge	71
	Bridge west of Bridgeport	74
	Bridge over White Canyon Creek	75
	Bridge over Dead Woman Creek	76
	Bridge over Cedar Canyon Creek	78
	Bridge east of Hydro	79
	Bridge west of Hydro	80
	Trestle east of Weatherford	81
	Tiber Creek Bridge	109
Least Threatened	Foyil Road	14
	Twin Bridges over Bird Creek	15
	Rail Road Trestle	64
	US281 Spur	69
	Pedestrian Underpass	63
	Roadbed West of El Reno	65
	Powder Face Creek Bridge	67
	Bridge over Creek	68
	20 Mile Roadbed Segment (West of Canadian River Bridge)	70
	Bridge over Unnamed Creek	72
	Bridge west of Hinton	73
	Roadbed east of I-40 in Custer County	85
	Roadbed west of I-40 in Custer County	96
	Roadbed west of Elk City	108

Under ***Immediately Threatened*** resources, three require further comment. At the time of our investigation, the *Miami Original Nine-Foot Segment* was covered with loose gravel in an apparent attempt to widen the roadbed surface. Vehicles traveling over the surface of this original roadbed segment force the gravel into the pavement causing further degradation. This gravel layer needs to be removed immediately. The second resource of concern, *Horse Creek Bridge*, experiences considerable traffic volume. Vehicular traffic as well as semi-tractor trailer truck traffic is heavy on this rather narrow bridge. Our primary concern is that this bridge will be replaced in the near future with a modern structure. Finally, the *Rock Island Line Viaduct* is in very poor repair with guard rails and substructure supports in advanced stages of deterioration.

Bridges listed as ***Moderately Threatened*** were also of some concern. We noticed in traveling on Resource 70, a twenty mile segment of road that begins just east of the Canadian

River Bridge and extends westward, that a number of bridges over smaller creeks had been removed and replaced with culvert-like structures and drains. This appears to be a very successful strategy in that the "bridge width" can be increased without substantial capital investment. Such replacement strategies, however, threaten existing bridges that may be considered too narrow or too costly to repair and/or maintain.

The Eleventh Street Bridge over the Arkansas River, though having ample deck width, is no longer in use. Rather, it is sealed off with cyclone fencing with no public access. Though the bridge is not immediately threatened, neglect and lack of maintenance place it in jeopardy over the long term.

The Ozark Trail marker is neither bridge nor roadbed, but a special feature. Though vandalized on a regular basis, its welfare is the concern of surrounding townspeople. It is clear, however, that there is no active maintenance on the part of the county.

The ***Least Threatened*** list contains a variety of resources: bridges, roadbeds, and one unique resource – the *El Reno Pedestrian Underpass*. This grade-separated pedestrian crossing is in very good condition and mostly needs attention and maintenance. This is also true of the other resources in this category.

CHAPTER FIVE
PRESERVATION AND MANAGEMENT STRATEGIES

The goal of this chapter will be to examine possible strategies to manage the listed and eligible historic properties along Route 66 in Oklahoma. Throughout this chapter it is important to keep in mind two points. First, historic properties are eligible for nomination to the National Register of Historic Places when they have enough integrity to communicate or convey their significance (National Register Bulletin 15: 44). This is important. Lack of maintenance and neglect of a historic resource will eventually affect its integrity.

Second, highway improvement projects need to safely integrate the design into the surrounding natural, human, and historic environment (Flexibility in Highway Design page xi). In other words flexibility in design is essential in working with historic highways. Straightening a curve to accommodate vehicles traveling at higher speeds should be rethought. Posting and enforcing lower speed limits will allow a community to maintain the character of a historic road in its community. In most cases, higher speeds on local and state roads is not in character with the needs of surrounding communities which have been built along a road where lower speeds were the norm.

There are three very important documents that all planners, designers, and preservation advocates need to be aware: the FHWA publication *Flexibility in Highway Design*; AASHTO publication *A Policy on Geometric Design of Highways and Streets*, also known as the Green Book; and AASHTO publication *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400)*. These three documents contain information for design changes on roads and bridges.

The most important of these three and the one that addresses the issues brought up in this study is the last. It has just been issued by AASHTO and incorporates issues raised in the first

volume *Flexibility in Highway Design* with the policies and guidelines outlines in the second *A Policy on Geometric Design of Highways and Streets*. Its appearance is very timely for issues raised in this report.

As outlined in Chapter Two and documented in **Table Two: Matrix of Threats** we collected information on traffic volume on all roadbed and bridge resources encountered during the course of our investigations. It should be noted, however, that observations were made by the study team during a week in March and a week in July of 2002. Our observations were purely subjective and anecdotal. The study team was unable to acquire official traffic counts for any of these resources. Later in this chapter we will recommend that traffic counts be taken for each resource on a regularly scheduled basis. Without any other data, however, we will proceed with our observations.

Our anecdotal evidence does suggests that except for the Horse Creek Bridge, roadbed and bridge resources investigated in this study experience light to moderate traffic volumes. This information is important. The *Guidelines for Geometric Design of Very Low-Volume Local Roads (ADT ≤ 400)* defines low volume roads as follows:

> A very low-volume road is a road that is functionally classified as a local road and has a design average daily traffic volume of 400 vehicles per day or less (AASHTO 2001:1).

The roadbed and bridge resources discussed here fall within this definition of a low volume road.

These new AASHTO guidelines for low-volume local roads encourage designers to be more flexible when dealing with scenic and historic roads that fall into this category.

> Even more flexibility than for new construction projects is provided to the designer for projects on existing roads…. The designer is discouraged at most sites from making unnecessary geometric design and roadside improvements, but is encouraged to look for evidence of site-specific safety problems and to focus safety expenditures on those sites where a site-specific safety problems exists that is potentially correctable by a specific roadway or roadside improvement (AASHTO 2001:16).

The guidelines go on to outline more detail specifications for measuring safety problems on roadway and bridge resources.

We encourage planners, designers, and regulators to examine these new AASHTO guidelines before planning any changes to eligible segments and integral structures discussed here. In particular, resources classified as Moderately Threatened and Least Threatened in Chapter Four should not be subject to any design change.

One note of omission needs to be made here. The reader will notice that there is no discussion of the Section 106 process as a preservation strategy for Route 66 in Oklahoma. The Section 106 process has been in place for over thirty years now and is the main tool used by Federal Agencies and the State Historic Preservation Officers to identify, evaluate, and mitigate the adverse effects undertakings can have on historic resources. Though a valuable tool the end result of many Section 106 reviews of historic resources is to document and remove or radically modify the resource. This would be unacceptable with a resource like Route 66. The road is the resource and once it loses its integrity or ability to communicate its historic significance we no longer have "Historic Route 66."

An appropriate analogy would be useful here. If you take an eligible civil war battle field and build a subdivision and shopping center upon it you no longer have a civil war battle field. It no longer conveys the feeling and sense of place where an important historic event took place. If you widen the road, change its cross-section and replace the bridges you will have the corridor upon which Route 66 once sat, but you will not have the "Historic Road."

It is the opinion of this evaluation team that preservation strategies must "pre-empt" the Section 106 process. It is important that historic road advocates move toward other strategies and resort if necessary to advocating for legislative or statutory action on the state and local level.

Oklahoma Strategies and Activities

We have a number of very specific recommendations and strategies for the resources ranked in our three-tiered system. Before we make these recommendations we would like to explore some more general recommendations and strategies for all the resources within the route. In addition some of these general strategies will be referred to as a specific remedy for a threatened resource later in this discussion. Consequently, we will present the more general first.

Strategies	Objective	Activities to Implement Strategies
Unified management strategy	Treat Historic Route 66 and its historic resources as parts of a whole. This would allow for more informed decisions about repair and maintenance. This would allow for long-term management solutions instead of crisis management.	Develop a "Route 66" Historic Advisory Council composed of appropriate state and local government officials and citizen advocacy groups. Develop a proposal for funding from one or a combination of the following sources: the next round of transportation enhancements; the Transportation Research Board (TRB); and the Route 66 Coordinator Preservation Program. Educate local road and county highway commissions on new AASTO Guidelines for Design on Low Volume Rural Roads. Develop a Programmatic Agreement with County Highway Boards of Commissioners to address ongoing repair and maintenance needs.
Community Involvement	To give local community and advocacy groups a role in protecting historic resources. Many communities groups have emotional attachment to historic resources.	Establish "Route 66 Adopt a Resource Program." This program would enroll local groups like high school history clubs or historical societies to clean up and monitor the resource on a regular

Strategies	Objective	Activities to Implement Strategies
	This type of community pride and identification with historic resources should be encouraged. It can also assist the preservation community in advocacy and lobbying activities.	basis. The Oklahoma Route 66 Association or similar organization could spearhead this type of activity. Annual Oklahoma Route 66 Conference or a roundtable at annual statewide preservation conference where town representatives and "Chamber of Commerce" representatives are invited to participate. (Having the National Park Service Involved and actually issuing the invitations could increase attendance). Prominent business owners along Route 66 should be invited to provide information how the "economic advantages" of maintaining Route 66 related businesses and resources. Get the Oklahoma Dept. of Tourism involved in Route 66 issues. Route 66 cuts across the state and connects communities and tourist attractions both historic and otherwise in a way no other road in the region can. Advocates and community groups develop a "lobbying strategy" to get appropriate agencies to fund repair and maintenance. Develop workshops and programs to inform and educate the public about the importance of Route 66 in Oklahoma History. This might be done as a joint venture between the various state agencies (Historical Society and Tourism) with the support of local communities (Chambers of Commerce or local Tourism Councils.)

Strategies	Objective	Activities to Implement Strategies
Short term maintenance needs of various eligible resources along Route 66	To encourage local government entities that own or have jurisdiction over historic resources along Route 66 to repair and maintain them on a regular basis	Work with county officials, legislators, and ODOT to secure funding for repair and maintenance Develop working relationship with Route 66 Association constituents in each county. They may be the most effective tool in lobbying county highway officials for maintenance and improvement. Develop a schedule with local county highway commissions to set up "traffic counters" at critical points along Route 66 - particularly near eligible or listed properties.

Preservation Strategies: Immediately Threatened Resources

In the previous chapters we outlined some very specific threats to listed and eligible resources along Historic Route 66 in Oklahoma. In this portion of the report we would like to present some specific strategies to assist in the preservation of resources that have been ranked as "Immediately Threatened." We have chosen to address these individual because of the fragile condition an impeding threats we find to each of these. It should be noted that all recommendations imply discussion with the State Historic Preservation Officers to make sure that all applications and repair materials meet the Secretary of the Interior Standards for Rehabilitation of Historic Properties.

Resource Name	Preservation Strategies
Miami Original Nine Foot Segment (Resources 5,6,7)	(1) Remove all gravel road surface with a street sweeper. Keeping this road surface clean and free of material will radically reduce damage historic surface. (2) After consulting AASHTO "Low-Volume Road Guidelines" negotiate with SHPO a reasonable expansion of shoulders to allow vehicles to pass each other safely. Shoulder should be widened to allow for vehicles to pass safely and not to create

Resource Name	Preservation Strategies
	a roadway for two-way traffic. (3) Traffic volume should be measured on a regular basis and shared with SHPO. (4) Partnership between county, state, and Route 66 association should be explored to fund an enhancement project. Specifically the National Center for Preservation Technology and Training should be contacted. This segment of road would fit well into one of their project categories – especially if it involves teaming data gathering on resource usage and problem solving strategies on maintaining the historic road in a modern road use environment.
Horse Creek Bridge (Resource 8)	(1) Reduce speed limit on this bridge. (2) Install "reduce-speed bumps" or similar road surface impediments at appropriate distance before approach of the bridge. This should be done for both the eastern and the western approach. (3) Weight restrictions should be implemented. (4) Traffic volume should be measured on a regular basis and shared with SHPO. (5) A study should be conducted on suggesting alternative routes for semi tractor-trailer truck traffic.
Bridge over Rock Creek (Resource 26)	(1) Take immediate steps to clean structure and deck. (2) Repair damaged and rusting supports. (3) Weight restrictions should be implemented. (4) Install "reduce-speed bumps" or similar road surface impediments at appropriate distance before approach of the bridge. This should be done for both the eastern and the western approach. (5) Traffic volume should be measured on a regular basis and shared with SHPO. (6) This bridge should be on the **top of a priority list** for enhancement money on the next round. (7) Make this a candidate for the "adopt a resource program."
Bridge over Spunky Creek (Resource 18) Little Deep Fork Creek Bridge (Resource 37) Bridge of Dosie Creek (Resource 47)	(1) Take immediate steps to clean structure and repair wooden deck. (2) Repair worn and damaged rails. (3) Post and enforce weight restrictions. (4) Make this a candidate for the "adopt a resource program." (5) Traffic volume should be measured on a regular basis and shared with SHPO.

Resource Name	Preservation Strategies
Rock Island Viaduct (Resource 61)	(1) Engage a bridge engineer to assess the structural integrity of the viaduct. (2) Repair worn and damaged rails. (3) Repair, reinforce and restore support structures.
Bridge over Unnamed Creek Resource 77)	(1) Take immediate steps to prevent creek from undermining west abutment. (2) Repair support areas damaged by erosion.

Preservation Strategies: Moderately Threatened Resources

Resources in this category are not immediately threatened. As outlined in Chapter Three, however, they are experiencing conditions that, over time, will have serious affects upon their historic integrity. Acknowledging this fact, it is necessary to work toward implementing preservation strategies that will ameliorate the threats.

Resource Name	Preservation Strategies
Bridge over Little Cabin Creek (Resource 10) **Pryor Creek Bridge** (Resource 12) **Lake Overholser Bridge** (Resource 37) **Bridge over Cabin Creek** (Resource 50) **Concrete Box Bridge** (Resource 66) **Canadian River Bridge** (Resource 71) **Bridge West of Bridgeport** (Resource 74) **Bridge over White Canyon Creek** (Resource 75) **Bridge over Dead Woman Creek**	1) Establish firm speed limit restrictions on the approaches of each of these bridge resources. 2) Appropriate materials need to be used on the decking of each of these bridges. 3) Inappropriate overlay and patching materials should be removed and replaced with materials sympathetic to the original decking materials.

Resource Name	Preservation Strategies
(Resource 76) **Bridge over Cedar Canyon Creek** (Resource 78) **Bridge East of Hydro** (Resource 79) **Bridge West of Hydro** (Resource 80) **Tiber Creek Bridge** (Resource 109)	
Ozark Trail Marker (Resource 46) **Acadia Roadbed** (Resource 54) **Roadbed west of Supulpa** (Resource 27) **Tank Farm Loop** (Resource 31) **Tank Farm Loop** (Resource 32) **Bridge over Salt Creek** (Resource 43)	1) Each of these resources should be enrolled in "The Route 66 Adopt a Resource" program. 2) The parties responsible for care and maintenance of the Ozark Trail Marker should be definitively established. 3) Ozark Trail Marker should have a small (no more than 3 feet high) "cast iron" fence around the triangular parcel it rests upon. This would afford some protection. 4) The Oklahoma SHPO might look into working with the private owner of Tank Farm Loop (Resource 32) work out a preservation easement that could be donated either to Preservation Oklahoma, Inc. and/or to the State Historical Society and/or other appropriate organization.
Trestle East of Weatherford (Resource 81)	1) Establish ownership of this resource and their intensions for this rail spur. 2) Investigate incorporating this resource into a bike or similar trail.
Eleventh Street Arkansas Bridge (Resource 22)	This resource has a great deal of potential for community recreation – particularly for use in a city-wide bike trail system. Unfortunately, this resource was not considered as integral in the footprint of the current bike-trail system. SHPO might insist that future planning for parks and recreation in the City of Tulsa address the preservation and use of this resource in foot or bike path recreational activities. It could also serve as a central point for interpretive "kiosks" for Route 66 resource in Tulsa and the surrounding areas. Resource that cannot be used for their original purpose should be treated as "artifacts." Though it no longer serves its original function it should be treated as a valuable item and displayed as such for education and informative purposes.

Preservation Strategies: Least Threatened Resources

Resources in this category are essentially in very good condition and appear to be safe from any immediate threat. This could change. Consequently, we have some recommendations for the long-term welfare of each.

Resource Name	Preservation Strategies
Pedestrian Underpass in El Reno (Resource 63)	This resource is in excellent condition, but should be enlisted in a "Oklahoma Route 66 Adopt a Resource" program. It appears to require a clean up and some attention!
US 281 Spur (Resource 69) **Foyil Road** (Resource 14) **Twin Bridges over Bird Creek** (Resource 15) **Roadbed West of El Reno** (Resource 65) **Roadbed West of Canadian River Bridge** (Resource 70) **Powder Face Creek Bridge**(Resource 67) **Bridge over Unnamed Creek** (Resource 68) **Bridge over Unnamed Creek** (Resource 72) **Bridge West of Hinton** (Resource 73) **Roadbed east of I-40 in Custer County** (Resource 85) **Roadbed west of I-40 in Custer County** (Resource 96) **Roadbed west of Elk City** (Resource 108)	Traffic counts should be taken for these resources. In addition these resources could use some attention to maintenance.
Rail Road Trestle – Rock Island Line (Resource 64)	This resource is active and well maintained by the rail road. Needs no attention at this time.

General Recommendations

There are important types of information needed for planning and management of the resources examined in this document that were unavailable. Consequently, we would like to make some general recommendations. First, a qualified bridge engineer should make assessments of each bridge. The assessments should include information on the load bearing capacity of the bridge, a rating on its present structural strength, and prioritized list of tasks needed to keep the bridge in excellent working condition. AASHTO recommends that bridges of historic significance be left in place. Speed limits, weight limits, and other external traffic factors be adjusted to meet the needs of preserving the bridge (AASHTO Green Book 2001: 389).

In addition, information on the effects of weathering on roads and bridges in Oklahoma would have proved very helpful. If this information does exist we were unable to acquire it during the course of this investigation. Similarly, it would be helpful if information did exist on the best materials to use in patching and maintaining road surfaces, bridge decks, and bridge structures. If similar studies are planned by ODOT it would help to gather this specific information for Route 66 resources.

"Heritage Area" legislation is now pending in congress. Depending on the outcome this could be an important source of funding. As this legislation progresses the Oklahoma Historical Society and the Oklahoma Department of Tourism should look into designating Route 66 in Oklahoma as a Heritage Area to qualify for funding of specific resource and preservation related projects.

It would be important to develop a relationship with the National Center for Preservation Technology and Training (NCPTT). The fund resource specific projects that employ current and cutting edge methods and technology to preserving historic resources. As mentioned in our discussion of the Miami Segment (Resource #5), the ODOT could apply for funding to experiment with application of sympathetic materials to the original pavement or for solving the problem of modern traffic on very narrow pavement.

Another type of project NCPTT would fund would involve the Route 66 Association and Education. The Route 66 Association in conjunction with the Oklahoma Historical Society and the Oklahoma Department of Transportation could apply for funding to sponsor a "by invitation only" conference where engineers throughout the State would be invited to present papers or roundtable discussion addressing pavement and deck treatment on historic highways. This could be expanded to address historic bridge issues. It would be an excellent opportunity to educate the engineering community on the value of historic highways.

Final Remarks

Two points should be made in closing. First, the most important tool available in working with state and local highway agencies is the new AASHTO design guidelines for low volume local roads. The guidelines coupled with existing preservation laws can effect the preservation of significant historic roadbeds and related resources along Route 66 in Oklahoma.

Second, the most important tool in preserving these historic resources is to design programs that build in community involvement. In the discussion above, we encouraged the establishment of the "Route 66 Adopt a Resource" program. Our objective here is to involve community groups along the Route 66 corridor. Route 66 has become important to us because of grass roots activism by local Route 66 Associations across the country. Oklahoma is fortunate enough to have members of its Route 66 Association with a sophisticated understanding of historic resources and the ability to recognize and document them.

We are suggesting that programs be developed to build upon this base. An "Adopt a Resource" program where awards can be given to local "adopters" and workshops held during the statewide historic preservation conference would be an excellent start. We are sure that once in place such a program would grow in scope and activities well beyond any suggestions we could make today.

Route 66 is one of the most valuable tourism resources in the State of Oklahoma. According to Ms. Pat Smith, director of the Route 66 Museum in Clinton, Oklahoma over 35,000 people visit the museum annually. Attendance is over 200 per day during the busy season. These types of numbers are similar to those this investigation team encountered in the State of Illinois. They suggest that there is considerable interest both on the local and national level for driving the highway. Unfortunately, there are no data has been collected yet on the impact Route 66 has on the economy of the towns through which it passes.

Few tourism resources, however, cover such large sweeps of landscape as does Route 66 in Oklahoma. Its potential for heritage tourism and a source of revenue for business along the route are limitless. It is a resource that needs attention not only for its nostalgic value, but more importantly, for its ability to engage the imagination of future generations and remain, as it was and is, source of economic stimulation.

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