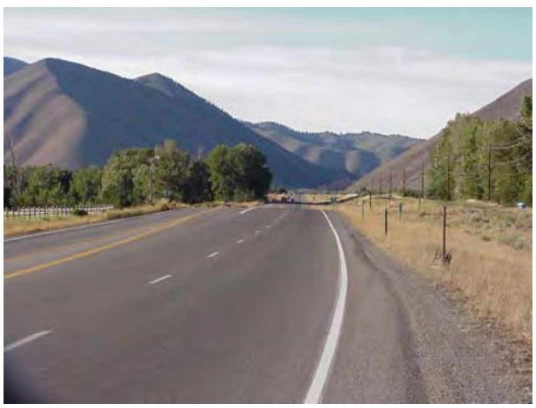
Timmerman to Ketchum
Draft Environmental Impact Statement

Project No. STP-F-2392(035)
Key No. 3077

Technical Reports
Volume III



September 2005

VOLUME III – TECHNICAL REPORTS

Volume III of this Draft Environmental Impact Statement contains the following technical reports:

- Tab 1 Biological Assessment
- Tab 2 Noise Report
- Tab 3 Baseline Transportation Conditions
- Tab 4 Origin/Destination Intercept Survey Technical Memorandum
- Tab 5 Transit Considerations
- Tab 6 Transportation Demand Management Survey Results
- Tab 7 Goods Movement Technical Memorandum
- Tab 8 Stated Preference Survey Summary Report

DRAFT

SH-75 Timmerman to Ketchum
Blaine County, Idaho

STP-F-2392(035), Key No. 3077

Programmatic Biological Assessment

Prepared for:

Idaho Transportation Department, District 4

January 20, 2005

Errata sheet for SH-75 Timmerman to Ketchum
Project #STP-F-2392(035), Key No. 3077
Programmatic Biological Assessment

On page 4, the last two paragraphs are deleted and replaced with the following:

This PBA provides information to facilitate an evaluation of the potential impact of the proposed SH-75 Timmerman to Ketchum project on listed and candidate species under USFWS and NOAA Fisheries jurisdiction. It also provides guidance for conducting ongoing consultation as the project moves forward and phased construction activities are initiated. As each phase is designed, additional coordination by ITD with the USFWS will occur to ensure consistency with the effect determinations, conservation/mitigation measures, and species-specific analyses contained in this document.

For each construction phase, Individual Project Worksheets (see Appendix A) will be completed and submitted to the USFWS prior to construction. The worksheets will provide phase-specific project descriptions, including project components such as erosion control, offsite components, mitigation, and construction methods/sequencing. Where pertinent, updated biological information on species and habitat will be provided. In total, the phase-specific information contained in the worksheets will be used to verify conformance and compatibility with this PBA and its associated concurrence letter.

If an individual construction phase fails to conform to or remain compatible with the conservation/mitigation measures and effect determinations outlined in this PBA, reinitiation of consultation may be necessary to ensure compliance with the Endangered Species Act. Additionally, any subsequent listing of a new species or critical habitat may warrant reinitiation.

In summary, the worksheets will serve as documentation of ITD's reevaluation of the project and its constituent parts. The worksheets will be provided to the USFWS for use in verifying that each individual construction phase tiers to this PBA and the conservation/mitigation measures identified herein.

On page 5, the fourth paragraph in Section 2.2 is deleted and replaced with the following:

Because most of the project's offsite areas are unknown at this time, offsite components will be described and documented on individual worksheets for each construction phase of the project. Conformance with this PBA will be verified by the USFWS using these phase-specific worksheets.

On page 20, the fourth sentence in the first paragraph is deleted and replaced with the following:

Cofferdams would be erected with clean, washed, crushed stone or other suitable materials (e.g. jersey barriers and sand bags) free of contaminants to minimize turbidity and sediment transport within the Big Wood River.

On page 28, the first bullet under Utah Valvata Snail is deleted and replaced with the following:

Project components located within 100-feet of Magic Reservoir and the Little Wood, Big Wood, Malad, and Snake rivers and/or their tributaries will by evaluated by ITD to determine whether a potential pathway exists for sediment entry to occur from the offsite area. If a potential pathway exits, ITD will determine whether the affected waterway contains potential habitat for the Utah valvata snail. If both conditions are met, the ITD will contact the USFWS to determine whether a snail survey and/or additional environmental protection measures will be needed.

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1. INTRODUCTION

The Idaho Transportation Department (ITD) proposes to improve the 27-mile State Highway 75 (SH-75) segment depicted in Figure 1 between Timmerman Hill (just south of the SH-75/US-20 intersection) and the City of Ketchum in Blaine County, Idaho (ITD Project No. STP 2392[035], Key No. 3077). Under the National Environmental Policy Act (NEPA), two build alternatives (Alternatives 2 and 3) and a no build alternative (Alternative 1) are being analyzed in this Programmatic Biological Assessment (PBA) and in the Environmental Impact Statement (EIS) prepared for the project.

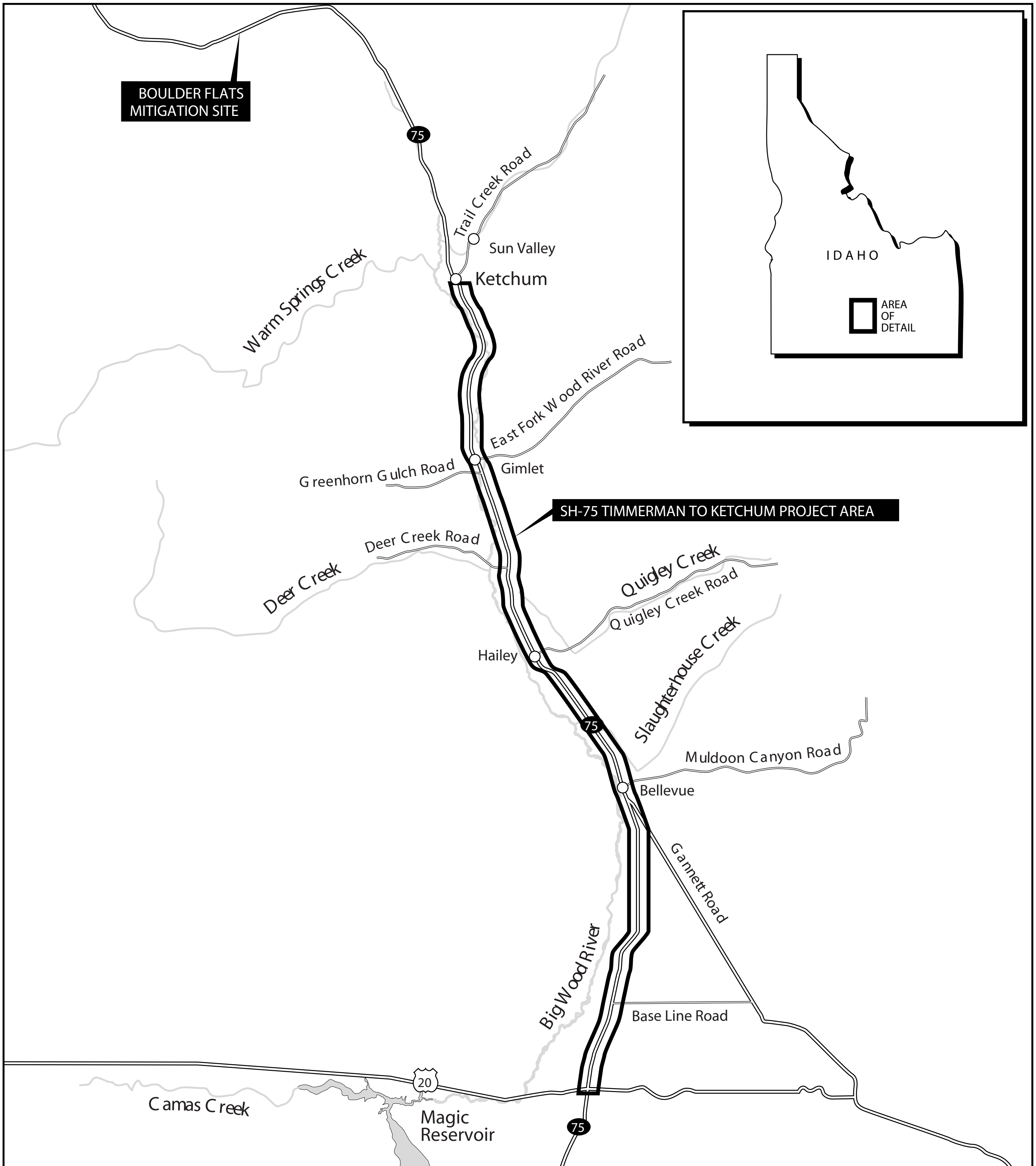
Alternative 2 generally consists of a four-lane roadway with a center turn lane, right-turn lanes, acceleration lanes, bus pullouts, pedestrian undercrossings, and traffic signals. Alternative 3 has the same physical footprint throughout the 27-mile corridor as Alternative 2, but the curb lane would operate as a high-occupancy vehicle (HOV) lane in the morning and evening peak hours from McKercher Boulevard to Elkhorn Road.

Construction of the SH-75 improvements is contingent upon approval of either Alternative 2 or 3 through the EIS process and the availability of funding. Project construction is expected to follow a seven-phase construction plan over the next 15 to 20 years. Each phase, as identified below and shown in Figure 2, would likely require one to two years of construction time.

- Phase 1 Gannett Road to Fox Acres Boulevard. This would include the improvements within the City of Bellevue.
- Phase 2 Buttercup Road to Alturas Road. This would include reconstruction of the Buttercup Road and SH-75 intersection and its associated pedestrian underpass.
- Phase 3 McKercher Boulevard to Buttercup Road. This would include full reconstruction of the highway.
- Phase 4 Timber Way to Hospital Drive. This would include the addition of one southbound lane through from Greenhorn Bridge south to Alturas Road.
- Phase 5 Hospital Drive to Elkhorn Road. This would include the construction of a new Big Wood River Bridge north of Hospital Drive.
- Phase 6 Elkhorn Road to River Street. This would include construction or reconstruction of the Trail Creek Bridge.
- Phase 7 US-20 to Gannett Road. This would include full reconstruction of the highway.

Highway improvements in perennial waters that cross SH-75 involve bridge construction on Trail Creek in Ketchum and on the Big Wood River north of Hospital Drive. Other work in perennial waters involves new culverts on Willow Creek just south of the SH-75/US-20 (Timmerman Junction) intersection and on an unnamed tributary about one-quarter mile north of Timmerman Junction.

Table 1 identifies the federally listed species (endangered, threatened, proposed, and candidate) that may occur in Blaine County and the current status and effect determination for each.



SH-75 Timmerman to Ketchum Programmatic Biological Assessment

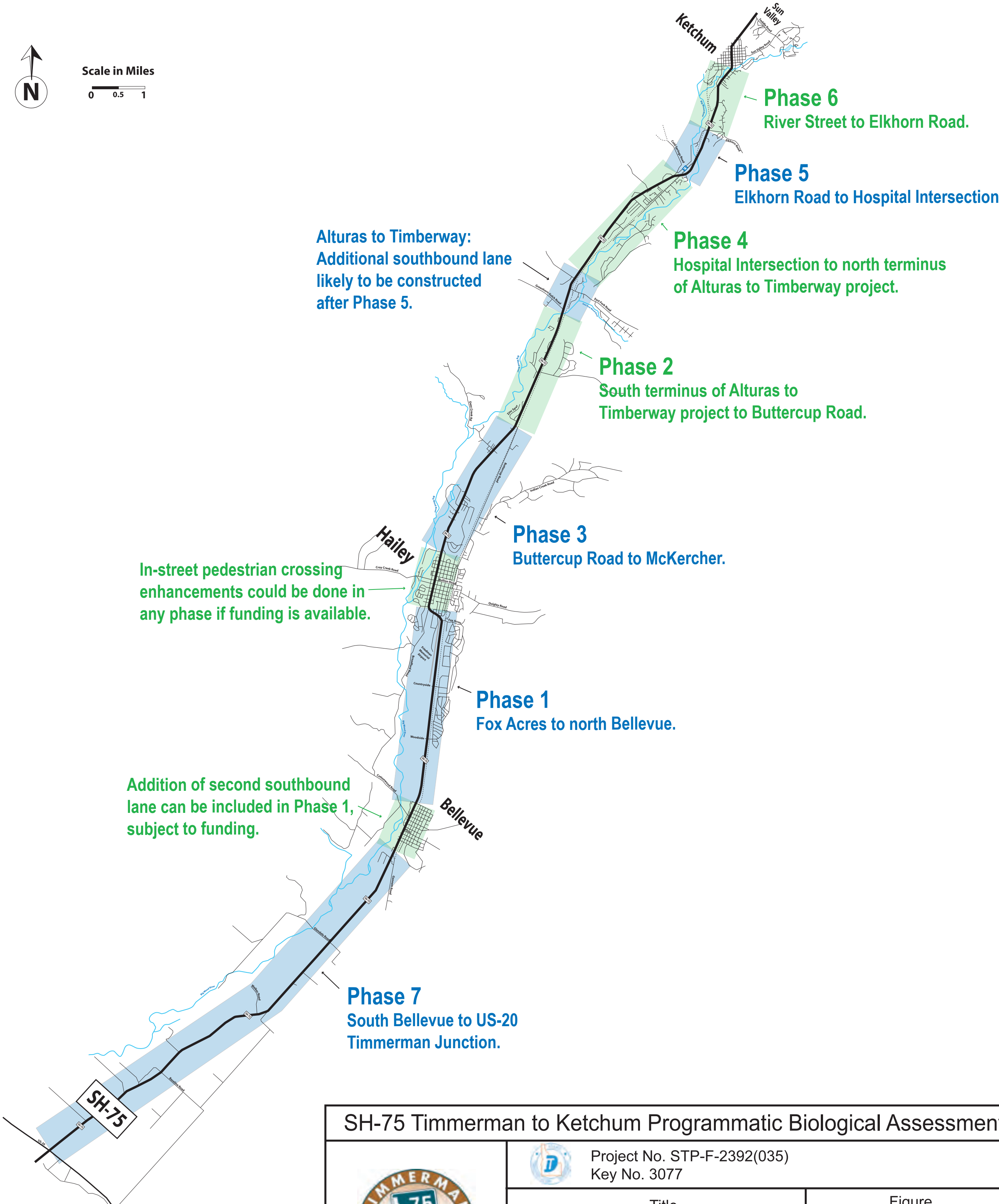
Project No. STP-F-2392(035)
Key No. 3077

Title
Project Vicinity and Mitigation Site Map

Figure
1

Date: January 2005

Construction Phases



SH-75 Timmerman to Ketchum Programmatic Biological Assessment		
	Project No. STP-F-2392(035) Key No. 3077	
	Title **Construction Phases**	Figure 2
		Date: *January 2005*

Table 1: Species, Critical Habitat, Status, and Effect Determination Summary

Species	Scientific Name	Federal Status	Effect Determination
Canada lynx	*Lynx canadensis*	Threatened	May Affect, Not Likely to Adversely Affect
Bald eagle	*Haliaeetus leucocephalus*	Threatened	May Affect, Not Likely to Adversely Affect
Utah valvata snail	*Valvata utahensis*	Endangered	May Affect, Not Likely to Adversely Affect
Yellow-billed cuckoo	*Coccyzus americanus*	Candidate	May Affect, Not Likely to Adversely Affect
Gray wolf	*Canis lupus*	Experimental/ Non-essential population	No Effect
Bull trout	*Salvelinus confluentus*	Threatened	No Effect
Bull trout critical habitat	--	Proposed	No Effect
Spring/summer Chinook salmon	*Oncorhynchus tshawytscha*	Threatened	No Effect
Steelhead	*Oncorhynchus mykiss*	Threatened	No Effect
Sockeye salmon	*Oncorhynchus nerka*	Endangered	No Effect

Source: USFWS 2004.

Section 7 of the Endangered Species Act (ESA) of 1973 (as amended in 1978, 1979, and 1982) directs federal agencies to ensure that actions they authorize, fund, and/or conduct are not likely to jeopardize the continued existence of any federally proposed or listed species, or result in destruction or adverse modification of critical habitat for such species. For projects that may affect threatened or endangered species, or their critical habitat, the federal agency must consult with fisheries staff at the National Oceanic and Atmospheric Administration (NOAA) and/or the U.S. Fish and Wildlife Service (USFWS).

This PBA provides information to facilitate an evaluation of the potential impact of the proposed SH-75 Timmerman to Ketchum project on listed and candidate species under USFWS and NOAA Fisheries jurisdiction. It also provides guidance for conducting ongoing consultation as the project moves forward and phased construction activities are initiated. As each phase is designed and constructed, additional USFWS consultation will be conducted to ensure consistency with the effect determinations, mitigation measures, and species-specific analyses contained in this document.

For each construction phase, Individual Project Worksheets (see Appendix A) will be completed and submitted to the USFWS for concurrence prior to construction. The worksheets will provide greater detail on phase-specific project components, erosion control, offsite components, mitigation, and construction methods/sequencing. The worksheets will also update biological information on listed species, evaluate any new species that have been added since concurrence on this PBA, and determine if a change in any species-specific effect determination is warranted.

2. PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The proposed project is located on the 27-mile segment of SH-75 that begins at Milepost (MP) 102.1 just south of Timmerman Junction and ends at MP 128.5 in Ketchum (see Figure 1). The project's action area, including all offsite areas known at this time, is entirely within Blaine County, Idaho.

2.2 DEFINITION OF ACTION AREA

The action area includes all areas that could be directly or indirectly affected by the proposed project (Alternatives 2 and 3). Within the 27-mile SH-75 corridor, the action area includes the project's stormwater detention ponds and cut and fill footprint to be built within ITD right-of-way (ROW).

The action area also includes all offsite areas (i.e., material source and disposal sites, storage and staging areas, stockpiling areas, and mitigation sites) that are outside the project footprint/ROW but needed to complete the proposed project.

Currently, the Boulder Flats wetland mitigation site north of Ketchum is the only known offsite area that has been specifically identified and assessed as an interrelated or interdependent effect of the proposed project. The mitigation concept is to restore wetland functions and values by reconnecting the Wood River floodplain, which is currently affected by the SH-75 roadbed, on Boulder Flats. This would be accomplished by realigning SH-75 between MP 139.2 and 140.4 to the north and removing the current SH-75 roadbed from Boulder Flats. This interrelated action has been fully integrated and considered in the species-specific biological evaluations prepared for this PBA.

Because most of the project's offsite areas are unknown at this time, offsite components will be included in future informal Section 7 consultations with the USFWS as they are identified and considered. Individual Project Worksheets will be prepared for each construction phase of the project.

For the purposes of preparing this PBA, physical habitat changes within the highway ROW will be limited to the project footprint, which is a relatively narrow corridor adjacent to the existing highway. ITD expects to provide most of the necessary fill from materials excavated within the project footprint.

Traffic noise on SH-75 is the primary ambient noise source in the project corridor and influenced by land use and topography. Ambient noise levels vary, with low levels in the southern portion of the project area where agriculture is the dominant land use and higher levels in the urbanized areas of Bellevue, Hailey and Ketchum.

The proposed project involves road, culvert, and/or bridge construction at four perennial stream crossings, which creates the opportunity for the downstream movement of suspended sediment during pile-driving, bridge pier and culvert construction, and earthwork activities. By applying the standard and project-specific Best Management Practices (BMPs) identified in this document and the project EIS, the distance suspended sediment would travel would be limited to the vicinity of the construction site.

Other impacts, such as indirect (secondary) impacts on development induced by the proposed project, would be focused on areas immediately accessible from the widened highway corridor.

2.3 PROPOSED ACTION

This section describes the proposed action (Alternatives 2 and 3) to widen SH-75 between Timmerman Junction and Ketchum. It also describes the project's construction methods; the wetland mitigation concept plan for Boulder Flats; and the impact avoidance, minimization, and mitigation measures to be applied.

2.3.1 Description of Build Alternatives

Two project build alternatives (Alternative 2 and Alternative 3) were carried forward for detailed study and evaluation. Both build alternatives have the identical physical footprint but vary operationally. Unlike Alternative 2, Alternative 3 involves using the curb lane as an HOV lane in the morning and evening peak hours between McKercher Boulevard and Elkhorn Road.

Impacts on listed species would be similar under either build alternative because they have the same physical footprint. The following project description identifies by geographic segment the physical features to be constructed under both build alternatives.

US-20 to Gannett Road

SH-75 from US-20 to Gannett Road in the southern part of the City of Bellevue is approximately 8.9 miles long. During the development of alternatives, impacts on wetlands were minimized in this geographic segment by advancing a proposed two-lane roadway with center turn lane and passing lanes only where feasible and warranted. A wider four-lane cross section with greater wetland impacts was eliminated from further consideration. The centerline of SH-75 was also shifted to avoid impacts on irrigation-dependent wetlands along the corridor.

Figure 3 highlights the proposed improvements within this geographic segment. The intersection of US-20 and SH-75 will be reconstructed to provide one 12-foot northbound lane, one 12-foot southbound lane, a 14-foot center turn lane, 8-foot shoulders, and a separate right-turn lane for northbound-to-eastbound traffic. Reconstruction will begin about 1,000 feet south of the existing intersection. US-20 will be widened for a distance of about 1,200 feet. The widening will be west of the existing road. Beginning about 800 feet north of the intersection, SH-75 will be reconstructed to provide a 12-foot lane in each direction with 8-foot shoulders on each side.

Beginning about 1,800 feet north of the US-20/SH-75 intersection, a northbound passing lane will be added, resulting in two northbound lanes and one southbound lane. This passing lane will end about 1,800 feet south of Baseline Road. A 14-foot center turn lane will be incorporated starting about 4,000 feet north of US-20.

At the Baseline Road intersection, SH-75 will be reconstructed to provide a 14-foot center turn lane through the intersection; a northbound right-turn lane; and a southbound right-turn lane. Baseline Road will be reconstructed on its west side to provide a center turn lane, starting about 350 feet west of the existing intersection and extending to about 600 feet east of the existing intersection.

A southbound passing lane will be provided. The southbound passing lane will begin about 1,900 feet south of the existing Walker Road and SH-75 intersection and terminate about 1,800 feet north of Baseline Road. Through this portion of the highway, SH-75 will be shifted slightly east to avoid impacts to the Bypass Canal on the west side. Between the end of the southbound passing lane and Walker Road, the roadway will return to a two-lane with center turn lane and shoulders configuration.

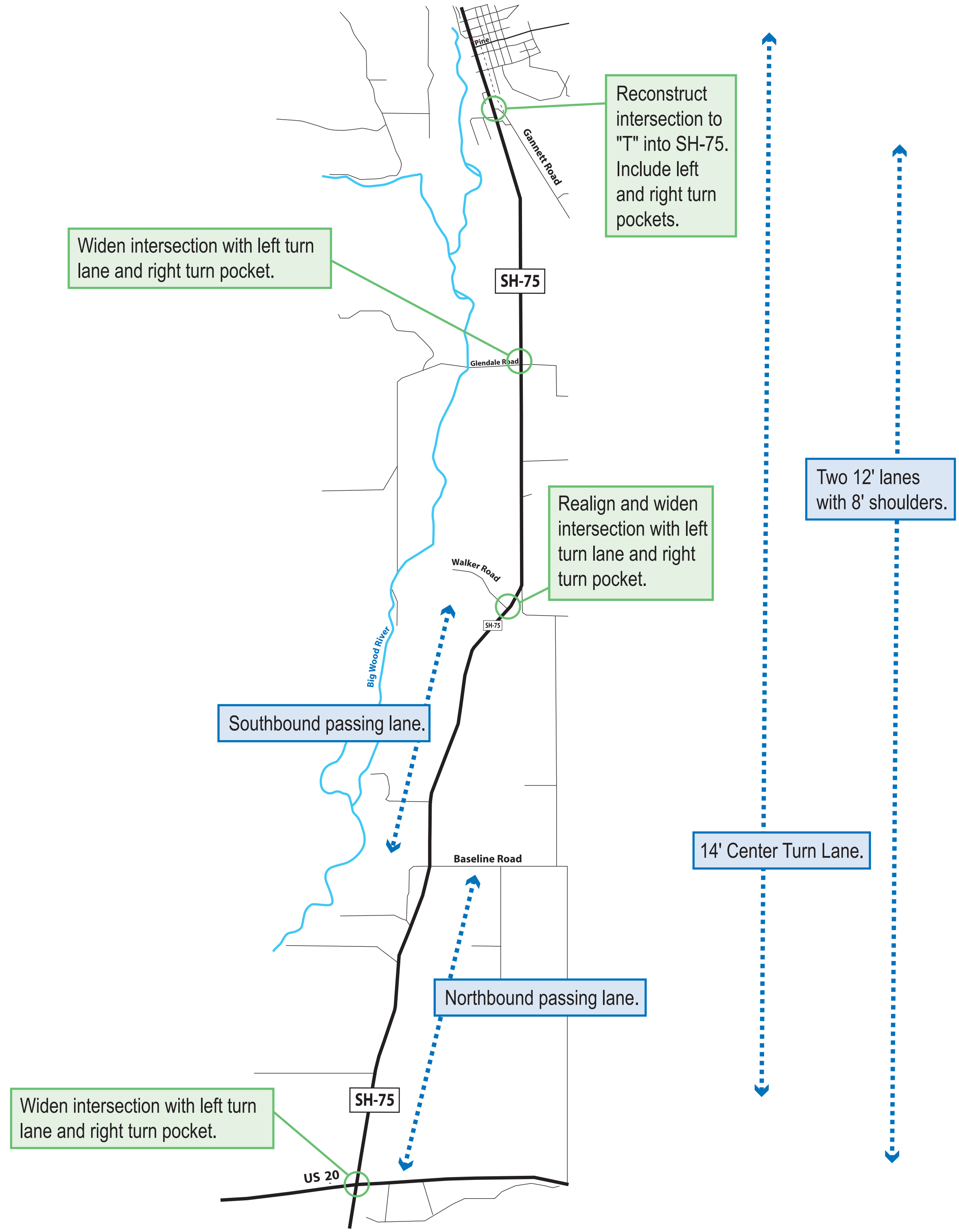
The intersection of Walker Road and SH-75 will be realigned to the south in order to provide better sight distance. The intersection will have one 12-foot through-traffic lane in each direction on SH-75 plus a center turn lane, a right-turn lane for both southbound and northbound traffic, and shoulders. This realignment of Walker Road will necessitate its reconstruction approximately 900 feet on the west side and 500 feet on the east side of SH-75. Walker Road will include through-traffic lanes, a center turn lane, and right-turn lanes.

About 1,000 feet north of Walker Road, the alignment of SH-75 will shift westward to avoid the District Canal and its associated cottonwood trees.

At the intersection of SH-75 and Glendale Road, SH-75 will widen to create a left-turn lane, northbound right-turn lane, and southbound right-turn lane starting about 1,000 feet north and south of the intersection. Glendale Road will be reconstructed to provide a left-turn lane; this reconstruction will begin about 400 feet west of the intersection and continue to about 300 feet to the east. About 1,200 feet north of Glendale Road, SH-75 will return to the three-lane configuration.

SH-75 will be widened as it approaches the City of Bellevue to match the existing SH-75 cross section through Bellevue. This cross section has two lanes in each direction with a center turn lane. The intersection of SH-75 and Gannett Road will be maintained, but Gannett Road will be realigned slightly to the north to provide a T-intersection with better sight distance for motorists accessing SH-75 from Gannett Road.

Between US-20 and Gannett Road, the speed limit will be 55 mph, decreasing at the entrance to the City of Bellevue.



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SH-75 Timmerman to Ketchum Programmatic Biological Assessment

Project No. STP-F-2392(035)
Key No. 3077

Title
SH-75 Alternatives 2 & 3:
Proposed Improvements
Segment: US-20 to Gannett Road

Figure
3

Date: *January 2005*

Gannett Road to Fox Acres Drive

Figure 4 highlights the proposed improvements within the 4.6-mile Gannett Road to Fox Acres Drive geographic segment. North of Gannett Road, SH-75 will continue in its current configuration of two lanes in each direction with a center turn lane.

Within the City of Bellevue between Spruce Street and Birch Street on the west side of SH-75, a second southbound lane will be provided. This will require a retaining wall approximately 750 feet long to retain the existing embankment. A sidewalk will be constructed on the east side of SH-75 from Honeysuckle Road to Gannett Road.

The existing sidewalk on the west side of SH-75 in north Bellevue will be extended from Sun Valley Garden Center to Kirtley Street. Curb and gutter will be extended on the west side for approximately 1,250 feet and will run continuously along the east side.

North of Bellevue, SH-75 will be reconstructed to provide two 12-foot lanes in each direction, 8-foot shoulders, and a 4-foot safety median. Starting at 600 feet south of Woodside Road, SH-75 will be widened to provide a 14-foot center turn lane and a northbound right-turn lane at the intersection. Woodside Road will be modified from Glenbrook Drive to SH-75 to provide a center turn lane to access SH-75. The intersection of Woodside Road and SH-75 will be signalized.

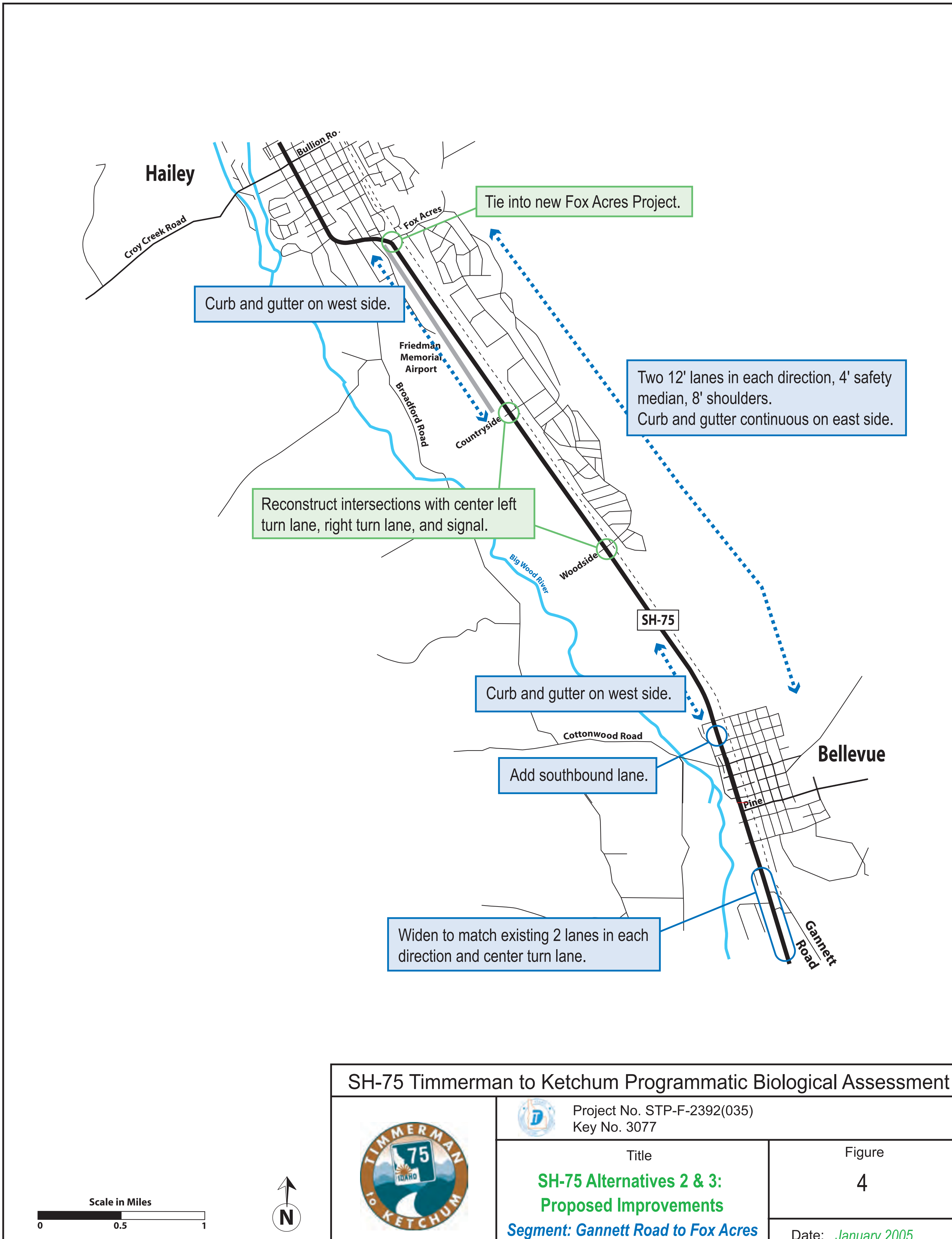
North of this intersection, SH-75 will return to the 4-foot safety median until just south of Countryside Road. Similar to the intersection of SH-75 and Woodside, this intersection will be reconstructed to provide a 14-foot center turn lane on SH-75, with reconstruction on Countryside Road immediately east of the highway to provide a center turn lane and right-turn area. North of Countryside Road, SH-75 will continue with a narrow 4-foot median. SH-75 will tie into the existing reconstructed highway just south of Fox Acres Boulevard.

Curb and gutter will be provided on the west side of SH-75 adjacent to the Friedman Memorial Airport property, tying into the curb and gutter south of the Fox Acres Boulevard intersection. A detention basin is proposed just south of the airport property to contain the stormwater from this section of curb and gutter.

The speed limit in Bellevue will continue to be 25 mph. The speed limit from north Bellevue to Fox Acres Boulevard will be 45 mph, decreasing as traffic approaches Fox Acres Boulevard.

Fox Acres Drive to McKercher Boulevard (City of Hailey)

Figure 5 highlights the proposed locations for enhanced pedestrian crossings within the Fox Acres Drive to McKercher Boulevard geographic segment. SH-75 will not be reconstructed through the City of Hailey and will remain in its current configuration for this 1.8-mile segment. At-grade pedestrian crossings will be provided at the intersections of SH-75 with Elm, Croy, Bullion, Carbonate, and Myrtle streets using paver inlay or other acceptable markings to improve the visibility of these crossings.



SH-75 Timmerman to Ketchum Programmatic Biological Assessment

Project No. STP-F-2392(035)
Key No. 3077

Title

SH-75 Alternatives 2 & 3: Proposed Improvements

Segment: Gannett Road to Fox Acres

Figure

4

Date: *January 2005*

Proposed Locations of Enhanced Pedestrian Facilities in Hailey:

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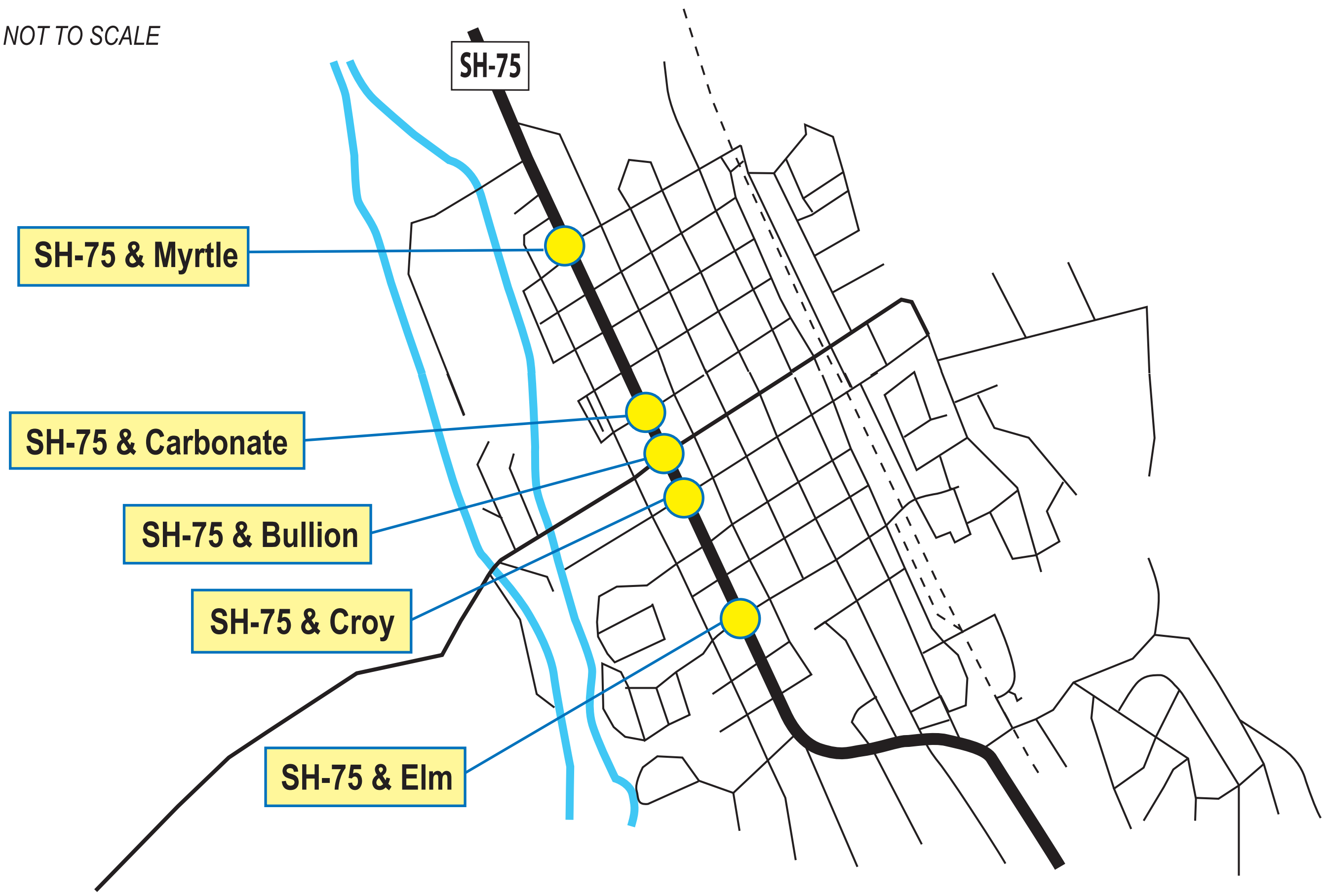


SH-75 Timmerman to Ketchum Programmatic Biological Assessment

Project No. STP-F-2392(035)
Key No. 3077

Title	Figure
At-Grade Pedestrian Crossing Enhancement Locations	5
	Date: *January 2005*

McKercher Boulevard to Elkhorn Road

Figures 6 and 7 highlight the proposed improvements within the 9.5-mile McKercher Boulevard to Elkhorn Road geographic segment. SH-75 will be reconstructed through this segment to provide two 12-foot lanes, a 14-foot center turn lane, and 8-foot shoulders. Some sections will include curb and gutter to reduce the total width of the roadway footprint.

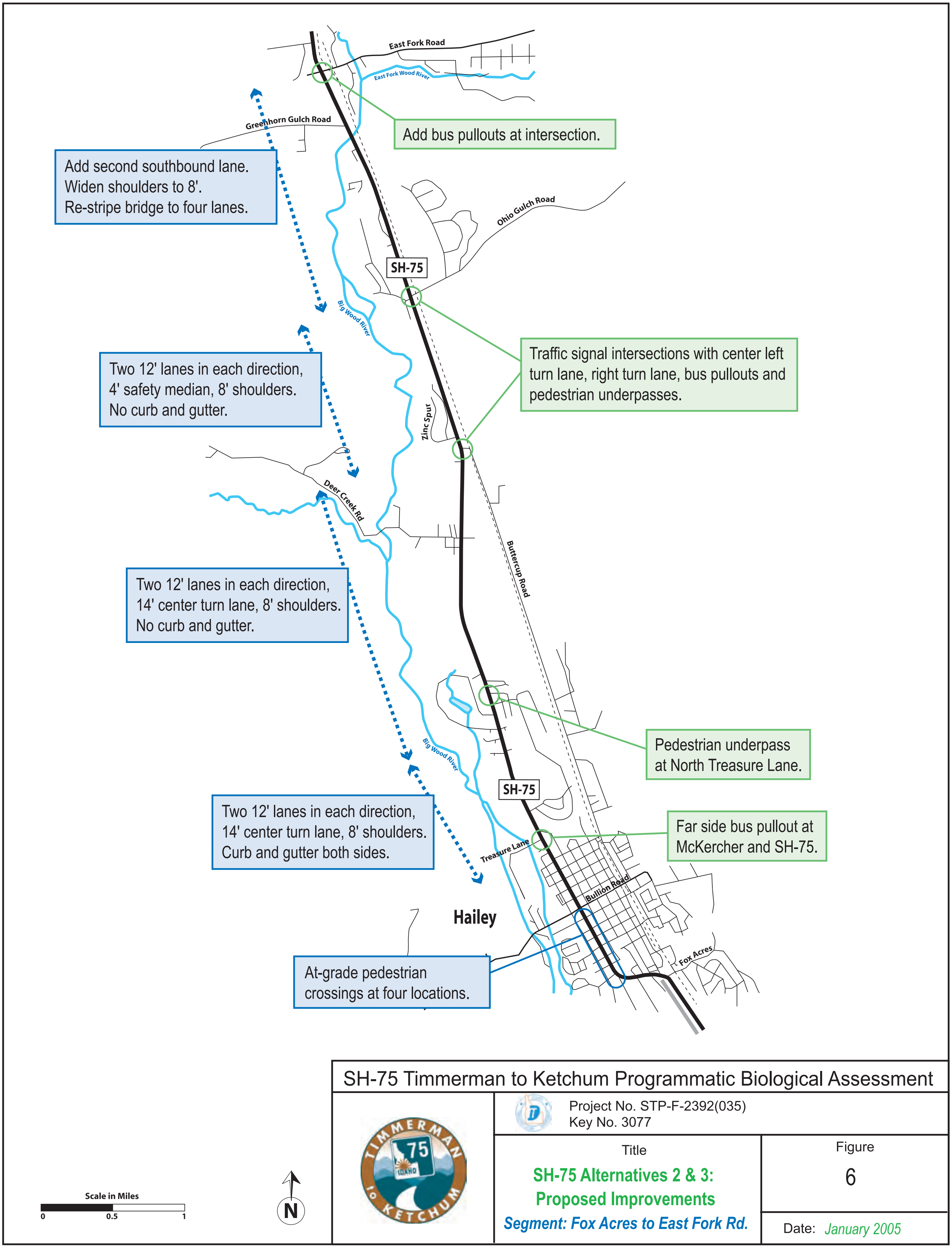
The intersection of McKercher Boulevard and SH-75 will be enhanced with the provision of bus pullouts adjacent to the northbound and southbound curb lanes of SH-75. The typical 8-foot shoulder will be widened to 14 feet to provide sufficient width for a stopped bus and associated pedestrian circulation.

A pedestrian underpass of SH-75 will be constructed at the north side of the Treasure Lane subdivision. The north Treasure Lane Road access will be closed to traffic, and a cul-de-sac will be provided. The curb and gutter portion of the highway will end at the pedestrian underpass. Spruce Way will be closed at SH-75.

At the intersection of Buttercup Road and SH-75, a second pedestrian undercrossing will be provided. The intersection will be signalized. Bus pullouts will be provided at this intersection.
The 14-foot center turn lane will be reduced to a 4-foot safety median, starting about 1,000 feet north of the Buttercup Road/SH-75 intersection. The median will widen to 14 feet again about 1,000 feet south of the Ohio Gulch/SH-75 intersection to provide the center left-turn lane. A northbound right-turn lane will be provided at the intersection with Ohio Gulch, which will be signalized. A pedestrian underpass will be constructed at Ohio Gulch. Bus pullouts will be provided at the intersection, widening the 8-foot shoulder to 14 feet. The northbound bus pullout will be located just north of the intersection; the southbound bus pullout will be located just south of the intersection.

The two lanes in each direction with a center turn lane and shoulders will continue north of Ohio Gulch and tie into the reconstructed SH-75 at approximately Alturas Way. The second southbound lane will be added from south of East Fork; 8-foot shoulders will be added where they were not constructed as part of the previous construction project. The widening for the additional southbound lane will be centered on the existing roadway between East Fork and the Greenhorn Bridge. South of the bridge, the widening will occur on the east side of the existing roadway. The new Greenhorn Bridge will be restriped to four lanes. The signalized East Fork and SH-75 intersection will stay the same. Bus pullouts will be provided on the far side of the signal by widening the 8-foot shoulder to 14 feet.

Where the Alturas to Timberway project constructed in 2002 terminates, SH-75 will continue with two lanes in each direction, a center turn lane, and shoulders. At the intersection with Gimlet, a northbound right-turn lane and northbound acceleration lane will be provided. At the Cold Springs intersection with SH-75, a northbound to eastbound right-turn lane will be constructed. Curb and gutter will be used from Cold Springs northward on both sides of the roadway. A northbound acceleration lane from Cold Springs will merge with a northbound right turn lane into Broadway Run, resulting in a continuous 650-foot auxiliary lane between Cold Springs Road and Broadway Run.



SH-75 Timmerman to Ketchum Programmatic Biological Assessment

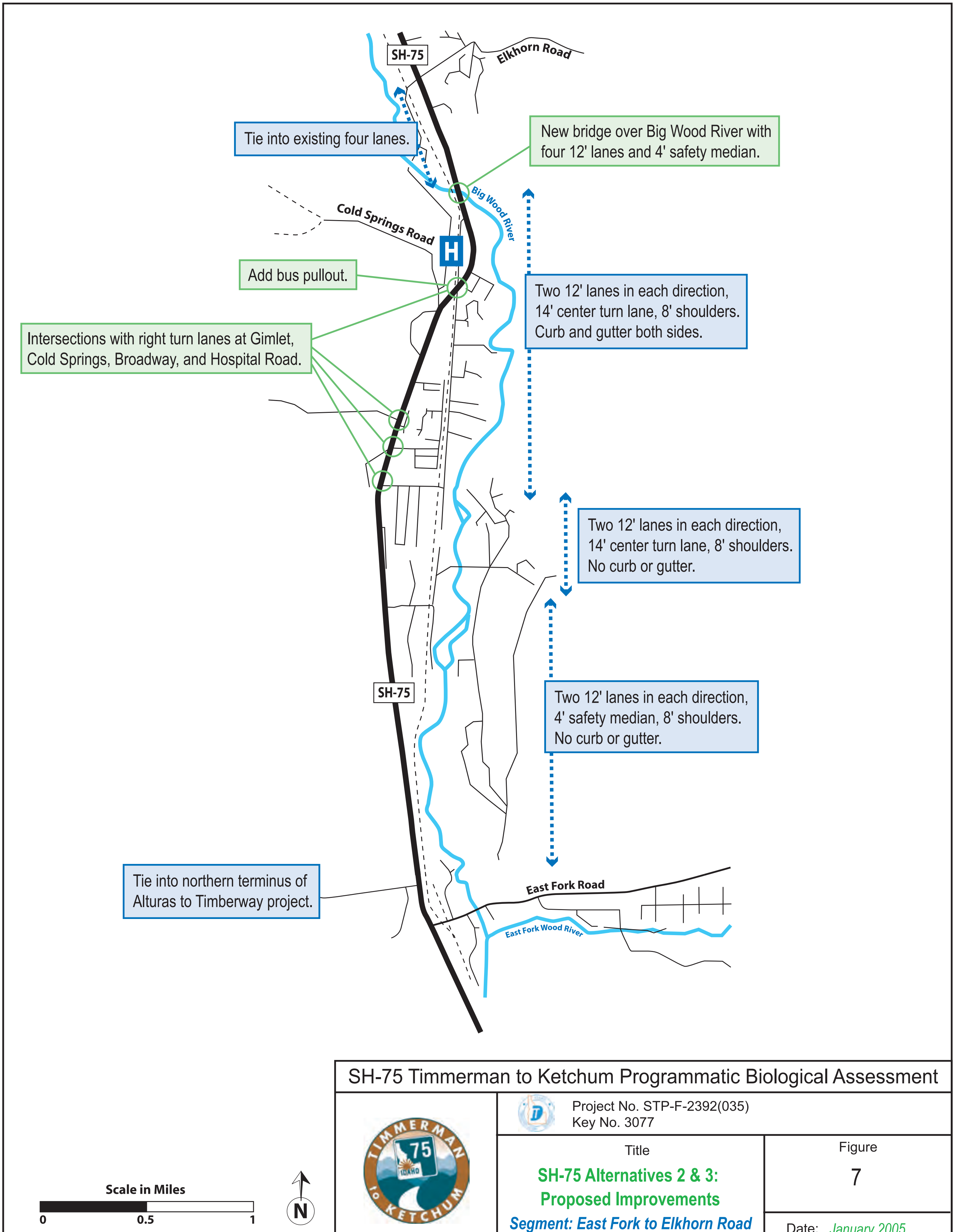
Project No. STP-F-2392(035)
Key No. 3077

Title

SH-75 Alternatives 2 & 3:
Proposed Improvements
Segment: Fox Acres to East Fork Rd.

Figure
6

Date: *January 2005*



SH-75 Timmerman to Ketchum Programmatic Biological Assessment

Project No. STP-F-2392(035)
Key No. 3077

Title
SH-75 Alternatives 2 & 3: Proposed Improvements
Segment: East Fork to Elkhorn Road

Figure
7

Date: *January 2005*

Traffic turning southbound onto SH-75 from Cold Springs Road and Broadway Run will be accommodated by a widened center turn lane that will function as a southbound acceleration lane. This acceleration lane concept will be striped to guide traffic merging into the southbound through-traffic lanes.

Just north of Broadway Run, a 7-foot-high retaining wall will extend approximately 550 feet on the west side to avoid cutting further into the escarpment and affecting residential properties on the east side.

Approaching the Broadway Run North/Hospital Drive/SH-75 intersection, the cross section will be widened to provide a northbound right-turn lane. The existing signal at the intersection will be retained, and bus pullouts will be provided at the intersection by widening the shoulder from 8 feet to 14 feet.

North of the Broadway Run/Hospital Drive/SH-75 intersection, the two lanes in each direction with a center turn lane and shoulders will be continued, using curb and gutter on both sides. This area is referred as the "McHanville Area." A detention pond will be constructed across from St. Luke's Hospital to contain drainage from the curb and gutter sections. The Big Wood River Bridge will be reconstructed to provide four through-traffic lanes, two in each direction. The 14-foot center turn lane will be reduced to a 4-foot safety median on the bridge. North of the Big Wood River Bridge, the roadway reconstruction will tie into the existing four-lane cross section adjacent to the Lane Ranch subdivision. No changes to SH-75 are proposed from this point to the intersection with Elkhorn Road.

Where large landscaped berms abut SH-75 between McKercher Boulevard and East Fork Road, berm encroachment will occur. Higher berms will be regraded to an elevation that is 5 feet above the centerline of the proposed roadway in accordance with Blaine County's Berm Ordinance. A bench will then transition and tie into the remaining, higher berm. For smaller berms, they will be regraded to a maximum height of 5 feet above the roadway centerline with the toe of the berm maintained on the private property.

By the year 2025, the speed limit from McKercher Boulevard to St. Luke's Hospital will be 45 mph. The speed limit from St. Luke's Hospital to Elkhorn Road will be 35 mph.

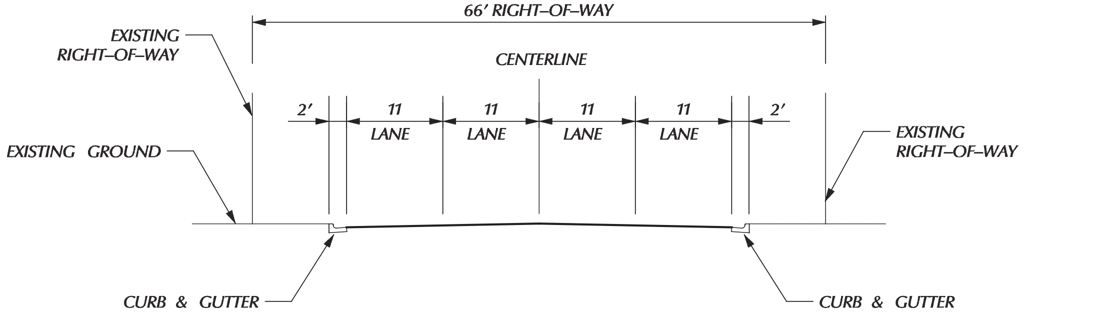
Elkhorn Road to River Street

Figures 8 and 9 highlight the design options under consideration from Elkhorn Road to River Street, a distance of approximately 1.3 miles. All construction will occur within the existing 66-foot highway ROW and will largely consist of minor reconstruction, striping, and signage. The physical footprint of these options will not extend outside the existing highway ROW.

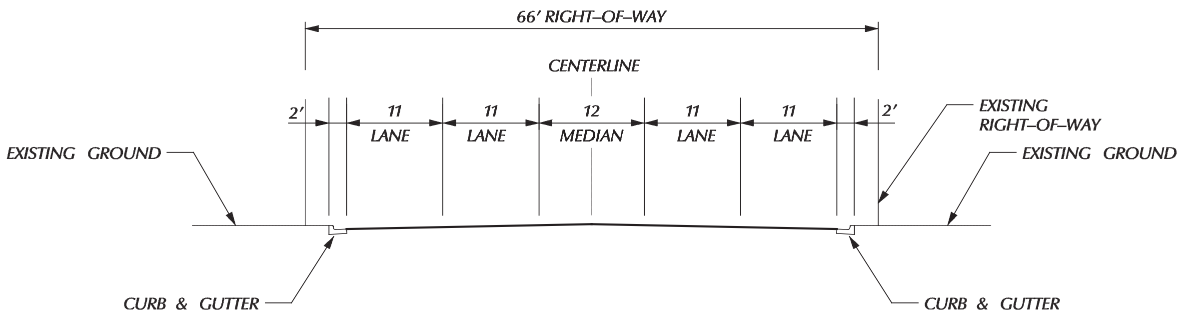
The reconstruction of Trail Creek Bridge will be required for those roadway options that are wider than two lanes. The speed limit through this segment will be no greater than 35 mph and likely will be 25 mph within the City of Ketchum.

Alternatives 2 and 3 Typical Sections: Elkhorn to Serenade

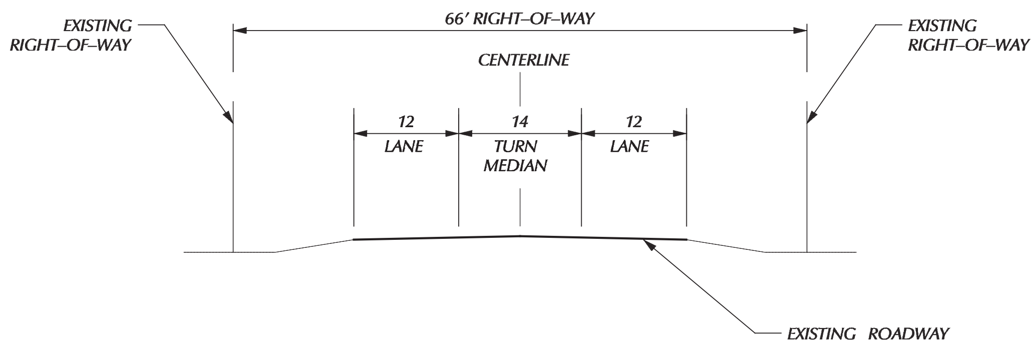
Cross Section 1



Cross Section 2



Cross Section 3



Note:
All cross-sections are viewed in a northbound direction.

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SH-75 Timmerman to Ketchum Programmatic Biological Assessment

Project No. STP-F-2392(035)
Key No. 3077

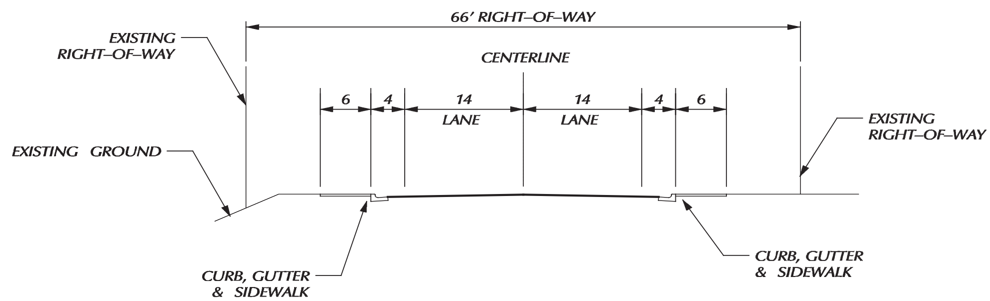
Title
Alternatives 2 and 3
Typical Cross-Sections
Elkhorn to Serenade

Figure
8

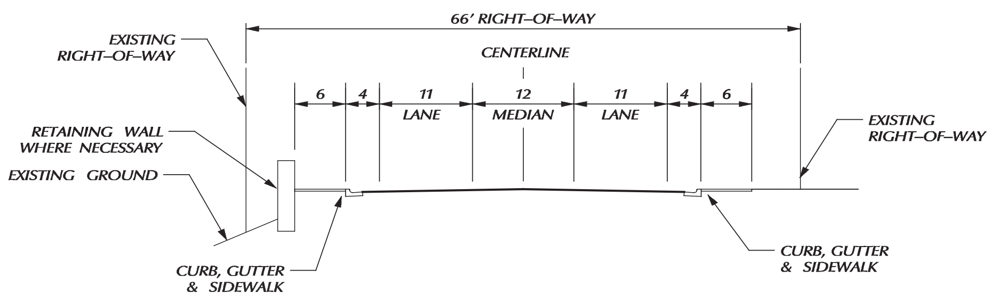
Date: *January 2005*

Alternatives 2 and 3 Typical Sections: Serenade to River Street

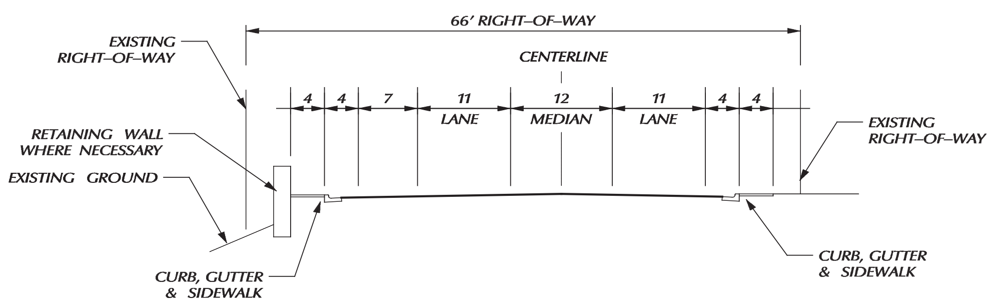
Cross Section 1



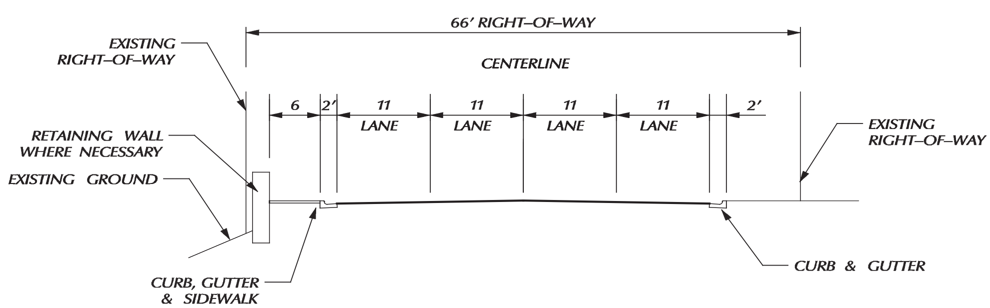
Cross Section 2



Cross Section 3



Cross Section 4



Note:
All cross-sections are viewed in a northbound direction.

NOT TO SCALE

SH-75 Timmerman to Ketchum Programmatic Biological Assessment

Project No. STP-F-2392(035)
Key No. 3077

Title
Alternatives 2 and 3
Typical Cross-Sections
Serenade to River Street

Figure
9

Date: *January 2005*

River Street to Saddle Road

No changes to the existing roadway will be made.

2.3.2 Construction Methodology

Reconstruction of SH-75 to implement either Alternative 2 or Alternative 3 will include roadway construction, associated drainage elements (i.e., ditches and culverts), retaining walls, noise barriers, pedestrian underpasses, and bridges. The following discussion presents a general overview of the construction sequence and effects that will likely occur in each construction phase.

General construction activities for Alternatives 2 and 3 will require clearing and grubbing of existing vegetation and topsoil, cut and fill earthwork, material stockpiling including topsoil, culvert installation, bridge construction, bridge abutment/pier construction, concrete work, road grading, storm drain construction, and general paving activities. Some of these activities will temporarily expose disturbed soils to wind and water erosion, and bridge and culvert activities will involve in-stream disturbances and/or temporary channel alteration (e.g., cofferdam installation/removal, bridge abutment and pier installation/removal, and culvert installation/removal).

For those construction activities that involve work in perennial waters, some minor and temporary increases in suspended sediment loads and short-term water quality degradation in surface waters are expected. The mitigation section identifies the BMPs and other environmental protection measures that will be applied to avoid or minimize impacts on the environment (i.e., water quality, wetlands, vegetation) and on any federally proposed or listed species potentially affected by the proposed project.

Roadway Construction

The wider pavement area proposed in Alternatives 2 and 3 will require that the roadway be fully reconstructed. Typical construction activities and their sequencing for each phase are described below.

1. Acquisition of ROW where required. This would be the first project activity after a Record of Decision on the EIS is issued and projects are programmed and funded.
2. Utility relocation. This would occur when ROW has been acquired. Relocation of utilities is typically conducted by the owner of the utility.
3. Mobilization and general site preparation. This activity includes clearing and grubbing, removal and storage of topsoil, selective removal of trees and stumps, removal of obstructions, and excavation and removal of existing pavement where required.
4. General grading and roadbed preparation. This phase includes most of the earthwork needed to develop a new roadbed and its associated cuts and fills.
5. Stormwater management system construction. This includes construction of storm drain facilities and systems, laterals, cross drains, detention ponds, swales, and other roadway drainage features needed to channel and treat highway stormwater runoff.

6. <u>Construction of temporary pavement sections</u>. Temporary pavement would be placed on portions of the new graded roadbed to enable traffic to continue to use SH-75 during construction.
7. <u>Construction of permanent pavement sections</u>. This includes placement and compaction of granular subbase, base, pavement, and surface course. The surface course would be the last paving operation. During this period, traffic would be placed on one side of the new alignment using temporary striping and signage while the final paving operation is under way on the opposite side of the new roadway. Once the first side of the road has its final layer of pavement and final striping, traffic would be relocated to that side of the new alignment, allowing for the final paving operation to occur on the remaining side. For side streets and driveways, one-half of the approach would be constructed while the other side is used to access intersecting roads and driveways.
8. <u>Signing and striping</u>. Final signage and striping would be installed once the permanent pavement sections are completed.
9. <u>Landscaping of the ROW</u>. This would generally be one of the last construction activities, except where required for erosion control, weed control, or control of particulate matter.

Bridge Construction

Two bridges will be built—one over the Big Wood River north of St. Luke's Hospital to replace the existing bridge and a second over Trail Creek in the City of Ketchum to replace an existing box culvert.

<u>Big Wood River</u>

Bridge construction over the Big Wood River would generally occur in two phases as follows:

Phase 1:

- Traffic would be diverted to one-half of the existing bridge with temporary precast barriers installed in the center.
- The existing bridge deck, girders, and piers from the closed side of the structure would be removed.
- Half of the new piers would be constructed.
- Half of the new girders and deck would be constructed on the new piers.

Phase 2:

- Traffic would be moved to the newly constructed side of the structure.
- The remaining bridge deck and girders would be removed.
- The existing piers would be removed.
- The second half of the new piers would be constructed.
- The second half of the new bridge girders and deck would be constructed.
- The complete bridge deck would be paved, signed, and striped.

At the Big Wood River Bridge crossing, two bridge piers would be constructed in the main river channel to replace the two existing piers. All in-channel work would occur during the low flow season (November through March). Cofferdam construction in the river channel is required prior to bridge pier installation. Cofferdams would be erected with clean, washed, crushed stone or other suitable materials free of contaminants to minimize turbidity and sediment transport within the Big Wood River. The piers would likely be supported on driven piles with a cast-in-place footing, column, and pier cap. Water pumped from the cofferdams would enter a settling basin or tank to remove sediment before returning to the river. The construction and removal of the cofferdams would temporarily increase sediment loading and deposition in the immediate vicinity of the construction area.

To construct the piers for the Big Wood River Bridge, the contractor would likely build a work pad extending into the river from its banks. Only one work pad at a time would be constructed and would be built out of clean rock and aggregate. The work pad may be necessary to construct the pier and to create adequate work space for cranes, excavators, pile-drivers, and other equipment. This approach would slightly divert flows on one side of the river at a time. If the contractor cannot use work pads, a work bridge would be the likely alternate and would consist of 50-foot steel spans across the river supported by piles driven into the streambed. The impacts of the work pad or the work bridge on sediments would be limited to the time necessary to install and remove the work pad/bridge used to facilitate pier construction. Cofferdam and work pad placement could temporarily redirect the erosive forces of the river, causing riverbed or streambank scouring and sediment transport.

Trail Creek

Construction of the Trail Creek Bridge would generally follow the same sequence as noted above for the Big Wood River. Because it is possible to detour traffic via Serenade Lane and Second Avenue to maintain access to Main Street in Ketchum, SH-75 could potentially be closed at Trail Creek, expediting construction of the new bridge. The highest temporary turbidity and sediment transport disturbance expected at Trail Creek would occur during culvert removal and restoration of the stream channel to a pre-culvert condition. Minimal water quality impacts during bridge construction are expected because the clear-span bridge abutments would be built just within the 100-year floodplain boundary and not within the channel.

Culvert Construction

The process of replacing or extending drainage culverts could result in some sediment being released in the affected reach of the watercourse as well as downstream. The widening of SH-75 at the Willow Creek and unnamed tributary crossings would require replacing two existing 36-inch-diameter corrugated metal pipe culverts with a single 18-foot-wide by 5-foot-high metal plate arch culvert covered by fill. The length of each new culvert would be about 140 and 120 feet, respectively. Both of these arch culverts would improve the suitability of these two locations as wildlife crossing points. Some animals traveling along each of these tributaries would be more likely to continue beneath the road than be forced to move up and over the road at grade, exposing them to collision risk with vehicles. These arch culverts would be more attractive to small animals than large animals. Long culvert lengths may deter some animals from using them.

Temporary sediment release would occur in Willow Creek and the unnamed tributary because culvert work in these perennial waters would involve diverting flows around the work area, streambed alterations to install the culvert, and the placement of fill around the culvert. To minimize this potential impact, these culvert installations would be timed to coincide with the low-flow season from November through March in perennial waterways (i.e., Willow Creek, Big Wood River) or with the non-irrigation/freeze-up season (December, January, and February). This would help to minimize sediment in intermittent channels, such as irrigation canals, laterals, and ditches.

Other Structures

Other structures include three pedestrian underpasses between McKercher Boulevard and East Fork Road, two retaining walls—one in the City of Bellevue and one south of St. Luke's Hospital, and two noise barriers. The construction of these structures will be coordinated closely with roadway reconstruction.

Construction of the retaining walls in Bellevue and south of St. Luke's Hospital will most likely occur prior to final grading of the roadway surface. The three proposed pedestrian underpasses will be constructed at the same time that the roadway construction occurs. While traffic is diverted onto temporary pavement, one-half of each structure would be constructed and the new road base constructed on top of the completed structure. Traffic would then be moved onto this reconstructed area and the second half of the underpass and roadway would be completed. The two noise barriers could be constructed once final grading of the roadway is completed.

Boulder Flats Wetland Mitigation Concept Plan (Offsite Project Component)

Regardless of the build alternative (Alternative 2 or Alternative 3) selected, the proposed improvements would result in a 2.48-acre loss of jurisdictional wetland habitat along the SH-75 project corridor. Of this total, 1.19 acres are associated with natural wetlands and 1.29 acres with irrigation-dependent wetlands. To fully mitigate this wetland loss, a wetland mitigation concept plan was developed for the Boulder Flats site north of Ketchum.

The mitigation plan will restore floodplain and wetland functions and values by reconnecting the Big Wood River floodplain affected by the existing SH-75 roadbed on Boulder Flats. Floodplain and wetland restoration would be accomplished by realigning a 1.2-mile segment of SH-75 out of the floodplain and removing the existing SH-75 roadbed from Boulder Flats.

The wetland mitigation plan will fully compensate for the 2.48-acre wetland loss attributed to the SH-75 Timmerman to Ketchum project and the 0.316-acre wetland loss attributed to the 1.2-mile realignment of SH-75 at Boulder Flats. In addition, the proposed realignment of SH-75 and the removal of the existing SH-75 roadbed from the Big Wood River floodplain will improve highway and intermodal safety by removing two at-grade highway crossings with the Harriman Trail (an 18-mile, nonmotorized hiking, bicycling, equestrian, and cross-country ski trail between Galena Lodge to the north and the Sawtooth National Recreation Area [SNRA] headquarters to the south) while accomplishing positive wetland, aesthetic, and recreational benefits.

The Boulder Flats mitigation site is located in Blaine County approximately 10 miles north of Ketchum in the SNRA. As depicted in Figure 10, the Boulder Flats wetland mitigation plan will consist of the following actions:

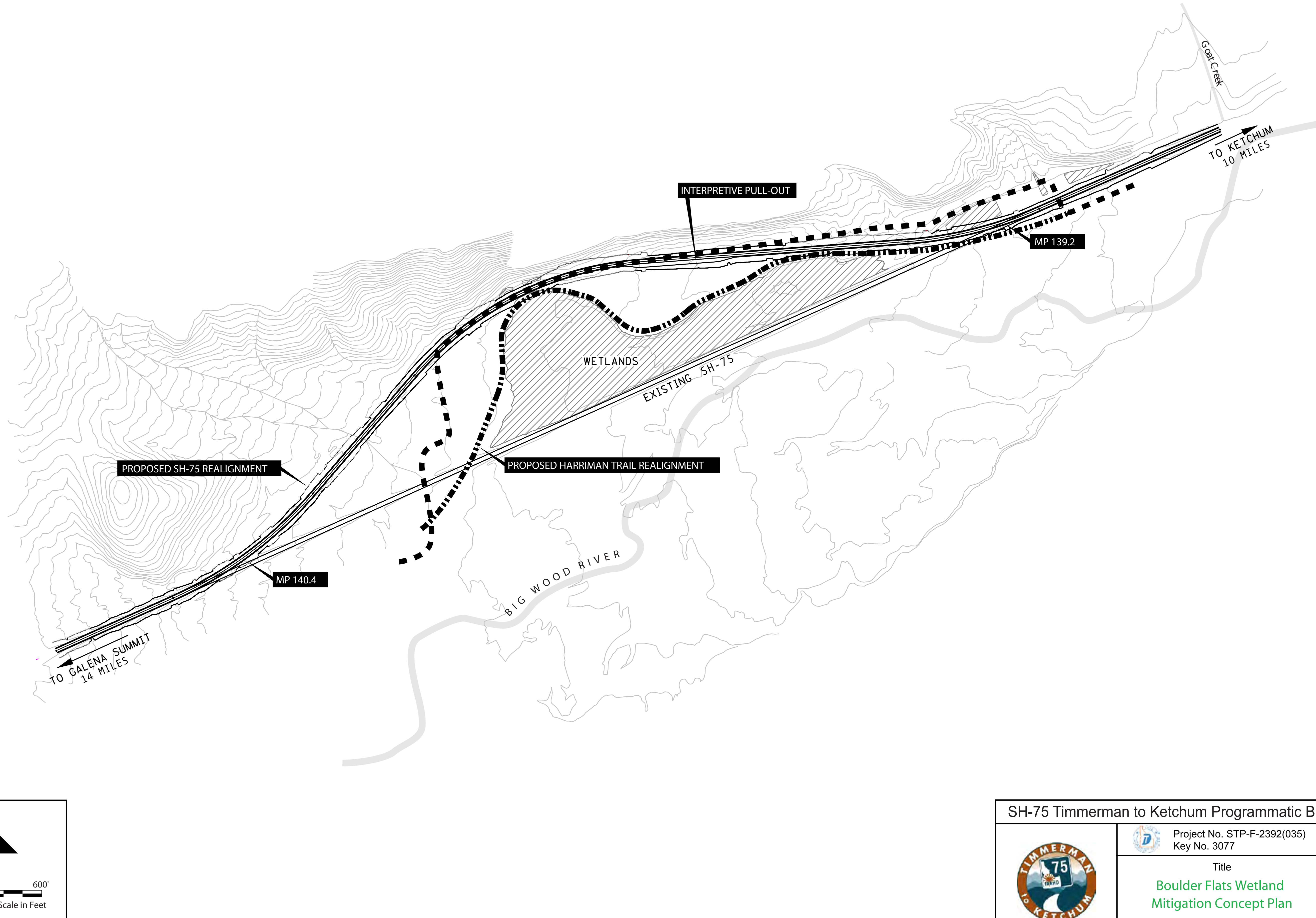
- Realign SH-75 and Harriman Trail. Between MP 139.2 and MP 140.4, SH-75 will be realigned to the northeast and built on the highway's original roadbed. The realigned highway would consist of two 12-foot travel lanes (one in each direction) and 5-foot shoulders on each side of the highway.

  With a portion of the original SH-75 roadbed currently used for the Harriman Trail, the affected trail segment would be rebuilt south of the realigned highway. By realigning the existing highway along the northern edge of Boulder Flats, the two at-grade trail crossings with the current SH-75 alignment would be eliminated.

- Remove SH-75 Roadbed from Boulder Flats. Once SH-75 and the Harriman Trail have been realigned, the current SH-75 roadbed, which affects the Big Wood River floodplain and its associated wetlands, would be removed and the site rehabilitated. This action would result in a 5.9-acre gain in wetland area and would be used to offset the 1.19 acres of natural and 1.29 acres of irrigation-dependent wetlands directly affected by the SH-75 Timmerman to Ketchum project and the 0.316-acre loss at the mitigation site. Based on the mitigation ratios applied to each wetland loss, 5.55 acres are needed to fully compensate for the wetland losses attributed to the SH-75 Timmerman to Ketchum project and its associated wetland mitigation plan.

  With the removal of the SH-75 roadbed from the river's natural floodplain, 19 acres of floodplain connectivity would be restored. This action would also increase the site's capacity to attenuate flooding, restore hydrologic connectivity within the larger Big Wood River floodplain, and restore palustrine scrub-shrub and palustrine emergent wetland functions and values.

The mitigation plan calls for the planting of native willows where the existing SH-75 roadbed would be removed. Other plantings will include small areas of cottonwood and seedings of native grasses and herbaceous species in both wetland and upland areas disturbed by roadbed removal. Hydrologic support of the wetland plantings will occur from groundwater and seasonal runoff. The mitigation site receives runoff from Boulder Creek, Goat Creek, and several unnamed drainages. Drainage patterns and the presence of hydrophytic plants indicate there is favorable onsite wetland hydrology.



SH-75 Timmerman to Ketchum Programmatic Biological Assessment

Project No. STP-F-2392(035)
Key No. 3077

Title: Boulder Flats Wetland Mitigation Concept Plan

Figure 10

Date: January 2005

2.3.3 Impact Avoidance, Minimization, and Mitigation Measures

Any construction over or within perennial waters, including culvert extensions and replacements, will adhere to the BMPs specified in ITD's *Standard Specifications for Highway Construction* (ITD 2004) and in the *Erosion and Sediment Control Manual* (ITD 2001). The specific measures to be applied during each construction phase will include the following.

Measures for Water Quality Protection

As with all projects involving waters of the United States, a Section 404 permit from the U.S. Army Corps of Engineers (Corps) and a Stream Alteration Permit from the Idaho Department of Water Resources (IDWR) for work in perennial waters will be required. Water quality certification and a National Pollutant Discharge Elimination System (NPDES) Stormwater Permit from the Idaho Department of Environmental Quality (IDEQ) will also be required for the stormwater management plan. Various Blaine County, ITD, U.S. Environmental Protection Agency (EPA), IDEQ, and other federal and state agencies will be involved during the permitting processes. The process established under Section 404 of the Clean Water Act ensures that federal and state jurisdictional agencies have the opportunity to comment on the permits and provide recommendations. Specific impact avoidance and minimization measures for the SH-75 Timmerman to Ketchum project will include the following:

- ITD will prepare a NPDES Stormwater Permit for Construction Activities, including a Stormwater Pollution Prevention (SWPP) Plan, consistent with *Standard Specifications for Highway Construction*, Section 212, Erosion and Sediment Control (ITD 2004). The SWPP Plan would focus on erosion-sensitive areas, sediment-sensitive areas, and the control and precautionary measures to be followed. This plan will include BMPs with a description of the maintenance schedule, drainage and culvert systems, pre- and post-construction hydrology, non-stormwater discharges, waste disposal, dust control, revegetation, and monitoring procedures.
- Water pollution prevention control measures will be scheduled and implemented to correspond with ground-disturbing activities.
- Within 100 yards of all natural waterways, fiber wattles, or other similar erosion control measures (i.e., rock check dams and retention basins), will be installed during construction to control sediment.
- When fiber wattles are used, they will be placed around the perimeter of existing and new inlets, outlets, ditches, or channels to slow runoff velocity and capture sediments. The fiber wattles will be staked in place and adjacent wattles will abut each other. When sediment has filled-in to overflow behind the fiber wattles, new fiber wattles will be installed either upstream or downstream as directed. Fiber wattles will be left in place after final construction unless otherwise directed.
- Only clean, granular material, rock or aggregate will be used for the construction of temporary dikes and cofferdams for equipment operation and project construction.
- Revegetation of the disturbed riparian zone will be accomplished by preserving all topsoil, placing additional topsoil if needed, and planting selected rooted trees and woody vegetation along with an approved riparian seed mix. This will enable the area to recover quickly and with more mature vegetation providing an almost immediate restoration of streambank and

riparian areas. All introduced cobble will be removed and/or contoured to achieve a natural appearance in the project area.

- Activities with a high potential for causing sediment, such as cofferdam placement or stream diversion, will not be conducted during high runoff. All in-stream diversion, bridge pier, fill placement and culvert construction in perennial waterways will be conducted during the low flow season (November through March) and in accordance with all applicable permit conditions.
- Turbidity levels caused by construction activities will be limited to the increases permitted under the guidelines issued by the EPA and IDEQ for streams in the Big Wood River Basin. When necessary to perform construction work within a stream channel, the prescribed turbidity limits may be exceeded for the shortest practical period required to complete such work, subject to permit conditions. Machinery for in-stream construction work will operate from the streambank or an approved work pad or work bridge rather than within the stream channel.
- Construction specifications will require riprap/armor materials to be free of contaminants.
- Any and all sedimentation basins that may occur in the floodplain will be restored to a natural appearance and seeded with an approved riparian seed mix reflecting native vegetative patterns.
- Demolition of existing bridges may cause some debris to enter the stream flow. Debris entering the stream flow will be minimized through the use of a suspended canvas or similar catchment device under the bridge during demolition activities. Any large debris (concrete and/or asphalt) that falls into the stream will be promptly removed.
- Excess soil and rock materials will not be stockpiled or disposed of near or in wetlands, riparian areas, floodplains, or other watercourse perimeters where they could be washed away by high water or stormwater runoff, or will encroach upon the waterbody itself.
- Water pumped during construction will not enter watercourses or other surface water features (e.g., drainage ditches) without use of turbidity control measures. These may include settling ponds, entrapment dikes, or other approved methods. Any wastewater discharged into surface waters will be free of settleable material.
- An approved upland seed mix will be used in conjunction with compost mulching in all disturbed areas to reduce sediment loading, encourage revegetation, and improve water quality.
- All earthwork activities will cease to allow enough time for vegetation to become established before snowfall. Erosion controls will be established on all disturbed ground by that date, and in a manner appropriate to prevent erosion through the ensuing winter.
- Construction specifications will require methods that prevent entrance or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into flowing or dry watercourses or groundwater. Potential pollutants and wastes include, but are not limited to, refuse, garbage, cement, concrete, sewage effluent, industrial waste, oil, and other petroleum products.
- Inserts will be used as described in BMP #42 of IDEQ's catalogue of BMPs to aid in the removal of sediment, oil, and litter from stormwater before it is discharged into the Comstock Ditch.
- Settling basin and infiltration swales will conform to BMP #43 of IDEQ's catalogue of BMPs.

- The potential for oil and fuel spills during construction will be minimized through careful handling and designation of specific equipment repair and fuel storage areas that are at least 100 feet away from surface waters.
- Oil, petroleum waste products, chemicals, and hazardous or potentially hazardous wastes will not be drained onto the soil but confined in sealed containers for removal to approved disposal waste sites. Waste materials known to be hazardous will be disposed of in approved treatment or disposal facilities in accordance with federal, state, and local regulations, standards, codes, and laws. Hazardous waste materials will be transported in accordance with all applicable federal and state safety standards.
- A hazardous material safety and communication plan will be required from each contractor with special emphasis on preventing hazardous materials from entering watercourses and wetland or riparian areas, or contaminating the ground or groundwater. In the event that any hazardous materials are spilled during project construction, the Blaine County Disaster Service Office Director and IDEQ will be promptly notified.
- Retaining walls will be used at the Big Wood River and Trail Creek bridge crossings to minimize the amount of fill located in floodplain, riparian, and wetland areas.

Measures for Terrestrial Habitat Protection

A number of measures to avoid or minimize construction impacts on terrestrial habitat will be implemented during and after construction. Certain measures relate only to construction activities near environmentally sensitive areas such as wetland/riparian areas and floodplains, whereas others relate to upland site stabilization and revegetation, or final project design considerations. The measures related to construction include the following:

- Construction specifications will require contractors to preserve the landscape and prevent any unnecessary destruction, scarring, or defacing of vegetation in the work vicinity. All trees, shrubs, and other vegetation will be preserved and protected from construction activities and equipment, except where clearing and grubbing is required for fill, excavation, or other construction activities (e.g., retaining wall). All maintenance yards, field offices, and staging areas will be sited to preserve vegetation.
- Clearing and grubbing activities will be limited to that needed for project construction. All critical environmental areas including wetlands, riparian areas, stream corridors, and floodplains will be clearly delineated and marked with hazard fencing before the start of construction and avoided to the maximum practicable extent. Critical environmental areas will not be used for equipment, material storage, construction staging grounds and maintenance activities, or field offices.
- Excavated or graded materials will not be stockpiled or deposited near or on any waterways, steep slopes, or wetlands outside the approved footprint.
- As soon as an area is no longer needed for construction, stockpiling, or access, final site stabilization and landscape restoration measures will be initiated. Any lands disturbed and not permanently occupied by project facilities will be graded to provide proper drainage, covered with topsoil stripped from construction areas or stockpiled, scarified as needed, and revegetated with a low-lying, grass-forb seed mix that will not attract ungulates into the highway ROW.

- Retaining walls will be used at the Big Wood River and Trail Creek bridge crossings to minimize the amount of fill and vegetative clearing required in wetland and associated riparian areas.
- The Idaho Department of Fish and Game (IDFG) will be consulted to determine the final revegetation goals and recommended composition of plant species, planting dates, and seeding rates established for short- and long-term site stabilization and landscape restoration. The species mix to be used will be matched for soil drainage, climate, shading, resistance to erosion, and vegetation management goals.
- The contractors will be required to establish conditions suitable for reseeding or replanting, proper drainage, and erosion prevention. Mulching or other comparable methods will be used as a means of controlling dust and erosion, and to aid revegetation efforts.
- When no longer required by the contractor, any temporary access roads will be restored to their pre-construction original contours, graded to ensure proper drainage and erosion prevention, and made impassable to traffic. Temporary access road surfaces will be scarified to establish conditions suitable for reseeding or replanting and will be blocked from traffic to allow establishment of vegetation.
- Only certified and approved weed-free mulch will be used in accordance with the *Noxious Weed-Free Forage and Straw Certification Rules* (IDAPA 02, Title 06, Chapter 31).
- To ensure successful plant establishment, permanent plantings will occur during the early spring and/or fall when precipitation is sufficient for plant survival.
- To ensure successful plant establishment and long-term health and vigor, all plantings will be carefully monitored by ITD and the landscape contractor for a period extending at least through two growing seasons. If noxious weeds are identified during monitoring, measures will be taken by ITD or the landscape contractor to ensure that the landscape and wetland restoration effort succeeds.
- During the third growing season, ITD, IDFG, and Blaine County Weed Control will conduct a final site review to determine whether a contingency revegetation plan is necessary. For the Boulder Flats wetland mitigation site, the USFS will participate in this final site review. A contingency plan will be developed with these same entities if the landscape or wetland restoration effort is judged unacceptable.
- A weed control management plan will be developed by the landscape contractor and approved by ITD prior to initiating construction. Measures to avoid the establishment and spread of noxious weeds will include at a minimum: (1) inspection and cleaning of all construction equipment, (2) use of weed seed-free mulches, topsoil, and seed mixtures during landscaping, and (3) use of eradication strategies in the event a noxious weed invasion occurs.

Measures for Wetland/Aquatic Habitat Protection

Many of the BMPs and mitigation measures specified above to protect water quality and terrestrial habitat will also protect wetlands and aquatic habitat. These measures will ensure that the Big Wood River's Total Maximum Daily Loads (TMDLs) for suspended sediment and substrate sediment will not be exceeded. Specific measures for wetland/aquatic habitat protection will include the following:

- Before construction begins, wetland and riparian areas outside the project footprint or edge of ITD ROW will be staked and flagged or marked by perimeter fencing to identify the no-work area.
- Free flow of waters into and across wetlands will be maintained by installing culverts at existing grade.
- Erosion control on the filled grade of the ROW will be implemented with fiber wattles, compost mulching of exposed earth, and other appropriate measures.
- Embankments, bridges, and culverts will be designed to minimize adverse impacts on wetlands, riparian areas, and drainages.
- Affected wetland plants and soils will be identified and salvaged to the maximum practicable extent prior to construction disturbance.
- Wetlands affected by accidental fill or construction equipment in no-work areas will be restored by removing the fill, restoring the area to its pre-existing grade, and replanting with wetland plants similar in density and species composition prior to the disturbance.
- When construction activities commence, administrative and environmental controls will be in place to ensure that wetland/riparian areas outside the project footprint are protected.
- Any changes to the construction plans by either the contractor or ITD will require review and approval by the appropriate state or federal agency if there is the potential for impacts on wetlands or waters of the U.S. not previously identified.
- Restoration of temporarily disturbed wetlands will include rough grading, if necessary, and revegetation to approximate pre-project conditions. Soils and wetland plants salvaged prior to construction will be used for onsite restoration.

Measures for Offsite Project Components

The following measures have been identified by the USFWS as measures to be used, when feasible, to avoid and minimize impacts of offsite activities (i.e., material source and disposal sites, storage and staging areas, stockpiling areas, and mitigation sites) on listed species. ITD will notify the USFWS of the location of offsite areas prior to the commencement of construction.

<u>Utah Valvata Snail</u>

- Project components located within 100-feet of Magic Reservoir and the Little Wood, Big Wood, Malad, and Snake rivers and/or their tributaries will require surveys for Utah valvata snail presence before a final effect determination can be made.
- The ITD will inspect each site prior to use and ensure that the site complies with all of the following conditions to be consistent with a "May Affect Not Likely to Adversely Affect" determination for the species:
    - An ITD-approved pollution and erosion control plan will be prepared and carried out to prevent pollution and erosion related to construction activities.
    - All disturbed areas must be stabilized within 12 hours of any break in work unless construction will resume within 7 days.
    - No in-water work or stream crossings are authorized.
    - A supply of emergency erosion control materials will be on hand.
    - Boulders, rock, large wood, and any other natural construction materials will be obtained from outside riparian buffer areas.

- No pesticide application is allowed.
- No surface application of fertilizer may occur within 50 feet of any stream channel.
- Fencing must be installed as necessary to prevent access to revegetated sites by livestock or unauthorized persons.
- Existing roadways or travel paths must be used whenever possible.
- The number of temporary access roads will be minimized and such roads will be designed to avoid adverse effects.
- Access roads may not be built within 150 feet or more of any stream, waterbody, or wetland.
- Access roads may not be built mid-slope or on slopes greater than 30 percent.
- All temporary access roads will be obliterated when the project is completed; the soil must be stabilized, and the site must be revegetated with an ITD-approved species mix.
- Any large wood, native vegetation, and weed-free topsoil displaced by construction must be stockpiled for use during site restoration.
- Any water intakes used for the project will have a fish screen installed, operated, and maintained according to NOAA Fisheries' fish screen criteria.
- Construction discharge water will be treated for water quality and discharge velocity, and released away from waterbodies containing suitable habitat for Utah valvata.
- Vehicle staging, cleaning, maintenance, refueling, and fuel storage will be 150 feet or more from any stream, waterbody, or wetland.
- All vehicles operated within 150 feet of any waterbody must be inspected daily for leaks and, if necessary, repaired before leaving the staging area. Inspections must be documented in a record that is available for review on request from the USFWS.

<u>Canada Lynx</u>

- No offsite areas associated with the project may be located in or adjacent to any identified lynx analysis unit (LAU).

<u>Bald Eagle</u>

- Project components will not be located within bald eagle breeding territories (3.1 miles from a nest) during the critical nesting period between February 1 and August 31 of each year. No activity will occur within 0.25 mile of nests or roosts and up to 0.5 mile within the line-of-sight of nests or roosts.
- Project components will not be located within bald eagle wintering areas during the winter use period between November 15 and March 15 of each year. No activity will occur within 0.2 mile of winter perching, roosting, or feeding sites.

<u>Gray Wolf</u>

- Project components will not be located within 1 mile of a known denning or rendezvous site.

<u>Yellow-Billed Cuckoo</u>

- Project components will not result in fragmentation, degradation, or destruction of riparian areas suitable for yellow-billed cuckoo nesting, particularly riparian woodlands composed of cottonwoods and willows.
- Project components should avoid work in or adjacent to riparian areas suitable for yellow-billed cuckoo during the breeding season (from May through August).
- If a project component is located within or adjacent to suitable yellow-billed cuckoo habitat, surveys will be conducted during the nesting season. If species presence is documented, the ITD will immediately notify the USFWS.
- Herbicides will not be used in or adjacent to suitable yellow-billed cuckoo habitat.

Monitoring and Reporting Plan

The primary vehicle for monitoring and reporting will be the Individual Project Worksheet and any required monitoring activities, including construction monitoring, to avoid impacts on bald eagle (if necessary). Monitoring will be adequate to document that all impact avoidance/minimization measures and applicable BMPs are implemented according to the terms of the PBA/Section 7 consultation. The results of project monitoring will be provided to the USFWS as directed in the Programmatic Section 7 consultation.

3. DESCRIPTION OF SPECIES AND HABITAT

3.1 NO EFFECT SPECIES

3.1.1 Bull Trout, Spring/Summer Chinook Salmon, Steelhead, and Sockeye Salmon

Considering (1) none of the salmonid species listed for Blaine County (bull trout, spring/summer Chinook salmon, steelhead, and sockeye salmon) historically occurred in the Big Wood River Basin, (2) no proposed or designated critical habitat for bull trout is within the Big Wood River Basin, and (3) the measures identified to avoid, minimize, and mitigate adverse impacts in the project action area will be incorporated into project plans and construction specifications, Alternative 2 and Alternative 3 will have “no effect” on any listed salmonid species or on any proposed or designated critical habitat for bull trout.

Project Area Habitat

All of the salmonids on the Blaine County species list, including bull trout, spring/summer Chinook salmon, steelhead, and sockeye salmon, do not occur in the Big Wood River watershed. They are prevented from being in the watershed and project action area by Devil’s Punchbowl Falls, estimated to be 90 to 110 feet tall, on the Malad River. The Malad River is downstream from the confluence of the Big and Little Wood rivers, which occurs about 35 miles downstream (south) of Timmerman Junction, the project’s southern terminus on SH-75.

There is no proposed or designated critical habitat for bull trout in the Big Wood River drainage. The only proposed critical habitat for the species in Blaine County occurs in the upper Salmon River drainage in the Salmon River Recovery Unit, which encompasses the entire Salmon River Basin. The headwaters of the Salmon River Basin begin and flow north of Galena Peak, which is on the Blaine and Custer county line. The headwaters of the Big Wood River drainage begin and flow south of Galena Peak, which is about 22 miles north of Ketchum, the project's northern terminus.

On September 21, 2004, the USFWS issued a final rule (see 50 CFR Part 17) designating critical habitat for the Klamath and Columbia River populations of bull trout. The final rule published in the Federal Register on October 6, 2004 (Volume 69, No. 193), did not designate any critical habitat for bull trout in the SH-75 project action area. The rule, which went into effect November 5, 2004, differs from the proposed rule in that some areas that were originally proposed for designation were excluded because of existing habitat protections. Excluded areas include federal lands managed under INFISH and PACFISH or revised plans, areas covered by the Snake River Basin Adjudication settlement, and areas covered by state management plans, among others.

In Idaho, designated critical habitat includes specific stream segments and/or lakes located in the Clark Fork River Basin and Coeur d'Alene Lake Basin in northern Idaho, and in the Imnaha-Snake River Basin/Hells Canyon complex on the Idaho-Oregon border. It includes 306 miles of streams and 27,296 acres of lakes in Adams, Benewah, Bonner, Boundary, Kootenai, and Shoshone counties.

Alternatives 2 and 3

Because no bull trout, steelhead, spring/summer Chinook salmon, and sockeye salmon historically or presently use the Big Wood River watershed, and no proposed or designated critical habitat for bull trout exists in or near Blaine County, both Alternatives 2 and 3 would have no effect on these federally listed threatened and endangered species or on bull trout critical habitat.

Wetland Mitigation Concept Plan for Boulder Flats

Because no bull trout, steelhead, spring/summer Chinook salmon, and sockeye salmon historically or currently use the Big Wood River watershed and no proposed or designated critical habitat for bull trout exists in or near Blaine County, the wetland mitigation concept plan for Boulder Flats would have no effect on these federally listed threatened and endangered species or on bull trout critical habitat.

3.1.2 Gray Wolf

Since the translocation of wolves from Canada, the population in Idaho south of Interstate 90 is considered "experimental, non-essential" under Section 10(j) of the Endangered Species Act. Under these circumstances, federal action agencies are required to confer with the USFWS if their actions are likely to jeopardize the continued existence of gray wolves (50 CFR 17.83). The USFWS does not anticipate any actions that would result in a "likely to jeopardize the continued existence" determination for the reintroduced, experimental population of wolves.

Project Area Habitat

No documented wolf packs are resident in the immediate project area and there are no known denning or rendezvous sites. However, the project action area is considered an occupied wolf area (Mack, pers. comm., 2001).

In January 1995 and 1996, the USFWS introduced 15 and 20 wolves, respectively, into central Idaho. Following release, two packs (Stanley and White Cloud) became established with all or part of their territories on the SNRA. Another pack established in Copper Basin adjacent to the Ketchum Ranger District to the northeast on the Salmon-Challis National Forest. During the spring and summer of 2000, however, both the Stanley and White Cloud packs were broken up following control actions to mitigate livestock depredation problems.

The closest known pack is the Wild Horse pack located in the Pioneer Mountains about 11 miles east of where the East Fork Big Wood River meets the Big Wood River. Other packs exist to the north near Stanley (Whitehawk Pack) within the SNRA and to the southwest on the Fairfield Ranger District (Big Smoky Pack) in the South Fork Boise River drainage. Control action was taken on the Whitehawk pack during the spring and summer of 2001 due to livestock depredations. Although reduced in number, the Whitehawk Pack is still functional.

Numerous reports of wolves have been made in the greater Sun Valley area, mainly from lower elevations during winter where they follow the movements of elk, their principal prey. Radio-collared wolves have also been reported in the Big Wood River drainage. Because of this, gray wolves could potentially be present in the project area during transient, long-distance travel (Mack, pers. comm., 2001).

Habitats in the Wood River Valley from Timmerman Junction north to Ketchum are characteristically urban, suburban, and agricultural in nature, which are unlikely to be selected for residence by wolves. Shrub-steppe communities on the lower surrounding hills and portions of the valley floor provide habitat for mule deer and elk, the principal prey for wolves. The riparian zone of the Big Wood River provides cover for wolves, which facilitates long-distance movements and supports large numbers of mule deer. Wolves probably use the Wood River Valley in the project vicinity when they are engaged in long-distance dispersal, during which they may forage on the plentiful deer and elk present.

Wetland habitats at the Boulder Flats mitigation site provide suitable prey habitat for wolves. Spring, summer, and fall range for mule deer and year-round range for elk and moose occur in the mitigation area. Similar to the project area, wolves likely use the Wood River Valley north of Ketchum when they are engaged in long-distance dispersal, foraging on the plentiful deer and elk present.

Alternatives 2 and 3

Although there would be a minor impact on habitat fragmentation and permeability attributable to the wider SH-75 roadway corridor, Alternatives 2 and 3 would have “no effect” on gray wolf. The predominant urban, suburban, and agricultural habitats adjacent to SH-75 in the project area are not wolf habitat, making it unlikely that individual animals would occur in the project area and regularly cross the highway.

There are no documented wolf packs or known denning sites in the Wood River Valley, and wolves are more likely to cross the Wood River Valley north of Ketchum where the human population and related disturbance are less and where habitats are situated closer to their core ranges. Gray wolf could potentially be in the project area during large-scale movements of elk, their principal prey.

Wolf sightings have occurred in the greater Sun Valley area, and radio-collared wolves have been reported in the Big Wood River drainage. Improved habitat permeability and connectivity at the Big Wood River and Trail Creek riparian crossings may facilitate wolf movements through these perennial drainages.

Wetland Mitigation Concept Plan for Boulder Flats

Considering (1) there would be no increased mortality risk to wolves, (2) the realigned SH-75 roadbed would have the same habitat permeability as the existing SH-75 roadbed, (3) there would be increased habitat availability for the primary prey species (elk and deer) typically sought by wolves, and (4) the USFWS does not anticipate any actions that would result in a "likely to jeopardize the continued existence" determination for the reintroduced, experimental population of wolves, the wetland mitigation concept plan for Boulder Flats will have no effect on the gray wolf.

Because of the site's relationship to neighboring core ranges, gray wolf may cross the realigned SH-75 corridor during long-distance dispersal or other transient movements. However, there would be no increased mortality risk to wolves because human access and activity (motorized and nonmotorized) and habitat permeability would not be adversely affected by the mitigation plan. This is because the width of the realigned SH-75 segment would match the existing pavement width (a 12-foot travel lane and 5-foot shoulder in each direction) and the posted speed limit (65 mph) would remain unchanged.

The mitigation plan is expected to temporarily displace a few prey species during construction of the SH-75 realignment and removal of the existing SH-75 roadbed from the floodplain area, but it would not adversely affect the number or distribution of prey species in the long term. With roadbed removal, the mitigation plan would restore 5.9 acres of wetland habitat and its connectivity with 19 acres of other wetland/floodplain habitat, thereby increasing the mitigation site's carrying capacity for the primary prey species (elk and deer) typically sought by wolves.

3.2 MAY AFFECT NOT LIKELY TO ADVERSELY AFFECT SPECIES

3.2.1 Canada Lynx

Status

The Canada lynx (*Lynx canadensis*) was listed as threatened on March 24, 2000. USFWS concluded that the single greatest factor threatening the contiguous U.S. Distinct Population Segment of this species is the inadequacy of existing mechanisms and guidance for lynx conservation in National Forest resource management plans and Bureau of Land Management land use plans.

Species Distribution/Natural History

Historically, Canada lynx were common in the northern Rocky Mountain forests of central Idaho, southwestern Montana, and northwestern Wyoming (Koehler and Aubry 1994). In the early 1940s, lynx were distributed throughout northern Idaho and occurred in eight of the 10 north-central counties. In 1990, the Idaho populations of lynx were described as stable or small and declining (USFWS 1998). Lewis and Wenger (1998) show the distribution of lynx as including portions of eastern Idaho in addition to the central and northern regions of the state.

Recent confirmed reports of lynx are scarce and currently no population estimates for Idaho lynx are available (USFWS 1998). In 1995, USFWS concluded that although individual lynx occur in Idaho, a self-sustaining resident population does not exist (USFWS 1998).

Habitat Requirements and Limiting Factors

Little to no information regarding habitat requirements for lynx is available for central Idaho. Thus, the following discussion of habitat suitability is extrapolated from studies in other areas, primarily from the work of McKelvey et al. (2000) in north-central Washington. Geology, vegetation, and climate are broadly similar between the northern Washington study area and the project action area and provide an approximation of habitat requirements within the central Idaho region.

In the contiguous U.S., Canada lynx inhabit transition zones that are a mosaic of boreal/coniferous forest and northern hardwoods. In northern latitudes, Canada lynx habitat is the boreal ecosystem (USFWS 1997). Both snow conditions and vegetation type are important components of lynx habitat (McKelvey et al. 2000). In the southwestern portion of their range, lynx primarily occur in boreal forest habitats where the mosaic of successional age and structural classes provide denning and foraging habitat. Preferred prey for lynx is also associated with a variety of forest types. Red squirrels are associated with mature cone-producing forests, whereas snowshoe hares reach their highest abundance in younger-aged (i.e., 10- to 20-year-old) forest stands (McKelvey et al. 2000).

Most lynx occurrences are associated with the broad-leaved continental forest type at the total population scale (McKelvey et al. 2000). In Idaho, most lynx occurrences are associated with dense coniferous forest within the Douglas-fir or spruce/fir forest types. Within these forest types, there appears to be a preference for lodgepole pine (Koehler and Aubry 1994; McKelvey et al. 2000; Aubry et al. 2000). In central Idaho, lodgepole pine habitats commonly occur on more gentle terrain, toe slopes, and valley bottoms wherever the species can dominate. Such lodgepole pine stands usually grade into the sub-alpine fir or Douglas-fir habitat type on steeper slopes or at higher elevations. The Douglas fir habitat type occurs over the broadest range of environmental conditions of any conifer in central Idaho, often extending from lower to upper timberline (Steele et al. 1981).

Overall, the habitat types most important to lynx include those where lodgepole pine is an early successional species and habitat conditions (i.e., moisture) support a dense shrub understory, which hares prefer. Older, more mature forests with downed trees provide cover for denning, escape, and protection from severe weather. Occasionally lynx will move into rangeland areas near forests for food. In these instances, white- and black-tailed jackrabbits, cottontail rabbit, grouse, and beaver may be sought as prey.

Snowshoe hare (*Lepus americanus*) is the primary prey of lynx, comprising 35 to 97% of the lynx diet throughout its range (Ruediger et al. 2000). Because lodgepole pine requires fire to open its seed cone and create new patches of young forest, the seedlings that sprout after a fire provide forage for snowshoe hare, which keeps the food base for lynx plentiful. Other prey species include grouse, ground and red squirrels, porcupine, beaver, mice, moles, shrews, fish, and ungulates as carrion or occasionally as prey (Ruediger et al. 2000). Southern populations of lynx may prey on a wider diversity of species than northern populations because of lower average hare densities and differences in small mammal communities. In areas characterized by patchy lynx habitat distribution, lynx may prey opportunistically on other species that occur in adjacent habitats including white-tailed jackrabbit, black-tailed jackrabbit, sage grouse, and Columbian sharp-tailed grouse (Quinn and Parker 1987; Lewis and Wenger 1998).

Although lynx are forest dwellers, they are capable of dispersing over large distances when local prey populations decline or during population irruptions of alternative prey species. Periodic long-distance dispersal may account for the apparent genetic homogeneity throughout its range (Koehler and Aubry 1994). Historical records show that lynx occasionally occur in non-forested areas and have been reported in Idaho's shrub-steppe habitats. During the early 1970s, four lynx (a female with kittens) were observed in Jerome County, Idaho (Lewis and Wenger 1998). These occurrences in atypical habitats appear to represent transient individuals and may have been associated with irruptions in jackrabbit populations at that time (Lewis and Wenger 1998). McKelvey et al. (2000) showed that lynx occurrences away from conifer forest declined exponentially with distance, emphasizing lynx as primarily a forest species.

The 10-year cycle of dramatic increases and declines for the more northern boreal populations of lynx and snowshoe hare, the principal prey for lynx, is well documented (Koehler and Aubry 1994). However, the population dynamics of lynx and snowshoe hare in the western mountains of the U.S (including Idaho) are not cyclic. Rather, both species exist in relatively stable densities comparable to the lows of the northern populations. This has been attributed to the lower quality and quantity of habitat in lower latitudes and/or the presence of additional snowshoe hare predators (Wolff 1982; USFWS 1997).

Because of their low foot loading, habitats with moderate snow depths in cold, dry climates may favor lynx, allowing them to exploit prey that would be unavailable to other predators. In the southern portion of their range, including much of Idaho, snow depth is variable and subject to repeated freezing and thawing. This can reduce their competitive advantage by allowing other mammalian predators (i.e., bobcats and coyotes) to compete with them and cause lower lynx densities than in more northern latitudes (Buskirk et al. 2000). The USFWS has found that home range size could vary from 3 to 300 square miles (1,920 to 192,000 acres), and that lynx home ranges at the southern extent of the species' range are generally larger than those in the northern portion of their range in Canada (USFWS 2000). This would indicate that if lynx were present near the project area, they would likely require a larger home range than lynx in more northern latitudes.

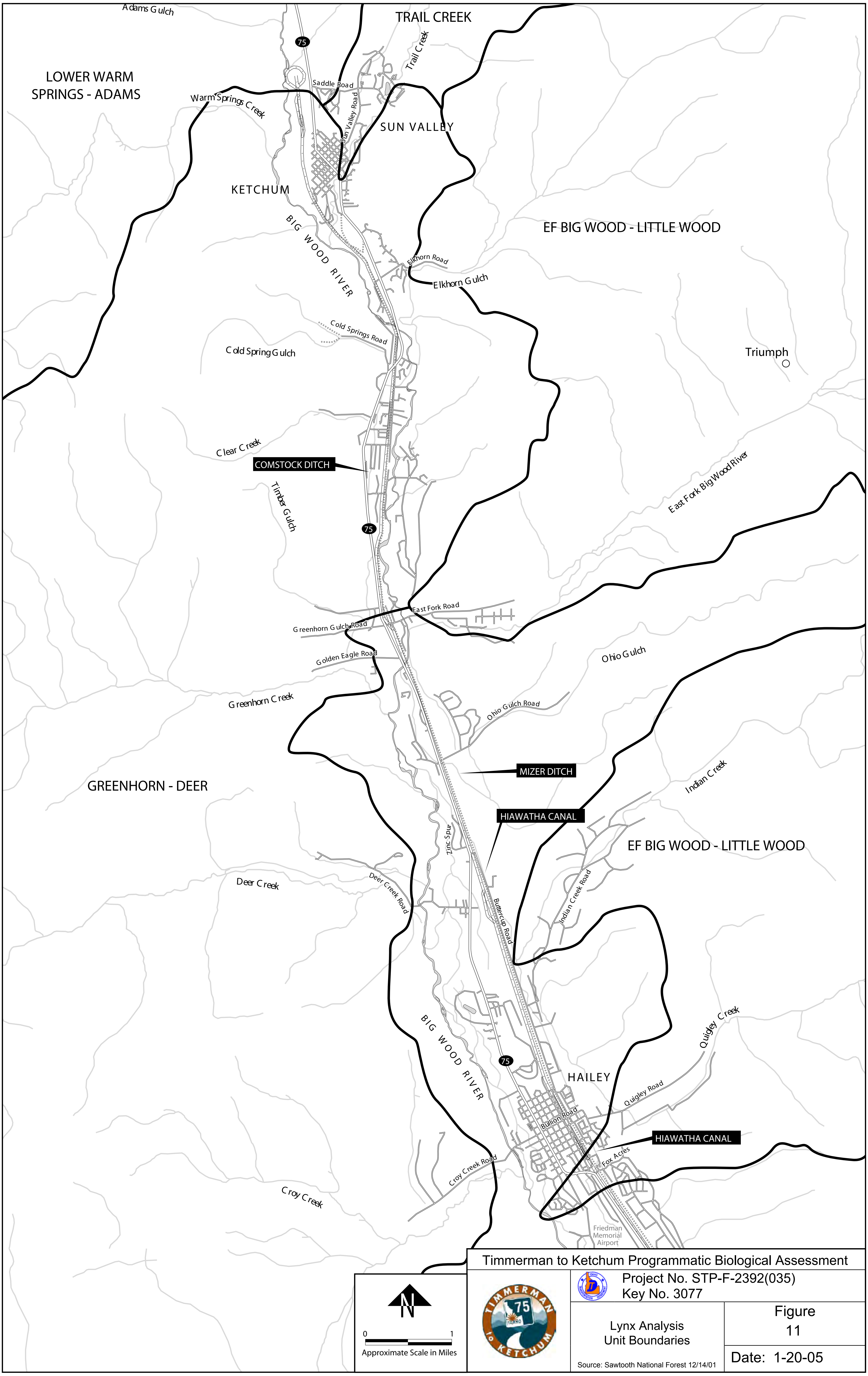
There is some evidence that lynx will tolerate a moderate amount of human activity, but their threshold is unknown (Aubry et al. 2000). Moderate human activity, including snowmobile traffic, is not believed to result in lynx displacement (USDA et al. 2000).

Project Area Habitat

Project area elevations range between 4,884 feet at Timmerman Junction and 5,800 feet in Ketchum and are within the known elevation range for lynx (McKelvey et al. 2000). In the project vicinity, the Wood River Valley does not contain Douglas-fir, spruce/fir, or lodgepole pine forests. This lack of coniferous forest results in the absence of lynx-preferred denning or foraging habitat. Instead, project area habitats are characteristically urban or pastoral in nature with shrub-steppe (i.e., sagebrush) on the lower slopes of the surrounding hills.

The forested riparian zone of the Big Wood River also lacks the habitat characteristics required for resident lynx, but it provides lynx with a potential corridor for long-distance dispersal. The potential use of the Big Wood River riparian zone as a lynx dispersal corridor is supported by the Conservation Data Center (CDC) database, which contains one record of occurrence for Canada lynx in the project area (see Appendix B). The occurrence is related to an illegally killed lynx located about 1 mile south of Bellevue along the Big Wood River in January 1984. The four lynx (a female with kittens) observed in Jerome County in the early 1970s, well outside the spatial distribution of their habitat, further documents their ability to move over large distances. During such movements, the cover provided by riparian corridors is an important habitat feature for lynx.

The northern portion of the project area between Hailey and Ketchum is bounded on the east by the East Fork Big Wood-Little Wood and Trail Creek lynx analysis units (LAUs) and on the west by the Greenhorn-Deer and Lower Warm Springs-Adams LAUs (Figure 11). The highway is within the Greenhorn-Deer, Trail Creek, and Lower Warm Springs-Adams LAUs. With significant residential and urban development in the Wood River Valley, most of the valley habitat in these LAUs is unsuitable for lynx. The presence of an LAU does not necessarily imply that there is currently occupied lynx habitat; instead it defines an area in which actions are managed with a view to current and future lynx movement and habitat connectivity.



Timmerman to Ketchum Programmatic Biological Assessment

Project No. STP-F-2392(035)
Key No. 3077

Lynx Analysis
Unit Boundaries

Source: Sawtooth National Forest 12/14/01

Figure
11

Date: 1-20-05

Other LAUs lie to the north of the project area. South of Hailey, there are no LAUs because of the absence of suitable habitat (USFWS 1997).

Boulder Flats Habitat

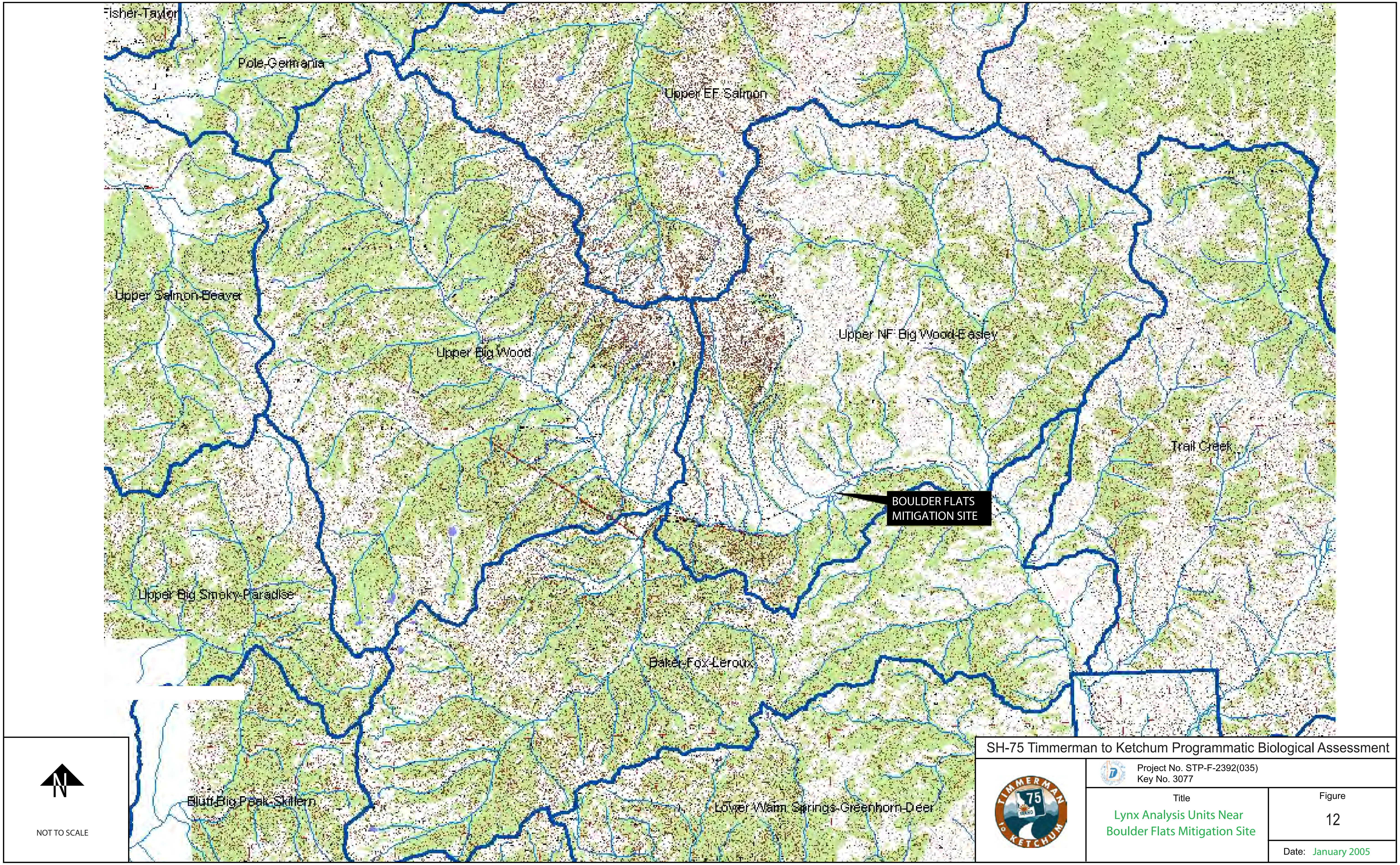
The Boulder Flats mitigation site is within the Upper North Fork Big Wood-Easley LAU (Figure 12). This LAU contains 18,200 acres of habitat, of which 2,900 acres or 16% is considered denning habitat. During the winter of 1997, there were confirmed lynx track sightings in the SNRA near the Fishhook Creek drainage and Alturas Lake Creek drainage. The closest sighting was approximately 20 miles north of the Boulder Flats site near Alturas. Trapping records from the 1960s and 1970s showed lynx occurrences throughout the Salmon River watershed on the SNRA (Power Engineers 2002).

On Boulder Flats, the Big Wood River floodplain does not contain Douglas-fir, spruce/fir, or lodgepole pine coniferous forests, resulting in the absence of lynx-preferred denning or foraging habitat. Instead, native shrub-steppe (i.e., sagebrush) communities dominate the valley floor and northern foothills, with Douglas-fir coniferous forest occupying the foothills south of the mitigation site. Construction and maintenance activities along SH-75, the old SH-75 roadbed, and the Harriman Trail, however, have modified the plant communities along these travel corridors by introducing various roadside grasses and some weeds.

On Boulder Flats, the shrub-steppe (sagebrush) community shrub layer is dominated by mountain big sagebrush (*Artemisia tridentate vayseyana),* with low sagebrush (*Artemisia arbuscula*), gray rabbitbrush (*Chrysothamnus nauseousus*), and round headed desert buckwheat (*Eriogonum sphaerocephalum*) also present. Idaho fescue (*Festuca idahoensis*) and bare ground dominate the herbaceous layer, which also includes wheatgrass species (*Agropyron spp*.), bluegrass species (*Poa spp.*), silky lupine (*Lupinus sericeus*), cinquefoil species (*Potentilla spp.*), and aster species (*Aster sp.*). The disturbed upland areas along SH-75, the old roadbed, and the Harriman Trail also include planted and weedy species such as wheatgrass (*Agropyron spp.*), smooth brome (*Bromus inermus*), cheatgrass (*Bromus tectorum),* white clover (*Trifolium repens*), tarweed (*Madia glomerata*), timothy (*Phleum pratense*), knotweed (*Polygonum aviculare*), common mullein (*Verbascum thapsus),* and knapweed (*Centaurea sp.)*.

The riparian wetlands found along the Big Wood River, its tributaries, and wet roadside ditches are dominated by PSS communities. These PSS communities are dominated by wolf willow (*Salix wolfii*), Geyer willow (*Salix geyerana*), Booth's willow (S*alix boothii*), and quaking aspen (*Populus tremuloides*), with beaked sedge (*Carex rostrata*), Nebraska sedge (*Carex nebrascensis),* and tufted hairgrass (*Deschampsia cespitosa*) dominating the herb layer.

Snowshoe hare, the primary prey of lynx, use many forest types but prefer areas with a dense layer of plant cover below the main forest canopy consisting of seedlings, young trees, and tall shrubs. This understory cover helps to protect them from predators and provide a food supply. During summer, snowshoe hares consume a variety of herbaceous plants (i.e., fireweed, strawberry, lupine, bluebell, and some grasses) and eat leaves from shrubs. Their winter diet consists of small twigs, buds, and bark from many coniferous and deciduous species including willow and alder.



SH-75 Timmerman to Ketchum Programmatic Biological Assessment

Project No. STP-F-2392(035)
Key No. 3077

Title	Figure
Lynx Analysis Units Near Boulder Flats Mitigation Site	12
	Date: January 2005

3.2.2 Bald Eagle

Status

The bald eagle (*Haliaeetus leucocephalus*) was listed as endangered on February 14, 1978, and downgraded to threatened on July 12, 1995 (60 FR 36010), in Idaho because of progress in recovery.

Species Distribution/Natural History

Currently, the bald eagle ranges throughout most of North America. The bald eagle breeding range extends from the Alaskan coast down through western Canada (with the exception of southern regions of Alberta and Saskatchewan), eastward through southern Canada and the Great Lakes, and northward to the eastern Canadian coast. Bald eagles reside (breed and winter) along their coastal habitat in the eastern states, throughout most of Florida, and along the Gulf Coast. In the west, they reside along the western coast from southern Alaska through the Pacific Northwest to northern California. A few small populations live in Arizona and Colorado.

Bald eagles winter throughout most of the United States west of the Mississippi River. During this time, high concentrations of eagles are found along the coast from southern Alaska and western Canada to Washington and along the upper Mississippi River.

In Idaho, bald eagles nest in three primary areas. The largest nesting population is found in eastern Idaho along the North Fork Snake River and South Fork Snake River. The second largest nesting population is located in the Pend Oreille River drainage and the Kootenai Valley of north Idaho. The North Fork Payette River near Cascade Reservoir contains the third concentration of nesting bald eagles. Other territories are scattered throughout southwestern and south-central Idaho (Beals and Melquist 1996). Outside the breeding season, bald eagles may use wide areas, including the project area.

Habitat Requirements and Limiting Factors

Most breeding areas are associated with large montane rivers, lakes, impoundments, and coniferous and cottonwood forests (Bureau of Reclamation 1994). Bald eagles in Idaho occupy riparian or lacustrine habitat almost exclusively during the breeding season, but they occasionally exploit upland areas for food and roost sites. Nest sites are usually as close as possible to maximum foraging opportunities. Both rivers and lakes are important foraging areas in eagle home ranges. Bald eagles often forage year-round near riffles, runs, and pools of rivers (Bureau of Reclamation 1994).

Bald eagle nests are constructed in dominant trees near open water that supports an adequate prey source. Bald eagles show strong fidelity to nest sites and often remain nearby if a nesting attempt is unsuccessful.

Major components of wintering habitat for bald eagle are an abundant food supply, suitable foraging habitat with adequate perch trees, and protected areas where birds can roost at night. An abundant food source is essential. During winter, eagles are scavengers and eat a variety of dead, dying, and vulnerable food sources. Fish is a dominant component of the diet of wintering bald eagles. Bald eagles also feed on winter- and road-killed mule deer, ground squirrels, cottontail rabbits, waterfowl, and other mammals.

In addition to a suitable food source, bald eagles also require adequate perching habitat during the day and roosting habitat at night. Eagles use perches for loafing, resting, hunting, or feeding. Bald eagles use a variety of perch types, but they prefer trees. Perch selection is strongly influenced by proximity to foraging areas. Most tree perches used by bald eagles are within 600 feet of a waterbody and provide a good view of the surrounding area. Bald eagles use a wide variety of trees for perching and species of tree is not as important as its size or growth form. Bald eagles select the tallest trees available that have panoramic views and open exposures on at least one side. Preferred perch trees tend to have large basal diameters and stout horizontal branches that extend over open areas.

Wintering bald eagles use roost sites to rest and sleep, sometimes roosting alone or with others. The habitat at night roosts often differs from that of day perches. Proximity to water is less important. The size of a roost varies from one tree to many in a large area and is usually well protected from inclement weather. Roosts along rivers and lakes are often in deciduous trees and in coniferous trees when the roost is distant from water.

As with the use of perch trees, bald eagles use a variety of tree species for roosting, selecting the largest available. Roost trees are generally larger than perch trees and tend to be the largest tree in the roost area. It usually has stout horizontal branches, sometimes forked, with each fork providing several horizontal branches suitable for perching.

Project Area Habitat

Bald eagles are present in the project area during winter where they are primarily associated with the Big Wood River and its mature riparian cottonwood gallery forest. Bald eagles forage on the abundant rainbow trout and other fish present in the river and use the many structurally suitable perch trees provided by the mature cottonwood forest. Bald eagles likely also forage on waterfowl and carrion, such as winter- or road-killed mule deer and elk. Although bald eagle habitat use is centered on the Big Wood River and its riparian zone, because of its proximity to SH-75, bald eagles could potentially be present anywhere in the project area.

The project area is considered a bald eagle wintering area (see CDC data in Appendix A for mid-winter bald eagle survey results). However, the CDC database contains no nesting bald eagle or winter roost occurrence records in or near the project area or the Boulder Flats mitigation site.

<u>Boulder Flats Habitat</u>

There has been no documented breeding by bald eagles on the SNRA, although the SNRA does provide suitable fall and winter habitat for bald eagles along the Big Wood River. Winter habitat is variable but generally requires open water for foraging or a reliable source of carrion with adequate perch trees nearby (Power Engineers 2002).

The Big Wood River and floodplain at Boulder Flats lacks the large cottonwood gallery forest canopy that provides suitable perch trees for foraging. Instead, the river's riparian zone primarily consists of willow, quaking aspen, and a variety of shrub and sedge species. Large, mature trees with the structure and growth form suitable for bald eagle perching or roosting are absent.

3.2.3 Utah Valvata Snail

Status

The Utah valvata snail (*Valvatia utahensis*) was listed as endangered by the USFWS in December 1992 (Federal Register 1992). A recovery plan has been developed (USFWS 1995) but the project area and the Boulder Flats mitigation site are not within the recovery area.

Species Distribution/Natural History

This aquatic snail is limited to the Snake River and a few isolated tributaries. Determined to be a separate species by Walker (1902), the Utah valvata snail is small (0.2 inches long) and inhabits deep pools adjacent to rapids or in perennial flowing waters associated with large spring complexes (USFWS 1992). It is primarily a detritivore, grazing along the mud surface eating diatoms or plant debris. Historically, this snail occurred from river mile 492 (near Grandview) to river mile 585 just above Thousand Springs on the Snake River, with a disjunct population in the tailwater area of the American Falls Dam (USFWS 1992). The species was also known to be from northern Utah.

Currently, the species is known to occur in the main stem Snake River between river mile 669 and 714 (at American Falls Dam) and in the Banbury Springs area near Hagerman Valley (Bureau of Reclamation 2001). Live specimens of the snail have been collected from the Big Wood River near Gooding, approximately 35 miles southwest of Timmerman Junction, the project's southern terminus (Weigel 2003). Shells of the species have also been collected in Magic Reservoir, which is located on the Big Wood River south of US-20 and 5 miles southwest of Timmerman Junction. No evidence of the snail has been documented in the Big Wood River north of Magic Reservoir.

Habitat Requirements and Limiting Factors

The species avoids areas with heavy currents or rapids and is absent from pure gravel-boulder bottoms. The snail prefers well-oxygenated areas of non-reducing calcareous mud or mud-sand substrate among beds of submergent aquatic vegetation (USFWS 1995). Cold, perennial flowing water with little to no fluctuation and good water quality are also important. Wiegel (2003) found reduced frequency of Utah valvata snail in plots located in higher velocity locations in the main stem Snake River.

Threats to the species include further hydropower development along the Snake River that could inundate existing and potential habitat, water quality degradation from pollutants carried in runoff from upland areas, low and fluctuating water flows due to hydropower manipulation, impacts to spring habitat from livestock, and competition from New Zealand mudsnails (USFWS 1992, 1995; Wiegel 2003). However, Weigel (2003) found some evidence that reservoirs may be providing a seasonally stable environment, insulating snail populations from variations in food availability or harsh winter conditions.

Project Area Habitat

Tables 2 and 3 summarize existing fish passage and channel conditions, and general riparian and aquatic habitat conditions at the corridor's bridge and culvert crossings.

Table 2: Existing Fish Passage, Channel Constriction, and Riparian Habitat Conditions at SH-75 Bridge and Culvert Crossing Locations[1/]

Perennial Waterbody (Milepost)	Fish Passage[2/]	Channel Constriction[3/]	Riparian Habitat Conditions	
			Vegetation Type[4/]	% Stable Streambanks
Trail Creek (MP 128.12)	Y	Y	BB2	75
Big Wood River (MP 126.29)	Y	Y	BB2	95
Unnamed Tributary (MP 102.38)	Y	Y	HD1	100
Willow Creek (MP 102.08)	Y	Y	HD1	100

1/ Based on July 2001, January 2003, and November 2003 field surveys.
2/ Fish passage at crossings (Y = Yes, N = No)
3/ Bankfull channel constricted by existing structure (Y = Yes, N = No)
4/ BB2 = Tree and shrub canopy more than 10%; dominant species are broadleaf deciduous trees (black cottonwood) more than 20 feet tall at maturity.
HD1 = Forbs and grasses dominate; shrub canopy less than 10%.

Table 3: General Aquatic Habitat Conditions at SH-75 Bridge and Culvert Crossing Locations[1/]

Perennial Waterbody (Milepost)	Aquatic Habitat Conditions					
	Floodplain Width (ft)	Channel Width (ft)	Dominant Habitat Type	Substrate		
				% Fines	% Gravel	Dominant Substrate
Trail Creek (MP 128.12)	83	36	riffle	10	20	cobble
Big Wood River (MP 126.29)	125	100	riffle/pool	5	10	cobble
Unnamed Tributary (MP 102.38)	[2/]	9.6	glide	95	5	silt
Willow Creek (MP 102.08)	[2/]	19	glide	90	10	silt

1/ Based on July 2001, January 2003, and November 2003 field surveys.
2/ Not measured, but channel incised in wide, silty alluvium floodplain.

Both the Big Wood River at the Big Wood River Bridge crossing and Trail Creek at its junction with SH-75 lack the aquatic habitat conditions suitable for the Utah valvata snail. At both locations, the dominant substrate is cobble and small boulders, the presence of fines is low (<10%), and submerged aquatic vegetation is absent.

The unnamed tributary is associated with a large spring complex, but water quality in both the unnamed tributary and Willow Creek is affected by irrigation runoff and livestock grazing in their watersheds. Aquatic habitat at the Willow Creek and unnamed tributary crossings with SH-75 consists of some gravel embedded in fine, non-calcareous silt (>90%). Beds of submerged aquatic vegetation are present but sparse. Although the species is unlikely to be present, the potential exists for the snail to occur at these two highway crossings.

Boulder Flats Habitat

The two perennial water features in or near Boulder Flats, the Big Wood River and Goat Creek, lack the habitat characteristics required for the snail to be present. In addition, both perennial water features are amply distant from the mitigation site's impact area.

3.2.4 Yellow-Billed Cuckoo

Status

The western continental population of the yellow-billed cuckoo (*Coccyzus americanus*) was found to warrant a threatened species designation but was precluded by other priorities. The species was added to the USFWS candidate species list on July 25, 2001.

Species Distribution/Natural History

The breeding range of the yellow-billed cuckoo formerly included most of North America from southern Canada to the greater Antilles and northern Mexico (USFWS 2001). In recent years the distribution of the species in the west has contracted from its former range. The northern limit of its western coastal breeding range is now in Sacramento Valley, California, and the northern limit in the western interior states is southern Idaho (USFWS 2001). East of the continental divide, the species is distributed more widely and is not subject to federal listing.

In Idaho, the available information on the distribution of yellow-billed cuckoo is inadequate to judge population or distributional trends, and the breeding population is likely limited to a few pairs at most (USFWS 2001). Considered to be a rare and local summer resident, there have been 64 verifiable records of the cuckoo in Idaho since 1895 (Trec 2003). The most recent record of occurrence was an auditory detection near the Big Wood River in 2003.

In southwestern Idaho, the yellow-billed cuckoo has been considered a rare, sometimes erratic visitor and breeder in the Snake River Valley. The difficulty of observing this elusive bird may contribute to the small number of observations. Although sightings have been reported in the southwestern part of the state in the past 25 years, the species appears to be hanging on precariously in Idaho and could easily become extirpated in the future (USFWS 2001).

Habitat Requirements and Limiting Factors

Yellow-billed cuckoos in the western U.S. breed in and appear to require large blocks of riparian habitat containing woodlands with cottonwoods and willows, whereas those in the east breed in a wider range of habitats, including deciduous woodlands and parks. Therefore, the habitat requirements of yellow-billed cuckoo in the west fundamentally differ from those of eastern birds because of the western population’s strong association with non-montane riparian woodlands, which contrasts with the eastern population’s wider range of nesting habitats.

In the western states, the species occurs primarily in arid regions where riparian woodlands, particularly those that include cottonwood trees as a dominant component, provide ecological conditions that are unique to the region and essential to the survival of the species (USFWS 2001). A dense understory, preferably willow, appears to be important in nest site selection, and tall cottonwood trees (30 to 45 feet) are important foraging habitat in areas where the species has been studied in California. Nesting west of the continental divide occurs almost exclusively close to water (USFWS 2001). Microhabitat requirements are also important with woodlands having less than 40% canopy closure unsuitable, 40 to 65% canopy closure marginal to suitable, and greater than 65% canopy closure optimal (Laymon 1998).

Project Area Habitat

Habitat for yellow-billed cuckoo in the project area consists of riparian gallery forest dominated by black cottonwood (*Populus trichocarpa*) and narrow leaf cottonwood (*Populus angustifolia*). This habitat type is found along the Big Wood River, which parallels the project corridor, and at Trail Creek in Ketchum. While the riparian gallery forest may provide some opportunities for nesting, suitable foraging sites (i.e., large cottonwood trees) are far more abundant than potential nesting sites because of the low willow densities present at the Big Wood River Bridge and Trail Creek crossings. Suitable habitat for the species is absent at the Willow Creek and unnamed tributary crossings.

The extent of old growth cottonwood forest between Bellevue and Ketchum is greater than in the southern part of the project area. However, residential development within the wider riparian zone in the north portion of the project area continues to reduce the amount of available habitat from historical levels.

The CDC database contains one record of occurrence for yellow-billed cuckoo in the Wood River Valley (see Appendix B). The record involves up to four individual yellow-billed cuckoos that were identified on June 24, 2001. The birds were seen and heard in a dense, old growth cottonwood riparian forest near the Stanton Crossing Bridge, which is where US-20 crosses the Big Wood River 2 miles west of Timmerman Junction. In addition, a single auditory detection of a cuckoo was made on June 25, 2003, in a cottonwood stand adjacent to the Big Wood River approximately three-quarters of a mile downstream of the Stanton Crossing Bridge (Garwood, pers. comm., 2003). This location is approximately 2.5 miles west of the project’s southern terminus.

<u>Boulder Flats Mitigation Site</u>

Along the Big Wood River at Boulder Flats, the riparian species and canopy densities fail to provide the habitat requirements required for yellow-billed cuckoo foraging or nesting. The riparian corridor lacks tall deciduous trees, cottonwoods, or dense willow stands. A low canopy closure (<40%) further negates the site’s suitability for the species.

4. EXISTING ENVIRONMENTAL CONDITIONS (BASELINE)

Elevations along the Wood River Valley floor range between 4,884 feet at the junction of SH-75 and US-20 and 5,800 feet in Ketchum. Historically, the valley floor was predominately occupied by shrub-steppe (i.e., sagebrush) communities in the uplands and wetland/riparian communities in the floodplains of the Big Wood River and its tributaries.

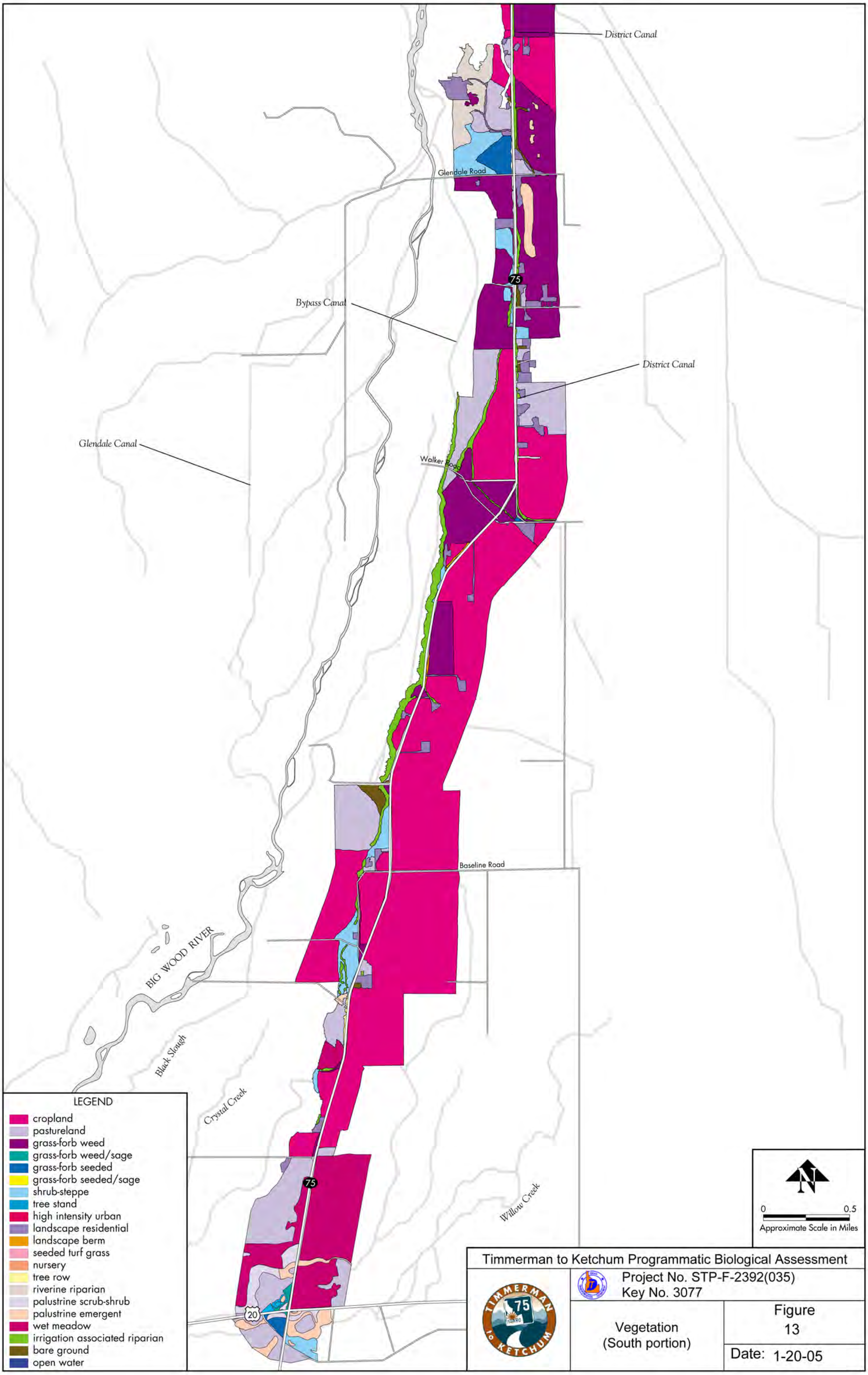
Over time, human settlement and development activities modified the valley's plant communities. These activities gradually converted most of the shrub-steppe communities to either agricultural land or urban and rural housing developments. Although some remnant shrub-steppe communities remain, the composition and density of the native species present in these communities have been altered by the introduction of weeds and land-use activities such as livestock production. Similarly, wetland/riparian communities along the Big Wood River and its tributaries remain, but grazing and rural residential development continue to affect them.

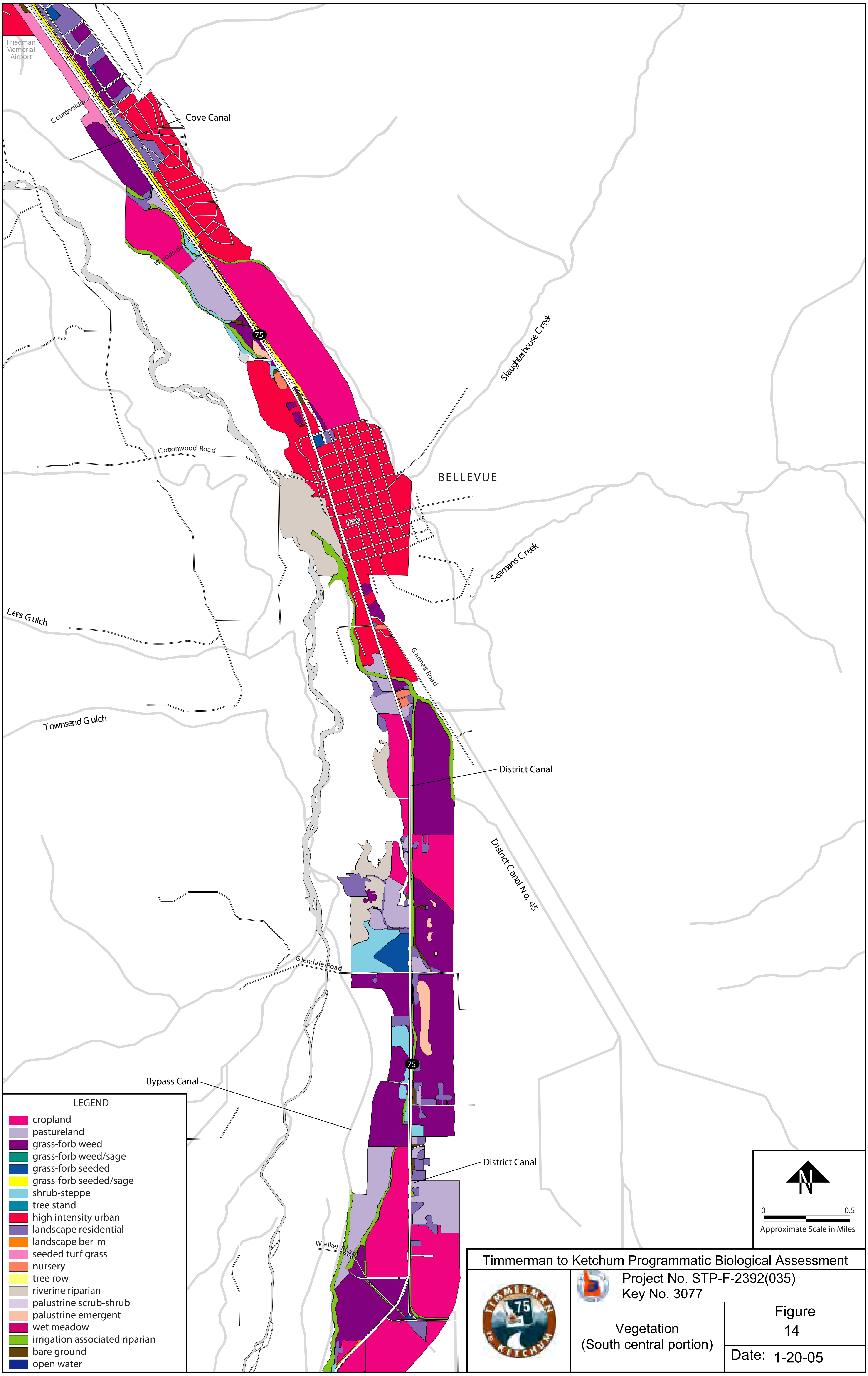
Along SH-75, much of the southern corridor passes through open agricultural lands that are uniform in habitat composition and structure, providing limited wildlife habitat. Urban and rural residential influences predominate in the middle and north portions of the corridor where various grass-forb communities or landscaped areas are common. As a result, most of the wildlife species present are somewhat generalized in their ecology and use more than one habitat type.

A dominant habitat feature paralleling the corridor is the Big Wood River and its associated riverine riparian gallery forest. Although this structurally diverse wetland/riparian community continues to be affected by water diversions, livestock grazing, and rural and urban residential development, the river and its tributaries (i.e., East Fork Big Wood River, Greenhorn Creek, Trail Creek, etc.) continue to support the greatest diversity of wildlife in the valley. The habitat (i.e., food, water, and cover) is generally favorable for wildlife breeding, nesting, perching, resting, and denning. The riparian corridor also offers cover for those species with large home ranges (i.e., black bear, lynx, mule deer, gray wolf, and mountain lion) engaged in long-distance dispersal or migration between the Pioneer and Smoky mountains.

Growth and development in the Wood River Valley continues to affect the availability and location of habitats used by large ungulates and other mammals. Some of the most attractive foraging areas for grazing herbivores are the irrigated landscaped berms and low density residential areas adjacent to or near SH-75. For example, Golden Eagle Ranch Estates provides lush lawn and ornamental plants as well as abundant permanent water near the highway corridor. Such landscape features attract and encourage grazing ungulates to approach and stay near the highway, where there is an increased chance of a collision with a motorist (Forman et al. 2003).

The project corridor contains seven broad vegetation types and 19 specific vegetation types (excluding bare ground and open water). Each vegetation type is depicted in Figures 13 through 16. Table 4 summarizes, by vegetation type, each of the plant communities found along the SH-75 project corridor.


District Canal
Glendale Road
75
Bypass Canal
District Canal
Glendale Canal
Walker Road
Baseline Road
BIG WOOD RIVER
Black Slough
Crystal Creek
Willow Creek
20
LEGEND
cropland
pastureland
grass-forb weed
grass-forb weed/sage
grass-forb seeded
grass-forb seeded/sage
shrub-steppe
tree stand
high intensity urban
landscape residential
landscape berm
seeded turf grass
nursery
tree row
riverine riparian
palustrine scrub-shrub
palustrine emergent
wet meadow
irrigation associated riparian
bare ground
open water
N
0
0.5
Approximate Scale in Miles
Timmerman to Ketchum Programmatic Biological Assessment
Project No. STP-F-2392(035)
Key No. 3077
Vegetation
(South portion)
Figure
13
Date: 1-20-05



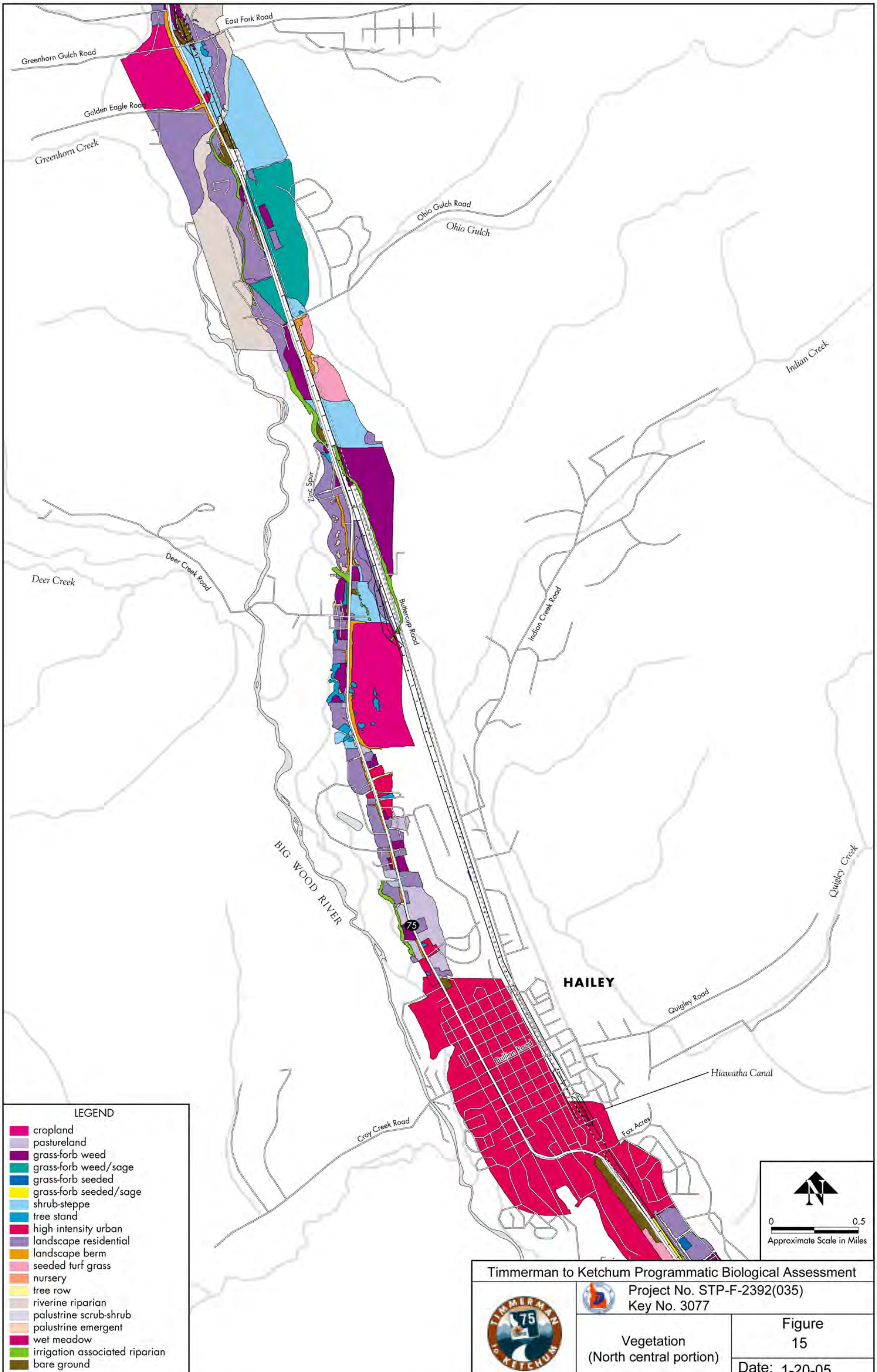
Timmerman to Ketchum Programmatic Biological Assessment

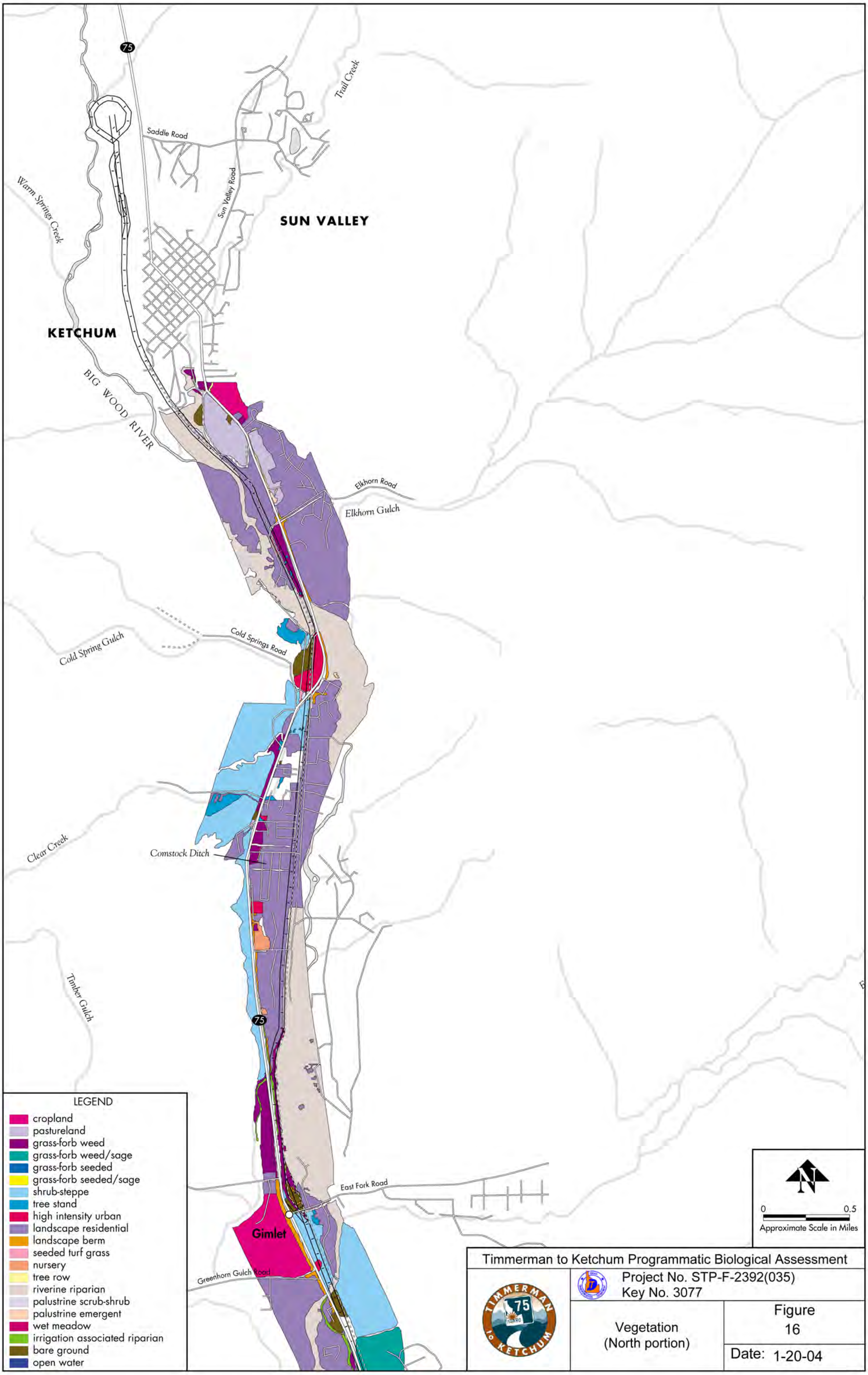
Project No. STP-F-2392(035)
Key No. 3077

Vegetation
(South central portion)

Figure
14

Date: 1-20-05


East Fork Road
Greenhorn Gulch Road
Golden Eagle Road
Greenhorn Creek
Ohio Gulch Road
Ohio Gulch
Indian Creek
Zinc Spur
Deer Creek Road
Deer Creek
Buttercup Road
Indian Creek Road
BIG WOOD RIVER
Quigley Creek
75
HAILEY
Quigley Road
Bullion Road
Hiawatha Canal
Croy Creek Road
Fox Acres
LEGEND
cropland
pastureland
grass-forb weed
grass-forb weed/sage
grass-forb seeded
grass-forb seeded/sage
shrub-steppe
tree stand
high intensity urban
landscape residential
landscape berm
seeded turf grass
nursery
tree row
riverine riparian
palustrine scrub-shrub
palustrine emergent
wet meadow
irrigation associated riparian
bare ground
open water
N
0
0.5
Approximate Scale in Miles
Timmerman to Ketchum Programmatic Biological Assessment
Project No. STP-F-2392(035)
Key No. 3077
Vegetation
(North central portion)
Figure
15
Date: 1-20-05



75
Saddle Road
Trail Creek
Warm Springs Creek
Sun Valley Road
SUN VALLEY
KETCHUM
BIG WOOD RIVER
Elkhorn Road
Elkhorn Gulch
Cold Springs Road
Cold Spring Gulch
Clear Creek
Comstock Ditch
Timber Gulch
75
East Fork Road
Gimlet
Greenhorn Gulch Road
LEGEND
cropland
pastureland
grass-forb weed
grass-forb weed/sage
grass-forb seeded
grass-forb seeded/sage
shrub-steppe
tree stand
high intensity urban
landscape residential
landscape berm
seeded turf grass
nursery
tree row
riverine riparian
palustrine scrub-shrub
palustrine emergent
wet meadow
irrigation associated riparian
bare ground
open water
N
0
0.5
Approximate Scale in Miles
Timmerman to Ketchum Programmatic Biological Assessment
Project No. STP-F-2392(035)
Key No. 3077
TIMMERMAN to KETCHUM
Vegetation
(North portion)
Figure
16
Date: 1-20-04

Table 4: Plant Community Composition by Vegetation Type

Vegetation Type	Plant Community Description
Shrub-Steppe Communities	Shrub-steppe communities are remnant patches of basin big sagebrush (*Artemisia tridentata*) and mountain big sagebrush (*Artemisia tridentata vaseyana*). Because of past disturbances, the understory is dominated by non-native grasses and weedy forbs, such as western salsify (*Tragopogon dubious*), sweetclover (*Melilotus spp*.), mustards, Dalmatian toadflax (*Linaria genistifolia*), prickly lettuce (*Lactuca serriola*), dandelion (*Taraxacum officinale*), and yarrow (*Achillea millefolium*). Green and gray rabbitbrush are also common (*Chrysothamnus viscidiflorus* and *Chrysothamnus nauseosus*, respectively).
Tree Stands	Tree stands are small, isolated stands of mature trees frequently consisting of aspens (*Populus tremuloides*), black cottonwood (*Populus trichocarpa*), or conifers.
Riparian Communities (Non-Wetland)	
Riverine Riparian	Riverine riparian communities consist of a mature forest overstory dominated by black cottonwood (*Populus trichocarpa*). The shrub layer includes willow (*Salix* species), golden currant (*Ribes aureum*), serviceberry (*Amelanchier alnifolia*), and Wood's rose (*Rosa woodsii*). Goldenrods (*Solidago species*), cow-parsnip (*Heracleum lanatum*), starry false Solomon's-seal (*Smilicina stellata*), poison hemlock (*Conium maculatum*), field horsetail (*Equisetum arvense*), wheatgrass (*Agropyron species*), bentgrass (*Agrostis stolonifera*), and nettles (*Urtica dioca*) are common in the herbaceous layer. Hydrology in this vegetation type is not sufficient to be considered a wetland.
Irrigation-Associated Riparian	Irrigation-associated riparian communities generally are narrow, associated with ditches and canals, and bounded by agricultural fields or roadside grass-forb communities. The vegetation is similar to the riverine riparian community, but ditch bank weeds, such as tansy (*Tancetum vulgare*), prickly lettuce, and poison hemlock, are more common because of frequent disturbance.
Wetland Communities	
Palustrine Scrub-Shrub	Palustrine scrub-shrub communities are dominated by yellow willow (*Salix lutea*), sandbar willow (*Salix exigua*), and shrubby cinquefoil (*Potentilla fruticosa*). Reed canarygrass (*Phalaris arundinacea*), beaked sedge (*Carex rostrata*), cattail (*Typha latifolia*), silverweed (*Potentilla anserina*), Baltic rush (*Juncus balticus*), and spikerush (*Eleocharis palustris*) are dominants in the herb layer.
Palustrine Emergent	Palustrine emergent communities are dominated primarily by Baltic rush. Other dominant or co-dominant plants include silverweed, beaked sedge, Nebraska sedge (*Carex nebrascensis*), sedges (*Carex* species), spikerush, Kentucky bluegrass (*Poa pratensis*), reed canarygrass, meadow foxtail (*Alopecurus pratensis*), cattails, and pasture grasses. These areas might have a shrub component that is not dominant.
Irrigation-Associated Riparian	Irrigation-associated riparian wetland communities are dominated by a forest overstory, scrub-shrub, or herbaceous vegetation. Black cottonwood *(Populus trichocarpa*) and narrow-leaf cottonwood (*Populus angustifolia*) dominate the overstory canopy. Willows, Wood's rose, and golden currant dominate the shrub layer. Reed canarygrass, bentgrass, goldenrods, and sedges dominate the herbaceous layer.
Riverine Riparian	Riverine riparian wetland communities consist of a mature forest overstory generally dominated by black and narrow-leaf cottonwoods. The shrub layer is dominated by yellow willow and the herb layer by reed canarygrass. Inclusion of palustrine scrub-shrub and palustrine emergent wetlands frequently is found in this vegetation type. Gravel bars with sandbar willows are common adjacent to the stream channel.

Table 4: Continued

Vegetation Type	Plant Community Description
Grass-Forb Communities	
Grass-Forb Weed	Grass-forb weed communities are dominated by grasses, including tall wheatgrass (*Agropyron elongatum*), intermediate wheatgrass (*Agropyron intermedium*.), smooth brome (*Bromus inermus*), cheatgrass (*Bromus tectorum*), and bulbous bluegrass (*Poa bulbosa*), interspersed with weedy forbs, including common mullein (*Verbascum thapsus*), dandelion, western salsify (*Tragopogon dubuis*), sweetclover (*Melilotus spp*.), tumble mustard (*Sisymbrium sp*), other mustard species, curly-cup gumweed (*Grindella squarrosa*), prickly lettuce, and kochia (*Kochia scoparia*). Noxious weeds include spotted knapweed and diffuse knapweed (*Centaurea diffusa)*, Dalmatian toadflax, and Canada thistle (*Cirsium arvense*). In the northern portion of the project area near Ketchum, spotted knapweed often is co-dominant with diffuse knapweed.
Grass-Forb Weed/Sage	The grass-forb weed/sage community is similar to the grass-forb weed community, but it also includes some sagebrush (*Artemisia tridentata*) and gray rabbitbrush.
Grass-Forb Seeded	Seeded grasses are dominated by intermediate and tall wheatgrass and smooth bromegrass. Cheatgrass, bulbous bluegrass, and Great Basin wild rye (*Elymus cinereus*) are also present. The relative abundance of weedy forbs is less than the grass-forb weed community.
Grass-Forb Seeded/Sage	The grass-forb seeded/sage community is similar to the grass-forb seeded community, but it also includes sagebrush in low density and gray rabbitbrush. The low density of sagebrush plants distinguishes it from the shrub-steppe community.
Agricultural Areas	
Cropland	Irrigated fields tilled and planted in barley, alfalfa, spring wheat, or other planted crops.
Pastureland	Fenced areas seeded with pasture grasses or with native grasses that are regularly irrigated and grazed by cattle, horses, and/or sheep.
Nursery	Several tree nurseries are near the highway right-of-way. These are private or commercial operations dedicated to the production and/or sale of exotic ornamental and native trees.
Landscaped Areas	
High-Intensity Urban	High-intensity urban areas are associated with the towns of Bellevue, Hailey, and Ketchum. These areas are planted with non-native ornamental trees, shrubs, and turf grasses that generally are irrigated.
Landscape Residential	This classification is similar to high-intensity urban areas but is associated with rural residential developments that border open space.
Landscape Berm	Landscape berms generally are seeded with turf grasses, ornamental shrubs, and trees (often including aspens and conifers) and irrigated. Landscape berms dominated by weedy species generally are not maintained or irrigated.
Seeded Turf Grass	Large areas of turf grasses are not directly associated with commercial or residential landscaping.
Tree Row	Tree rows generally are associated with rural residential developments and farmsteads. They generally consist of cottonwood or conifer plantings established for windbreak and wildlife habitat purposes.

4.1 SHRUB-STEPPE COMMUNITIES

The shrub-steppe communities are remnants of the upland sagebrush-dominated communities historically present within the Wood River Valley. Most of the larger shrub-steppe communities remaining are north of Hailey. South of Bellevue, the valley's historical shrub-steppe has been replaced by cropland and pastureland. Within the highway ROW, shrub-steppe has been reduced to a few remnant patches of weed-invaded sagebrush and rabbitbrush. Because of past and continuing disturbances, the shrub understory is often dominated by non-native grasses (e.g., cheatgrass and bulbous bluegrass) and weedy forbs.

The small shrub-steppe patches present in the project corridor are less important to wildlife. However, where they occur adjacent to irrigation-dependent riparian habitats, wildlife may use them with the riparian habitat. Wildlife use of the more extensive and less disturbed shrub-steppe habitats is highest on the hillsides surrounding the valley and project corridor. Mule deer and elk move and forage through these areas, and their winter home ranges include this habitat type where it is more extensive.

4.2 TREE STANDS

Tree stands are small, isolated groups of trees frequently consisting of aspens, cottonwoods, or conifers. They are generally found in the northern part of the corridor interspersed within rural residential and suburban developments.

4.3 RIPARIAN COMMUNITIES (NON-WETLAND)

Riverine Riparian: Riverine riparian habitats are associated with the floodplain of the Big Wood River and its tributaries. The river's extensive riparian forest gallery dominated by mature black and narrow leaf cottonwood forms a dense canopy over a diverse assemblage of smaller trees, shrubs, grasses, and forbs. This diversity and structure makes this one of the most important habitat types in the project area but also one of the most threatened because of continued rural estate and low density residential development within the riparian corridor.

This habitat type parallels the entire project corridor. It comes close to the existing highway in some areas (i.e., Bellevue), crosses the highway twice between Hailey and Ketchum, or is farther away in other areas (i.e., near Timmerman Junction). Between Bellevue and Ketchum, the riparian forest is much more extensive in area and closer to the highway than in the south part of the project area. In the interior Columbia River Basin, 64% of neotropical migratory birds depend on riparian vegetation during the breeding season. This habitat may harbor from two to 10 times as many individual birds as adjacent, non-riparian vegetation (Bureau of Land Management 1998).

Mule deer are numerous in riparian forest habitat; they use it for foraging, cover, and movement to adjacent habitats. Striped skunk, raccoon, red fox, coyote, voles, various mice, bats, and other small mammals also use this habitat type. Mountain lion and black bear at times use the riparian habitats of the Big Wood River when engaged in dispersed behavior (Warner, pers. comm., 2002).

Birds using riparian forest in the Wood River Valley for foraging and/or nesting are diverse and include, but are not limited to, Lewis's woodpecker, Williamson's sapsucker, western tanager, violet-green swallow, MacGillivray's warbler, black-headed grosbeak, lazuli bunting, lesser goldfinch, cooper's hawk, sharp-shinned hawk, and—during spring and fall migration and during winter—the North American goshawk. Four species of hummingbird (rufous, calliope, black-chinned, and broad-tailed) occur in the Wood River Valley during the summer; they feed off insects from trees and forage on nectar along the edge of riparian habitats, where flowering shrubs are more abundant.

Irrigation-Associated Riparian: Irrigation-associated riparian habitats are found along the canals and ditches that seasonally distribute water in the Wood River Valley. The largest of these communities is along the District Canal, which parallels the east side of SH-75 for approximately 2.5 miles south of Bellevue.

With a diverse range of shrubs, grasses, and forbs growing under a canopy of mature black cottonwood, a higher level of structural diversity is provided than most other habitats in the project area. This habitat type functions as nesting habitat for birds that use other habitats for their life cycle needs. It also supports a high diversity of invertebrate species, which improves foraging opportunities for other wildlife.

The linear nature of this habitat type facilitates the movements of mule deer and other wildlife that avoid crossing open areas when cover is available. Striped skunk, raccoon, long-tailed weasel, red fox, coyote, and great horned and screech owls use these habitats and prey on small mammals such as voles and mice.

Lewis's woodpecker is commonly found foraging and nesting in the cottonwoods along many of the valley's canals and ditches. Belted kingfisher use the cottonwoods as perches from which to forage on the seasonally available fish entering the canal system from the Big Wood River. Red-tailed and Swainson's hawks likely build their nests in suitable trees in this habitat type. While foraging in other habitats in the project area, some migratory bird species, such as American kestrel, American crow, magpie, great blue heron, and American robin, nest in irrigation-dependant riparian habitat where their species-specific nest site requirements are available.

4.4 WETLAND COMMUNITIES

Wetland communities in the project corridor are associated with perennial streams, canals and ditches, high groundwater areas, and springs. Most of the corridor's wetlands occur in the wet-meadow complex located between Baseline Road and the intersection of US-20 and SH-75, where natural hydrology and seasonal irrigation create hydric soil conditions. Most of the other wetlands are associated either with the valley's extensive canal and ditch system or the Big Wood River and its tributaries.

Although palustrine wetlands are scattered throughout the project corridor, they are more abundant in the southern portion of the project corridor, where an extensive mosaic of palustrine emergent (PEM) and palustrine scrub-shrub (PSS) wetlands are part of a large wet meadow complex near Timmerman Junction. Palustrine forest overstory (PFO) wetlands along the Bypass and District canals just west and east of the SH-75 ROW, respectively, also occur in this part of the corridor. Wetland communities in the central and north portion of the corridor are primarily PFO wetlands associated with the riverine riparian habitats of the Big Wood River and Trail Creek. Several PSS and PEM wetlands associated with irrigation canals, ditches, and ponds also are present in the central and north corridor segments.

Northern harriers, kestrels, and prairie falcons hunt birds while foraging in wetlands and other habitats. Red-winged and Brewer's blackbirds and fox sparrows nest in vegetation associated with wetlands, where their nest site requirements are met. Columbia spotted frogs may be present in some wetlands where hydrology, flow rates, and other habitat conditions are suitable.

The PEM, PSS, and PFO wetland communities found in the riverine riparian and irrigation-associated riparian habitats discussed above support the same diversity of wildlife species described under these subheadings.

4.5 GRASS-FORB COMMUNITIES

A large portion of the project corridor consists of grass-forb communities. These communities are characteristic of highway, road, and bike path rights-of-way; fallow fields; and vacant lots. In general, the soils have been disturbed, the topography has been modified, and native vegetation has been removed. Many of these communities have been reseeded with grasses or left to reseed naturally.

The grass-forb communities include four vegetation types: grass-forb weed, grass-forb seeded, grass-forb seeded/sage, and grass-forb weed/sage. These vegetation types are differentiated by the presence and abundance of seeded grasses, sagebrush, and weedy forb associates in their respective communities.

Grass-Forb Weed: This community occurs along SH-75, county roads, and the bike path. It is particularly common in fallow or abandoned farm fields.
Grass-Forb Seeded: This community is common in the SH-75 ROW and disturbed areas that have been seeded for road maintenance or landscape stabilization/rehabilitation purposes.
Grass-Forb Seeded/Sage: This community is similar to the grass-forb seeded community except sagebrush is noticeably present.
Grass-Forb Weed/Sage: This community has sagebrush in low density and represents a highly modified and remnant shrub-steppe community. The low density of sagebrush plants distinguishes it from the shrub-steppe community type.

Similar to agricultural areas, voles, mice, and gophers are present and form a prey base for a suite of predators including red-tailed hawks, American kestrels, prairie falcons, and Swainson's hawks during the summer and rough-legged hawk during the winter. Other predators include the gopher snake (*Pituophis melanoleucus*), long-tailed weasel, and the same predators in agricultural habitats (i.e., red fox and coyote). However, they occur at higher frequencies and densities because the more diverse habitat provides better foraging opportunities. Striped skunk and raccoon may also be present where cover is dense enough. Mule deer range widely in the project area and are occasionally found in grass-forb habitats.

Invertebrate diversity is higher than for cropland and pastureland, and birds such as the western kingbird hawk eat insects above grass-forb habitats during the summer. Killdeer breed and forage in grass-forb habitats where suitable substrate exists and disturbance is low.

4.6 AGRICULTURAL AREAS

Agricultural areas consist of cropland, pastureland, and nurseries. The highest density of cropland occurs between Bellevue and the southern terminus of the project (see Figures 13 and 14). Alfalfa, barley, wheat, and oats are the most common crops grown. Native and seeded grasses dominate the pasturelands grazed by sheep, cattle, and horses. Near Timmerman Junction, the pasturelands are a mosaic of upland grass communities and wet meadows. Several commercial and private nurseries dedicated to the production and/or sale of exotic ornamental and native trees are located near the SH-75 ROW.

Croplands adjacent to the highway ROW represent low diversity habitats characterized by monocultures of irrigated barley or alfalfa. Pasture grasses and associated weedy forbs comprise the monoculture habitat in pastureland. The diversity of wildlife using these habitats is low and reflects the low diversity of plants within these habitat types. The monoculture nature of these habitats limits diversity in invertebrate populations, which in turn limits foraging and nesting opportunities for migratory passerine birds.

Typical small mammal species include voles, mice, and gophers. Associated predators of diurnal small mammals include raptors such as resident red-tailed hawks, American kestrels, and northern harriers. Other predators, such as red fox and coyote, are also likely present but are associated with other habitat types as well, similar to raptors using croplands and pasturelands. Mule deer and, during heavy snowfall years, elk may be temporarily present in these habitats.

4.7 LANDSCAPED AREAS

Intensive residential and commercial development throughout the Wood River Valley has replaced the native shrub-steppe and riparian plant communities formerly present. In association with these developments, ornamental trees and shrubs, green lawns, and native trees and shrubs can be found. Landscaped areas are interspersed among the valley’s native and non-native plant communities and are more common north of Hailey. Ungulates such as elk and deer are attracted to these irrigated landscapes because of abundant forage and cover.

High-Intensity Urban: These areas are associated with the towns of Bellevue, Hailey, and Ketchum. Within these intensively developed areas, ornamental trees and shrubs, green lawns, and native trees and shrubs generally are irrigated. Large land areas within this category are covered with buildings, roads, and parking lots.

Landscape Residential: These areas are similar to high-intensity urban areas, but the residential buildings are less dense or isolated and do not include commercial structures. These landscaped areas typically are associated with rural residential developments that border open space.

Landscape Berm: These areas generally are found in or adjacent to the SH-75 ROW. They are particularly common along the highway between Hailey and Ketchum.

Seeded Turf Grass: These are large areas of turf grasses not directly associated with commercial or residential landscaping. The largest example of this vegetative type occurs between the Friedman Memorial Airport and SH-75 south of Hailey.

Tree Row: These areas generally are associated with rural residential developments and farmsteads. They often are planted for windbreak and wildlife habitat purposes.

Wildlife associated with landscaped areas are characteristically common, generalized species that are able to use highly modified and urban-influenced habitats. Common migratory birds would include the American robin, which nests in and forages near landscaped shrubs and trees; downy woodpecker, which forages for insects in mature trees; Oregon junco during winter; black-billed magpie; and American crow, which is a year-round resident. The most abundant birds are likely the non-native English sparrow, European starling, and in some high intensity urban areas, rock dove.

5. EFFECTS OF THE ACTION

The following describes the direct, indirect, interrelated, interdependent, and cumulative effects of Alternatives 2 and 3. The species-specific effects would be the same under both build alternatives. For the purpose of preparing this PBA, the following definitions have been used.

- *Direct effects* are those that are caused directly by the proposed action.
- *Indirect effects* are those that result from the project but occur later in time.
- *Interrelated effects* are those that are part of the larger action and depend on the larger action for their justification.
- *Interdependent effects* are those that have no independent utility apart from the proposed action.
- *Cumulative effects* are those related to future public or private activities that are reasonably certain to occur within the action area. Cumulative impacts result from the incremental impact of an action when added to other past, present, and reasonable foreseeable future actions regardless of what agency or person undertakes such actions.

Within the SH-75 corridor, past projects that have had impacts on natural and man-made resources are primarily related to land development within Blaine County and its incorporated cities. Past transportation projects that may have contributed to impacts on some resources include the reconstruction on SH-75 within the cities of Bellevue and Hailey, the SH-75 reconstruction projects between Alturas and Timberway, and improvements to the Fox Acres/SH-75 intersection in the City of Hailey.

Present projects include the expected reconstruction of East Fork Road. Although this Blaine County project is not yet approved, its implementation will likely be in the near future. Development and redevelopment of lands in accordance with County and City comprehensive plans will continue and are reflected in such projects as the redevelopment of the Elkhorn Resort.

Reasonably foreseeable projects in the Wood River Valley are primarily related to development and redevelopment of private lands both in unincorporated areas of Blaine County and within the incorporated cities. Examples of future projects include the redevelopment of the McHanville area, the proposed development of the River Run area of south Ketchum by the Sun Valley Company, and possible changes at the Friedman Memorial Airport.

5.1 CANADA LYNX

5.1.1 Direct and Indirect Effects

Although the proposed project would cross portions of three LAUs (Greenhorn-Deer, Trail Creek, and Lower Warm Springs-Adams) at the north end of the corridor (see Figure 11), no suitable Canada lynx habitat (e.g., dense coniferous forest) would be lost because of its absence within or near the highway ROW. The project area does not provide suitable denning or foraging habitat for resident lynx, but such habitat does exist in the neighboring mountain ranges and LAUs that border the project area and Wood River Valley. Consequently, lynx may cross the SH-75 corridor during long distance dispersal or other transient movements. During such movements, the cover provided by riparian corridors is an important habitat feature for lynx.

Both build alternatives would remove 0.18 acre of PFO wetland habitat and 205 linear feet of riparian habitat that could be used as dispersal habitat for lynx along the Big Wood River and Trail Creek. However, conditions for lynx to safely move and cross beneath SH-75 at these two bridge crossings would be improved compared to Alternative 1 (No Build).

Big Wood River: Replacement of the existing bridge over the Big Wood River would lengthen it by approximately 50 feet and widen it by approximately 22 feet. The lengthening would add 25 feet between the bridge pier and abutment on each side, increasing the horizontal space available for wildlife to travel underneath the bridge, particularly during low water. Based on anecdotal observations, the area between the existing bridge piers and abutments currently has significant wildlife crossing traffic. The proposed change would therefore enhance the suitability of the area between the piers and abutments as an underpass for large mammals and other wildlife, including lynx.

Trail Creek: The improvements to SH-75 include options that would require replacing the existing 20-foot-long by 48-foot-wide concrete box culvert with a 58-foot-long by 55-foot-wide single-span bridge. Currently, the box culvert provides some crossing opportunity for terrestrial wildlife during low water and none during high water. The new bridge would provide about 15 feet of horizontal space and 5 feet of vertical space on each side of the stream channel during a 50-year high water flood, with more space available at lower, more typical water elevations. This effect on habitat connectivity and permeability would be beneficial because it removes an existing impediment to wildlife movement along a critical riparian corridor in Ketchum, where sheltered, riparian crossing opportunities are increasingly rare.

Alternatives 2 and 3 would increase road pavement width and widen the unpaved right-of-way, giving drivers better visibility of animals entering the highway corridor. This change is expected to reduce the potential for wildlife-vehicle collisions. Similarly, by lowering the posted speed limit in non-urban areas between Bellevue and Hospital Drive from 55 mph to 45 mph by 2025, reduced traffic speed is expected to reduce the potential for wildlife-vehicle collisions, provided drivers abide by the posted speed limit. If drivers exceed the posted speed limit, however, the potential for wildlife collisions would be higher than if they followed the speed limit. During the morning peak hour, travel speeds relative to Alternative 1 (No Build) would be higher but still below 45 miles per hour, less than the current posted speed.

Depending on the geographic segment, the increase in pavement width, which varies between 30 and 90 feet, would contribute to a reduction in habitat permeability by widening the existing barrier that SH-75 presents to lynx and other wildlife. However, the increases in road width, combined with a wider unpaved right-of-way, would likely increase the behavioral barrier effect of the highway for some species, making it less likely that animals will attempt to cross SH-75.

5.1.2 Interrelated and Interdependent Effects:

Although the Boulder Flats wetland mitigation site is located in the Upper North Fork Big Wood-Easley LAU (see Figure 12), no suitable denning habitat for lynx would be removed (e.g., dense coniferous forest) because of its absence from the Boulder Flats site. Such habitat does exist, however, in the neighboring mountain ranges and other LAUs that border the mitigation site and Upper North Fork Big Wood-Easley LAU.

Because of the mitigation site's relationship to the Upper North Fork Big Wood-Easley LAU and neighboring LAUs, lynx may cross the realigned SH-75 corridor during long distance dispersal or other transient movements. However, there would be no increased mortality risk to lynx because human access and activity (motorized and non-motorized) and habitat permeability would not be adversely affected by the mitigation plan. This is because the width of the realigned SH-75 segment would match the existing pavement width (a 12-foot travel lane and 5-foot shoulder in each direction) and the posted speed limit (65 mph) would remain unchanged.

The mitigation plan is expected to temporarily displace a few prey species during construction of the SH-75 realignment and removal of the existing SH-75 roadbed from the floodplain area. Neither of these actions would adversely affect the number or distribution of prey species in the long term. Overall, the mitigation plan would restore 5.9 acres of wetland habitat and increase its carrying capacity for the primary prey species (snowshoe hare) typically sought by lynx. The mitigation plan would also move SH-75 farther away from the Big Wood River and out of the floodplain, improving conditions for long distance dispersed travel and other transient movements with the river corridor and floodplain.

5.1.3 Cumulative Effects

In combination with historical impacts and expected future impacts, the removal of additional habitat outside the highway ROW would result in cumulative impacts on wildlife habitat along the SH-75 corridor, none of which is suitable Canada lynx habitat (e.g., dense coniferous forest). Reasonably foreseeable development projects, which are independent of the proposed action, are expected to affect existing habitats within the Wood River Valley. The man-made landscaping features associated with historical and expected future development have changed and will likely continue to change the habitat types and wildlife able to occupy them.

5.1.4 Mitigation

No mitigation measures beyond those previously identified in this document are proposed.

5.2 BALD EAGLE

5.2.1 Direct and Indirect Effects

No impacts on bald eagle nesting habitat or breeding territories would occur because no such habitat or territories are present in the project area. Both alternatives would remove 0.18 acre of PFO wetland habitat and 205 linear feet of riparian habitat along the Big Wood River and Trail Creek, including mature cottonwood trees that could serve as roosting or perching habitat for wintering bald eagles. Because bridge construction in these riparian areas would occur during the low flow season (November through March) to minimize water quality effects, wintering bald eagles could be disturbed from their usual foraging patterns.

The potential for bald eagle-vehicle collision impacts while eagles forage on roadkill carrion on SH-75 would likely be reduced due to a lower speed limit by 2025, increased visibility of the roadway environment for drivers, increased room for collision avoidance, and low level revegetation of the unpaved ROW area that reduces its attractiveness as cover for bald eagle prey.

No direct or indirect effects on bald eagle are expected in offsite areas because no project component or activity would be located within (1) bald eagle breeding territories during the critical nesting period between February 1 and August 31; (2) 0.25 mile of nests or roosts; (3) 0.5 mile line-of-sight of nests or roosts; (4) bald eagle wintering areas during the winter use period between November 15 and March 15; and (5) 0.2 mile of winter perching, roosting, or feeding sites.

5.2.2 Interrelated and Interdependent Effects:

Construction activities associated with the Boulder Flats wetland mitigation plan would have a low potential to displace bald eagles during the fall, when eagles begin to use the Big Wood River corridor and project area, because the site lacks suitable trees for perching, foraging, or roosting. This lack of suitable habitat would likely preclude or discourage bald eagle use in the mitigation area.

Following the realignment of SH-75 to the north, the river corridor would be farther away from SH-75 (see Figure 10). This change would lower human disturbance near the river corridor and is expected to lower the potential for bald eagle-vehicle collision impacts because suitable perch trees for eagles foraging for roadkill carrion are not near the realigned segment. The habitat type adjacent to the realigned highway segment is open shrub-steppe consisting of low and big sagebrush, rabbitbrush, bitterbursh, lupine, balsamroot, and various grasses.

5.2.3 Cumulative Effects

Independent of the SH-75 alternatives, continued development in the Wood River Valley, particularly of large rural estate lots in the riparian gallery forest, would have a considerable impact on the future availability of perching, foraging, and roosting habitat for wintering bald eagles along the Big Wood River.

5.2.4 Mitigation

In addition to the mitigation measures previously identified in this document, the ITD will monitor the Big Wood River and Trail Creek crossings for the presence of bald eagles prior to initiating bridge and road construction in these areas. The ITD will also monitor the Boulder Flats wetland mitigation site for the presence of bald eagles prior to initiating the realignment of SH-75, removing the roadbed, and restoring the wetland. If bald eagle are present, the USFWS will be immediately notified and consulted as to whether any additional construction limitations are warranted prior to initiating project construction activities in these areas.

5.3 UTAH VALVATA SNAIL

5.3.1 Direct and Indirect Effects

At the population level, if the Utah valvata snail occurs at the Willow Creek and/or unnamed tributary crossing(s) with SH-75, the installation of an arch culvert would likely maintain and improve snail occupation in these tributary streams. This change would occur because of favorable aquatic bed and flow conditions inside the arch culvert compared to those that exist in the currently corrugated metal pipe culverts. Details specific to each culvert crossing are presented below.

Willow Creek

The proposed widening of SH-75 at the Willow Creek crossing south of the SH-75/US-20 intersection would require the replacement of two 36-inch-diameter by 100-foot-long corrugated metal pipe culverts with a single 18-foot-wide by 140-foot-long metal plate arch culvert covered by fill. This replacement would result in the loss of an estimated 80 linear feet of PSS riparian/wetland habitat along the Willow Creek channel and the placement of an additional 720 square feet (0.017 acre) of existing riparian/aquatic habitat into the proposed natural bottom arch culvert. The additional fill and culvert length required at this location would cover 0.18 acre of PSS wetland habitat and would add an estimated 1,920 square feet (0.044 acre) of glide habitat within the new culvert. Table 5 presents an assessment of impacts on Willow Creek aquatic habitat indicators.

Table 5: Assessment of Impacts on Willow Creek Aquatic Habitat Indicators

Aquatic Habitat Indicators	Alternative 1	Alternatives 2 and 3
Toxics	Low impact	Low impact
Sediment	Low impact	Low impact
Water temperature	No effect	No effect
Large woody debris	No effect	No effect
Pool habitat	Low impact	Low impact
Space, cover, off-channel habitat	No effect	Low impact
Width/depth ratio	No effect	Low impact
Streambank stability	No effect	No effect
Habitat access	Low impact	Improved over existing
Floodplain connectivity	Low impact	Improved over existing
Riparian habitat	No effect	Low impact

Unnamed Tributary

The proposed widening of SH-75 at the unnamed tributary crossing north of the SH-75/US-20 intersection would require the replacement of two 36-inch-diameter by 95-foot-long corrugated metal pipe culverts with a single 18-foot-wide by 120-foot-long metal plate arch culvert covered by fill. This replacement would result in the loss of an estimated 50 linear feet of PEM riparian/wetland habitat along the stream channel and the placement of an additional 450 square feet (0.01 acre) of existing riparian/aquatic habitat into the proposed natural bottom arch culvert. The additional fill and culvert length required at this location would cover 0.07 acre of PEM wetland habitat and would add an estimated 1,590 square feet (0.037 acre) of glide habitat within the new culvert. Table 6 presents an assessment of impacts on unnamed tributary aquatic habitat indicators.

Table 6: Assessment of Impacts on Unnamed Tributary Aquatic Habitat Indicators

Aquatic Habitat Indicators	Alternative 1	Alternatives 2 and 3
Toxics	Low impact	Low impact
Sediment	Low impact	Low impact
Water temperature	No effect	No effect
Large woody debris	No effect	No effect
Pool habitat	Low impact	Low impact
Space, cover, off-channel habitat	No effect	Low impact
Width/depth ratio	No effect	Low impact
Streambank stability	No effect	No effect
Habitat access	Low impact	Improved over existing
Floodplain connectivity	Low impact	Improved over existing
Riparian habitat	No effect	Low impact

Indirect effects on aquatic resources including the Utah valvata snail, if present, could occur as continued growth and development changes surface water and groundwater volumes and the contaminant loads that might reach local waters. Such development-induced effects, however, would occur independent of the proposed action (Alternatives 2 and 3).

5.3.2 Interrelated and Interdependent Effects

Considering (1) the Big Wood River and Goat Creek lack the habitat characteristics required for the snail to be present, and (2) both of these perennial waters are amply distant from the Boulder Flats wetland mitigation site impact area, there would be no effect on the Utah valvata snail.

5.3.3 Cumulative Effects

No cumulative effects are expected.

5.3.4 Mitigation

In addition to the mitigation measures previously identified in this document, the ITD will survey the Willow Creek and unnamed tributary crossings for the presence of Utah valvata snail prior to initiating culvert and road construction in these areas. The survey will be performed by a biologist familiar with the species and its identification. If Utah valvata snail is documented at either stream crossing, the USFWS will be immediately notified and a project-specific biological assessment will be prepared in accordance with the *Procedures Relating to Section 7 of the Endangered Species Act and Transportation Projects in Idaho* (FHWA, ITD, USFWS, and NOAA Fisheries 2003). The biological assessment will identify what actions are warranted prior to initiating project construction activities in these areas.

5.4 YELLOW-BILLED CUCKOO

5.4.1 Direct and Indirect Effects

The proposed project would remove 0.18 acre of PFO wetland habitat and 205 linear feet of riparian habitat, including some mature cottonwood trees, along the Big Wood River and Trail Creek. This habitat loss would not substantially reduce the availability of nesting, perching, or foraging habitat for the cuckoo in the project area. Because the project area is at the edge of the species range distribution and it is uncertain if the cuckoo is a regular breeding resident in the Wood River Valley, the proposed project would not likely have a long-term adverse impact on this federal candidate species.

5.4.2 Interrelated and Interdependent Effects:

The Boulder Flats wetland mitigation plan would have no adverse effect on the yellow-billed cuckoo because the site lacks suitable habitat for foraging or nesting and because no adverse effect on the river's riparian corridor or associated habitat would occur. In the long term, the realignment of SH-75 would move the roadway farther away from the Big Wood River (see Figure 10) and outside its associated floodplain. This change would lower human disturbance along the river corridor. In addition, the reestablishment and restoration of wetland vegetation within the floodplain, which would be enhanced by the wetland plantings proposed on the removed SH-75 roadbed, may provide potential cuckoo habitat in the future as the mitigation site's wetland and riparian habitats develop and mature over time.

5.4.3 Cumulative Effects

Independent of the SH-75 alternatives, continued development in the Wood River Valley, particularly of large rural estate lots in the riparian gallery forest, would have an impact on the future availability of nesting, perching, or foraging habitat for the cuckoo along the Big Wood River.

5.4.4 Mitigation

No mitigation measures beyond those previously identified in this document are proposed.

6. DETERMINATION OF EFFECT

The determination of effect is the conclusion reached regarding the project's likelihood of affecting a threatened, endangered, proposed, or candidate species, and/or critical habitat.

6.1 CANADA LYNX

Alternatives 2 and 3 "may affect but are not likely to adversely affect" this federally listed threatened species. This is based on the following points:

- Lack of suitable habitat (dense coniferous forest) and historical reproducing populations;
- Only one documented lynx sighting near the project area that occurred in 1984;
- Low likelihood of an individual lynx being present in the action area, particularly outside riparian/perennial stream corridors;
- Improved habitat permeability and connectivity at the Big Wood River and Trail Creek riparian crossings, where the species is most likely to travel; and
- Improved snowshoe hare habitat/carrying capacity at Boulder Flats wetland mitigation site following restoration of wetland functions and values.

The lynx is a rare visitor to the Wood River Valley. Only one has been recorded in the valley, in 1984. These animals are strongly associated with dense coniferous forest/lodgepole pine habitat, which does not occur in or near the project area. There is a low likelihood of an individual lynx being present in the project area because of the lack of suitable habitat near the project corridor.

The proposed project would cross portions of three LAUs (Greenhorn-Deer, Trail Creek, and Lower Warm Springs-Adams) at the north end of the project corridor (Figure 11), but no suitable lynx foraging or denning habitat (e.g., dense coniferous forest) would be removed under either build alternative. Similarly, the Boulder Flats wetland mitigation site is located in the Upper North Fork Big Wood-Easley LAU (Figure 12), but no suitable denning habitat for lynx would be removed because none is present at the Boulder Flats site. Such habitat does exist, however, in the neighboring mountain ranges and other LAUs that border the project area and mitigation site.

Both build alternatives would remove 0.18 acre of PFO wetland habitat and 205 linear feet of riparian habitat along the Big Wood River and Trail Creek that could be used as dispersal habitat for lynx. However, conditions for lynx to safely move along the river and cross beneath SH-75 at the Trail Creek and Big Wood River bridge crossings would be improved compared to Alternative 1 (No Build). At Boulder Flats, moving SH-75 farther away from the Big Wood River and out of the floodplain would improve conditions for long distance dispersed travel and other transient movements within the river corridor and floodplain.

Considering the low likelihood of an individual lynx being present in the action area and the lack of suitable habitat, the determination of effect is “may affect, not likely to adversely affect.”

6.2 BALD EAGLE

Alternatives 2 and 3 “may affect but are not likely to adversely affect” this federally listed threatened species. No impacts on bald eagle nesting habitat or territories would occur because no such habitat or territories are present in the project area. Between Timmerman Junction and Ketchum, the potential for bald eagle-vehicle collision impacts while eagles forage on roadkill carrion on SH-75 would likely be lowered due to a lower speed limit, increased visibility of the roadway environment for drivers, increased room for collision avoidance, and low level revegetation of the unpaved right-of-way that reduces its attractiveness as cover for bald eagle prey.

Following the realignment of SH-75 at Boulder Flats, the river corridor would be farther away from the highway, lowering human disturbance near the river. This change would also lower the potential for bald eagle-vehicle collision impacts because suitable perch trees for eagles foraging for roadkill carrion are not near the realigned highway segment. The habitat type adjacent to the realigned highway segment is open shrub-steppe consisting of low and big sagebrush, rabbitbrush, bitterbrush, lupine, balsamroot, and various grasses.

Both alternatives would remove a small amount (0.18 acre) of PFO wetland habitat and 205 linear feet of riparian habitat, including mature cottonwood trees that may currently serve as roosting or perching habitat for wintering bald eagles. If project construction occurs during the wintering period, eagles could be disturbed from their usual foraging patterns.

The CDC database contains no nesting bald eagle or winter roost occurrence records in or near the project area. However, the entire project area is considered a bald eagle wintering area. The mature cottonwood gallery forest provides abundant perching opportunities for eagles foraging for fish and carrion. Direct effects of the project on bald eagle wintering habitat would be limited to a few large trees removed at the Big Wood River and Trail Creek bridge crossings.

With implementation of the proposed mitigation measures, the determination of effect for bald eagle is “may affect, not likely to adversely affect.”

6.3 UTAH VALVATA SNAIL

Alternatives 2 and 3 “may affect but are not likely to adversely affect” this federally listed endangered species. Specific impacts on potential Utah valvata snail habitat would include those wetland and aquatic habitat effects identified in Section 5, Effects of the Action, and in Tables 5 and 6 for the Willow Creek and unnamed tributary crossings, respectively. Aquatic habitat at the Big Wood River and Trail Creek bridge crossings is not considered suitable habitat for the snail, and no suitable habitat for the snail would be affected at the Boulder Flats wetland mitigation site.

Existing culvert replacement at Willow Creek with a natural bottom arch culvert would result in the loss of 720 square feet (0.017 acre) of riparian/aquatic habitat at the SH-75 crossing. A similar culvert replacement at the unnamed tributary would result in the loss of 450 square feet (0.01 acre) of riparian/aquatic habitat. Although the documented presence or absence of the Utah valvata snail is currently unknown at either crossing, if the species were present, the identified loss of aquatic habitat within each metal plate arch culvert would be small and inconsequential to the continued existence of the species and would be offset by improved passage and habitat access year-round at both culvert locations.

Given that no evidence of the Utah valvata snail has been found in the Big Wood River drainage above Magic Reservoir, it is unlikely that the identified habitat losses would have an adverse impact on the snail. However, the uncertainty about the distribution of the snail in the SH-75 project area warrants pre-construction surveys at Willow Creek and the unnamed tributary prior to proceeding with construction. If the Utah valvata snail were documented at either stream crossing, a project-specific biological assessment would be prepared in accordance with the *Procedures Relating to Section 7 of the Endangered Species Act and Transportation Projects in Idaho* (FHWA, ITD, USFWS, and NOAA Fisheries 2003). With implementation of this and the other proposed mitigation measures, the determination of effect is "may affect, not likely to adversely affect."

6.4 YELLOW-BILLED CUCKOO

Alternatives 2 and 3 "may affect but are not likely to adversely affect" the yellow-billed cuckoo. Either action would remove a small amount (0.18 acre) of PFO wetland habitat and 205 linear feet of riparian habitat, including some mature cottonwood trees, along the Big Wood River and Trail Creek. This habitat loss would not substantially reduce the availability of nesting, perching, or foraging habitat for the cuckoo in the project area. Because the project area is at the edge of the species range distribution and it is uncertain if the cuckoo is a regular breeding resident in the Big Wood River Valley, the proposed project would not likely have a long-term adverse impact on this federal candidate species.

The project area is at the northern limit of the species' distribution. Although it is known to occur in the action area, the species has been recorded only twice and there is no confirmed breeding in the action area. Considering Alternatives 2 and 3 would have only minor impacts on potential habitat for the species along the project corridor (e.g., mature cottonwood riparian gallery forest with some willow in the understory) and no effect on suitable habitat at the Boulder Flats wetland mitigation site, the determination of effect is "may affect, not likely to adversely affect."

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Appendix A

Individual Project Worksheet

SH-75 TIMMERMAN TO KETCHUM PROGRAMMATIC CONSULTATION

INDIVIDUAL PROJECT WORKSHEET

Programmatic Consultation OALS#____________________

I. PROJECT INFORMATION

Date presented:_______________________________

Project Name:____

Location:

____
____
____
____

(please attach map).

Project description:

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____
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II. SPECIES INFORMATION

Please provide rationales to support programmatic determination consistency:

Gray wolf
(NE)____

Canada lynx
(NLAA)____

Bald eagle
(NLAA)____

Bull trout
(NE)____

Proposed bull trout critical habitat
(NE)____

Utah valvata
(NLAA)____

Yellow-billed cuckoo (candidate)
(NLAA)____

III. SIGNATURES

Review and Agreement by Level 1 team

______________________________	______________________________
(ITD District 4)	**(date)**
______________________________	______________________________
(ITD Headquarters)	**(date)**
______________________________	______________________________
(FHWA)	**(date)**
______________________________	______________________________
(USFWS)	**(date)**

Appendix B

Idaho Conservation Data Center Records of Occurrence
U.S. Fish and Wildlife Service 90-Day Species List Update

Appendix C

Consultation History/Agency Correspondence

APPENDIX C
CONSULTATION HISTORY/AGENCY CORRESPONDENCE

This appendix describes the agency consultation and coordination activities used during preparation of the Environmental Impact Statement (EIS) and Programmatic Biological Assessment (PBA) for the SH-75 Timmerman to Ketchum Project. Agency consultation was an integral part of these project activities and included meetings, field visits, conversations and correspondence.

The agency consultation and coordination program included various outreach activities intended to create a high level of agency awareness during project development. A timely flow of project-related information was shared with the various federal, state, and local agencies involved in the project. Beginning with project scoping in October 2000, agency coordination activities included an agency scoping meeting in November 2000, team meetings, briefings with agency staff, and agency contact by telephone and email throughout the planning process.

The following summary outlines the specific agency consultation activities that occurred during project development and the preparation of this PBA.

Agency Scoping Meeting

An agency scoping meeting was held on November 28, 2000, at the Idaho Department of Water Resources office in Twin Falls, Idaho. The goal of this meeting was to provide background on the project, to solicit agency input regarding existing or potential issues that fell within each agency's mandate, and to identify any broader agency concerns with the SH-75 project. Eleven different resource agencies including the U.S. Fish and Wildlife Service (USFWS) were invited to participate. Along with representatives from ITD and FHWA, the following agencies attended the meeting:

- Idaho Department of Fish and Game (IDFG);
- United States Forest Service (USFS);
- Idaho Department of Lands (IDL);
- Environmental Protection Agency (EPA);
- Blaine County Recreation District (BCRD); and
- Idaho Department of Water Resources (IDWR).

Agency scoping comments received included those pertaining to the natural resource mandates of each agency, and those relating to other project issues.

State and Federal Agency Consultation and Coordination

Coordination with state and federal resource agencies was on-going during project development and preparation of the DEIS and this PBA. Table C-1 summarizes the coordination date, type of coordination, and the agency or agencies involved. Meeting notes were prepared for each agency coordination activity and distributed accordingly to the agencies involved or interested in the activity.

Table C-2 summaries the agency correspondence received from state and federal agencies in response to requests for comment, input, and/or review. All meeting notes and agency correspondence are on file and an integral part of the project's comprehensive Administrative Record.

Table C-1: Summary of State and Federal Agency Coordination Meetings

Date	Agency or Agencies	Purpose
November 28, 2000	Federal Highway Administration U.S. Forest Service Environmental Protection Agency Idaho Department of Water Resources Idaho Department of Fish & Game Idaho Department of Lands	Agency scoping meeting[1/, 2/]
June 20, 2001	Idaho Conservation Data Center Idaho Transportation Department	GIS data and mapping
November 19, 2002	U.S. Army Corps of Engineers	Wetland delineation field review
January 28, 2003	Federal Highway Administration Environmental Protection Agency U.S. Army Corp of Engineers U.S. Fish and Wildlife Service Natural Resource Conservation Service Bureau of Land Management Idaho Department of Environmental Quality Idaho Department of Water Resources	Review alternatives and agency resource concerns[1/, 3/]
September 5, 2003	Idaho Department of Fish & Game Idaho Transportation Department	Corridor field trip to review wetlands, habitat, potential wetlands mitigation sites, and stream crossings[1/, 2/]
October 16, 2003	Idaho Department of Environmental Quality Idaho Transportation Department	Review drainage/stormwater management concepts for project
February 25, 2004	Natural Resource Conservation Service	Farmland impacts
February 25, 2004	Federal Highway Administration Idaho Transportation Department	Coordination on DEIS document preparation and noise impacts
March 10, 2004	U.S. Army Corps of Engineers U.S. Fish & Wildlife Service U.S. Forest Service Idaho Department of Environmental Quality Idaho Department of Fish & Game	Review potential wetland mitigation sites[1/]
March 10, 2004	U.S. Fish & Wildlife Service Idaho Transportation Department	Section 7 consultation and programmatic Biological Assessment preparation
April 15, 2004	U.S. Fish & Wildlife Service Idaho Transportation Department	Biological Assessment coordination[1/]
September 9, 2004	U.S. Forest Service Idaho Transportation Department	Review Boulder Flats Wetland Mitigation Site and USFS environmental compliance requirements
January 10, 2005	Federal Highway Administration Idaho Transportation Department	Review comments on administrative DEIS and to confirm requirements and review process for Boulder Flats Wetland Mitigation Concept Plan and programmatic Biological Assessment

1/ Copy of meeting notes sent to U.S. Fish and Wildlife Service, Idaho Department of Fish and Game, and other participating resource agencies
2/ U.S. Fish and Wildlife Service invited to attend.
3/ Idaho Department of Fish and Game invited to attend.

Table C-2: State and Federal Agency Consultation Letters Received

Date	Type	Agency
January 9, 2001	Letter regarding Boulder Flats area north of Ketchum	U.S. Forest Service Sawtooth National Forest Sawtooth National Recreation Area
August 3, 2001	Letter regarding wetlands and waters of the U.S. in SH-75 corridor	U.S. Army Corps of Engineers Boise Regulatory Office Boise, Idaho
February 20, 2002	Letter regarding potential impacts to fish and wildlife resources and measures to reduce impacts in SH-75 corridor	Idaho Department of Fish and Game Magic Valley Region Jerome, Idaho
August 26, 2002	Letter stating acceptance of SH-75 Purpose and Need Integrated Summary Statement	Federal Highway Administration Boise, Idaho
March 25, 2003	Letter regarding surface water crossings in SH-75 corridor	Idaho Department of Environmental Quality Water Quality Protection Twin Falls, Idaho
August 14, 2003	Letter containing issues, concerns and recommendations	Mike McDonald Environmental Staff Biologist Idaho Department of Fish and Game Jerome, Idaho
October 2, 2003	Letter responding to request for list of special status plants and animals and occurrence records in SH-75 project area	Idaho Conservation Data Center Idaho Department of Fish and Game Boise, Idaho
June 29, 2004	Wetland Delineation Report concurrence letter	U.S. Army Corps of Engineers Boise Regulatory Office Boise, Idaho
September 27, 2004	Letter responding to request for list of special status plants and animals and occurrence records in Boulder Flats wetland mitigation area	Idaho Conservation Data Center Idaho Department of Fish and Game Boise, Idaho
December 8, 2004	90-day threatened and endangered species list update	U.S. Fish and Wildlife Service Snake River Office Boise, Idaho
January 7, 2005	Wetland Delineation Report concurrence letter	U.S. Army Corps of Engineers Boise Regulatory Office Boise, Idaho

In addition to the agency consultation and coordination activities summarized in Tables C-1 and C-2, information pertinent to the project DEIS and this PBA was obtained through phone conversations and emails with resource professionals, species biologists, and agency personnel.

Appendix D

List of Preparers

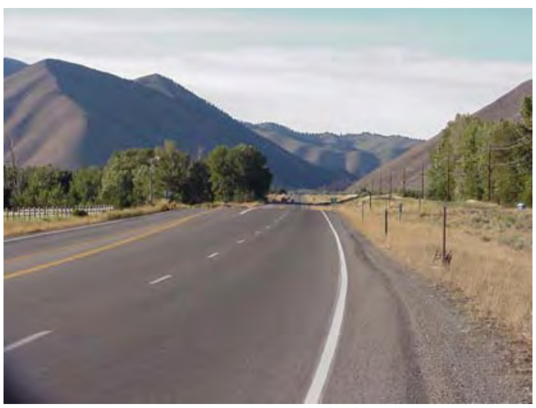
List of Preparers
Shapiro and Associates, Inc.

Name	Title	Project Role
Steve Jakubowics	Senior Environmental Planner	Project Manager; Lead BA Author, Fisheries
Gray Rand	Wildlife Biologist	BA Co-Author, Wildlife
Laurence Barea	Biologist	Threatened and Endangered Species Descriptions
Robert House	Fisheries Biologist	Fisheries/Aquatic Habitat Inventory
David Kordiyak	Wetland Biologist	Wetlands/Vegetation Baseline
Jill Raben	Editor	Document Editing
Mark Sandlin	Graphic Designer	Graphics

Timmerman to Ketchum Environmental Analyses

Project No. STP-F-2392 (035)
Key No. 3077
Agreement No. 4718

Noise Technical Report



March 2005

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APPENDICES

1.0 EXECUTIVE SUMMARY

This report describes the potential noise impacts associated with the construction and operation of a project to widen and realign SH-75 between the Timmerman Junction and Ketchum Idaho (MP 102.017 to 130.158). The analysis of noise impacts in the project area is based on a comparison of future noise levels with existing levels and applicable criteria. Construction noise impacts are described based on maximum noise levels of construction equipment published by the U.S. Environmental Protection Agency (EPA). Traffic noise levels are predicted at sensitive receptors based on projected future traffic operations using the Federal Highway Administration (FHWA) Traffic Noise Model (TNM). Mitigation measures are discussed, where appropriate, to avoid or reduce potential noise impacts.

Environmental noise is composed of many frequencies, each occurring simultaneously at its own sound pressure level. Environmental sound levels are commonly reported in A-weighted decibels (dBA) a logarithmic frequency-weighted scale that simulates how an average person hears sound. The equivalent A-weighted sound level (Leq), a common sound descriptor, is a measure of the average sound energy over time.

Applicable noise regulations and guidelines provide a basis for evaluating potential noise impacts. For Federally funded highway projects, traffic noise impacts occur when predicted L_{eq}(h) noise levels approach or exceed noise abatement criteria (NAC) as established by the FHWA, or substantially exceed existing noise levels (US Department of Transportation, 1982, Noise Abatement Council). FHWA does not define "approach" and requires that state highway agencies establish a definition of “approach” that is at least one dBA less than the NAC. (USDOT, 1995). ITD as the State Highway Agency has developed procedures, analysis criteria, and definitions that are contained within their Environmental Procedures Manual (ITD 2003) and in the ITD Noise Policy (May 2003). ITD’s noise policy uses the noise criteria of one dBA less than the NAC. This will be referred to as the” ITD noise criteria” throughout this technical report. ITD’s policy defines a relative noise impact as one that occurs when the future design noise level exceeds the existing traffic noise level by 15 dBA or more.

Ambient noise levels were measured during 2002 and 2003 along the SH-75 corridor to describe the existing noise environment and to calibrate the existing conditions noise model. Existing noise levels are typical of rural and urban (Bellevue, Hailey, and Ketchum) environments.

Currently traffic noise levels are at or exceed the ITD noise criteria at 5 modeling locations representing 44 residential units. Under Alternative 1 No Build, traffic noise levels in 2025 will be at or will exceed the ITD noise criteria at 111 residential units. Table 1 summarizes the noise impacts and mitigation measures identified and assessed during this study.

Under Alternative 2 and 3, speed limits will be reduced through the central portion of the corridor, which will reduce traffic noise levels by 3 to 4 dBA on average, resulting in a reduction in traffic noise impacts in that portion of the corridor. Without mitigation, traffic noise levels are predicted to be at or will exceed the ITD noise criteria at 8 modeling locations representing 94 residences under the various build alternatives. Mitigation in the form of further speed reductions and noise barriers was evaluated to determine if it will be feasible and reasonable to substantially reduce traffic noise levels at each of the sensitive receivers where traffic noise impacts are predicted. Barriers are found to be possible in two areas, but final determination of the barrier construction needs to be evaluated considering local ordinance, wall size, access issues, and concerns of property owners.

Table 1
Summary of Noise Impacts and Mitigation

Alternative	Construction Impacts	Operation Impacts	Mitigation Measures
Alternative 1 No Build	None	Noise levels will be at or exceed the ITD noise criteria at 111 residential receptors.	None
Alternative 2 4-Lane with Center Turn Lane	Nearby receptors will experience temporary noise impacts during construction of the project.	Without mitigation, noise levels will be at or exceed the ITD noise criteria at 94 residential receptors.	Noise walls in two locations, Receptor Area 29 and 32, are found to be feasible but evaluation as to the reasonableness criteria needs further investigation due to their size, county ordinance, access issues and concerns of property owners. If these walls are found to be reasonable then 24 residences will be benefited by construction of noise walls (24 residences benefited assumes the driveway modification at Receptor Area 29 is feasible). Ten mile per hour speed reductions are examined at each impacted location and are found to not provide a 5dBA reduction in traffic noise. <u>Other areas:</u> Mitigation will not be feasible and/or reasonable at the other locations.
Alternative 3 4-Lanes with Center Turn Lane and HOV Lane	Nearby receptors will experience temporary noise impacts during construction	Without mitigation, noise levels will be at or exceed the ITD noise criteria at 95 residential receptors.	Same as Alternative 2

2.0 PROJECT BACKGROUND

This report describes the potential noise quality impacts associated with construction and operation of the SH-75 Timmerman to Ketchum project (see Figure 1). The results of the analysis documented in this report will be incorporated into a project-specific Environmental Impact Statement (EIS) that meets the requirements of the National Environmental Policy Act (NEPA) (U.S.C. 4332(2) (c)).

2.1 Project Description

2.1.1 Alternative 1 – No Build

The NEPA environmental review process requires considering the effect that making no changes will have on the roadway system. The No Build Alternative must be evaluated so that the level of impacts from the Build Alternatives can be clearly distinguished from the conditions expected without the proposed action.

2.1.2 Alternative 2 – Four Lanes with Center Turn Lane

Alternative 2 is described below and shown graphically in Appendix A.

<u>Highway 20 to Gannett Road</u>

With this alternative, the intersection of Highway 20 and SH-75 will be reconstructed to provide one northbound lane, one southbound lane, a center turn lane, shoulders, and a separate right-turn lane for northbound to eastbound traffic. The typical cross-section for this section will be one 12-foot travel lane in each direction, a 14-foot center turn lane, and 8-foot shoulders.

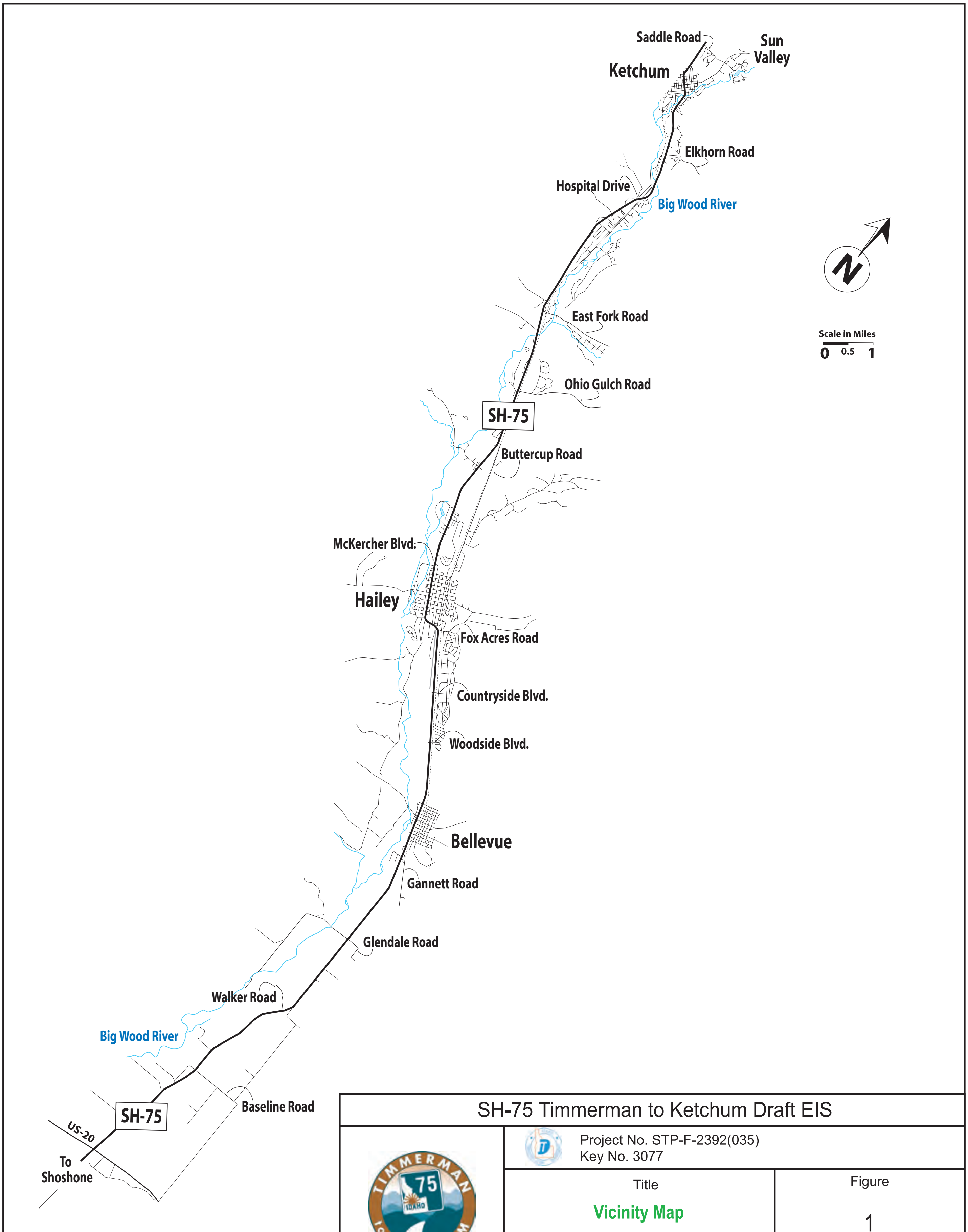
At the Baseline Road intersection, SH-75 will be reconstructed to provide a center turn lane through the intersection, a northbound right-turn lane, and a southbound right-turn lane. Baseline Road will be reconstructed on the west side to provide a center turn lane.

A northbound passing lane will be added north of the Highway 20/SH-75 intersection, resulting in two northbound lanes and one southbound lane. A southbound passing lane will be provided between Baseline Road and just south of Walker Road.

The intersection of Walker Road and SH-75 will be realigned to the south to provide better sight distance. The intersection will provide for one through lane in each direction on SH-75, a center turn lane, a right-turn lane for both southbound and northbound traffic, and shoulders.

At the intersection of SH-75 and Glendale Road, SH-75 will widen to create a left-turn lane, a northbound right-turn lane, and a southbound right-turn lane. Glendale Road will be reconstructed to provide for a left-turn lane.

SH-75 will be widened as it approaches the City of Bellevue, to match the existing two lanes in each direction with a center turn lane cross-section. The intersection of SH-75 with Gannett Road will be maintained, but Gannett Road will be realigned slightly to the north to provide a T-intersection with better sight distance.



SH-75 Timmerman to Ketchum Draft EIS

Project No. STP-F-2392(035)
Key No. 3077

Title
Vicinity Map

Figure
1

Date: May 2005

Between Highway 20 and Gannett Road, the speed limit will be 55 miles per hour, decreasing at the entrance to Bellevue.

Gannett Road to Fox Acres Drive

North of Gannett Road, SH-75 will continue through the City of Bellevue at its current width, with two lanes in each direction and a center turn lane. A second southbound lane will be provided between Spruce Street and Birch Street on the west side of SH-75.

North of Bellevue, SH-75 will be reconstructed to provide two lanes in each direction. Approaching both Woodside Road and Countryside Boulevard, SH-75 will widen to provide a center turn lane and a northbound right-turn lane at the intersection. Both cross-streets will be modified to provide a center turn lane to access SH-75. The intersection of Woodside Road and SH-75 and Countryside and SH-75 will be signalized.

The speed limit from north Bellevue to Fox Acres Road will be 45 miles per hour, decreasing as traffic approaches Fox Acres Road.

Fox Acres Road to McKercher Boulevard (City of Hailey)

SH-75 will not be reconstructed through the City of Hailey. It will remain in its current configuration.

The speed limit will remain at 25 miles per hour through Hailey.

McKercher Boulevard to Elk Horn Road

SH-75 will be reconstructed through this section to provide two lanes and a center turn lane. The speed limit from McKercher Boulevard to St. Luke’s Hospital will be 45 miles per hour. The speed limit from St. Luke’s Hospital to Elkhorn Road will be 35 miles per hour.

Elk Horn Road to River Street

The City of Ketchum is preparing a Transportation Master Plan. The results of this planning process may assist in Ketchum’s decision with respect to this segment of SH-75. There are four options through this segment. All will occur within the existing highway right-of-way and will largely consist of minor reconstruction within the existing right-of-way and striping and signing.

From Elkhorn Road to Serenade Lane the speed limit will be no greater than 35 miles per hour. From Serenade Lane to River Street the speed limit should be no greater than 35 miles per hour and will likely be 25 miles per hour based on speed current limits within the City of Ketchum.

River Street to Saddle Road

No changes to the existing roadway will be made in this area. Any changes to traffic signal timing and/or parking will be subject to direction from the City of Ketchum, based on their Master Transportation Planning process and related studies.

The speed limit through this section will be 25 miles per hour.

2.1.3 Alternative 3 – Four Lanes with Center Turn Lane and High Occupancy Vehicle Lane

Alternative 3 has the same physical footprint throughout the 27-mile corridor as Alternative 2, but in Alternative 3, the curb lane from McKercher Boulevard to Elk Horn Road will operate as a high occupancy vehicle (HOV) lane in the morning and evening peak hours. It will be restricted to buses and other vehicles carrying two or more persons. The 8-foot shoulders will be used for enforcement.

The HOV operation will terminate at Elk Horn Road.

3.0 STUDIES AND COORDINATION

3.1 Characteristics of Noise

Sound is created when objects vibrate, resulting in a minute variation in surrounding atmospheric pressure called sound pressure. The human response to sound depends on the magnitude of a sound as a function of its frequency and time pattern (EPA, 1974). Magnitude measures the physical sound energy in the air. The range of magnitude from the faintest to the loudest sound the ear can hear is so large that sound pressure is expressed on a logarithmic scale in units called decibels (dB). Loudness, compared to physical sound measurement, refers to how people subjectively judge a sound and varies from person to person. Magnitudes of typical noise levels are presented in Table 2.

Humans respond to a sound's frequency or pitch. The human ear is very effective at perceiving sounds with a frequency between approximately 1,000 and 5,000 Hz, with the efficiency decreasing outside this range. Environmental noise is composed of many frequencies, each occurring simultaneously at its own sound pressure level. Frequency weighting, which is applied electronically by a sound level meter, combines the overall sound frequency into one sound level that simulates how an average person hears sounds. The commonly used frequency weighting for environmental noise is A-weighting (dBA), which is most similar to how humans perceive sounds of low to moderate magnitude.

Because of the logarithmic decibel scale, a doubling of the number of noise sources, such as the number of cars operating on a roadway, increases noise levels by 3 dBA. A tenfold increase in the number of noise sources will add 10 dBA. As a result, a noise source emitting a noise level of 60 dBA combined with another noise source of 60 dBA yields a combined noise level of 63 dBA, not 120 dBA. The human ear can barely perceive a 3 dBA increase, while a 5 or 6 dBA increase is readily noticeable and sounds as if the noise is about one and one-half times as loud. A 10 dBA increase appears to be a doubling in noise level to most listeners.

Noise levels from traffic sources depend on volume, speed, and the type of vehicle emitting the noise. Generally, an increase in volume, speed, or vehicle size increases traffic noise levels. Vehicular noise is a combination of noises from the engine, exhaust, and tires. Other conditions affecting traffic noise include defective mufflers, steep grades, terrain, vegetation, distance from the roadway, and shielding by barriers and buildings.

Noise levels decrease with distance from the noise source. For a line source such as a roadway, noise levels decrease 3 dBA over hard ground (concrete, pavement) or 4.5 dBA over soft ground (grass) for every doubling of distance between the source and the receptor. For a point source such as construction sources, noise levels will decrease between 6 and 7.5 dBA for every doubling of distance from the source.

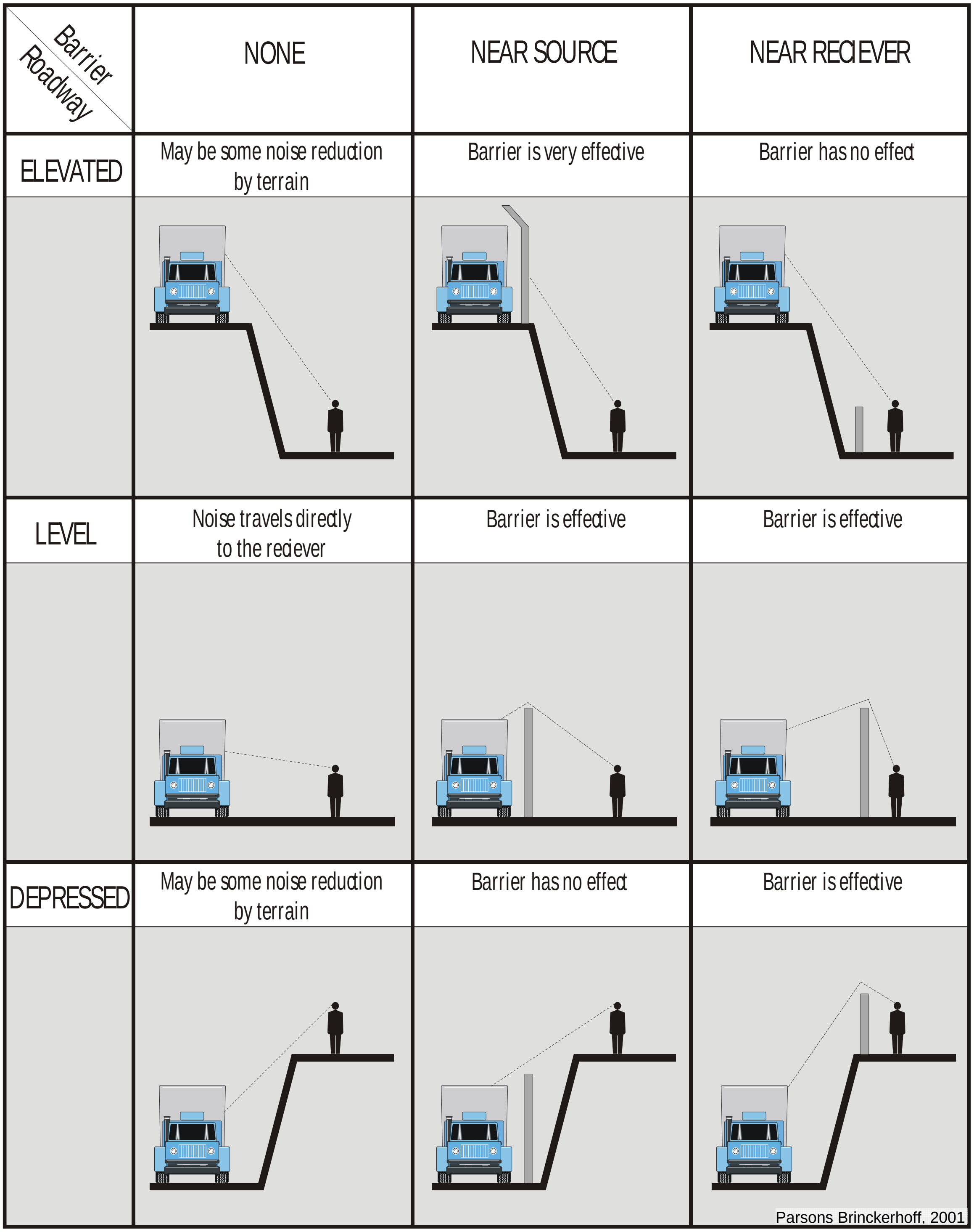
The propagation of noise can be greatly affected by terrain and the elevation of the receiver relative to the noise source (Figure 2). Level ground is the simplest case. Noise travels in a straight line-of-sight path between the source and the receiver. The addition of a berm or other area of high terrain will reduce the noise energy arriving at the receiver. Breaking the line of sight between the receiver and the highest noise source results in a noise reduction of approximately 5 dBA.

If the noise source is depressed or the receiver is elevated, noise generally will still travel directly to the receiver. In some situations, noise levels may be reduced because the terrain crests between the source and receiver, resulting in a partial noise barrier near the receiver. If the noise source is elevated or the receiver is depressed, noise is often reduced at the receiver, because the edge of the roadway can act as a partial noise barrier, blocking some sound transmission between the source and receiver.

Table 2
Typical Noise Levels

Transportation Sources	Noise Level (dBA)	Other Sources	Description
	130		Painfully loud
Jet takeoff (200 feet)	120		
Car horn (3 feet)			Maximum vocal
	110		Effort
	100	Shout (.5 feet)	
			Very annoying
Heavy truck (50 feet)	90	Jack hammer (50 feet)	Loss of hearing with
		Home shop tools (3 feet)	prolonged exposure
Train on a structure (50 feet)	85	Backhoe (50 feet)	
City bus (50 feet)	80	Bulldozer (50 feet)	Annoying
		Vacuum cleaner (3 feet)	
Train (50 feet)	75	Blender (3 feet)	
City bus at stop (50 feet)			
Freeway traffic (50 feet)	70	Lawn mower (50 feet)	
		Large office	
Train in station (50 feet)	65	Washing machine (3 feet)	Intrusive
	60	TV (10 feet)	
Light traffic (50 feet)		Talking (10 feet)	
Light traffic (100 feet)	50		Quiet
		Refrigerator (3 feet)	
	40	Library	
	30	Soft whisper (15 feet)	Very quiet
Sources: FTA, 1995; EPA, 1971; EPA, 1974			

Figure 2
Noise Barrier Effectiveness



3.2 Noise Level Descriptors

A widely used descriptor for environmental noise is the equivalent sound level (L_{eq}). The L_{eq} can be considered a measure of the average noise level during a specified period of time. It is a measure of total noise, or a summation of all sounds during a time period. It places more emphasis on occasional high noise levels that accompany general background noise levels. L_{eq} is defined as the constant level that, over a given period of time, transmits to the receiver the same amount of acoustical energy as the actual time-varying sound. For example, two sounds, one of which contain twice as much energy but lasts only half as long, have the same L_{eq} noise levels. L_{eq} measured over a one-hour period is the hourly L_{eq} [L_{eq}(h)], which is used for highway noise impact and abatement analyses.

For residential areas, daily averaged noise levels that rank evening or night noise more heavily are often reported. The day/night level (L_{dn}) is a descriptor of the daily noise environment, with a penalty for high noise levels at night. The L_{dn} adds 10 dBA to noise levels that occur between 10 p.m. and 7 a.m.

Short-term noise levels, such as those from a single truck pass-by, can be described by either the total noise energy or the highest instantaneous noise level that occurs during the event. The sound exposure level (SEL) is a measure of total sound energy from an event, and is useful in determining what the L_{eq} will be over a period in time when several noise events occur. The maximum sound level (L_{max}) is the greatest short-duration sound level that occurs during a single event. L_{max} is related to impacts on speech interference and sleep disruption. In comparison, L_{min} is the minimum sound level during a period of time.

3.3 Effects of Noise

Environmental noise at high intensities directly affects human health by causing the disease of hearing loss. Although scientific evidence currently is not conclusive, noise is suspected of causing or aggravating other diseases. Environmental noise indirectly affects human welfare by interfering with sleep, thought, and conversation. The FHWA noise abatement criteria are based on speech interference, which is a well-documented impact that is relatively reproducible in human response studies.

3.4 Noise Regulations and Impact Criteria

Applicable noise regulations and guidelines provide a basis for evaluating potential noise impacts. For federally funded highway projects, traffic noise impacts occur when predicted L_{eq}(h) noise levels approach or exceed noise abatement criteria (NAC) as established by the FHWA, or substantially exceed existing noise levels (U.S. Department of Transportation, 1982, Noise Abatement Council). FHWA does not define "approach" and requires that State Highway Agencies establish a definition of “approach” that is at last 1 dBA less than the NAC. (USDOT, 1995). ITD as the State Highway Agency has developed procedures, analysis criteria and definitions that are contained within their Environmental Procedures Manual (ITD 2003) and in the ITD Noise Policy (May 2003). ITD’s policy defines a relative noise impact as one that occurs when the future design level exceeds the existing traffic noise level of 15 dBA or more.

The FHWA noise abatement criteria are noise standards that specify exterior L_{eq}(h) noise levels for various land activity categories (Table 3). For receptors where serenity and quiet are of extraordinary significance, such as historical memorials or outdoor amphitheaters, the noise criterion is 57 dBA. For residences, parks, schools, churches, and similar areas, the noise criterion is 67 dBA. For other developed lands, the noise criterion is 72 dBA. ITD noise policy defines a noise impact to occur if predicted L_{eq}(h) noise levels approach within 1 dBA of the noise abatement criteria in Table 3. Thus, if a noise level are 66 dBA or higher, it will approach or exceed the FHWA noise abatement criterion of 67 dBA for residences. ITD noise policy requires that mitigation be evaluated when traffic noise levels with a project would be equal or greater than the ITD noise criteria or where a relative noise impact is predicted. The mitigation must be constructed where it is determined to be feasible and reasonable under the department's policy. Feasibility and reasonableness are described in Section 7.2 of this Technical Report.

Table 3
FHWA Noise Abatement Criteria

Activity Category	L_{eq} (h) (dBA)	Description of Activity Category
A	57 (exterior)	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B	67 (exterior)	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.
C	72 (exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	-	Undeveloped lands.
E	52 (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.
Source: U.S. Department of Transportation, 1982.		

4.0 METHODOLOGY

Ambient noise levels are measured to describe the existing noise environment, identify major noise sources in the project area, and calibrate the noise model. Ambient noise levels are measured at several locations near the project area to characterize the weekday noise levels. Appendix B contains noise measurement and modeling locations. Measurement locations represent a variety of noise conditions and are representative of other sensitive receptors near the proposed project. Existing and future noise levels for Alternatives 1 No Build and for Alternatives 2 and 3 are modeled at all of the monitoring locations and at several additional locations that potentially will be affected by the project.

FHWA's Traffic Noise Model (TNM) Version 2.1 computer model (FHWA, 2003) was used to predict L_{eq}(h) traffic noise levels. TNM is used to obtain precise estimates of noise levels at discrete points by considering interactions between different noise sources and the effects of topographical features on the noise level. The model estimates the acoustic intensity at a receiver location calculated from a series of straight-line roadway segments. Noise emissions from free-flowing traffic depend on the number of automobiles, medium trucks, and heavy trucks per hour; vehicular speed; and reference noise emission levels of an individual vehicle. TNM also considers effects of intervening barriers, topography, trees, and atmospheric absorption. Noise from sources other than traffic is not included; therefore, when non-traffic noise, such as aircraft, is considerable in an area, TNM will under-predict the actual noise level. Noise monitoring results are used to calibrate the Existing Conditions noise model.

An AutoCAD DXF file of the proposed design of Alternatives 2 and 3 was imported into the TNM package, and major roadways, topographical features, building rows, and sensitive receptors are digitized into the model. Elevations are added from the 2-foot contour data. Elevations for planned improvements including cut and fill limits are taken from design profiles.

Thirty-seven measured sites, representative of approximately 440 residences in the corridor, are chosen as representative of noise-sensitive sites in the SH-75 corridor. For noise model calibration, traffic volumes in the noise model are adjusted to match field counts during the time of day of the noise measurement. Additional topographical and geometrical detail was added to the existing conditions TNM model until the modeled peak-hour noise levels at each of the forty-four measurement sites are within 2 dBA of the measured level. Model adjustment factors are applied where necessary to ensure that calibration was within 2 dBA. Site 17a was calibrated using a noise measurement taken near the edge of Treasure Lane, but the modeled site was located approximately 100 feet closer to SH-75 to reflect noise levels at nearby sensitive receptors.

Predicted noise levels are based on PM peak-hour traffic conditions to estimate worst-case noise levels. Existing traffic volumes for 2000 and expected future traffic volumes for 2025 are modeled. The thirty-seven measurement sites are modeled as representative of similar receptors in the area, although noise levels at adjacent receptors may vary because of terrain or distance. The receptors include both worst-case (closest to the SH-75 alignment and other roads that will be substantially affected) and other local noise-sensitive receptors that could be affected by either increases or decreases in traffic noise as a result of this project.

Thirty-five additional receptors representing approximately 270 residences are also included in the model runs to provide additional information in areas of concern. The Plan View of the Existing Conditions TNM model is shown in Appendix C.

Traffic data for AM peak hour traffic, the time when the highest volume of traffic moves freely along the corridor, was applied to the existing conditions, to Alternative 1 No Build, and to Alternatives 2 and 3, the two build alternatives. Alternative 3's HOV lane between McKercher Boulevard and Elk Horn Road was modeled as a separate lane to account for the difference in vehicle type using the HOV lane during AM peak hours. Traffic volumes are taken from the traffic analysis conducted for this NEPA process. Traffic volumes and vehicle mix for SH-75 are summarized in Appendix D.

Predicted noise levels are compared to the ITD Noise Policy and the numbers of affected receptors are counted for the build alternative. Mitigation measures are evaluated using ITD's reasonableness and effectiveness criteria along with engineering feasibility at receptors where noise levels are modeled to be at or exceed the ITD noise criteria. ITD's approach to this analysis is contained in their Environmental Procedures Manual (ITD, 2003).

Construction noise was qualitatively assessed using EPA reference levels.

5.0 AFFECTED ENVIRONMENT

5.1 Land Use

Land use in the study corridor ranges between farmland in the southern portion of the corridor to urban/small town within Bellevue, Hailey, and Ketchum. The corridor's terrain is relatively flat with pockets of depressed and elevated roadway along SH-75. Berms are common throughout the corridor and are used for noise attenuation and visual shielding from SH-75.

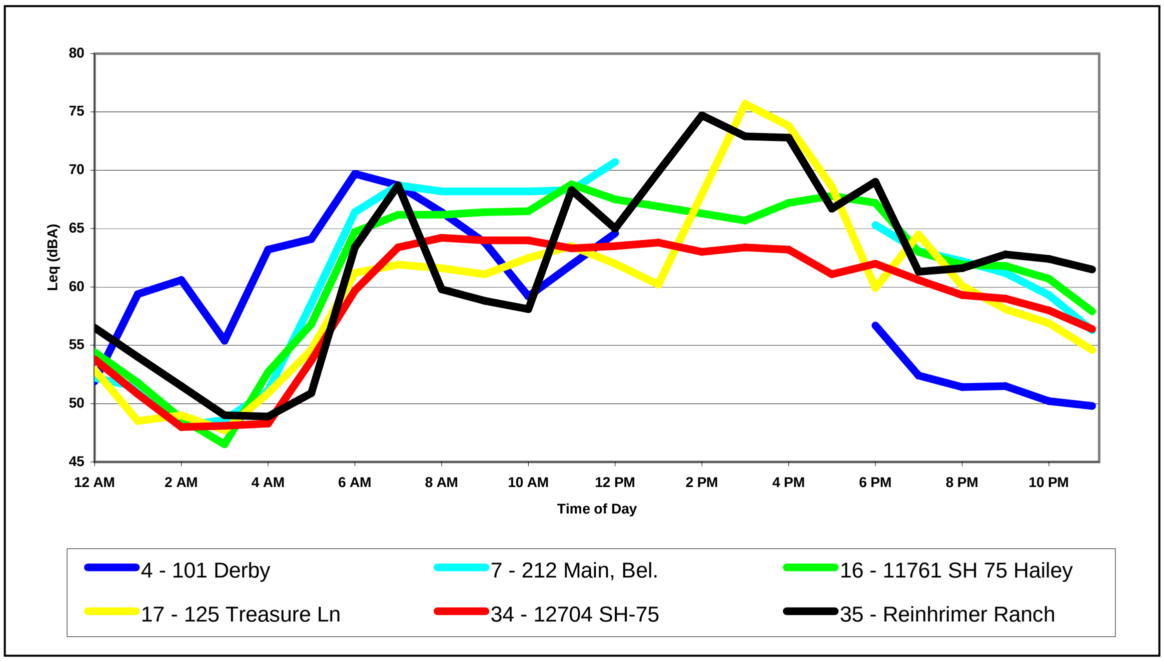
5.2 Existing Conditions

Existing noise levels are measured at 44 locations within the project area (Table 4 and Appendix B). Sites 26 and 26a are measured a second time on August 18, 2003 for verification of the field measurements taken on July 24, 2002. There are no significant differences between the measurements taken in July 2002 and August 2003. Twenty-four hour noise measurements are taken at 6 locations to evaluate the daily noise environment. Two of the measurements did not cover the entire 24-hour period. Fifteen-minute noise measurements are taken at 44 of the noise measurement locations (Appendix B, numbered sites). The fifteen-minute measured noise levels are used to verify the results of the traffic noise model used to predict noise levels of the proposed alternatives, existing conditions, and the no build alternative. Traffic noise was the dominant noise source in the project area, with minor contributions from aircraft using the Friedman Memorial Airport south of Hailey.

Noise levels at the 44 measurement locations and at an additional 35 locations are modeled using the FHWA Traffic Noise Model (TNM) (Table 5 and Table 6). The measurement locations are shown in Appendix B, Noise Measurement and Modeling Locations. Noise levels at three existing locations are measured and modeled to be at or exceed the ITD noise criteria of 66 dBA for residence, parks, schools, churches, and similar areas. These receptors are 16, 29 and 32 and are located between the Albertsons in Hailey and Elkhorn Road. Receptor 16, just north of the city of Hailey, represents nine first row units along the east side of SH-75. The receptor is located approximately 55 feet from SH-75 and level with the freeway. Because of the receptor's proximity, elevated levels will be expected. Receptor 29, just south of Cold Springs Road, is representative of 16 residences. The receptor was located approximately 90 feet from SH-75 and level with the freeway. A 6-foot skip board fence runs parallel with the first row residences and SH-75. Because of the receptor's proximity to SH-75 and the lack of shielding, these higher levels are to be expected. Receptor 32 is representative of eight units and is located on the east side of SH-75 approximately 850 feet south of St. Luke's Hospital. The receptor was located approximately 40 feet from SH-75 and 4 feet above the highway. A berm runs parallel to the residences and SH-75 to provide for some shielding. Because the receptor is within 40 feet of the freeway, elevated and slightly higher than the berm, an elevated noise level is expected.

The noise levels at Receptors W and Y will exceed the ITD noise criteria and are located between McKercher Boulevard in north Hailey and Elkhorn Road. Receptor W is representative of 4 residences and is approximately 65 feet from SH-75. Receptor Y represents seven residences and is approximately 40 feet from SH-75 and level with the roadway. In both of these cases the receptors are within close proximity to SH-75 and are on relatively flat terrain.

Figure 3
Twenty-four Hour Noise Measurement Results



Several of the twenty-four hour measurement sites are measured at more than 67 dBA during part of the day, but are below the ITD noise criteria of 66 dBA when modeled. The twenty-four hour measurements include all ambient noise sources. Sources other than traffic from SH-75 include children playing nearby, aircraft, and other sounds typical of town life, such as lawn mowing. Since these measurements include noise sources other than traffic, the measured noise levels do not demonstrate an exceedance of the ITD noise criteria.

Table 4
Fifteen-minute and Twenty-Four Hour Noise Measurements

Measured Site		Date	Start Time	Leq (dBA)
1	J.K. Molneuxts Ranch	7/24/02	2:11 p.m.	55
2	10564 SH-75 Lau Ranch	7/24/02	2:57 p.m.	53
3	10664 SH-75	7/24/02	3:48 p.m.	55
4	101 Derby Road	7/24/02	4:23 p.m./24 hrs	55
5	11033 SH-75	7/24/02	4:56 p.m.	61
6	116 Pine Street	7/24/02	5:43 p.m.	59
7	212 Main Street (Bellevue)	7/24/02	24 hrs	69
8	204 Spruce Street	7/25/02	10:40 a.m.	49
9	3321 Glennbrook Drive	7/25/02	12:23 p.m.	54
9a	Flying Hat Ranch	8/18/03	11:10 a.m.	62
10	Trail On Berm	7/25/02	8:55 p.m.	63
11	1811 Briarwood Drive	7/25/02	8:53 p.m.	59
12	1131 Creekview Drive	7/26/02	10:40 p.m.	55
13	1140 Creekview Drive	7/26/02	10:40 p.m.	52
14	Roberta McKercher Park	7/24/02	8:25 a.m.	63
15	603 N. Main Hailey	7/25/02	5:45 p.m.	64
16	11761 SH-75	7/24/02	12:00 p.m./24 hrs	68
17	125 Treasure Lane	7/25/02	2:15 p.m./24 hrs	63
17a	100 Block Treasure Lane	8/18/03	2:10 p.m.	58
18	2nd row Treasure Lane	7/25/02	2:18 p.m.	55
19	#3 Deer Creek	7/25/02	2:50 p.m.	59
20	#4 Deer Creek	7/25/02	2:50 p.m.	60
21	970 Buttercup	7/24/02	5:20 p.m.	53
21a	Lot 55 Hidden Lake Dr.	8/18/03	1:40 p.m./5:25 p.m.	48/50
22	106 Zinc Spur Road	7/24/02	11:15 a.m.	51
23	Lot 109 Willow Lane	7/24/02	11:15 a.m.	51
24	200 Block of Starweather	7/24/02	9:25 a.m.	52
	200 Block of Starweather	8/18/03	4:55 p.m.	52
24a	110 Mallard	8/18/03	2:25 p.m.	55
25	257 Alturas Drive	7/24/02	10:15 a.m.	55
26	401 Shawn Lane	7/24/02	10:45 a.m.	53
	401 Shawn Lane	8/18/03	2:55 p.m.	54
26a	105 Shawn Lane	8/18/03	4:25 p.m.	56
26b	306 Sweetbrier	8/18/03	3:40 p.m.	47
27	110 Golden Eagle Drive	7/26/02	11:45 a.m.	48
28	138 Canyon Drive	7/25/02	4:25 p.m.	55
29	12457 SH-75 Country Chalet	7/25/02	10:15 a.m.	69
30	Cold Springs Drive	7/24/02	4:40 p.m.	60
31	Meadows RV Park	7/25/02	11:00 a.m.	54
32	12556 SH-75	7/24/02	3:55 p.m.	66
33	12585 SH-75 Sun Tree Hollow	7/25/02	4:00 p.m.	61
34	12704 SH-75	7/25/02	12:05 p.m./24 hrs	63
35	12749 SH-75 (Reinheimer Ranch)	7/24/02	2:05 p.m./24 hrs	62
36	103 Garnet Street	7/24/02	2:35 p.m.	62
37	409 S. Main (Ski View Lodge)	7/24/02	3:00 p.m.	61

Table 5
Leq (h) Noise Modeling Results at Measurement Sites

Location	Residences Represented	Existing	Alternative 1 No Build	Alternatives 2 & 3
1	1	53	53	58
2	2	56	56	56
3	1	55	55	57
4	4	52	52	54
5	6	59	62	63
6	31	56	58	58
7	37	64	**68**	**68**
8	4	45	48	47
9	47	55	57	57
9a	1	58	60	58
10	1	59	62	64
11	42	58	60	62
12	13	52	55	55
13	8	51	53	53
14	1 Park	54	57	58
15	39	61	63	63
16	9	**67**	**69**	**69/69**
17	7	64	65	62/62
17a	6	63	65	61/61
18	9	56	58	57/57
19	5	59	61	60/60
20	5	61	63	62/62
21	2	53	55	55/55
21a	1	47	49	47/49
22	9	52	54	53/53
23	7	52	54	52/52
24	5	51	53	50/50
24a	1	55	57	56/56
25	16	58	60	58/58
26	1	54	56	57/57
26a	5	52	54	53/53
26b	1	42	44	43/43
27	1	51	53	50/50
28	13	55	56	52/52
29	16	**66**	**68**	**66/66**
30	1	60	62	62/61
31	24	56	57	59/59
32	8	**67**	**68**	**67/66**
33	12	64	**66**	65/65
34	11	59	61	62
35	3	63	64	64
36	12	63	65	65
37	13	60	62	63

Numbers in **bold** represent a noise level that is an impact under the ITD Noise Policy.

Table 6
Leq (h) Noise Modeling Results at Modeled-Only Sites

Location	Residences Represented	Existing	Alternative 1 No Build	Alternatives 2 & 3
A	3	64	64	**67**
B	4	61	62	64
C	5	64	**67**	64
D	10	58	64	63
E	4 Commercial*	63*	68*	67*
F	15	45	47	48
G	38	51	53	54
H	17	56	59	58
I	12	55	57	57
J	3	54	56	57
K	6	54	57	60/60
L	2	58	60	60/59
M	4	56	58	57/57
N	12	57	59	58/58
O	5	61	63	59/58
P	1	63	65	65/65
Q	1	65	**66**	63/63
R	1	51	53	53/53
S	13	62	63	62/62
T	11	61	62	60/60
U	1	61	63	64/64
V	28	58	59	59/59
W	4	**68**	**69**	**67/68**
X	2	65	**66**	64/64
Y	7	**67**	**69**	**68/68**
Z	11	59	61	59/59
AA	7	62	63	59/60
AB	11	52	54	54
AC	10	65	**67**	**67**
AD	7	55	57	57
AE	10	54	56	57
AF	7	56	58	59
AG	2	54	56	56
AH	1	58	60	60
AI	1	56	58	58
AJ	5	52	55	55

Numbers in **bold** represent a noise level that is an impact under the ITD Noise Policy.
*Receptor E now has a commercial use. The impact criterion is 71 dBA at that location.

6.0 IMPACTS

The noise impacts of the three alternatives are discussed below.

6.1 Alternative 1 No Build

Under the Alternative 1 No Build, noise levels are projected to increase between 1 and 6 dBA at most receptors in the study area (Table 5 and Table 6) as a result of increased traffic in the future. A 1 to 2 dBA increase is not perceptible to most individuals, while a 3 to 4 dBA increase is barely perceptible. In addition to the five receptors that are at or exceed the ITD noise criteria under existing conditions, six other locations (Receptors 7, 33, C, Q, X, and AC) are predicted to be at or exceed the ITD noise criteria in 2025 under the No Build Alternative. The increase at each of these receptors will result from increased traffic on SH-75. The number of receptors and their number of affected units that are at or exceed the ITD noise criteria is summarized in Table 7.

Table 7
Receptors Affected by each Alternative

Modeled Receptor Location	Number of residential units represented	Number of affected units by Modeled Receptor by Alternative			
		Existing	Alternative 1 No Build	Alternative 2 4-Lane	Alternative 3 HOV
7	37	0	37	37	37
16	9	9	9	9	9
29	16	16	16	16	16
32	8	8	8	8	8
33	12	0	12	0	0
A	3	0	0	3	3
C	5	0	5	0	0
Q	1	0	1	0	0
W	4	4	4	4	4
X	2	0	2	0	0
Y	7	7	7	7	7
AC	10	0	10	10	10
Total		44	111	94	94

6.2 Alternative 2 Four Lane with Center Turn Lane and Alternative 3 Four Lane with Center Turn Lane and HOV Lane

Alternatives 2 and 3 would have the same physical footprint. Traffic volumes would be similar; however, a higher volume of traffic would be in the general purpose lane in the peak hour under Alternative 3. Predicted sound levels for both alternatives are within 1 dBA, and predicted impacts are the same. As a 1 dBA difference is less than perceptible to humans, the following discussion applies to both of these alternatives.

6.2.1 Operation Noise

Under Alternatives 2 and 3, noise levels will increase between 1 and 6 dBA relative to existing conditions (Table 5 and Table 6). Noise levels at nine modeled receptors under either alternative will be at or exceed the ITD noise criteria. The number of represented sensitive receivers that will be at or exceed the ITD noise criteria is summarized in Table 7. Fewer receptors will be at or exceed the ITD noise criteria under Alternative 2 and 3 than under Alternative 1 No Build because Alternatives 2 and 3 have lower speed limits in some geographic segments. Receptors where traffic noise levels are predicted to approach or exceed the noise abatement criteria are described by project section below, from south to north.

<u>US-20 to Gannett Road</u>

Noise levels at receptor A would be at 67 dBA, 1 dBA greater than the ITD noise criteria, as a result of the increased traffic. This receptor represents one home adjacent to SH-75. The current speed limit on SH-75 at this receptor is 55 miles per hour and would remain at 55 in the future.

<u>Gannett Road to Fox Acres Road</u>

Receptor 7 would have a noise level of 68 dBA, exceeding the ITD noise criteria. This receptor represents 37 first row residences within the City of Bellevue. These homes have direct driveway access onto SH-75. ITD's abatement policy and procedures states that noise barriers would not be expected for dwellings with direct access onto highways and that reconfiguration of access would not be considered feasible. The current and future speed limit within central Bellevue is 25 miles per hour.

<u>McKercher Boulevard to Elkhorn Road</u>

Receptor 16, just north of the city of Hailey, represents nine first row residences along the east side of SH-75. Noise levels at this receptor would be 69 dBA, 3 dBA over the ITD noise criteria impact level of 66 dBA, as a result of the increased traffic. The speed limit on SH-75 would be reduced from 55 miles per hour to 45 miles per hour by 2025.

Receptor 29 is located just south of Cold Springs Road and represents 16 first row units adjacent to SH-75. Noise levels at this receptor would be at 66 dBA, the ITD noise criteria impact level.. The speed limit on SH-75 would be reduced from 55 miles per hour to 45 miles per hour by 2025.

Receptor W is located approximately 1,300 feet north of Broadway Run South and represents four first row residences. Noise levels at receptor W for all alternatives would exceed the ITD noise criteria level of 66 dBA. The speed limit on SH-75 would be reduced from 55 miles per hour to 45 miles per hour by 2025.

Receptor 32 represents eight units and is located on the west side of SH-75 approximately 850 feet south of St. Luke's Hospital. Noise levels at receptor 32 would be at or exceed the ITD noise criteria level. The speed limit on SH-75 would be reduced from 55 miles per hour to 45 miles per hour by 2025.

At receptor Y the noise levels would exceed the ITD noise criteria level. Receptor Y represents 7 units on the west side of SH-75 approximately 700 feet north of Hospital Road. The speed limit from Hospital Drive/Broadway Run to Elkhorn Road would be 35 miles per hour by 2025.

<u>Elkhorn Road to River Street</u>

Receptor AC is located approximately 700 feet north of Serenade Lane on the west side of SH-75 and represents 10 first row units. Noise levels at receptor AC will be at the ITD noise criteria. The speed limit from Serenade to the proximity of the Trail Creek Bridge is 35 miles per hour and will be 25 miles per hour in Year 2025.

River Street to Saddle Road

No traffic noise impacts are found to occur within this segment for either of the alternatives.

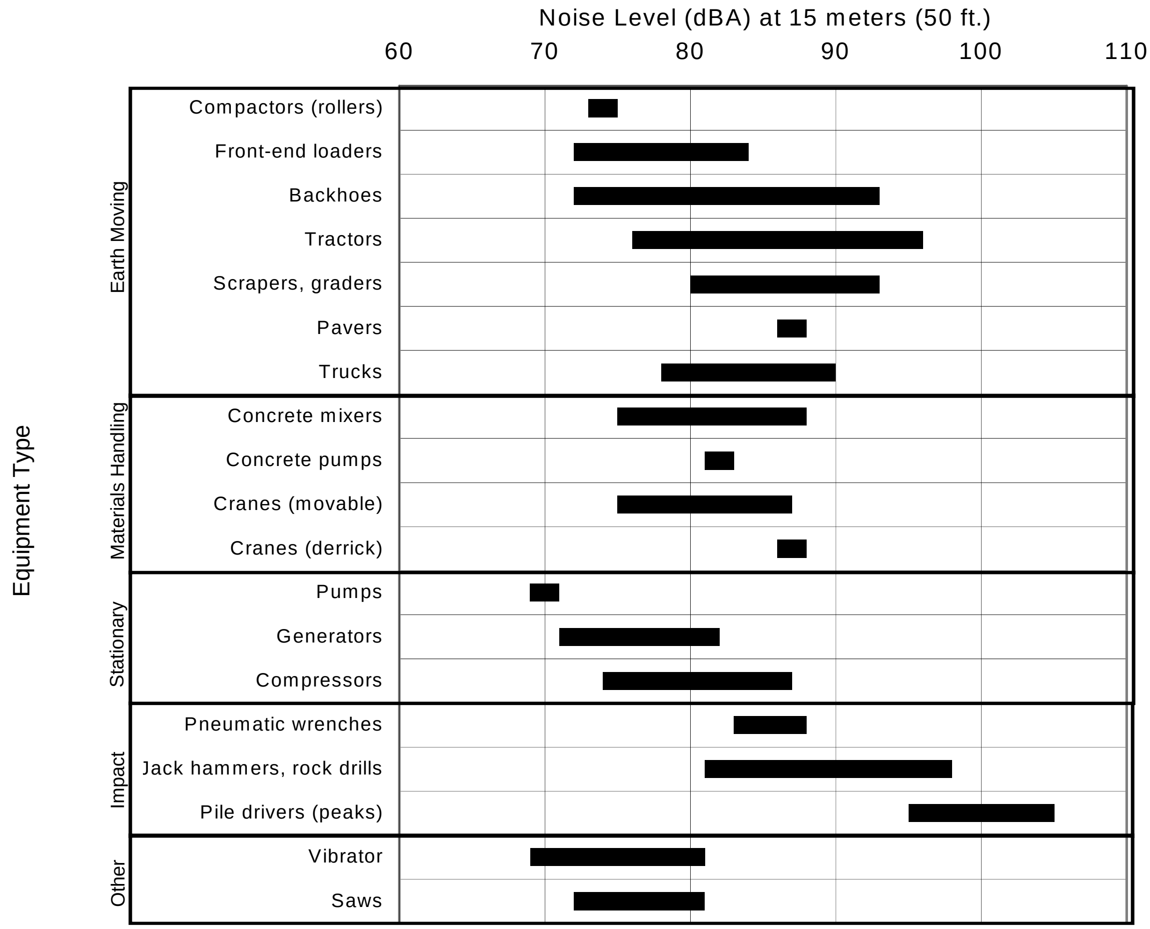
6.3 Construction Noise

Construction activities will generate noise during the construction period. Construction usually will be carried out in several reasonably discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. Roadway construction will involve clearing, cut-and-fill activities, removing old roadways, importing fill, and paving.

The most prevalent noise source at construction sites will be the internal combustion engine. Engine-powered equipment includes earth-moving equipment, material-handling equipment, and stationary equipment. Mobile equipment operates in a cyclic fashion, while stationary equipment, such as generators and compressors, operates at sound levels fairly constant over time. Because trucks will be present during most phases and will not be confined to the project site, noise from trucks could affect more receptors. Other noise sources will include impact equipment and tools such as pile drivers. Impact tools could be pneumatically powered, hydraulic, or electric. Construction noise will be intermittent and occurring seasonally. Construction noise levels will depend on the type, amount, and location of construction activities. The type of construction methods will establish the maximum noise levels of construction equipment used. The amount of construction activity will quantify how often construction noise will occur throughout the day. The location of construction equipment relative to adjacent properties will determine any effects of distance in reducing construction noise levels. Maximum noise levels of construction equipment under all build alternatives will be similar to typical maximum construction equipment noise levels presented in Figure 4.

As shown in Figure 4, maximum noise levels from construction equipment will range from 69 to 106 dBA at 50 feet (15 meters). Construction noise at residences farther away will decrease at a rate of 6 dBA per doubling of distance from the source. The number of occurrences of the Lmax noise peaks will increase during construction, particularly during pile-driving activities. Because various equipment will be turned off, idling, or operating at less than full power at any time, and because construction machinery is typically used to complete short-term tasks at any given location, average Leq noise levels during the day will be less than maximum noise levels presented in Figure 4. Construction noise levels could be reduced by the construction practices identified in the Mitigation Section.

Figure 4
Construction Noise Levels



Source: EPA, 1971 and WSDOT, 1991.

7.0 MITIGATION

Noise can be controlled at three locations: (1) at the source, such as with mufflers and quieter engines; (2) along the noise path, with barriers; and (3) at the receptor, with insulation. Noise abatement is necessary only where frequent human use occurs and where a lower noise level will have benefits (U.S. DOT, 1982).

7.1 OPERATIONAL NOISE MITIGATION OPTIONS

The ITD Noise Policy defines noise abatement measures as those that must be considered when a project will result in a noise impact. Abatement measures include:

- Traffic management,
- Alteration of horizontal and vertical alignments,
- Acquisition of real property to serve as a buffer zone,

- Acquisition of property rights for barrier construction purposes, and
- Insulation of public use, non-profit institutional structures.
- Construction of noise barriers,

These mitigation measures were evaluated for their potential to reduce noise impacts from the proposed action. The results of the evaluation are summarized below. Final determination of size and placement of noise barriers or berms and implementation of other mitigation methods takes place during detailed project design, after an opportunity for public involvement and approval at the local, state, and federal levels. The ITD Noise Policy outlines the process once a decision under NEPA has been made and the project enters the design phase.

Traffic Management Measures
Management measures could include restricting travel times, restrictions on truck traffic, modified speed limits, and exclusive land designations. Restriction of truck traffic is not feasible as there is no alternative route to SH-75. Lower speed limits on SH-75 were evaluated in several locations to determine if they would be effective. Noise impacts could be reduced by land use controls throughout the project area to limit the proximity of future construction to major facilities. This can be achieved through building setback requirements.

Acquisition of Property to Serve as a Buffer Zone
Undeveloped parcels adjacent to SH-75 study area could be acquired to provide noise buffers. While this could limit the effects of traffic noise on future development, it would not mitigate impacts to any of the currently existing receptors that would experience elevated noise levels under this project. The costs of land acquisition for this purpose would also be prohibitively expensive.

Alteration of Roadway Horizontal and/or Vertical Alignment
Development of Alternatives 2 and 3 was an iterative process that resulted in minor changes to the roadway alignment to avoid or minimize impacts to resources. In most areas where noise impacts are predicted to occur, the horizontal alignment of SH-75 is constrained by topography or existing development. Additional changes to the SH-75 horizontal alignment would not be a feasible noise mitigation measure. Changes of the vertical alignment, such as depressing the roadway, would not be feasible. As the topography of the SH-75 corridor is flat and there is considerable existing development adjacent to the roadway, lowering the roadway would worsen direct impacts on adjacent properties and resources.

Insulation of Public Use, Nonprofit Institutional Buildings
The receptors that would be impacted are not public use, nonprofit institutions and therefore would not be eligible for acoustic insulation.

Noise barriers
Noise barriers include noise walls, berms, and buildings that are not sensitive to noise. The effectiveness of a noise barrier is determined by its height and length and by the topography of the project site. To be effective, the barrier must block the "line of sight" between the highest point of a noise source, such as a truck's exhaust stack, and the highest part of a receiver. It must be long enough to prevent sounds from passing around the ends, have no openings such as driveway connections, and be dense enough so that noise will not be transmitted through it. Intervening rows of buildings that are not noise sensitive also could be used as barriers.

7.2 Noise Mitigation Measure Feasibility and Reasonableness

ITD evaluates many factors to determine whether mitigation measures would be feasible and reasonable. The evaluation consists of determining the engineering feasibility of constructing the mitigation in a certain location and determining the effectiveness of the potential mitigation measure. The ITD Noise Policy defines effective mitigation as providing a noise reduction of at least 10 dBA at a distance of ten feet from the mitigation and 5 dBA at a distance of 100 feet. Five dBA of reduction must also be achievable at the receptors of concern.

Determination of reasonableness includes the number of sensitive receptors benefited by at least 5 dBA, cost-effectiveness of the mitigation, and concerns such as the desires of nearby residents, aesthetics, and safety. The ITD Noise Policy provides definitions of cost-effectiveness, as well as the post-NEPA process for considering the desires of the community and property owners directly affected by proposed noise mitigation.

Cost effectiveness is determined by multiplying the total number of benefited receptors by $20,000 and subtracting the estimated cost of constructing effective mitigation. If this calculation results in a positive figure, the mitigation measure is cost effective (ITD, 2003). The dollar figure per benefited house and the construction cost information is adjusted every few years.

For noise barriers, ITD currently uses a planning-level cost estimate of $25 per square foot of barrier for barriers less than 0.25 miles in length and $20 per square foot of barrier for longer barriers. All proposed barriers for Alternatives 2 and 3 are less than 0.25 miles in length; therefore, the estimated construction cost for each barrier is determined by multiplying the length times the height of a proposed noise wall by $25 per square foot.

The feasibility and reasonableness of barriers was evaluated for all receptors where noise levels would be at or exceed the ITD noise criteria. Feasible mitigation measures along the SH-75 project corridor include speed limit restrictions and noise barrier construction. A 10-mile-per-hour speed limit reduction was evaluated at all receptors where noise impacts are predicted and where the proposed speed limit was greater than 25 miles per hour. Noise barriers are evaluated at all receptors where noise impacts are predicted. Table 8 summarizes the noise barriers that were evaluated. A discussion of the feasibility and reasonableness of the barriers follows the table.

Table 8 Summary of Noise Barriers Evaluated

Receptor Area	Feasible	Reasonable
A	Not Evaluated	NO
7	NO	Not Evaluated
16	NO	Not Evaluated
29	YES	POSSIBLY
32	YES	POSSIBLY
W	YES	NO
Y	NO	Not Evaluated
AC	YES	NO

7.2.1 Highway 20 Timmerman Junction to Gannett Road

Appendix E contains plan views and mitigation TNM summary sheets for each of the following receptors.

Receptor Area A: Mitigation Not Reasonable

Receptor A is a single house at the south end of the project. It will experience an impact at 67 dBA in the Year 2025. Because it is a single receptor, building a noise wall will not be cost-effective and therefore is not reasonable. A reduction of the speed limit from 55 miles per hour to 45 miles per hour was analyzed but would not achieve a 5 dBA reduction that would qualify it as effective noise mitigation under the ITD Noise Policy. Speed limit reduction is therefore not an effective mitigation for this receptor. Although Alternatives 2 and 3 shift the roadway alignment away from the house, SH-75 will be approximately 60 feet from the house. The noise impact is a result of the increased traffic and this close proximity to the highway.

7.2.2 Gannett Road to Fox Acres Road

Receptor Area 7: Mitigation Not Feasible

Thirty-seven first-row houses within the City of Bellevue will experience an impact at 68 dBA. These houses have direct driveway access onto SH-75 such that building a noise wall will not be feasible. Building a noise wall to benefit these homes would require that their direct access onto SH-75 be eliminated and replaced with access from the rear of these parcels. This would have adverse impacts on the properties behind the receptors and is also not consistent with ITD policy. The ITD Noise Policy states that barriers are not appropriate for dwellings with direct highway access unless relocated access and the barrier could be constructed without exceeding the cost reasonableness criteria. Acquisition of developed properties behind this row of homes to provide alternative access plus the cost of a barrier would likely exceed the cost criteria and therefore would not be feasible. The speed limit is 25 miles per hour in this section and further speed reduction will have minimal noise benefit and a negative impact to mobility. The noise impact is a result of very close proximity of the residences to the roadway, a distance of about 25 feet.

7.2.3 McKercher Boulevard to Elkhorn Road

Receptor Area 16: Mitigation Not Feasible

Receptor 16 represents 9 houses and will experience an impact of 69 dBA from increased traffic on SH-75. A noise wall will not be feasible as these residences have direct driveway access to SH-75. As described above for Receptor 7, provision of alternative access would not be reasonable and would likely exceed the cost effectiveness criteria of the ITD Noise Policy. A speed reduction of 10 miles per hour, from 45 miles per hour to 35 miles per hour, will reduce the noise level to 66 dBA, a 3 dBA reduction. A speed reduction will not meet the 5 dBA effectiveness criteria as defined by the ITD Noise Policy.

Receptor Area 29: Mitigation Feasible, Reasonableness To Be Evaluated

Receptor 29, representing 16 units, will experience an impact of 66 dBA from the increased traffic on SH-75. A noise wall approximately 650 feet long and 10 to 12 feet high, with an area of 6,500 square feet, will provide a 10 dBA reduction 10 feet behind the wall and a 5 dBA reduction at receivers experiencing impacts and at 100 feet back. Nine of the 16 units will experience a 5 dBA or greater noise reduction from the noise wall. To be effective for the entire development, the access road will have to be moved to the northern property line and the wall extended across the current driveway. Movement of the access road may not be feasible.

Based on these 16 units, the allowable cost for this wall is $320,000. The proposed wall at 6,500 square feet at a construction planning cost of $25 per square foot will cost approximately $162,500. Because of the potential wall's location and wall height, the impact of a noise wall on sight distance for vehicles accessing SH-75 needs to be considered during its design.

The barrier is not in conformance with the Blaine County Berm Ordinance and the Scenic Highway designation of SH-75. Full determination of the reasonableness of this barrier is also dependent upon acceptance of the barrier by a majority of affected residents. These determinations would be made during final design of the roadway improvements included in Alternatives 2 and 3. As design and construction are several years away and are dependent upon FHWA approval of a build alternative through this NEPA process and provision of funding for project implementation, resolution of these issues at this phase of project development was not pursued. During design of the project, the ITD Noise Policy outlines a process to determine whether construction of the barrier is reasonable and will proceed. That process entails consultation with local officials and affected property owners.

A ten mile per hour reduction in the speed limit, from 45 miles per hour to 35 miles per hour, will reduce the noise level to 63 dBA, a 3 dBA reduction that would be barely perceptible to the human ear and would not meet the 5-dBA effectiveness criteria. The ITD Noise Policy considers speed restrictions only when they would not create unreasonable delay or hardship on the motoring public, and do not create a potential enforcement problem. Given the function of SH-75 in this location, a speed restriction would increase travel times that the project is intended to improve, and would be difficult to enforce. For these reasons, a speed reduction would not be an appropriate noise mitigation at this location.

Receptor Area 32: Mitigation Feasible, Reasonableness To Be Evaluated

Receptor 32, representing 8 trailer homes, will experience an impact of 67 dBA from the increased traffic on SH-75. A noise wall approximately 610 feet long and eight feet high, with an area of 4,880 square feet, will provide a 10 dBA reduction 10 feet behind the wall and a 6 dBA or greater reduction at receptors up to 100 feet behind the wall. The barrier was modeled at the right of way line between the receptors and SH-75. The allowable cost for this wall is $160,000. The proposed noise wall at 4,880 square feet at a construction planning estimated cost of $25 per square foot will cost approximately $122,000.

Like Receptor 29 discussed above, Receptor 32 Area does not conform to Blaine County's Berm Ordinance and SH-75's Scenic Highway designation. Resolution of this issue and the desires of affected residents will occur during the next phase of project development as discussed above.

A ten mile per hour reduction in the speed limit from 55 miles per hour to 45 miles per hour will reduce the noise level to 64 dBA, a 3 dBA reduction. A speed reduction will not meet the 5 dBA effectiveness criteria.

The speed limit on SH-75 will be reduced from 55 miles per hour to 45 miles per hour by Year 2025.

Receptor Area W: Mitigation Not Reasonable

Receptor W, representing 4 houses (one group of 3 houses and a single house in the northern part of area W), will experience an impact of 68 dBA from the increased traffic on SH-75. A noise wall, 440 feet long and 8 to 10 feet high with an area of 4,000 square feet, will provide a 10 dBA reduction 10 feet behind the wall, and 5 dBA at two of the three houses. A 5 dBA reduction was not attainable 100 feet behind the wall, one of the requirements of an effective noise wall as defined by the ITD Noise Policy. The allowable estimated planning cost for this wall is $60,000. The proposed wall at 4,000 square feet at a construction planning cost of $25 per square foot will cost approximately $100,000. The wall was found to be feasible except for the lack of a 5 dBA reduction at 100 feet behind the wall. The ITD Noise Policy cost-effectiveness requirement is not met at this location for the three houses.

At the single northern house, a noise wall, approximately 350 ft long and 6 to 10 feet high, with an area of 2,750 square feet will provide an 11 dBA reduction at 10 feet behind the wall and a 5 dBA reduction at the house. A reduction of 5 dBA was not achievable at 100 ft behind the wall. The allowable estimated planning cost for this wall is $20,000. The proposed wall at 2750 square feet and an estimated construction cost of $25 per square foot will cost an estimated $68,750. The wall for the single house was found to be feasible except for the lack of a 5 dBA reduction 100 feet behind the wall. The wall does not meet the ITD Noise Policy cost-effectiveness requirement and is therefore not reasonable.

A ten mile per hour reduction in the speed limit from 45 miles per hour to 35 miles per hour will reduce the noise level to 64 dBA, a 4 dBA reduction and would not meet the 5-dBA effectiveness criteria. The ITD Noise Policy considers speed restrictions only when they would not create unreasonable delay or hardship on the motoring public, and do not create a potential enforcement problem. Given the function of SH-75 in this location, a speed restriction would increase travel times that the project is intended to improve, and would be difficult to enforce. For these reasons, a speed reduction would not be an appropriate noise mitigation at this location.

Receptor Area Y: Mitigation Not Feasible

Receptor Y, representing five houses, would experience a noise impact of 68 dBA from increased traffic on SH-75. A noise wall is not feasible at this location because these houses have direct access to SH-75. Building a noise wall to benefit these homes would require that their direct access onto SH-75 be eliminated and replaced with access from the rear of these parcels. This would have adverse impacts on the properties behind the receptors and is also not consistent with ITD policy. The ITD Noise Policy states that barriers will not be appropriate for dwellings with direct highway access unless relocated access and the barrier could be constructed without exceeding the cost reasonableness criteria. Acquisition of developed properties behind this row of homes to provide alternative access plus the cost of a barrier would exceed the cost criteria. and therefore would not be feasible.

A speed reduction of 10 miles per hour from 45 miles per hour to 35 miles per hour would reduce the noise level to 64 dBA, a 4-dBA reduction and would not meet the 5-dBA effectiveness criteria. The ITD Noise Policy considers speed restrictions only when they would not create unreasonable delay or hardship on the motoring public, and do not create a potential enforcement problem. Given the function of SH-75 in this location, a speed restriction would increase travel times that the project is intended to improve, and would be difficult to enforce. For these reasons, a speed reduction would not be an appropriate noise mitigation at this location.

7.2.4 Elkhorn Road to River Street

Receptor Area AC: Mitigation Feasible, Not Reasonable

Receptor AC, representing 10 units, would experience an impact of 68 dBA from increased traffic on SH-75. A noise wall approximately 640 feet long and varying between 4 and 10 feet high with an area of 4,150 square feet would provide a 10-dBA reduction 10 feet behind the wall, and a five-dBA reduction at the 10 units. One hundred feet behind the wall, where the terrain is approximately 20 or more feet below the road grade, has a calculated dBA of 54, and would receive a four-dBA reduction from the proposed wall. The allowable estimated planning cost for this wall is $200,000. The proposed wall at a planning estimated construction cost of $25 per square foot would cost an estimated $103,750. The noise wall would not be feasible because the homes have direct driveway access onto SH-75. Building a noise wall to benefit these homes would require that their direct access onto SH-75 be eliminated and replaced with access from the rear of these parcels. This would have adverse impacts on the properties behind the receptors and is also not consistent with ITD policy. The ITD Noise Policy states that barriers will not be appropriate for dwellings with direct highway access unless relocated access and the barrier could be constructed without exceeding the cost reasonableness criteria. Acquisition of developed properties behind this row of homes to provide alternative access plus the cost of a barrier would exceed the cost criteria. and therefore would not be feasible.

A 10 mile-per-hour reduction in the speed limit, from 35 miles per hour to 25 miles per hour, would reduce the noise level to 64 dBA, a four-dBA reduction and would not meet the 5-dBA effectiveness criteria. The ITD Noise Policy considers speed restrictions only when they would not create unreasonable delay or hardship on the motoring public, and do not create a potential enforcement problem. Given the function of SH-75 in this location, a speed restriction would increase travel times that the project is intended to improve, and would be difficult to enforce. For these reasons, a speed reduction would not be an appropriate noise mitigation at this location.

7.2.5 River Street to Saddle Road

No traffic noise impacts are found to occur within this segment for either of the alternatives.

7.3 CONSTRUCTION NOISE MITIGATION

Construction noise could be reduced by using enclosures or walls to surround noisy equipment, installing mufflers on engines, substituting quieter equipment or construction methods, minimizing times of operation, and locating equipment farther from sensitive receptors. To reduce construction noise at nearby receptors, the following mitigation measures could be incorporated into construction plans and contractor specifications:

- Limiting construction activities to between 7 a.m. and 10 p.m. will reduce construction noise levels during sensitive nighttime hours;
- Equipping construction equipment engines with adequate mufflers, intake silencers, and engine enclosures will reduce their noise by 5 to 10 dBA (U.S. EPA, 1971);
- Specifying the quietest equipment available will reduce noise by 5 to 10 dBA;
- Turning off construction equipment during prolonged periods of nonuse will eliminate noise from construction equipment during those periods;
- Requiring contractors to maintain all equipment and to train their equipment operators will reduce noise levels and increase efficiency of operation;
- Locating stationary equipment away from receiving properties will decrease noise from that equipment as the distance increases;
- Constructing temporary noise barriers or curtains around stationary equipment that must be located close to residences will decrease noise levels at nearby sensitive receptors.

REFERENCES

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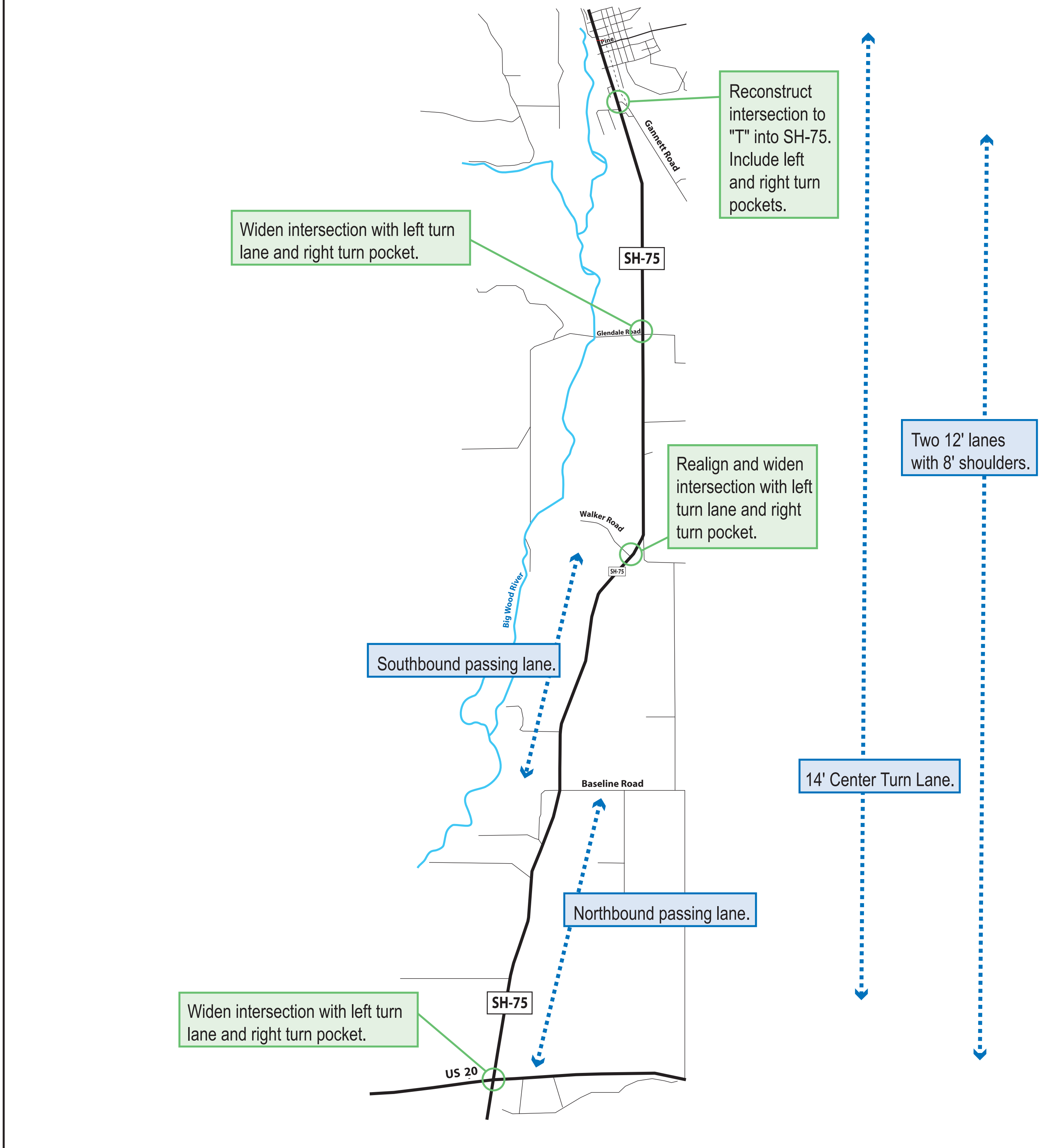
APPENDIX A
ALTERNATIVES 2 AND 3 PROPOSED IMPROVEMENTS



SH-75 Timmerman to Ketchum Draft EIS

Project No. STP-F-2392(035)
Key No. 3077

Title

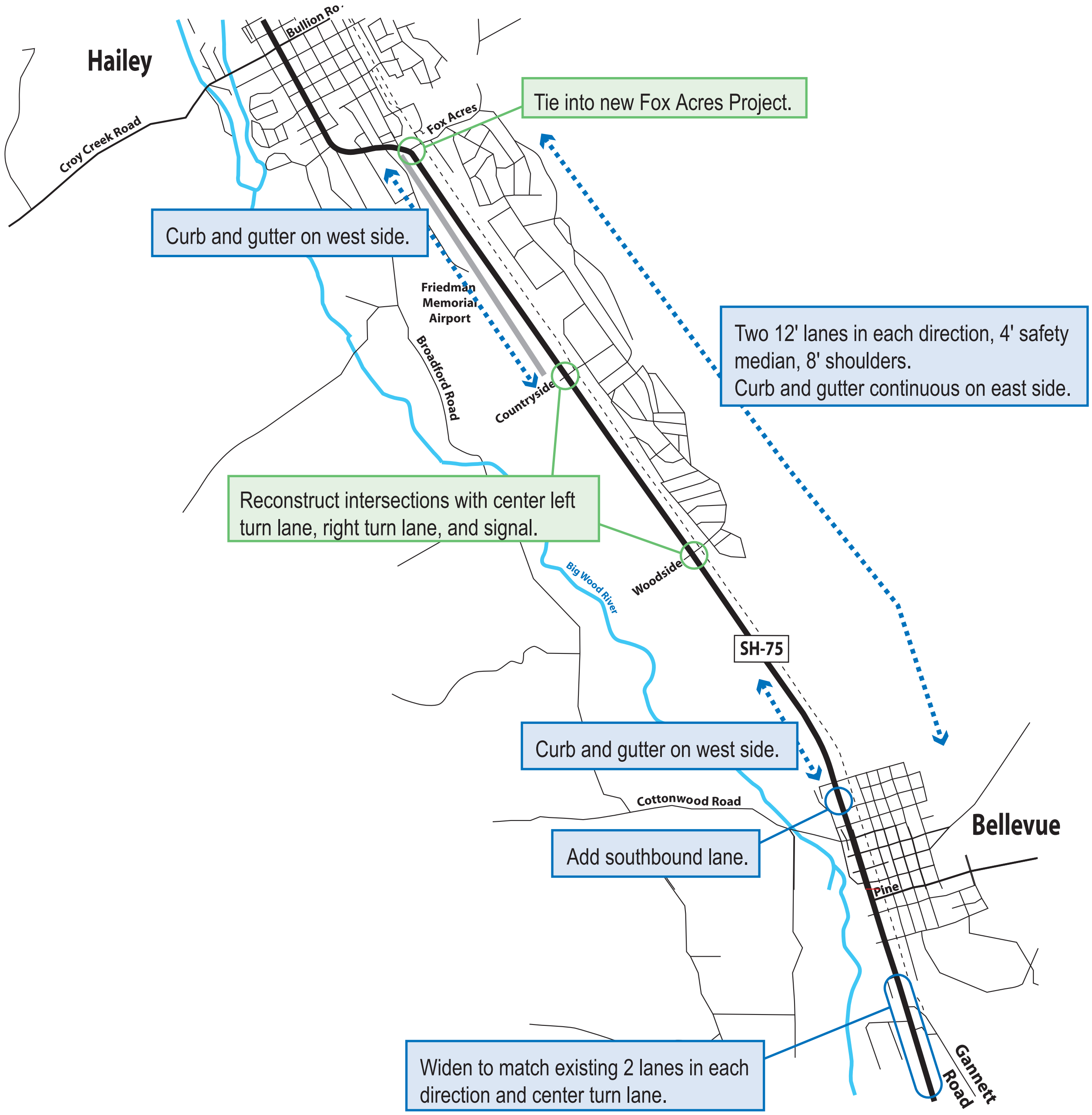
SH-75 Alternatives 2 & 3: Proposed Improvements

Segment: US-20 to Gannett Road

Figure

A-1

Date: *May 2005*



Scale in Miles

0 0.5 1

N

SH-75 Timmerman to Ketchum Draft EIS

Project No. STP-F-2392(035)
Key No. 3077

Title

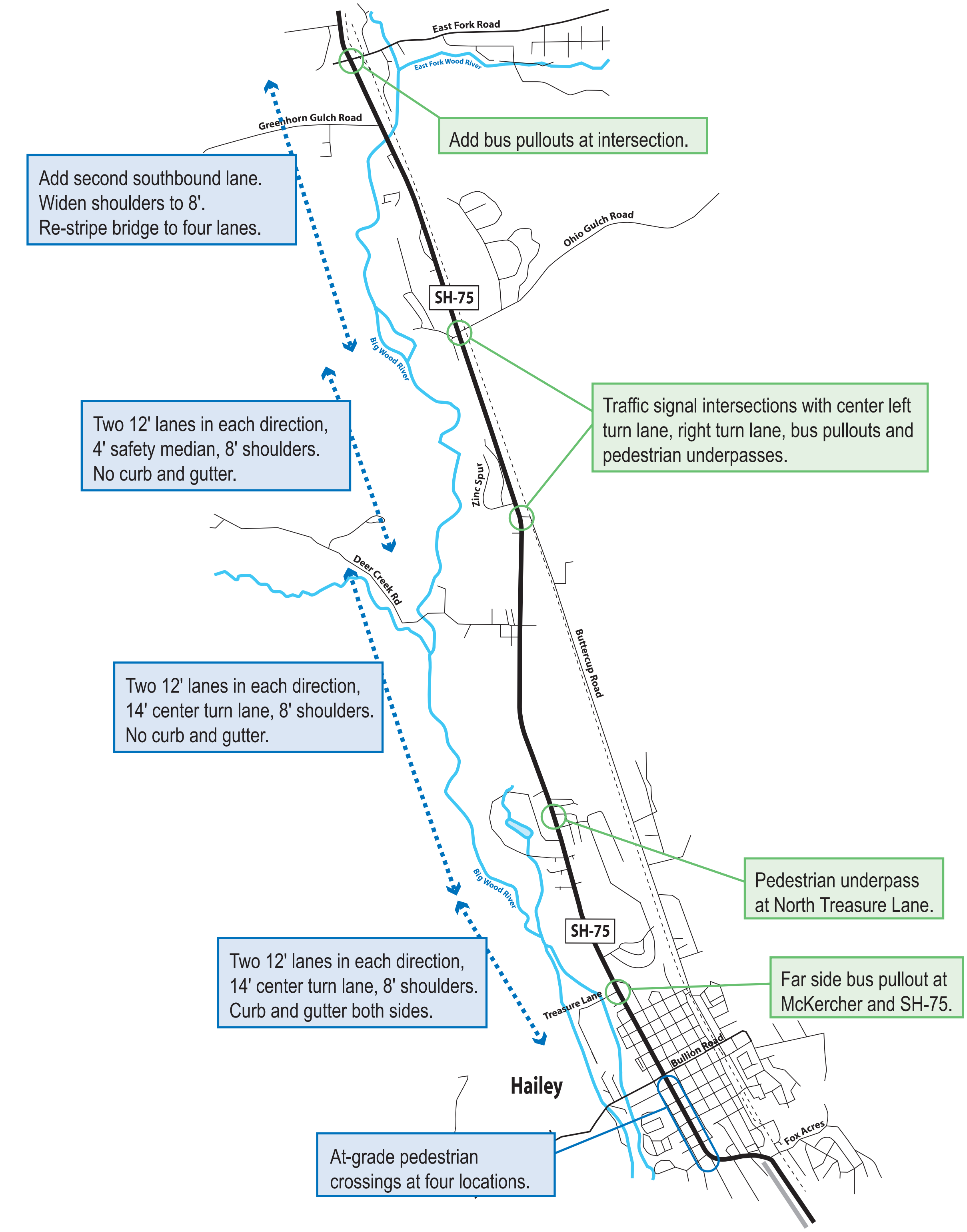
SH-75 Alternatives 2 & 3: Proposed Improvements

Segment: Gannett Road to Fox Acres

Figure

A-2

Date: *May 2005*



Scale in Miles

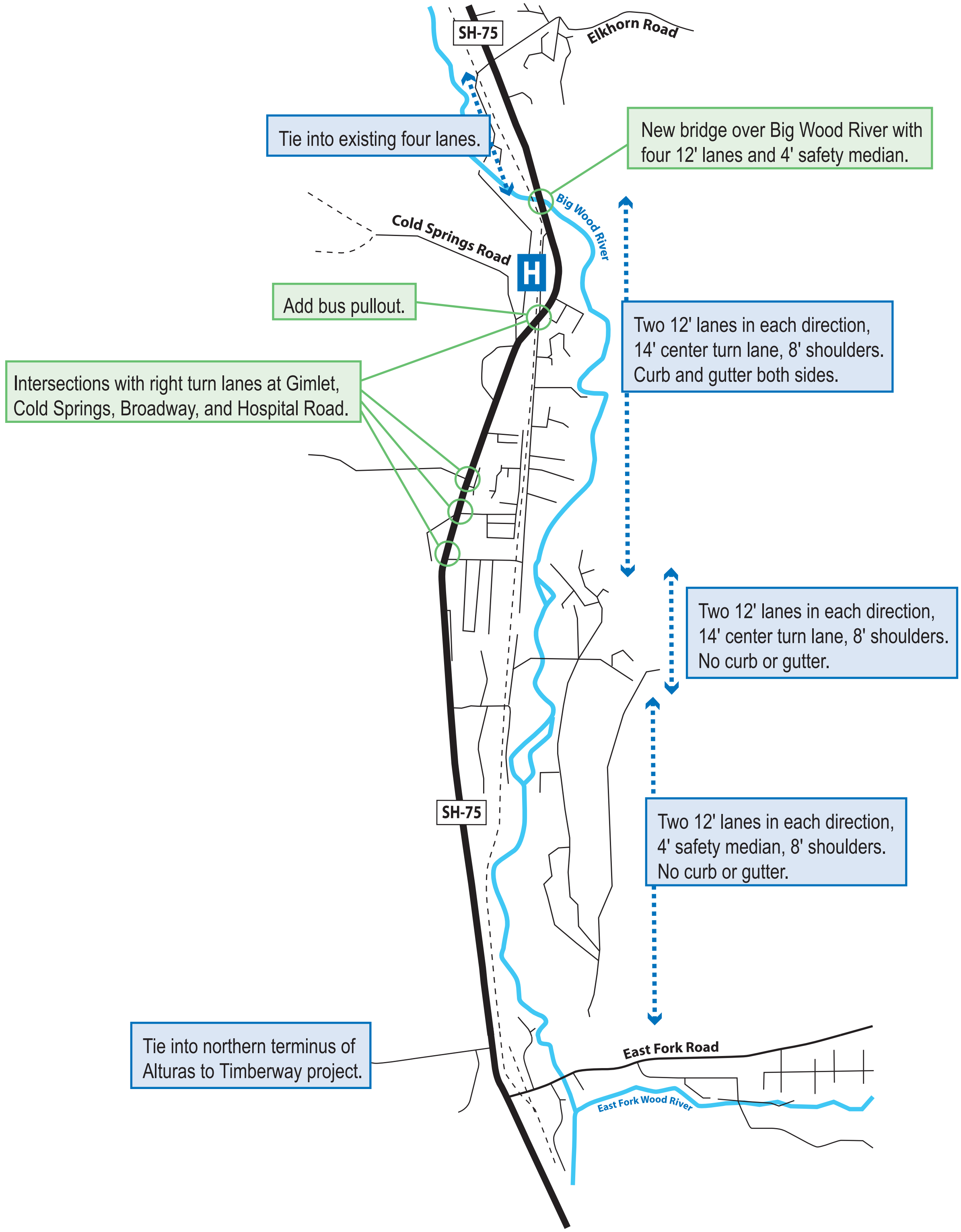
0 0.5 1

N

SH-75 Timmerman to Ketchum Draft EIS

Project No. STP-F-2392(035)
Key No. 3077

Title	Figure
SH-75 Alternatives 2 & 3: Proposed Improvements	A-3
Segment: Fox Acres to East Fork Rd.	Date: *May 2005*



Scale in Miles

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N

SH-75 Timmerman to Ketchum Draft EIS

Project No. STP-F-2392(035)
Key No. 3077

Title

SH-75 Alternatives 2 & 3: Proposed Improvements

Segment: East Fork to Elkhorn Road

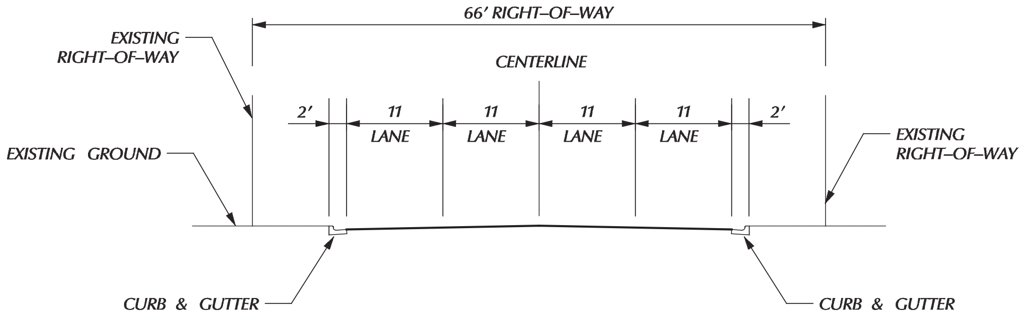
Figure

A-4

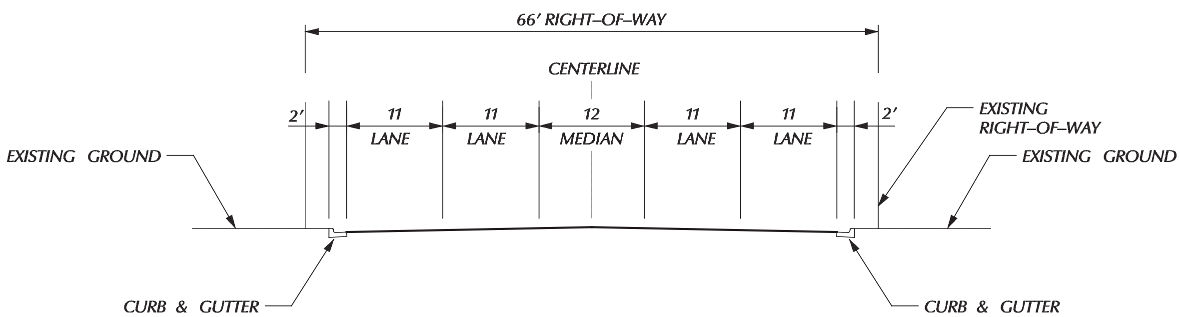
Date: *May 2005*

Alternatives 2 and 3 Typical Sections: Elkhorn to Serenade

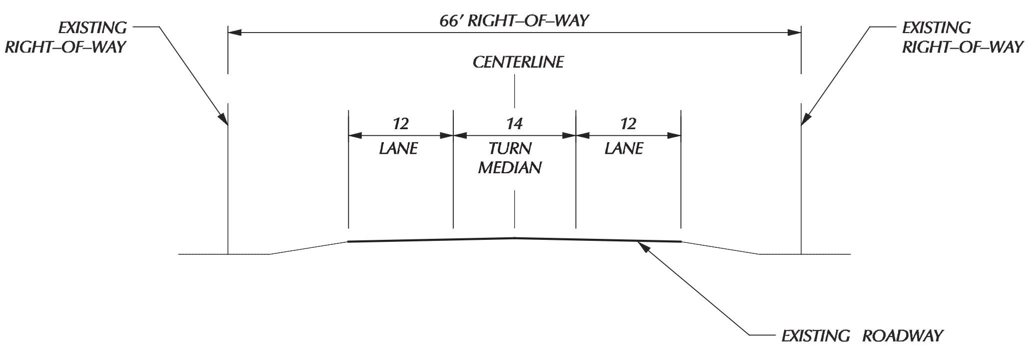
Cross Section 1



Cross Section 2



Cross Section 3



Note:
All cross-sections are viewed in a northbound direction.

NOT TO SCALE

SH-75 Timmerman to Ketchum Draft EIS

Project No. STP-F-2392(035)
Key No. 3077

Title

Alternatives 2 and 3
Typical Cross-Sections
Elkhorn to Serenade

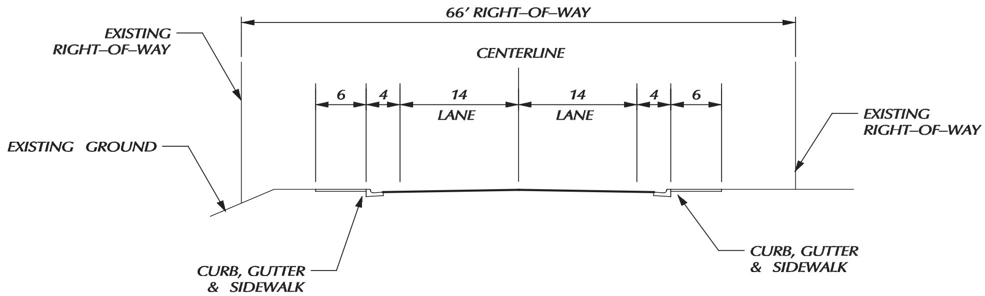
Figure

A-5

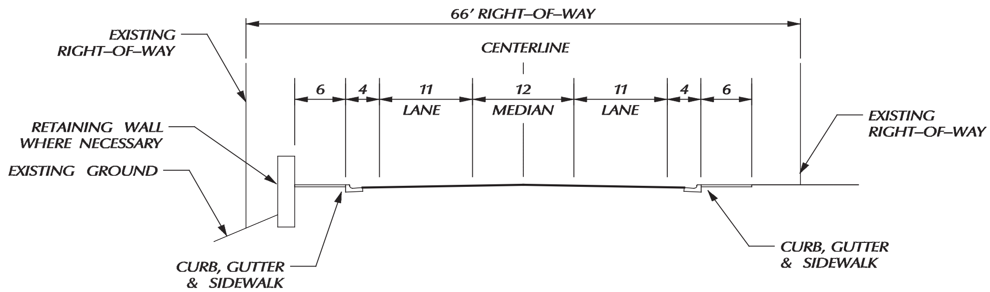
Date: *May 2005*

Alternatives 2 and 3 Typical Sections: Serenade to River Street

Cross Section 1



Cross Section 2



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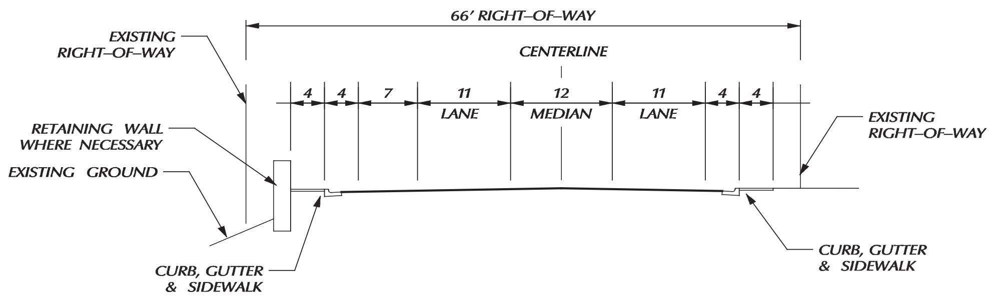
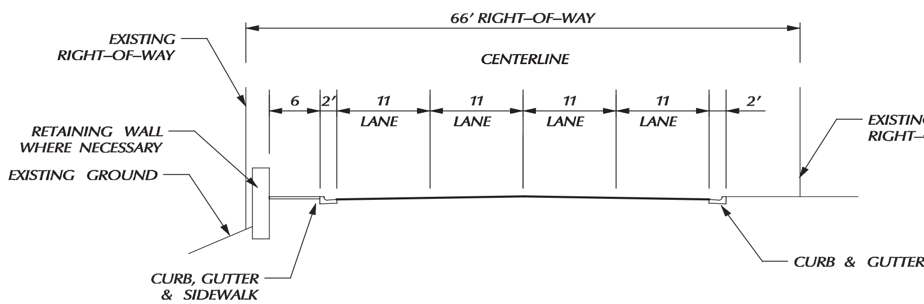


Cross Section 4



Note:
All cross-sections are viewed in a northbound direction.

NOT TO SCALE

SH-75 Timmerman to Ketchum Draft EIS

Project No. STP-F-2392(035)
Key No. 3077

Title

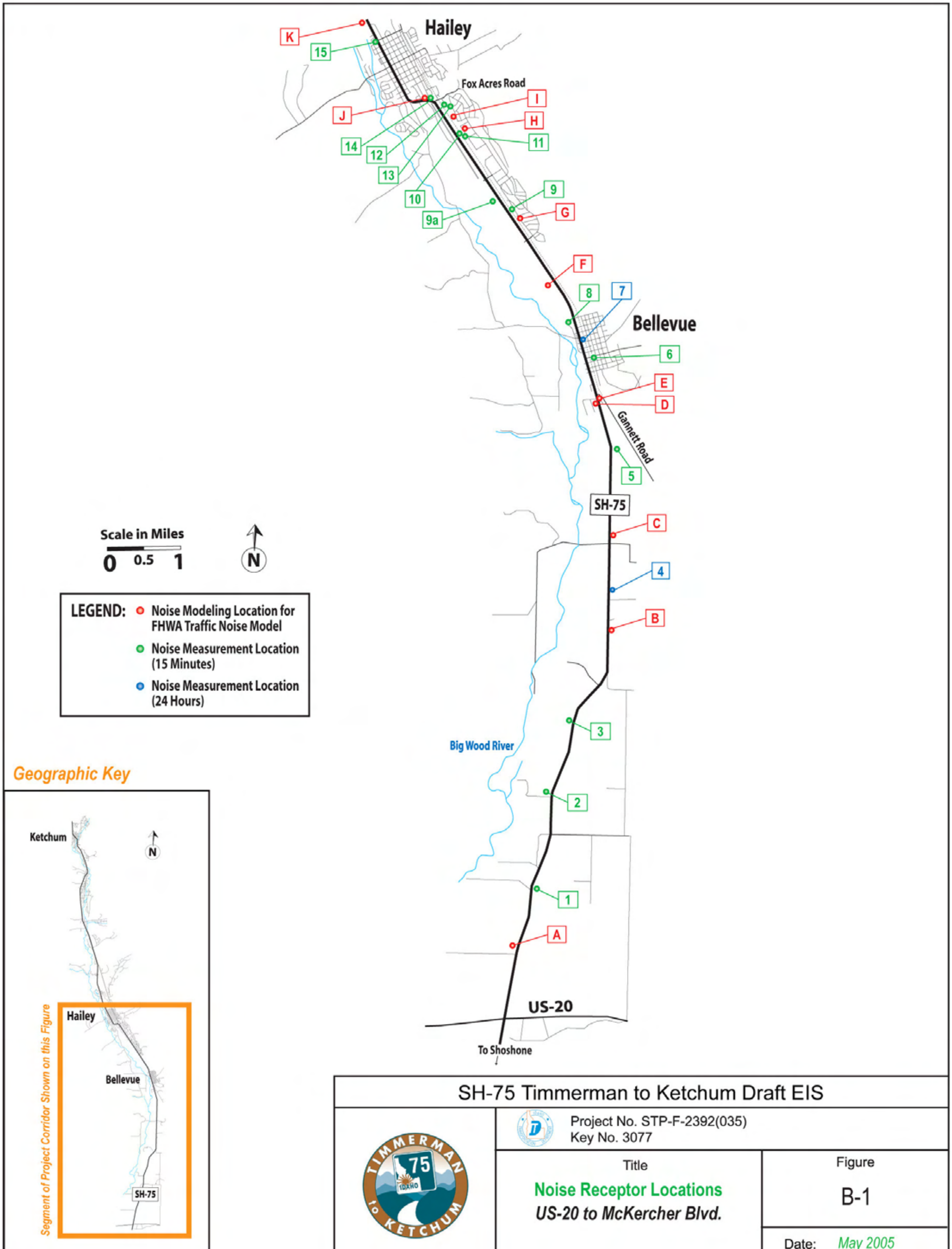
Alternatives 2 and 3
Typical Cross-Sections
Serenade to River Street

Figure

A-6

Date: *May 2005*

APPENDIX B
NOISE MEASUREMENT AND MODELING LOCATIONS



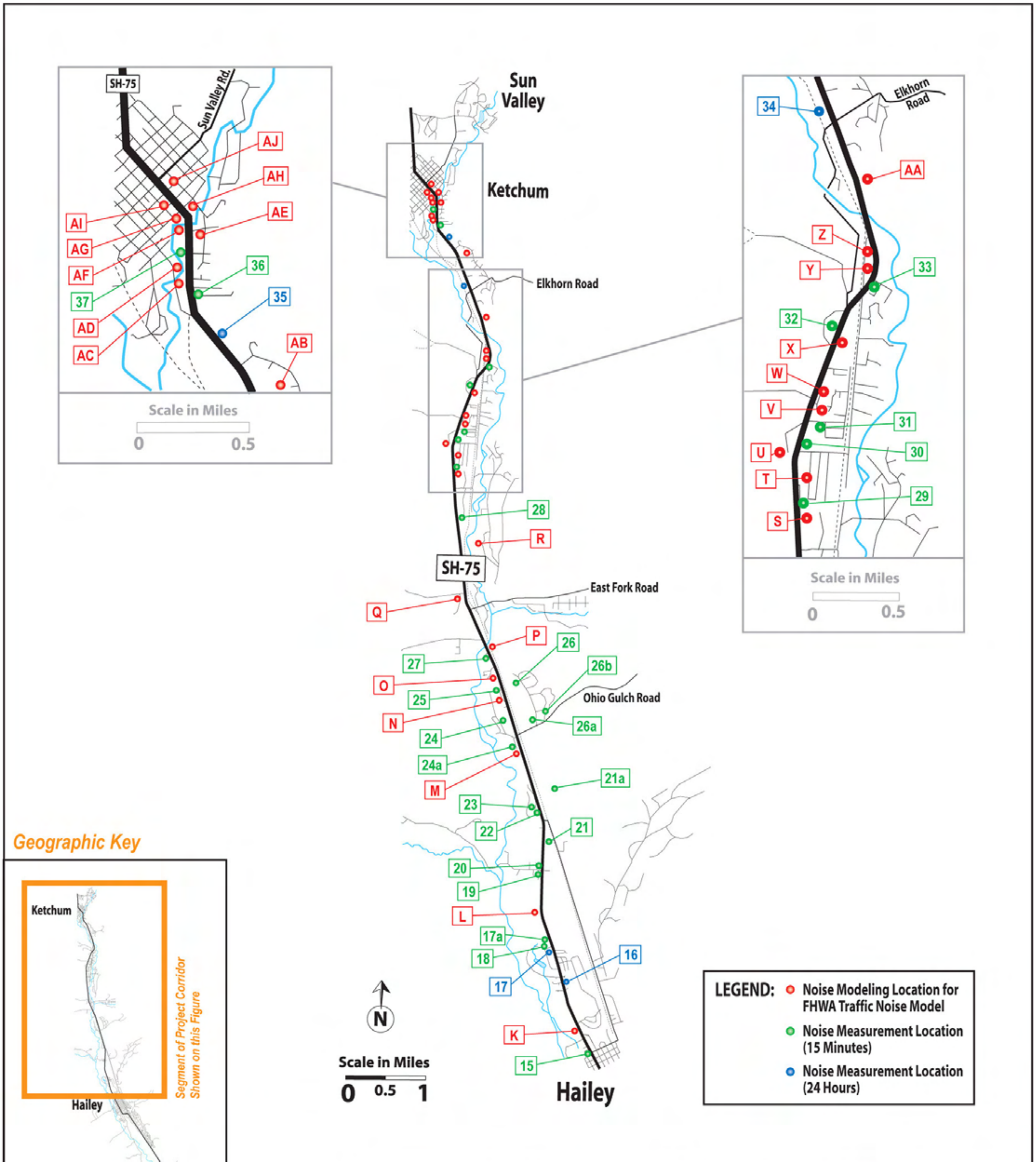
SH-75 Timmerman to Ketchum Draft EIS

Project No. STP-F-2392(035)
Key No. 3077

Title
Noise Receptor Locations
US-20 to McKercher Blvd.

Figure
B-1

Date: *May 2005*



SH-75 Timmerman to Ketchum Draft EIS

Project No. STP-F-2392(035)
Key No. 3077

Title

Noise Receptor Locations

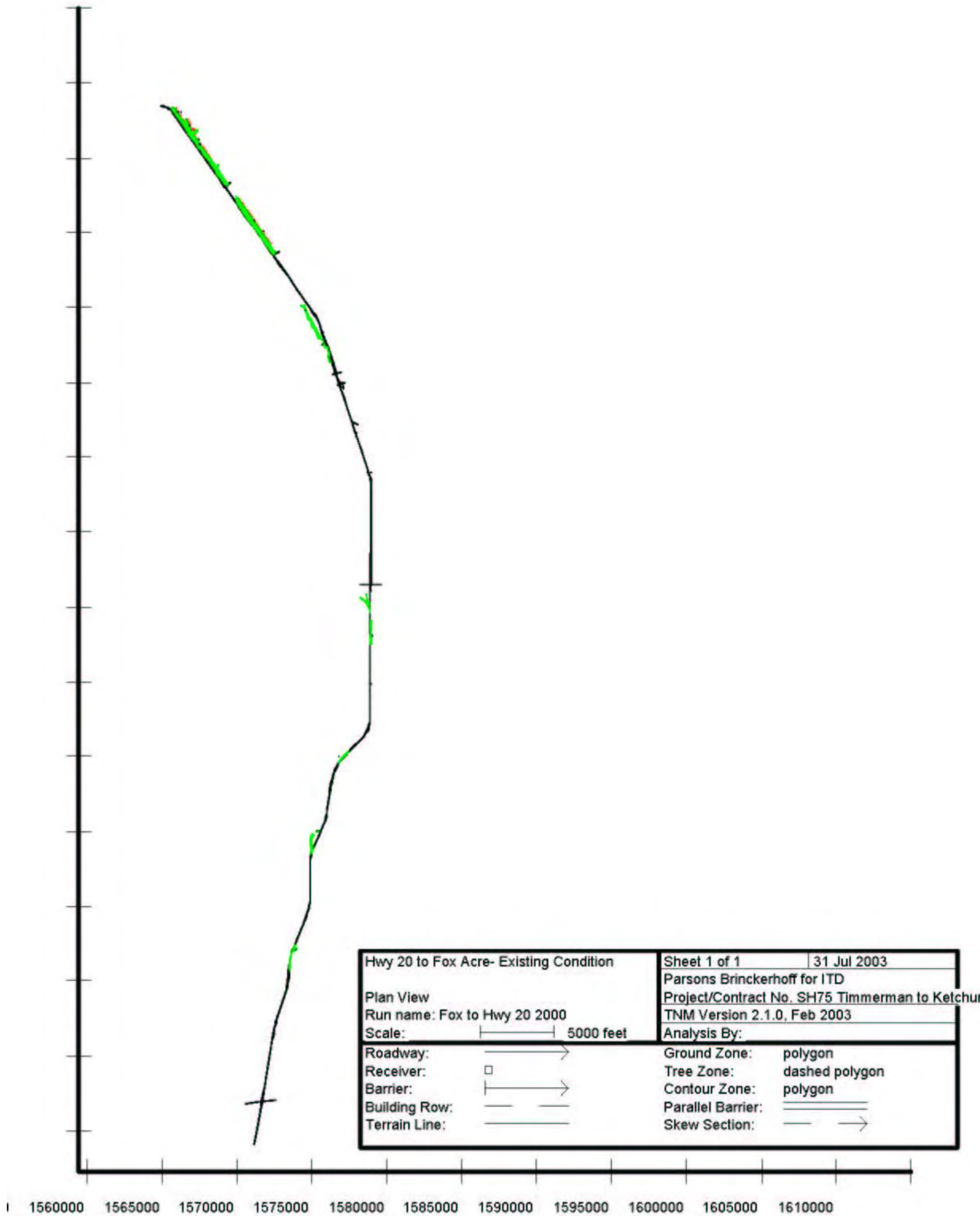
McKercher Blvd. to Saddle Road

Figure

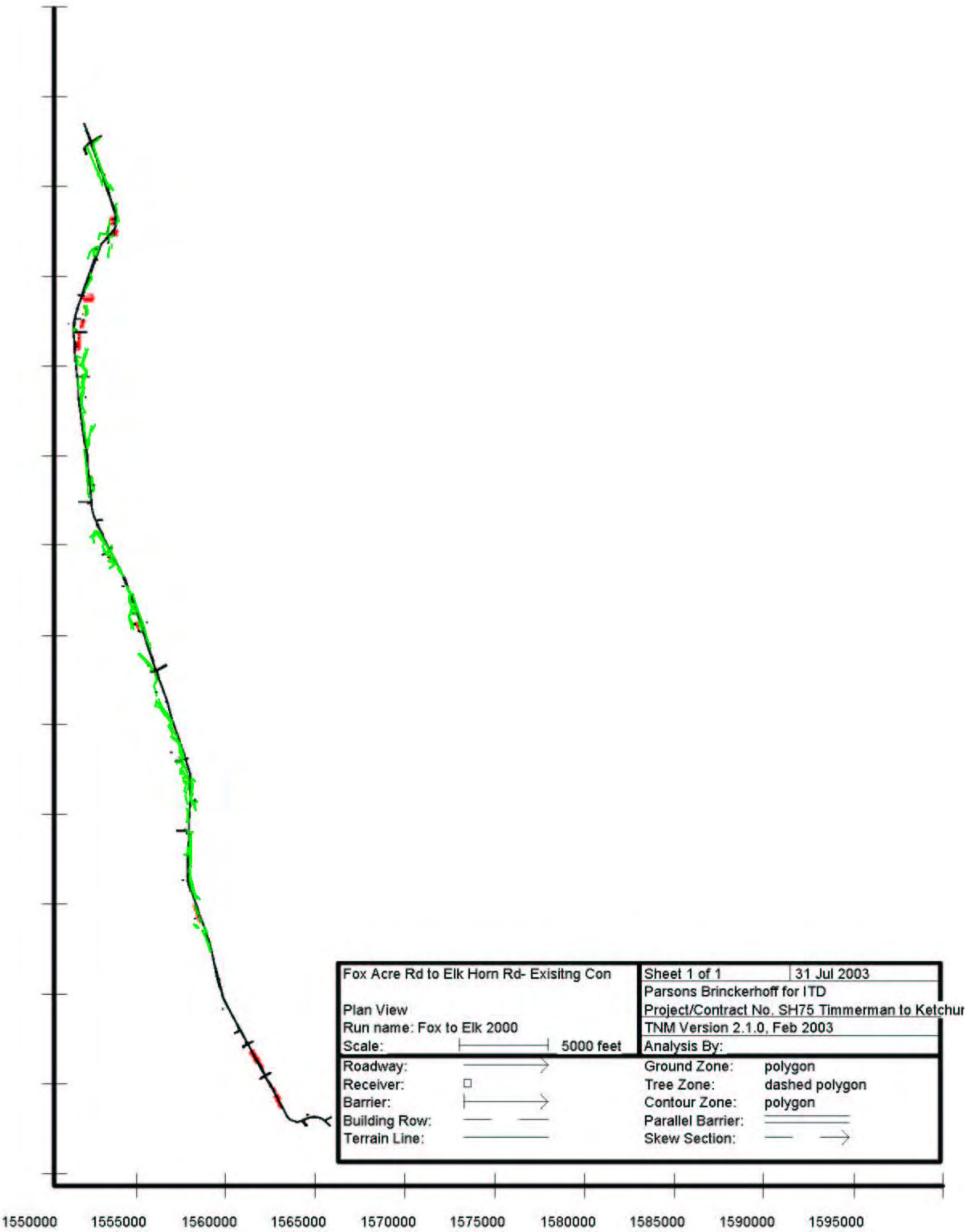
B-2

Date: May 2005

APPENDIX C
PLAN VIEW REPRESENTATION OF THE TRAFFIC NOISE MODEL



1560000
1565000
1570000
1575000
1580000
1585000
1590000
1595000
1600000
1605000
1610000
Hwy 20 to Fox Acre- Existing Condition
Plan View
Run name: Fox to Hwy 20 2000
Scale: 5000 feet
Sheet 1 of 1
31 Jul 2003
Parsons Brinckerhoff for ITD
Project/Contract No. SH75 Timmerman to Ketchur
TNM Version 2.1.0, Feb 2003
Analysis By:
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone: polygon
Tree Zone: dashed polygon
Contour Zone: polygon
Parallel Barrier:
Skew Section:



Fox Acre Rd to Elk Horn Rd- Exisitng Con
Plan View
Run name: Fox to Elk 2000
Scale:
5000 feet
Sheet 1 of 1
31 Jul 2003
Parsons Brinckerhoff for ITD
Project/Contract No. SH75 Timmerman to Ketchur
TNM Version 2.1.0, Feb 2003
Analysis By:
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone:
polygon
Tree Zone:
dashed polygon
Contour Zone:
polygon
Parallel Barrier:
Skew Section:
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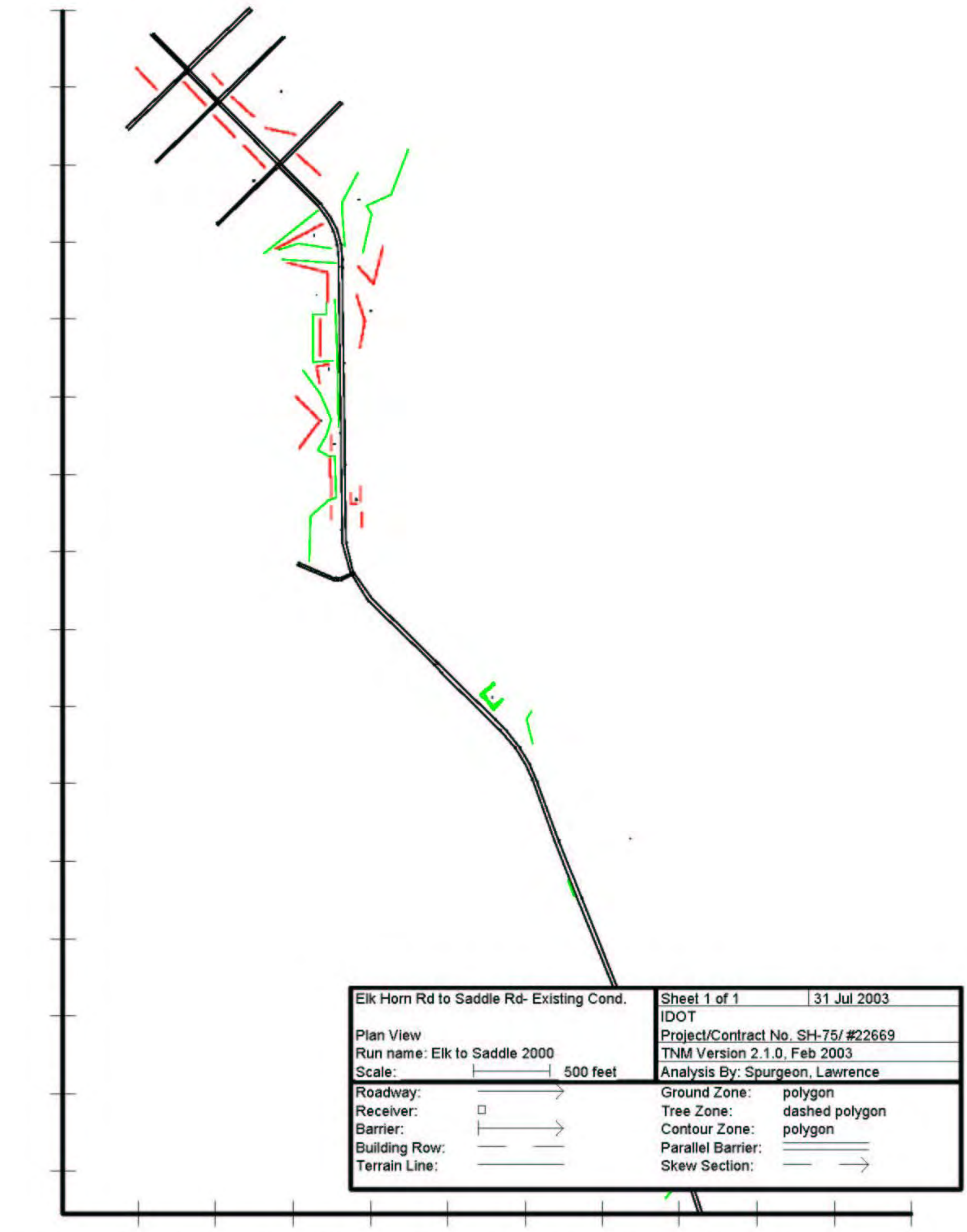
1595000


Elk Horn Rd to Saddle Rd- Existing Cond.
Plan View
Run name: Elk to Saddle 2000
Scale: 500 feet
Sheet 1 of 1
31 Jul 2003
IDOT
Project/Contract No. SH-75/ #22669
TNM Version 2.1.0, Feb 2003
Analysis By: Spurgeon, Lawrence
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone: polygon
Tree Zone: dashed polygon
Contour Zone: polygon
Parallel Barrier:
Skew Section:
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1544500
1545000
1545500
1546000
1546500
1547000
1547500
1548000
1548500
1549000

APPENDIX D
NOISE MODEL TRAFFIC DATA

INPUT: TRAFFIC DATA FOR LAeq1h Volumes

PROJECT: SH 75 Timmerman to Ketchum, Project #STP-F-2392(035), Key # 3077 — TNM 2.1

RUN: Alternative 3 (HOV)

	Autos		MTrucks		HTrucks		Transit Buses	
	Vehicles	Speed	Vehicles	Speed	Vehicles	Speed	Vehicles	Speed
Roadway Name	veh/hr	mph	veh/hr	mph	veh/hr	mph	veh/hr	mph
Hwy 75 SB (Fox Acre to Country Side)	368	35	26	35	6	35		
Hwy 20 EB (E of 75)	83	55	10	55	2	55		
Glendale Rd	122	35	15	35	4	35		
Gannett-Picabo Rd	245	35	9	35	2	35		
E. Pine St	120	25	0	0	0	0		
Elm Street	40	25	0	0	0	0		
Hwy 20 WB (E of 75)	43	55	5	55	1	55		
Woodside WB	99	25	7	25	2	25		
Woodside Rd EB	105	25	7	25	2	25		
Country Side WB	144	25	10	25	2	25		
Country Side Rd EB	24	25	2	25	0	0		
Main St Bellevue SB	355	25	25	25	6	25		
Hwy 75 SB (Gannett to Glendale N end)	280	25	34	25	8	25		
Alley	30	10	0	0	0	0		
Hwy 75 NB(Glendale to Gannett Rd S End)	612	55	74	55	17	55		
Hwy 75 NB(Glendale to Gannett Rd SN End)	612	35	74	35	17	35		
Main St Bellevue NB	1113	35	78	35	18	35		
Hwy 75 NB (Woodside to Country Side)	1092	55	77	55	18	55		
Hwy 75 NB (Country SIde to Fox Acre)	1316	55	93	55	22	55		
Hwy 75 SB (Woodside to N. Bellevue)	355	55	25	55	6	55		
Hwy 75 SB (Country SIde to Woodside)	449	55	32	55	7	55		
Hwy 75 NB (N. Bellevue to Woodside)	1113	45	78	45	18	45		
Hwy 75 SB (Glendale to Hwy 20)	147	55	18	55	4	55		
Hwy 75 NB(S of Hwy20)	521	55	63	55	15	55		
Hwy 20 EB (W of 75)	51	55	6	55	1	55		
Hwy 20 WB (W of 75)	24	55	3	55	1	55		
Hwy 75 NB(Hwy20 to Glendale)	602	55	73	55	17	55		
Hwy 75 SB (Glendale to Hwy 20)	147	55	18	55	4	55		
Hwy 75 SB (S of Hwy 20)	121	55	8	55	2	55		
Hwy 75 SB (Gannett to Glendale S Ebd)	280	55	34	55	8	55		
Hwy 75 NB (N. Bellevue to Woodside)	1113	55	78	55	18	55		
Hwy 75 SB (Woodside to N. Bellevue)	355	55	25	55	6	55		
Hwy 75 NB (Woodside to Country Side)	1092	55	77	55	18	55		
Hwy 75 SB (Country SIde to Woodside)	449	55	32	55	7	55		
Hwy 75 SB (Fox Acre to Country Side)	368	55	26	55	6	55		
Hwy 75 NB (Country SIde to Fox Acre)	1316	55	93	55	22	55		
Hwy 75 NB (Country SIde to Fox Acre)-2	1316	35	93	35	22	35		
Hwy 75 SB (Fox Acre to Country Side)-2	368	35	26	35	6	35		
Main St Bellevue NB-2	1113	25	78	25	18	25		
Hwy 75 SB (Woodside to N. Bellevue)-2	355	45	25	45	6	45		
Elk Horn Road EB	12	30	1	30	0	0	0	0

Roadway Name	Autos Vehicles veh/hr	Autos Speed mph	MTrucks Vehicles veh/hr	MTrucks Speed mph	HTrucks Vehicles veh/hr	HTrucks Speed mph	Transit Buses Vehicles veh/hr	Transit Buses Speed mph
Fox Acre Rd WB	269	25	19	25	4	25	0	0
Fox Acre Rd EB	282	25	20	25	5	25	0	0
Airport Way NB	62	25	4	25	1	25	0	0
Airport Way SB	123	25	9	25	2	25	0	0
Bullion St WB	22	25	2	25	0	0	0	0
Bullion St EB	69	25	5	25	0	0	0	0
Myrtle St WB	95	25	7	25	2	25	0	0
Myrtle St EB	36	25	3	25	0	0	0	0
Empty Saddle Rd EB	1	25	0	0	0	0	0	0
Empty Saddle Rd WB	6	25	0	0	0	0	0	0
Zinc Spur Rd WB	54	25	5	25	0	0	0	0
Zinc Spur Rd EB	15	25	0	0	0	0	0	0
Deer Creek Rd EB	13	25	0	0	0	0	0	0
Deer Creek Rd WB	11	25	0	0	0	0	0	0
Ohio Gulch WB	52	25	5	25	0	0	0	0
Ohio Gulch EB	16	25	1	25	0	0	0	0
Alturus Way WB	21	25	2	25	0	0	0	0
Alturus Way EB	42	25	3	25	0	0	0	0
Timber Way EB	97	35	7	35	2	35	0	0
Timber Way WB	157	35	11	35	3	35	0	0
East Fork WB	140	35	10	35	2	35	0	0
East Fork EB	18	35	1	35	0	0	0	0
Greenhorn Gulch Rd EB	29	30	2	30	0	0	0	0
Greenhorn Gulch Rd WB	12	30	1	30	0	0	0	0
Gimlet Rd WB	175	35	12	35	3	35	0	0
Gimlet Rd EB	132	35	9	35	2	35	0	0
Rainbow Rd WB	176	35	12	35	3	35	0	0
Rainbow Rd EB	110	35	8	35	2	35	0	0
Cold Springs Rd WB	88	35	6	35	2	35	0	0
Cold Springs Rd EB	68	35	5	35	1	35	0	0
Broadway North WB	23	35	2	35	0	0	0	0
Broadway North EB	60	35	4	35	1	35	0	0
Clear Creek RD WB	23	35	2	35	0	0	0	0
Clear Creek Rd EB	52	35	4	35	0	0	0	0
Hwy 75 NB (Fox Acre - Airport Way)	1316	35	93	35	22	35	0	0
Hwy 75 SB (north of Elk Horn)	305	35	21	35	5	35	0	0
Elk Horn Rd WB	61	30	4	30	1	30	0	0
Hwy 75 NB (North of Elk Horn)	1307	35	92	35	22	35	0	0
Hwy 75 NB (Clear Ck - Brdway North) - HOV La	289	45	0	0	0	0	3	45
Hwy 75 SB (S. Brdway - Cold Springs)	190	45	14	45	3	45	0	0
Hwy 75 SB (Clear Creek - S. Brdway)	190	45	14	45	3	45	0	0
Hwy 75 NB (Cold Springs - S. Brdway)-HOV	289	45	0	0	0	0	3	45
Hwy 75 NB (Timber Way - Rainbow Rd)-HOV	304	45	0	0	0	0	3	45
Hwy 75 SB (Timber Way - East Fork)	174	45	12	45	3	45	0	0
Hwy 75 NB (Alturus Way - Greenhorn)	1374	45	97	45	23	45	0	0
Hwy 75 SB (Alturus Way - Ohio Gulch)	176	45	13	45	3	45	0	0
Hwy 75 SB (Ohio Gulch - Zinc Spur)	176	45	13	45	3	45	0	0
Hwy 75 NB (Deer Creek - Zinc Spur)-HOV Lane	282	45	0	0	0	0	3	45
Hwy 75 NB (Empty Saddle - Deer Creek)-HOV	282	45	0	0	0	0	3	45

Roadway Name	Autos Vehicles veh/hr	Speed mph	MTrucks Vehicles veh/hr	Speed mph	HTrucks Vehicles veh/hr	Speed mph	Transit Buses Vehicles veh/hr	Speed mph
Hwy 75 SB (Empty Saddle - Myrtle)	209	25	15	25	4	25	0	0
Hwy 75 NB (Airport Way - Bullion)	1073	25	76	25	18	25	0	0
Hwy 75 SB (Airport Way - Fox Acre)	294	35	21	35	5	35	0	0
Hwy 75 NB (Bullion - Myrtle)	1087	25	77	25	18	25	0	0
Hwy 75 NB (Myrtle - Empty Saddle)	1304	25	92	25	21	25	0	0
Hwy 75 SB (Bullion - Airport Way)	383	25	27	25	6	25	0	0
Hwy 75 SB (Myrtle - Bullion)	415	25	29	25	7	25	0	0
Hwy 75 SB (Deer Creek - Empty Saddle)	194	45	14	45	3	45	0	0
Hwy 75 SB (Zinc Spur - Deer Creek)	176	45	13	45	3	45	0	0
Hwy 75 NB (Zinc Spur - Ohio Gulch)- HOV	282	45	0	0	0	0	3	45
Hwy 75 NB (Ohio Gulch - Alturus Way))-HOV	289	45	0	0	0	0	3	45
Hwy 75 NB (Greenhorn - East Fork)-HOV Lane	292	45	0	0	0	0	3	45
Hwy 75 SB (Greenhorn - Alturus Way)	178	45	13	45	3	45	0	0
Hwy 75 NB (East Fork - Timber Way)-HOV Lane	294	45	0	0	0	0	3	45
Hwy 75 SB (East Fork - Greenhorn)	176	45	13	45	3	45	0	0
Hwy 75 NB (Rainbow Rd - Gimlet Rd)	304	45	0	0	0	0	3	45
Hwy 75 SB (Rainbow Rd - Timber Way)	179	45	13	45	3	45	0	0
Hwy 75 NB (Gimlet - Cold Springs)	304	45	0	0	0	0	3	45
Hwy 75 SB (Gimlet Rd - Rainbow Rd)	176	45	13	45	3	45	0	0
Hwy 75 SB (Cold Springs - Gimlet)	187	45	13	45	3	45	0	0
Hwy 75 SB (Brdway North - Clear Crk)	193	45	14	45	3	45	0	0
Hwy 75 NB (Brdway North - Elk Horn)- HOV LAN	289	35	0	0	0	0	3	35
Hwy 75 SB (Elk Horn - Brdway North)	144	35	10	35	3	35	0	0
Hwy 75 SB (Elk Horn - Brdway North) - HOV Lar	144	35	10	35	3	35	0	0
Hwy 75 SB (Elk Horn - Brdway North)-HOV Lane	209	25	15	25	4	25	0	0
Hwy 75 SB (Deer Creek - Empty Saddle) - HOV	194	45	14	45	3	45	0	0
Hwy 75 SB (Gimlet Rd - Rainbow Rd)-HOV	176	45	13	45	3	45	0	0
Hwy 75 SB (Greenhorn - Alturus Way) - HOV	178	45	13	45	3	45	0	0
Hwy 75 SB (Timber Way - East Fork)-HOV	174	45	12	45	3	45	0	0
Hwy 75 SB (Rainbow Rd - Timber Way) - HOV	179	45	13	45	3	45	0	0
Hwy 75 SB (Cold Springs - Gimlet) - HOV	187	45	13	45	3	45	0	0
Hwy 75 SB (Clear Creek - S. Brdway)-HOV	190	45	14	45	3	45	0	0
Hwy 75 SB (Brdway North - Clear Crk)-HOV lane	193	45	14	45	3	45	0	0
Hwy 75 SB (Airport Way - Fox Acre)-2	294	35	21	35	5	35	0	0
Hwy 75 NB (Fox Acre - Airport Way)-2	1100	35	78	35	18	35	0	0
Hwy 75 SB (Empty Saddle - Myrtle)-2	417	25	29	25	7	25	0	0
Hwy 75 SB (Greenhorn - Alturus Way)-2	178	45	13	45	3	45	0	0
Hwy 75 SB (Timber Way - East Fork)-2	174	45	12	45	3	45	0	0
Hwy 75 SB (East Fork - Greenhorn)	176	45	13	45	3	45	0	0
Hwy 75 SB (Rainbow Rd - Timber Way)	179	45	13	45	3	45	0	0
Hwy 75 SB (Rainbow Rd - Timber Way)-HOV La	179	45	13	45	3	45	0	0
Hwy 75 SB (Elk Horn - Brdway North)-HOV Lane	144	35	10	35	3	35	0	0
Hwy 75 SB (Elk Horn - Brdway North)	144	35	10	35	3	35	0	0
Hwy 75 SB (north of Elk Horn)	305	35	21	35	5	35	0	0
Hwy 75 NB (Myrtle - Empty Saddle) - Inside Lan	1038	25	80	25	23	25	0	0
Hwy 75 NB (Myrtle - Empty Saddle)-HOV Lane	282	25	0	0	0	0	3	25
Hwy 75 NB (Deer Creek - Zinc Spur)- Inside Lan	1042	45	80	45	23	45	0	0
Hwy 75 NB (Zinc Spur - Ohio Gulch) - Inside	1063	45	80	45	23	45	0	0
Hwy 75 NB (Ohio Gulch - Alturus Way) Inside	1075	45	83	45	24	45	0	0

Roadway Name	Autos Vehicles veh/hr	Autos Speed mph	MTrucks Vehicles veh/hr	MTrucks Speed mph	HTrucks Vehicles veh/hr	HTrucks Speed mph	Transit Buses Vehicles veh/hr	Transit Buses Speed mph
Hwy 75 NB (Deer Creek - Zinc Spur)-Inside Lane	1083	45	83	45	24	45	0	0
Hwy 75 NB (Rainbow Rd - Gimlet Rd) - Insidr	1116	45	86	45	25	45	0	0
Hwy 75 NB (Gimlet - Cold Springs) - Inside	1116	45	86	45	25	45	0	0
Hwy 75 NB (Cold Springs - S. Brdway) - Inside	1062	35	82	35	23	35	0	0
Hwy 75 NB (Clear Ck - Brdway North)-Inside	1038	45	80	45	23	45	0	0
Hwy 75 NB (Brdway North - Elk Horn) - Inside	1038	45	80	45	23	45	0	0
Hwy 75 NB (Deer Creek - Zinc Spur)-HOV Lane	282	45	0	0	0	0	3	45
Hwy 75 NB (Zinc Spur - Ohio Gulch)-HOV LANE	282	45	0	0	0	0	3	45
Hwy 75 NB (Zinc Spur - Ohio Gulch)-Inside	1042	45	80	45	23	45	0	0
Hwy 75 NB (Ohio Gulch - Alturus Way))-2	289	45	0	0	0	0	3	45
Hwy 75 NB (Ohio Gulch - Alturus Way) - Inside L	1063	45	80	45	23	45	0	0
Hwy 75 NB (Alturus Way - Greenhorn)-Inside La	1074	45	83	45	24	45	0	0
Hwy 75 NB (Alturus Way - Greenhorn)-HOV Lan	292	45	0	0	0	0	3	45
Hwy 75 NB (Greenhorn - East Fork)-Inside	1074	45	83	45	24	45	0	0
Hwy 75 NB (Greenhorn - East Fork)-HOV	292	45	0	0	0	0	3	45
Hwy 75 NB (East Fork - Timber Way)-Inside	1075	45	83	45	24	45	0	0
Hwy 75 NB (East Fork - Timber Way)-HOV	294	45	0	0	0	0	3	45
Hwy 75 NB (Timber Way - Rainbow Rd) - Inside	1116	45	86	45	25	45	0	0
Hwy 75 NB (Timber Way - Rainbow Rd)-HOV	304	45	0	0	0	0	3	45
Hwy 75 NB (Rainbow Rd - Gimlet Rd)-HOV	304	45	0	0	0	0	3	45
Hwy 75 NB (Gimlet - Cold Springs)-HOV	304	45	0	0	0	0	3	45
Hwy 75 NB (Cold Springs - S. Brdway)-HOV	283	45	0	0	0	0	3	45
Broadway South WB	88	30	6	30	0	0	0	0
Broadway South EB	64	30	5	30	0	0	0	0
Hwy 75 NB (S. Brdway - Clear Creek)-HOV	283	45	0	0	0	0	3	45
Hwy 75 NB (S. Brdway - Clear Creek)-Inside	1040	45	80	45	23	45	0	0
Hwy 75 NB (Clear Ck - Brdway North)-HOV	289	45	0	0	0	0	3	45
Hwy 75 NB (Brdway North - Elk Horn)-HOV	289	35	0	0	0	0	3	35
Hwy 75 NB (Brdway North - Elk Horn)-Inside	1062	35	82	35	23	35	0	0
Hwy 75 NB (Brdway North - Elk Horn)-HOV	289	35	0	0	0	0	3	35
Hwy 75 NB (Brdway North - Elk Horn)-Inside	1062	35	82	35	23	35	0	0
Hwy 75 NB (Brdway North - Elk Horn)-2-2-2	289	35	0	0	0	0	3	35
Ohio Gulch EB-2	28	25	2	25	0	0	0	0
Ohio Gulch WB-2	13	25	1	25	0	0	0	0
Hwy 75 SB (S. Brdway - Cold Springs) - Inside	191	45	14	45	3	45	0	0
Hwy 75 SB (S. Brdway - Cold Springs)-HOV	191	45	14	45	3	45	0	0
Elk Horn Road EB-2	105	30	7	30	2	30	0	0
Elk Horn Rd WB-2	21	30	2	30	0	0	0	0
SH-75 SB (N End - 4th Street)	257	25	18	25	4	25		
4th Street WB	40	25	3	25	1	25		
4th Street EB	45	25	3	25	1	25		
Sun Valley Rd WB	162	25	11	25	3	25		
Sun Valley Rd EB	152	25	11	25	3	25		
1st Street WB	42	25	4	25	0	0		
1st Street EB	32	25	3	25	0	0		
Serenade lane WB	291	25	21	25	5	25		
Serenade Lane EB	59	25	4	25	1	25		
SH-75 NB (Sun Valley Rd - 4th Street)	929	25	65	25	15	25		
SH-75 NB (4th Street - N End)	606	25	43	25	10	25		

Roadway Name	Autos Vehicles veh/hr	Autos Speed mph	MTrucks Vehicles veh/hr	MTrucks Speed mph	HTrucks Vehicles veh/hr	HTrucks Speed mph	Transit Buses Vehicles veh/hr	Transit Buses Speed mph
SH-75 SB (4th Street - Sun Valley Rd)	245	25	17	25	4	25		
SH-75 SB (Serenade Ln - Elk Horn)	387	35	28	35	6	35		
SH-75 NB (Elk Horn - Serenade Ln)	1307	35	92	35	22	35		
SH-75 NB (Serenade Ln - 1st Street)	1095	25	77	25	18	25		
SH-75 SB (1st Street - Sun Valley)	363	25	26	25	6	25		
SH-75 NB (Sun Valley - 1st Street)	1037	25	73	25	17	25		
SH-75 SB (1st Street - Serenade Ln)	359	25	25	25	6	25		

APPENDIX E
TRAFFIC NOISE MODEL MITIGATION ANALYSIS

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN: Elk Horn to Saddle- Alternatives 2 & 3
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier		
				1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
35 12749 SH-75 (Reinheimer Ranch)	1	3	62.6	64.4	66	1.8	15	----	64.4	0	5	-5
36 103 Garnet Street	3	12	63.4	64.9	66	1.5	15	----	64.9	0	5	-5
37 409 S. Main (Ski View Lodge)	5	13	60.3	62.8	66	2.5	15	----	62.8	0	5	-5
AB	12	11	52.3	53.9	66	1.6	15	----	53.9	0	5	-5
AC	25	10	65.1	67.3	66	2.2	15	Snd Lvl	67.3	0	5	-5
AD	14	7	55	57.1	66	2.1	15	----	57.1	0	5	-5
AE	15	10	54.2	56.9	66	2.7	15	----	56.9	0	5	-5
AF	23	7	55.9	59	66	3.1	15	----	59	0	5	-5
AG	16	2	53.9	55.9	66	2	15	----	55.9	0	5	-5
AH	17	1	58	60.2	66	2.2	15	----	60.2	0	5	-5
AI	19	1	55.8	58.2	66	2.4	15	----	58.2	0	5	-5
AJ	18	5	52.3	54.7	66	2.4	15	----	54.7	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		82	0	0	0
All Impacted		10	0	0	0
All that meet NR Goal		0	0	0	0

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN: Fox Acre to Elk Horn- Existing Condition
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				1h		Increase over existing		Type Impact		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
14-Site 1 Picnic Table at park	31	1	0	54.4	66	54.4	15	----		54.4	0	5	-5
15 603 N. Main Hailey	35	39	0	60.6	66	60.6	15	----		60.6	0	5	-5
16 11761 SH75 24-3 mtr 0161	29	9	0	67.1	66	67.1	15	Snd Lvl		67.1	0	5	-5
17 125 Treasure Lane 24-6 mtr 0161	26	13	0	64.2	66	64.2	15	----		64.2	0	5	-5
18 Vacant Lot 2nd row Treasure Ln	27	9	0	55.7	66	55.7	15	----		55.7	0	5	-5
19 #3 Deer Creek	38	5	0	59.2	66	59.2	15	----		59.2	0	5	-5
20 #4 Deer Creek	37	5	0	60.8	66	60.8	15	----		60.8	0	5	-5
21 907 Buttercup	24	2	0	53.3	66	53.3	15	----		53.3	0	5	-5
22 106 Zinc Spur Rd	21	9	0	51.7	66	51.7	15	----		51.7	0	5	-5
23 Willow Lane	22	7	0	52.2	66	52.2	15	----		52.2	0	5	-5
24 202 Star Weather	19	5	0	51.3	66	51.3	15	----		51.3	0	5	-5
25 257 Alturus	13	16	0	58.3	66	58.3	15	----		58.3	0	5	-5
26 401 Shawn Ln	15	1	0	54.4	66	54.4	15	----		54.4	0	5	-5
27 Golden Eagle Ranch	11	1	0	50.8	66	50.8	15	----		50.8	0	5	-5
28 138 Canyon Dr	9	13	0	54.8	66	54.8	15	----		54.8	0	5	-5
29 12457 SH75 Country Chalet TP	7	16	0	66.4	66	66.4	15	Snd Lvl		66.4	0	5	-5
30	5	1	0	59.8	66	59.8	15	----		59.8	0	5	-5
31 The Meadows RV Park	17	24	0	55.6	66	55.6	15	----		55.6	0	5	-5
32 12556 SH75	3	8	0	66.9	66	66.9	15	Snd Lvl		66.9	0	5	-5
33 Sun Tree Hollow	1	12	0	64.3	66	64.3	15	----		64.3	0	5	-5
34 12704 & 12702	33	11	0	59.1	66	59.1	15	----		59.1	0	5	-5
J	40	3	0	54.3	66	54.3	15	----		54.3	0	5	-5
K	42	6	0	54.4	66	54.4	15	----		54.4	0	5	-5
L	44	2	0	57.7	66	57.7	15	----		57.7	0	5	-5
M	46	4	0	55.5	66	55.5	15	----		55.5	0	5	-5
N	48	12	0	57.4	66	57.4	15	----		57.4	0	5	-5
O	50	5	0	60.6	66	60.6	15	----		60.6	0	5	-5
P	52	1	0	63.2	66	63.2	15	----		63.2	0	5	-5
Q	53	1	0	64.5	66	64.5	15	----		64.5	0	5	-5
R	54	1	0	51.2	66	51.2	15	----		51.2	0	5	-5
S	56	13	0	61.6	66	61.6	15	----		61.6	0	5	-5

T	58	11	0	60.9	66	60.9	15	----	60.9	0	5	-5
U	60	1	0	60.7	66	60.7	15	----	60.7	0	5	-5
V	61	28	0	57.6	66	57.6	15	----	57.6	0	5	-5
W	63	4	0	68.2	66	68.2	15	Snd Lvl	68.2	0	5	-5
X	65	2	0	65	66	65	15	----	65	0	5	-5
Y	67	7	0	67.4	66	67.4	15	Snd Lvl	67.4	0	5	-5
Z	68	11	0	59.4	66	59.4	15	----	59.4	0	5	-5
AA	70	7	0	61.7	66	61.7	15	----	61.7	0	5	-5
17a	72	6	0	63.0	66	63.0	15	----	63.0	0	5	-5
26a	74	5	0	52.2	66	52.2	15	----	52.2	0	5	-5
26b	76	1	0	42.1	66	42.1	15	----	42.1	0	5	-5
24a	75	1	0	55.3	66	55.3	15	----	55.3	0	5	-5
21a	77	1	0	47.1	66	47.1	15	----	47.1	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		334	0	0	0
All Impacted		44	0	0	0
All that meet NR Goal		0	0	0	0

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN: Elk Horn to Saddle- Existing Condition
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				1h		Increase over existing		Type Impact		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
35 12749 SH-75 (Reinheimer Ranch)	1	3	0	62.6	66	62.6	15	----		62.6	0	5	-5
36 103 Garnet Street	3	12	0	63.4	66	63.4	15	----		63.4	0	5	-5
37 409 S. Main (Ski View Lodge)	5	13	0	60.3	66	60.3	15	----		60.3	0	5	-5
AB	12	11	0	52.3	66	52.3	15	----		52.3	0	5	-5
AC	25	10	0	65.1	66	65.1	15	----		65.1	0	5	-5
AD	14	7	0	55	66	55	15	----		55	0	5	-5
AE	15	10	0	54.2	66	54.2	15	----		54.2	0	5	-5
AF	23	7	0	55.9	66	55.9	15	----		55.9	0	5	-5
AG	16	2	0	53.9	66	53.9	15	----		53.9	0	5	-5
AH	17	1	0	58	66	58	15	----		58	0	5	-5
AI	19	1	0	55.8	66	55.8	15	----		55.8	0	5	-5
AJ	18	5	0	52.3	66	52.3	15	----		52.3	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		82	0	0	0
All Impacted		0	0	0	0
All that meet NR Goal		0	0	0	0

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN: Hwy 20 to Fox Acre- No Build
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				LAeq1h		Increase over existing		Type Impact		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
1 J.K. Molneuxts	1	1	52.5	52.7	66	0.2	15	----		52.7	0	5	-5
2 10564 Hwy-75 (Lau Ranch)	5	2	56	56	66	0	15	----		56	0	5	-5
3 10664 Hwy-75 (Alpine Kennels)	3	1	55.3	55.3	66	0	15	----		55.3	0	5	-5
4 101 Derby Rd	7	4	51.6	52.1	66	0.5	15	----		52.1	0	5	-5
5 11033 Hwy-75	9	6	59.2	62	66	2.8	15	----		62	0	5	-5
6 116 Pine St	11	31	55.5	58.1	66	2.6	15	----		58.1	0	5	-5
7 212 Main 0161	23	37	64	67.6	66	3.6	15	Snd Lvl		67.6	0	5	-5
8 204 Private Drive	13	4	44.5	48	66	3.5	15	----		48	0	5	-5
9 3321 Glenbrook Drive	25	47	54.8	56.6	66	1.8	15	----		56.6	0	5	-5
10 Trail/ Co sited with 15	16	1	59	61.6	66	2.6	15	----		61.6	0	5	-5
11 1811Briarwood Dr	17	42	57.7	60.4	66	2.7	15	----		60.4	0	5	-5
12 Empty lots off of Creekside Dr	19	13	52.2	54.8	66	2.6	15	----		54.8	0	5	-5
13 Empty lots off of Creekside Dr	20	8	50.7	53.4	66	2.7	15	----		53.4	0	5	-5
A	27	3	63.6	63.8	66	0.2	15	----		63.8	0	5	-5
B	29	4	61.3	61.5	66	0.2	15	----		61.5	0	5	-5
C	31	5	64.1	66.9	66	2.8	15	Snd Lvl		66.9	0	5	-5
D	33	10	57.6	63.8	66	6.2	15	----		63.8	0	5	-5
E	34	4	62.9	68.4	66	5.5	15	Snd Lvl		68.4	0	5	-5
F	36	15	44.7	46.5	66	1.8	15	----		46.5	0	5	-5
G	38	38	51.1	52.9	66	1.8	15	----		52.9	0	5	-5
H	40	17	55.9	58.7	66	2.8	15	----		58.7	0	5	-5
I	42	12	54.5	57.2	66	2.7	15	----		57.2	0	5	-5
9a	44	1	58.4	60.2	66	1.8	15	----		60.2	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		306	0	0	0
All Impacted		46	0	0	0
All that meet NR Goal		0	0	0	0

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN: Fox Acre to Elk Horn- No Build
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				1h		Increase over existing		Type Impact		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
14-Site 1 Picnic Table at park	31	1	54.4	56.6	66	2.2	15	----		56.6	0	5	-5
15 603 N. Main Hailey	35	39	60.6	62.9	66	2.3	15	----		62.9	0	5	-5
16 11761 SH75 24-3 mtr 0161	29	9	67.1	69.2	66	2.1	15	Snd Lvl		69.2	0	5	-5
17 125 Treasure Lane 24-6 mtr 0161	26	7	64.1	65.4	66	1.3	15	----		65.4	0	5	-5
18 Vacant Lot 2nd row Treasure Ln	27	9	55.7	57.7	66	2	15	----		57.7	0	5	-5
19 #3 Deer Creek	38	5	59.2	61.3	66	2.1	15	----		61.3	0	5	-5
20 #4 Deer Creek	37	5	60.8	62.8	66	2	15	----		62.8	0	5	-5
21 907 Buttercup	24	2	53.3	55.3	66	2	15	----		55.3	0	5	-5
22 106 Zinc Spur Rd	21	9	51.7	53.6	66	1.9	15	----		53.6	0	5	-5
23 Willow Lane	22	7	52.2	54.1	66	1.9	15	----		54.1	0	5	-5
24 202 Star Weather	19	5	51.3	53.2	66	1.9	15	----		53.2	0	5	-5
25 257 Alturus	13	16	58.3	60.3	66	2	15	----		60.3	0	5	-5
26 401 Shawn Ln	15	1	54.4	56.4	66	2	15	----		56.4	0	5	-5
27 Golden Eagle Ranch	11	1	50.8	52.7	66	1.9	15	----		52.7	0	5	-5
28 138 Canyon Dr	9	13	54.8	56.4	66	1.6	15	----		56.4	0	5	-5
29 12457 SH75 Country Chalet TP	7	16	66.4	68	66	1.6	15	Snd Lvl		68	0	5	-5
30	5	1	59.8	61.5	66	1.7	15	----		61.5	0	5	-5
31 The Meadows RV Park	17	24	55.6	57.3	66	1.7	15	----		57.3	0	5	-5
32 12556 SH75	3	8	66.9	68.2	66	1.3	15	Snd Lvl		68.2	0	5	-5
33 Sun Tree Hollow	1	12	64.3	65.6	66	1.3	15	----		65.6	0	5	-5
34 12704 & 12702	33	11	59.1	60.7	66	1.6	15	----		60.7	0	5	-5
J	40	3	54.3	56.3	66	2	15	----		56.3	0	5	-5
K	42	6	54.4	56.5	66	2.1	15	----		56.5	0	5	-5
L	44	2	57.7	59.7	66	2	15	----		59.7	0	5	-5
M	46	4	55.5	57.5	66	2	15	----		57.5	0	5	-5
N	48	12	57.4	59.3	66	1.9	15	----		59.3	0	5	-5
O	50	5	60.6	62.5	66	1.9	15	----		62.5	0	5	-5
P	52	1	63.2	65.2	66	2	15	----		65.2	0	5	-5
Q	53	1	64.5	66.3	66	1.8	15	Snd Lvl		66.3	0	5	-5
R	54	1	51.2	52.9	66	1.7	15	----		52.9	0	5	-5
S	56	13	61.6	63.2	66	1.6	15	----		63.2	0	5	-5

T	58	11	60.9	62.4	66	1.5	15	----	62.4	0	5	-5
U	60	1	60.7	62.6	66	1.9	15	----	62.6	0	5	-5
V	61	28	57.6	59.3	66	1.7	15	----	59.3	0	5	-5
W	63	4	68.2	69.4	66	1.2	15	Snd Lvl	69.4	0	5	-5
X	65	2	65	66.2	66	1.2	15	Snd Lvl	66.2	0	5	-5
Y	67	7	67.4	68.7	66	1.3	15	Snd Lvl	68.7	0	5	-5
Z	68	11	59.4	60.8	66	1.4	15	----	60.8	0	5	-5
AA	70	7	61.7	63.0	66	1.3	15	----	63.0	0	5	-5
17a	72	6	63.1	65.1	66	2.0	15	----	65.1	0	5	-5
26a	74	5	52.2	54.1	66	1.9	15	----	54.1	0	5	-5
26b	76	1	42.1	44.0	66	1.9	15	----	44.0	0	5	-5
24a	75	1	55.3	57.2	66	1.9	15	----	57.2	0	5	-5
21a	77	1	47.1	49.0	66	1.9	15	----	49.0	0	5	-5

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	334	0	0	0
All Impacted	47	0	0	0
All that meet NR Goal	0	0	0	0

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN: Elk Horn to Saddle- No Build
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				LAeq1h		Increase over existing		Type Impact		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
35 12749 SH-75 (Reinheimer Ranch)	1	3	62.6	64.2	66	1.6	15	----		64.2	0	5	-5
36 103 Garnet Street	3	12	63.4	65.3	66	1.9	15	----		65.3	0	5	-5
37 409 S. Main (Ski View Lodge)	5	13	60.3	62.4	66	2.1	15	----		62.4	0	5	-5
AB	12	11	52.3	53.7	66	1.4	15	----		53.7	0	5	-5
AC	31	10	65.1	67	66	1.9	15	Snd Lvl		67	0	5	-5
AD	14	7	55	56.9	66	1.9	15	----		56.9	0	5	-5
AE	15	10	54.2	56	66	1.8	15	----		56	0	5	-5
AF	23	7	55.9	57.8	66	1.9	15	----		57.8	0	5	-5
AG	16	2	53.9	55.8	66	1.9	15	----		55.8	0	5	-5
AH	17	1	58	59.9	66	1.9	15	----		59.9	0	5	-5
AI	19	1	55.8	58.1	66	2.3	15	----		58.1	0	5	-5
AJ	18	5	52.3	54.6	66	2.3	15	----		54.6	0	5	-5

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	82	0	0	0
All Impacted	10	0	0	0
All that meet NR Goal	0	0	0	0

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN: Hwy 20 to Fox Acre- Alternatives 2 & 3
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				LAeq1h		Increase over existing		Type Impact		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
1 J.K. Molneuxts	1	1	52.5	57.5	66	5	15	----		57.5	0	5	-5
2 10564 Hwy-75 (Lau Ranch)	5	2	56.0	56.2	66	0.2	15	----		56.2	0	5	-5
3 10664 Hwy-75 (Alpine Kennels)	3	1	55.3	56.7	66	1.4	15	----		56.7	0	5	-5
4 101 Derby Rd	7	4	51.6	53.6	66	2	15	----		53.6	0	5	-5
5 11033 Hwy-75	9	6	59.2	63.3	66	4.1	15	----		63.3	0	5	-5
6 116 Pine St	11	31	55.5	57.8	66	2.3	15	----		57.8	0	5	-5
7 212 Main 0161	23	37	64.0	67.7	66	3.7	15	Snd Lvl		67.7	0	5	-5
8 204 Private Drive	13	4	44.5	46.8	66	2.3	15	----		46.8	0	5	-5
9 3321 Glenbrook Drive	25	47	54.8	56.9	66	2.1	15	----		56.9	0	5	-5
10 Trail/ Co sited with 15	16	1	59.0	63.5	66	4.5	15	----		63.5	0	5	-5
11 1811Briarwood Dr	17	42	57.7	62.3	66	4.6	15	----		62.3	0	5	-5
12 Empty lots off of Creekside Dr	19	13	52.2	55.2	66	3	15	----		55.2	0	5	-5
13 Empty lots off of Creekside Dr	20	8	50.7	53.1	66	2.4	15	----		53.1	0	5	-5
A	27	3	63.6	67.2	66	3.6	15	Snd Lvl		67.2	0	5	-5
B	29	4	61.3	63.8	66	2.5	15	----		63.8	0	5	-5
C	31	5	64.1	64.2	66	0.1	15	----		64.2	0	5	-5
D	33	10	57.6	63.1	66	5.5	15	----		63.1	0	5	-5
E	34	4	62.9	66.9	66	4	15	Snd Lvl		66.9	0	5	-5
F	36	15	44.7	48.0	66	3.3	15	----		48.0	0	5	-5
G	38	38	51.1	53.8	66	2.7	15	----		53.8	0	5	-5
H	40	17	55.9	58.0	66	2.1	15	----		58.0	0	5	-5
I	42	12	54.5	56.6	66	2.1	15	----		56.6	0	5	-5
9a	44	1	58.4	58.0	66	-0.4	15	----		58.0	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		306	0	0	0
All Impacted		44	0	0	0
All that meet NR Goal		0	0	0	0

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN: Fox Acre to Elk Horn- Alternative 2 (HOV)
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				LAeq1h		Increase over existing		Type Impact		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
14-Site 1 Picnic Table at park	31	1	54.4	58	66	3.6	15	----		58	0	5	-5
15 603 N. Main Hailey	35	39	60.6	63.1	66	2.5	15	----		63.1	0	5	-5
16 11761 SH75 24-3 mtr 0161	29	9	67.1	68.9	66	1.8	15	Snd Lvl		68.9	0	5	-5
17 125 Treasure Lane 24-6 mtr 0161	26	7	64.1	61.7	66	-2.4	15	----		61.7	0	5	-5
18 Vacant Lot 2nd row Treasure Ln	27	9	55	54.8	66	-0.2	15	----		54.8	0	5	-5
19 #3 Deer Creek	38	5	59.2	59.9	66	0.7	15	----		59.9	0	5	-5
20 #4 Deer Creek	37	5	60.8	62	66	1.2	15	----		62	0	5	-5
21 907 Buttercup	24	2	53.3	54.9	66	1.6	15	----		54.9	0	5	-5
22 106 Zinc Spur Rd	21	9	51.7	53.1	66	1.4	15	----		53.1	0	5	-5
23 Willow Lane	22	7	52.2	51.7	66	-0.5	15	----		51.7	0	5	-5
24 202 Star Weather	19	5	51.3	50.1	66	-1.2	15	----		50.1	0	5	-5
25 257 Alturus	13	16	58.3	58.4	66	0.1	15	----		58.4	0	5	-5
26 401 Shawn Ln	15	1	54.4	56.9	66	2.5	15	----		56.9	0	5	-5
27 Golden Eagle Ranch	11	1	50.8	50.2	66	-0.6	15	----		50.2	0	5	-5
28 138 Canyon Dr	9	13	54.8	51.6	66	-3.2	15	----		51.6	0	5	-5
29 12457 SH75 Country Chalet TP	7	16	66.4	66.2	66	-0.2	15	Snd Lvl		66.2	0	5	-5
30	5	1	59.8	61.3	66	1.5	15	----		61.3	0	5	-5
31 The Meadows RV Park	17	24	55.6	58.7	66	3.1	15	----		58.7	0	5	-5
32 12556 SH75	3	8	66.9	66.5	66	-0.4	15	Snd Lvl		66.5	0	5	-5
33 Sun Tree Hollow	1	12	64.3	64.9	66	0.6	15	----		64.9	0	5	-5
34 12704 & 12702	33	11	59.1	61.9	66	2.8	15	----		61.9	0	5	-5
J	40	3	54.3	57.4	66	3.1	15	----		57.4	0	5	-5
K	42	6	54.4	59.6	66	5.2	15	----		59.6	0	5	-5
L	44	2	57.7	59.8	66	2.1	15	----		59.8	0	5	-5
M	46	4	55.5	56.5	66	1	15	----		56.5	0	5	-5
N	48	12	57.4	57.8	66	0.4	15	----		57.8	0	5	-5
O	50	5	60.6	58.7	66	-1.9	15	----		58.7	0	5	-5
P	52	1	63.2	65.2	66	2	15	----		65.2	0	5	-5
Q	53	1	64.5	62.7	66	-1.8	15	----		62.7	0	5	-5
R	54	1	51.2	52.6	66	1.4	15	----		52.6	0	5	-5
S	56	13	61.6	62.1	66	0.5	15	----		62.1	0	5	-5

T	58	11	60.9	60.3	66	-0.6	15	----	60.3	0	5	-5
U	60	1	60.7	64	66	3.3	15	----	64	0	5	-5
V	61	28	57.6	58.7	66	1.1	15	----	58.7	0	5	-5
W	63	4	68.2	67.2	66	-1	15	Snd Lvl	67.2	0	5	-5
X	65	2	65	63.5	66	-1.5	15	----	63.5	0	5	-5
Y	67	7	67.4	68.1	66	0.7	15	Snd Lvl	68.1	0	5	-5
Z	68	11	59.4	59	66	-0.4	15	----	59	0	5	-5
AA	70	7	61.7	59.4	66	-2.3	15	----	59.4	0	5	-5
17a	72	6	63.1	61.1	66	-2	15	----	61.1	0	5	-5
26a	74	5	52.2	53.2	66	1	15	----	53.2	0	5	-5
26b	76	1	42.1	43.3	66	1.2	15	----	43.3	0	5	-5
24a	75	1	55.3	55.6	66	0.3	15	----	55.6	0	5	-5
21a	77	1	47.1	48.5	66	1.4	15	----	48.5	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		334	0	0	0
All Impacted		44	0	0	0
All that meet NR Goal		0	0	0	0

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN: Fox Acre to Elk Horn- Alternative 3 (4-Lane)
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				1h		Increase over existing		Type		Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact		LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
14-Site 1 Picnic Table at park	31	1	54.4	58	66	3.6	15	----		58	0	5	-5
15 603 N. Main Hailey	35	39	60.6	63.1	66	2.5	15	----		63.1	0	5	-5
16 11761 SH75 24-3 mtr 0161	29	9	67.1	69.3	66	2.2	15	Snd Lvl		69.3	0	5	-5
17 125 Treasure Lane 24-6 mtr 0161	26	7	64.1	61.6	66	-2.5	15	----		61.6	0	5	-5
18 Vacant Lot 2nd row Treasure Ln	27	9	55	55	66	0	15	----		55	0	5	-5
19 #3 Deer Creek	38	5	59.2	59.9	66	0.7	15	----		59.9	0	5	-5
20 #4 Deer Creek	37	5	60.8	61.8	66	1	15	----		61.8	0	5	-5
21 907 Buttercup	24	2	53.3	55	66	1.7	15	----		55	0	5	-5
22 106 Zinc Spur Rd	21	9	51.7	53.2	66	1.5	15	----		53.2	0	5	-5
23 Willow Lane	22	7	52.2	51.7	66	-0.5	15	----		51.7	0	5	-5
24 202 Star Weather	19	5	51.3	50.4	66	-0.9	15	----		50.4	0	5	-5
25 257 Alturus	13	16	58.3	58.3	66	0	15	----		58.3	0	5	-5
26 401 Shawn Ln	15	1	54.4	56.9	66	2.5	15	----		56.9	0	5	-5
27 Golden Eagle Ranch	11	1	50.8	49.9	66	-0.9	15	----		49.9	0	5	-5
28 138 Canyon Dr	9	13	54.8	52.1	66	-2.7	15	----		52.1	0	5	-5
29 12457 SH75 Country Chalet TP	7	16	66.4	66.4	66	0	15	Snd Lvl		66.4	0	5	-5
30	5	1	59.8	61.7	66	1.9	15	----		61.7	0	5	-5
31 The Meadows RV Park	17	24	55.6	58.9	66	3.3	15	----		58.9	0	5	-5
32 12556 SH75	3	8	66.9	66	66	-0.9	15	Snd Lvl		66	0	5	-5
33 Sun Tree Hollow	1	12	64.3	65.1	66	0.8	15	----		65.1	0	5	-5
34 12704 & 12702	33	11	59.1	61.9	66	2.8	15	----		61.9	0	5	-5
J	40	3	54.3	57.4	66	3.1	15	----		57.4	0	5	-5
K	42	6	54.4	59.7	66	5.3	15	----		59.7	0	5	-5
L	44	2	57.7	59.1	66	1.4	15	----		59.1	0	5	-5
M	46	4	55.5	56.8	66	1.3	15	----		56.8	0	5	-5
N	48	12	57.4	58.2	66	0.8	15	----		58.2	0	5	-5
O	50	5	60.6	58.4	66	-2.2	15	----		58.4	0	5	-5
P	52	1	63.2	65.4	66	2.2	15	----		65.4	0	5	-5
Q	53	1	64.5	62.7	66	-1.8	15	----		62.7	0	5	-5
R	54	1	51.2	52.8	66	1.6	15	----		52.8	0	5	-5
S	56	13	61.6	62.2	66	0.6	15	----		62.2	0	5	-5

T	58	11	60.9	60.4	66	-0.5	15	----	60.4	0	5	-5
U	60	1	60.7	64	66	3.3	15	----	64	0	5	-5
V	61	28	57.6	58.9	66	1.3	15	----	58.9	0	5	-5
W	63	4	68.2	67.7	66	-0.5	15	Snd Lvl	67.7	0	5	-5
X	65	2	65	63.9	66	-1.1	15	----	63.9	0	5	-5
Y	67	7	67.4	67.5	66	0.1	15	Snd Lvl	67.5	0	5	-5
Z	68	11	59.4	58.9	66	-0.5	15	----	58.9	0	5	-5
AA	70	7	61.7	59.7	66	-2	15	----	59.7	0	5	-5
17a	72	6	63.1	61.1	66	-2	15	----	61.1	0	5	-5
26a	74	5	52.2	53.4	66	1.2	15	----	53.4	0	5	-5
26b	76	1	42.1	43.1	66	1	15	----	43.1	0	5	-5
24a	75	1	55.3	55.7	66	0.4	15	----	55.7	0	5	-5
21a	77	1	47.1	48.6	66	1.5	15	----	48.6	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		334	0	0	0
All Impacted		44	0	0	0
All that meet NR Goal		0	0	0	0

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN: Hwy 20 to Fox Acre- Existing Condition
BARRIER DESIGN: INPUT HEIGHTS

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				1h	Increase over existing			Type Impact		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
1 J.K. Molneuxts	1	1	0	52.5	66	52.5	15	----		52.5	0	5	-5
2 10564 Hwy-75 (Lau Ranch)	5	2	0	56	66	56	15	----		56	0	5	-5
3 10664 Hwy-75 (Alpine Kennels)	3	1	0	55.3	66	55.3	15	----		55.3	0	5	-5
4 101 Derby Rd	7	4	0	51.6	66	51.6	15	----		51.6	0	5	-5
5 11033 Hwy-75	9	6	0	59.2	66	59.2	15	----		59.2	0	5	-5
6 116 Pine St	11	31	0	55.5	66	55.5	15	----		55.5	0	5	-5
7 212 Main 0161	23	37	0	64	66	64	15	----		64	0	5	-5
8 204 Private Drive	13	4	0	44.5	66	44.5	15	----		44.5	0	5	-5
9 3321 Glenbrook Drive	25	47	0	54.8	66	54.8	15	----		54.8	0	5	-5
10 Trail/ Co sited with 15	16	1	0	59	66	59	15	----		59	0	5	-5
11 1811Briarwood Dr	17	42	0	57.7	66	57.7	15	----		57.7	0	5	-5
12 Empty lots off of Creekside Dr	19	13	0	52.2	66	52.2	15	----		52.2	0	5	-5
13 Empty lots off of Creekside Dr	20	8	0	50.7	66	50.7	15	----		50.7	0	5	-5
A	27	3	0	63.6	66	63.6	15	----		63.6	0	5	-5
B	29	4	0	61.3	66	61.3	15	----		61.3	0	5	-5
C	31	5	0	64.1	66	64.1	15	----		64.1	0	5	-5
D	33	10	0	57.6	66	57.6	15	----		57.6	0	5	-5
E	34	4	0	62.9	66	62.9	15	----		62.9	0	5	-5
F	36	15	0	44.7	66	44.7	15	----		44.7	0	5	-5
G	38	38	0	51.1	66	51.1	15	----		51.1	0	5	-5
H	40	17	0	55.9	66	55.9	15	----		55.9	0	5	-5
I	42	12	0	54.5	66	54.5	15	----		54.5	0	5	-5
9a	44	1	0	58.4	66	58.4	15	----		58.4	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		306	0	0	0
All Impacted		0	0	0	0
All that meet NR Goal		0	0	0	0

SITE 14

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Wall 14-1

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier				
				LAeq1h	Increase over existing			Type Impact	Calculated LAeq1h	Noise Reduction			
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
100ft-14	73	0	0	60.9	66	60.9	15	----	57	3.9	5	-1.1
14 Picnic Table at park	31	1	60	65.8	66	5.8	15	----	58.2	7.6	5	2.6
10ft-14	72	0	0	70.6	66	70.6	15	Snd Lvl	59.6	11	10	1

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	1	3.9	7.5	11
All Impacted	0	11	11	11
All that meet NR Goal	1	7.6	9.3	11

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Site #14 mph

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				LAeq1h		Increase over existing		Type Impact		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
14 Picnic Table at park	31	1	60	63.2	66	3.2	15	----		63.2	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		1	0	0	0
All Impacted		0	0	0	0
All that meet NR Goal		0	0	0	0

Parsons Brinckerhoff for ITD **12-Aug-03**
TNM 2.1

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: **SH75 Timmerman to Ketchum**
RUN:
BARRIER DESIGN: **Wall 14-1**

Barriers

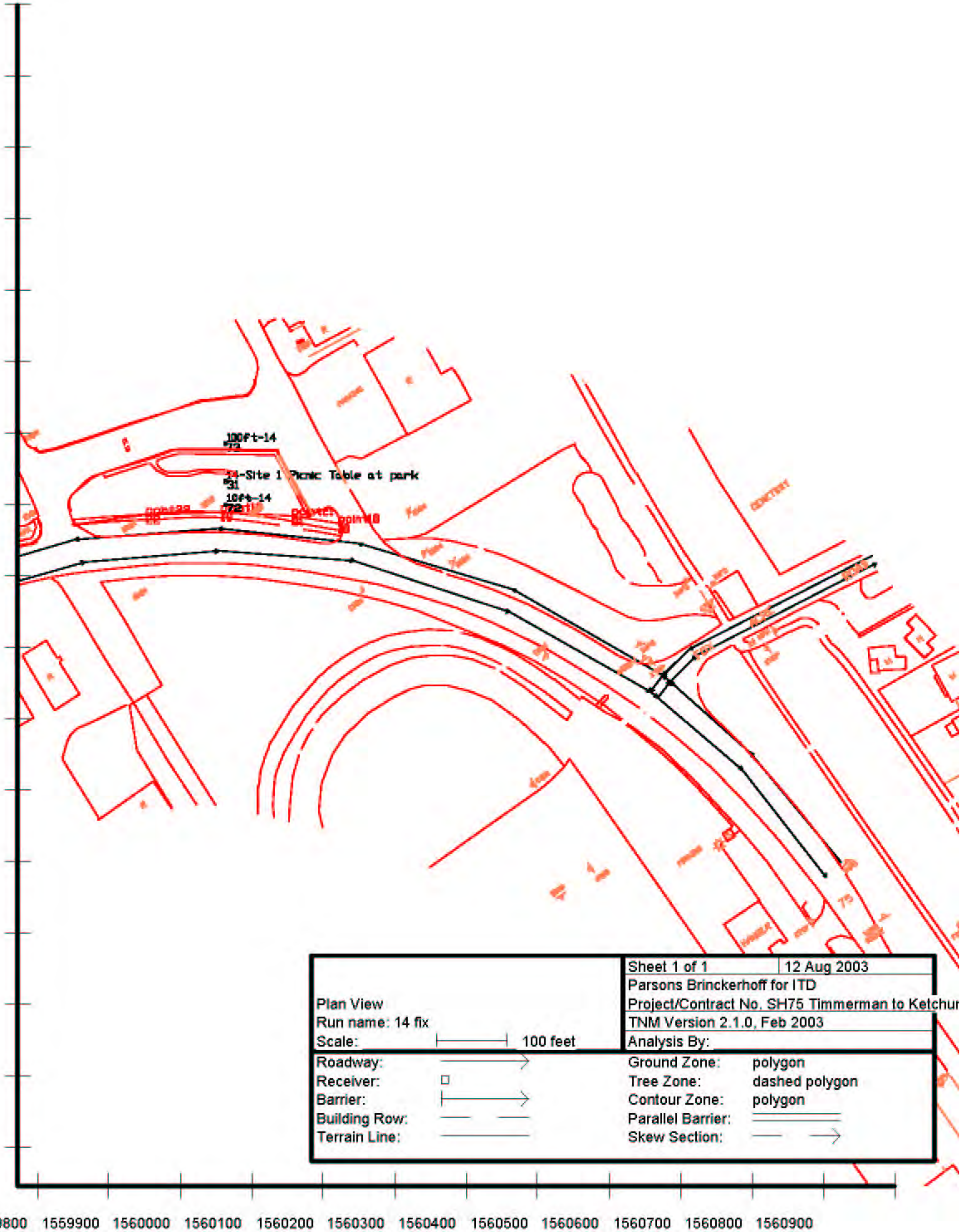
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Wall 14-1	W	6	6.53	8	373	2436				60898
									Total Cost:	60898

Parsons Brinckerhoff for ITD

12-Aug-03
TNM 2.1

INPUT: BARRIERS
PROJECT/ SH75 Timmerman to Ketchum
RUN:

Barrier		Points					
Name	Type	Name	No.	Coordinates (bottom)			Height at Point
				X	Y	Z	
				ft	ft	ft	ft
Wall 14-1	W	point18	18	1,560,120.80	673,375.70	5,320	6
		point21	21	1,560,056.60	673,384.80	5,321	8
		point19	19	1,559,957.50	673,390.90	5,321	6
		point22	22	1,559,852.90	673,387.20	5,322	6
		point20	20	1,559,749.60	673,373.90	5,322	6



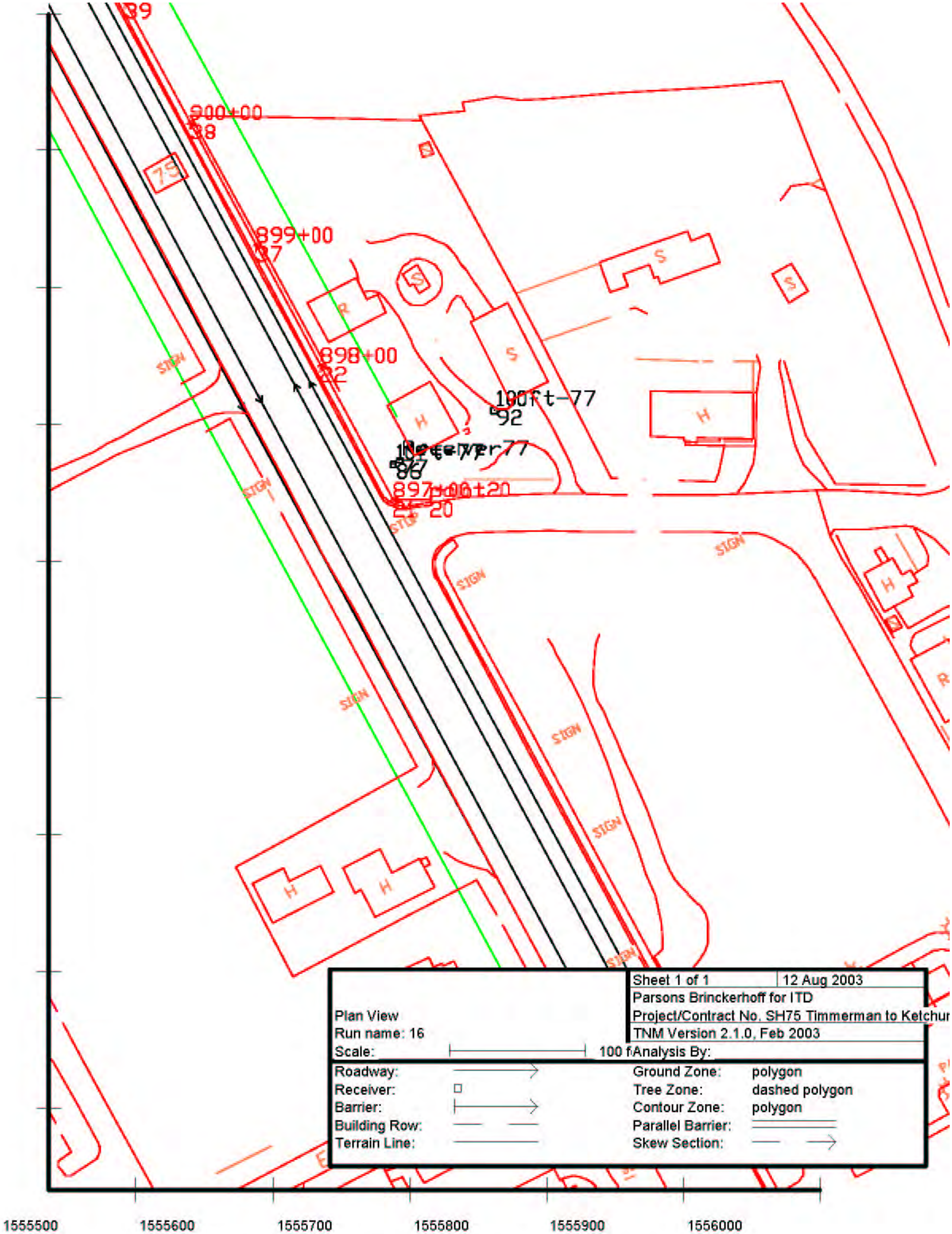
Plan View	Sheet 1 of 1 — 12 Aug 2003
Run name: 14 fix	Parsons Brinckerhoff for ITD
Scale: 100 feet	Project/Contract No. SH75 Timmerman to Ketchur
	TNM Version 2.1.0, Feb 2003
	Analysis By:

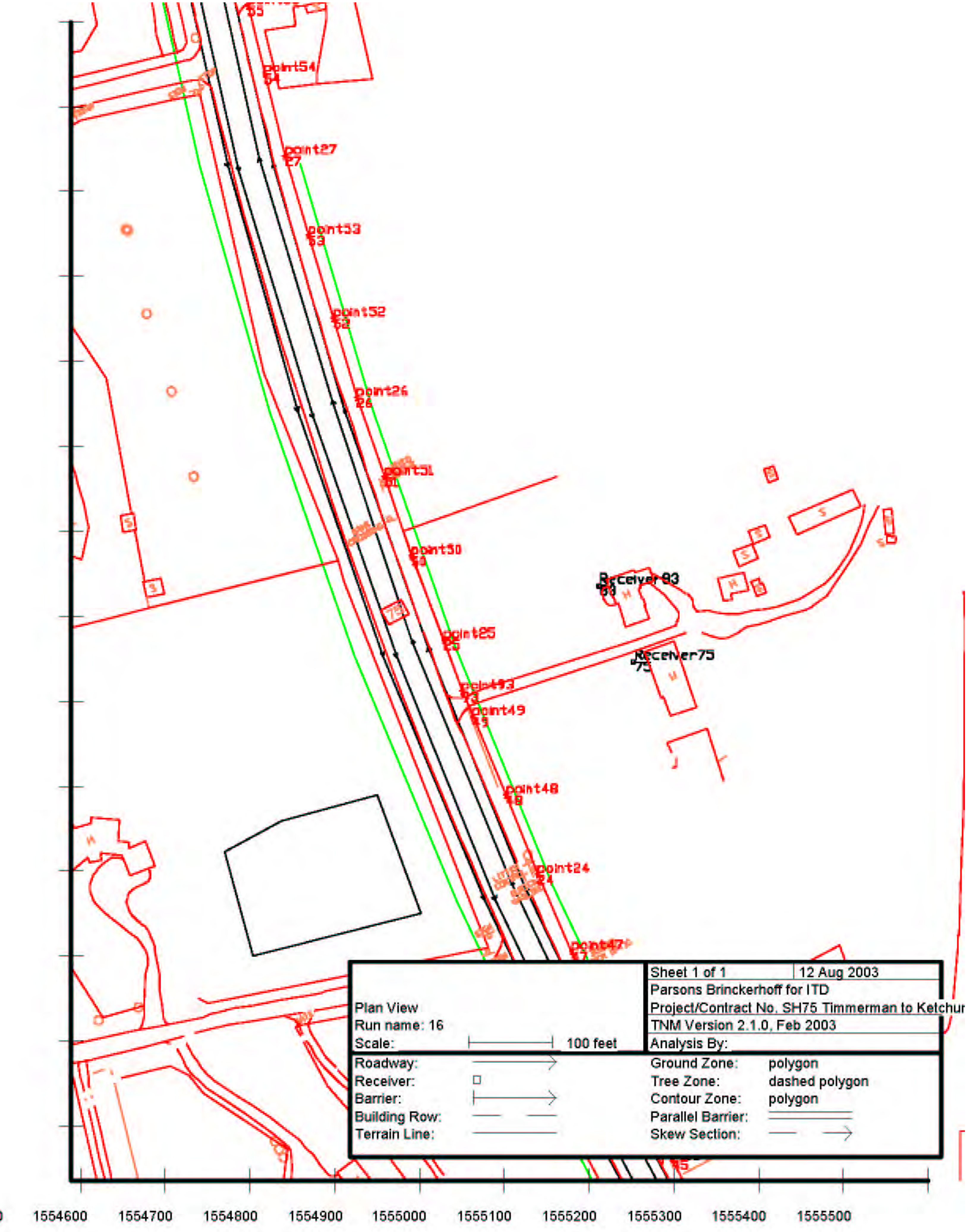
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone: polygon
Tree Zone: dashed polygon
Contour Zone: polygon
Parallel Barrier:
Skew Section:

SITE 16

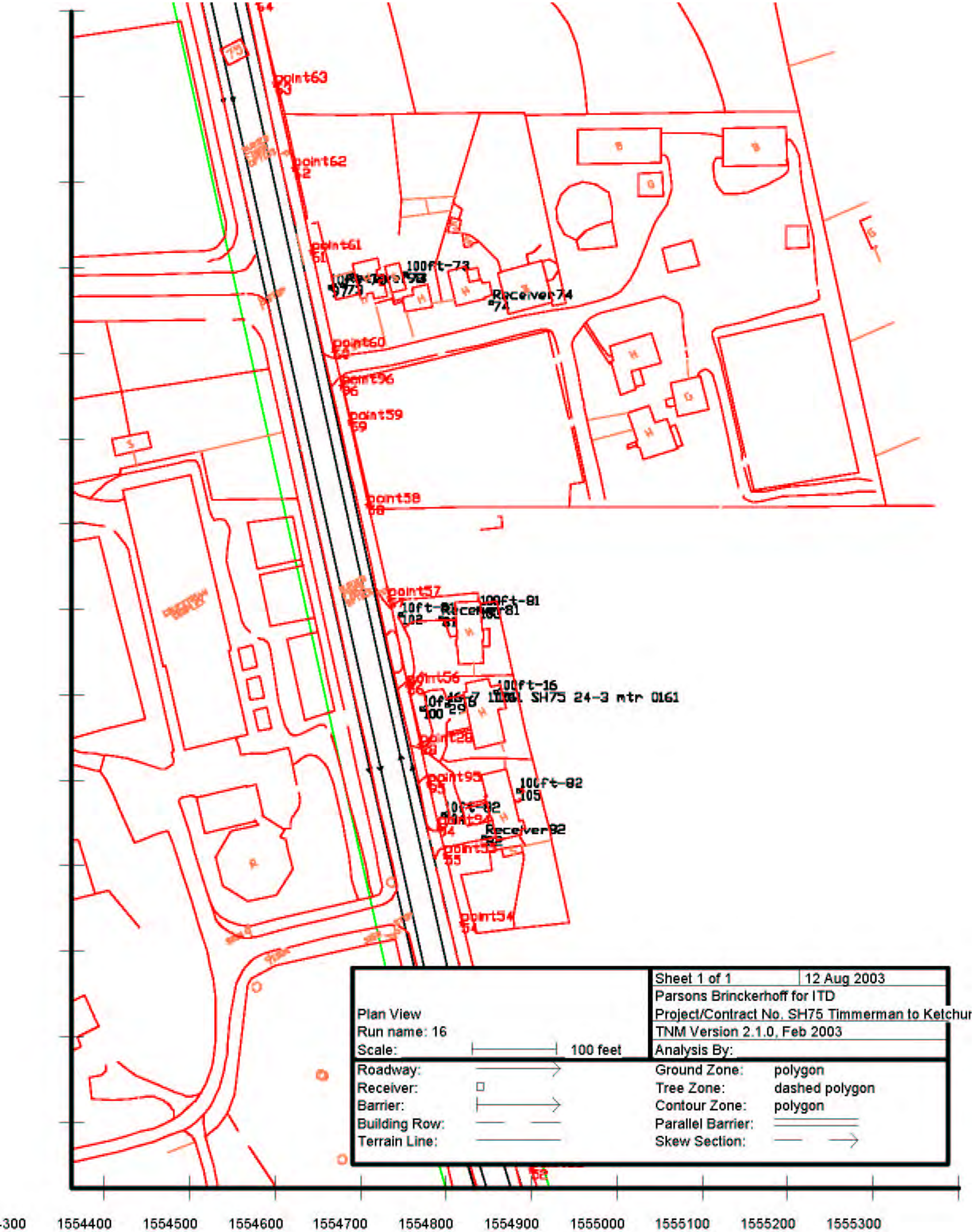
10ft-77	86	1	0	74.2	66	74.2	15	Snd Lvl	63.4	10.8	10	0.8
Receiver77	77	1	0	73.1	66	73.1	15	Snd Lvl	63.4	9.7	5	4.7
100ft-77	92	1	0	64.1	66	64.1	15	----	61.9	2.2	5	-2.8

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		37	0.1	4.1	12
All Impacted		25	0.1	5.8	12
All that meet NR Goal		7	5	8.5	12


900+00
899+00
898+00
897+00
100ft-77
Receiver77
SIGN
STOP
H
R
S
75
Sheet 1 of 1
12 Aug 2003
Parsons Brinckerhoff for ITD
Project/Contract No. SH75 Timmerman to Ketchur
TNM Version 2.1.0, Feb 2003
Plan View
Run name: 16
Scale:
100 f
Analysis By:
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone:
polygon
Tree Zone:
dashed polygon
Contour Zone:
polygon
Parallel Barrier:
Skew Section:
1555500
1555600
1555700
1555800
1555900
1556000



point54
point27
point53
point52
point26
point30
Receiver83
point25
Receiver75
point49
point48
point24
point47
1554600
1554700
1554800
1554900
1555000
1555100
1555200
1555300
1555400
1555500
Sheet 1 of 1
12 Aug 2003
Plan View
Parsons Brinckerhoff for ITD
Run name: 16
Project/Contract No. SH75 Timmerman to Ketchur
Scale:
100 feet
TNM Version 2.1.0, Feb 2003
Analysis By:
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone: polygon
Tree Zone: dashed polygon
Contour Zone: polygon
Parallel Barrier:
Skew Section:


point63
point62
point61
100ft-73
Receiver74
point60
point59
point58
point57
100ft-81
100ft-16
SH75 24-3 mtr 0161
100ft-82
Receiver82
point54
Sheet 1 of 1
12 Aug 2003
Parsons Brinckerhoff for ITD
Project/Contract No. SH75 Timmerman to Ketchur
TNM Version 2.1.0, Feb 2003
Analysis By:
Plan View
Run name: 16
Scale:
100 feet
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone:
polygon
Tree Zone:
dashed polygon
Contour Zone:
polygon
Parallel Barrier:
Skew Section:
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1554500
1554600
1554700
1554800
1554900
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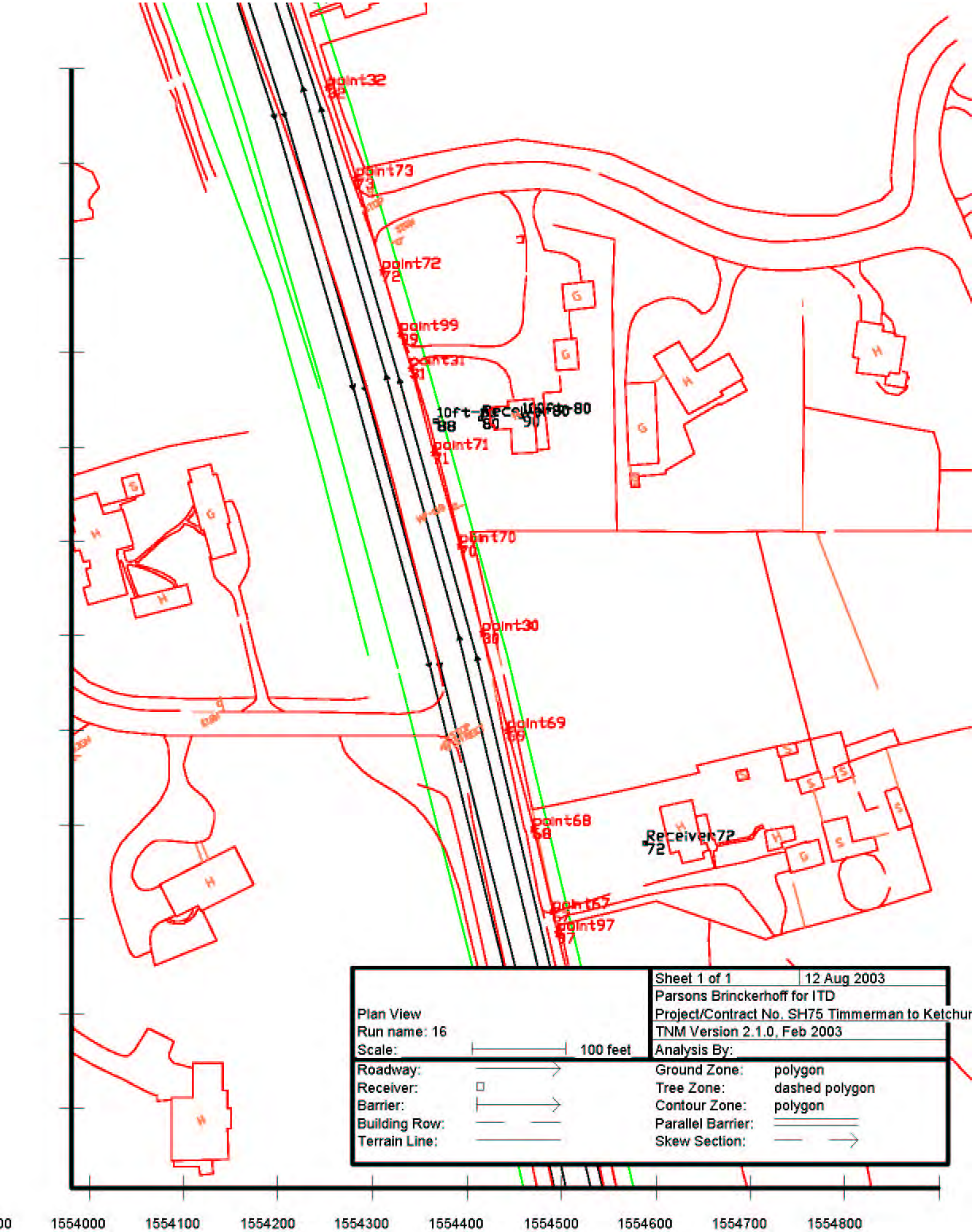
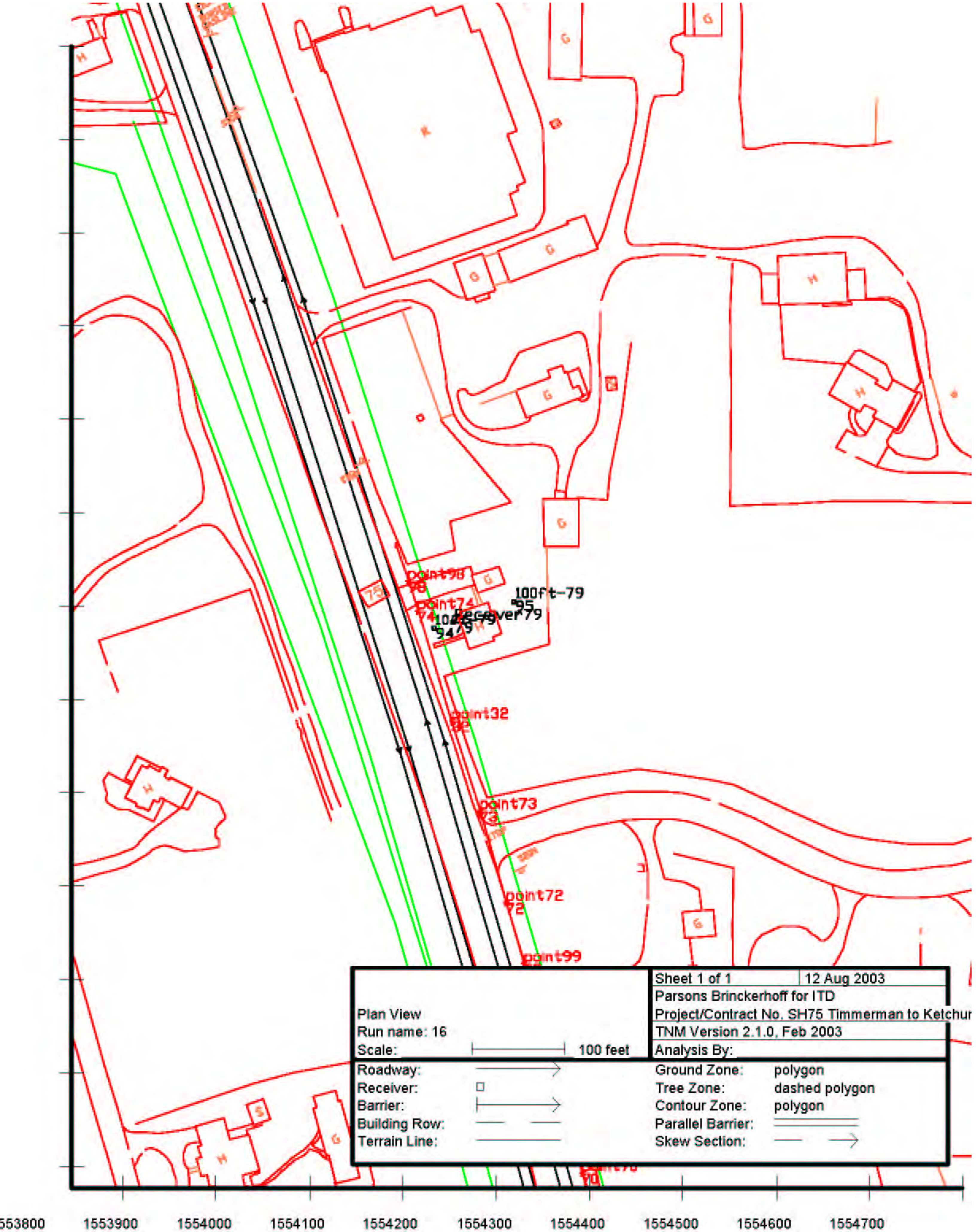
1555100
1555200
1555300



point32
point73
point72
point99
point31
Receiver80
point71
point70
point30
point69
point68
Receiver72
point67
point97
Sheet 1 of 1
12 Aug 2003
Parsons Brinckerhoff for ITD
Project/Contract No. SH75 Timmerman to Ketchur
TNM Version 2.1.0, Feb 2003
Analysis By:
Plan View
Run name: 16
Scale:
100 feet
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone:
polygon
Tree Zone:
dashed polygon
Contour Zone:
polygon
Parallel Barrier:
Skew Section:
1554000
1554100
1554200
1554300
1554400
1554500
1554600
1554700
1554800



Sheet 1 of 1
12 Aug 2003
Parsons Brinckerhoff for ITD
Project/Contract No. SH75 Timmerman to Ketchum
TNM Version 2.1.0, Feb 2003
Analysis By:
Plan View
Run name: 16
Scale:
100 feet
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone:
polygon
Tree Zone:
dashed polygon
Contour Zone:
polygon
Parallel Barrier:
Skew Section:
point98
point74
100ft-79
Receiver79
point32
point73
point72
point99
1553800
1553900
1554000
1554100
1554200
1554300
1554400
1554500
1554600
1554700

Parsons Brinckerhoff for ITD

12-Aug-03
TNM 2.1

INPUT: BARRIERS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:

Barrier		Points					
Name	Type	Name	No.	Coordinates (bottom)			Height at Point
				X ft	Y ft	Z ft	ft
Wall 16-1	W	point20	20	1,555,714.00	678,545.80	5,338	6
		897+00	21	1,555,687.60	678,545.80	5,338	8
		898+00	22	1,555,634.60	678,643.40	5,338	0
		899+00	37	1,555,587.90	678,730.90	5,339	0
		900+00	38	1,555,540.00	678,819.80	5,340	0
		901+00	39	1,555,492.80	678,907.80	5,341	0
		902+00	40	1,555,444.80	678,996.60	5,342	0
		903+00	41	1,555,398.50	679,083.30	5,343	0
		point92	92	1,555,379.50	679,120.60	5,343	0
		point91	91	1,555,360.60	679,157.90	5,344	0
		904+00	42	1,555,334.20	679,206.80	5,344	0
		905+00	43	1,555,309.60	679,252.10	5,345	8
		906+00	44	1,555,248.90	679,366.30	5,346	0
		point90	90	1,555,227.00	679,406.90	5,347	8
		907+00	45	1,555,195.90	679,465.20	5,347	0
		908+00	23	1,555,165.10	679,524.00	5,348	0
		point46	46	1,555,121.50	679,615.40	5,349	0
		point47	47	1,555,078.00	679,709.30	5,350	0
		point24	24	1,555,038.20	679,799.60	5,351	0
		point48	48	1,555,001.20	679,892.40	5,352	0
		point49	49	1,554,962.00	679,984.10	5,353	0
		point93	93	1,554,949.60	680,013.90	5,354	0
		point25	25	1,554,928.10	680,074.80	5,354	0

		point50	50	1,554,890.10	680,172.20	5,354	0
		point51	51	1,554,858.80	680,265.70	5,354	0
		point26	26	1,554,826.00	680,357.90	5,354	0
		point52	52	1,554,799.00	680,450.80	5,355	0
		point53	53	1,554,769.60	680,547.90	5,355	0
		point27	27	1,554,742.10	680,641.30	5,356	0
		point54	54	1,554,717.90	680,737.40	5,357	6
		point55	55	1,554,698.50	680,816.80	5,357	0
		point94	94	1,554,691.20	680,849.70	5,358	6
		point95	95	1,554,679.60	680,899.40	5,358	0
		point28	28	1,554,670.10	680,945.10	5,358	8
		point56	56	1,554,655.20	681,015.20	5,359	0
		point57	57	1,554,633.40	681,115.40	5,360	4
		point58	58	1,554,608.60	681,224.00	5,360	0
		point59	59	1,554,588.20	681,320.50	5,361	0
		point96	96	1,554,578.80	681,362.80	5,362	0
		point60	60	1,554,569.20	681,405.00	5,362	10
		point61	61	1,554,544.10	681,518.40	5,363	0
		point62	62	1,554,522.90	681,615.80	5,364	0
		point63	63	1,554,501.10	681,713.60	5,364	0
		point64	64	1,554,479.80	681,810.10	5,365	0
		point29	29	1,554,459.10	681,907.70	5,366	0
		point65	65	1,554,436.90	682,003.30	5,367	0
		point66	66	1,554,414.40	682,101.10	5,368	0
		point97	97	1,554,393.80	682,189.50	5,368	0
		point67	67	1,554,388.40	682,212.30	5,369	0
		point68	68	1,554,368.00	682,299.70	5,369	0
		point69	69	1,554,341.40	682,402.80	5,370	0
		point30	30	1,554,315.10	682,505.10	5,371	6
		point70	70	1,554,290.60	682,597.70	5,372	8
		point71	71	1,554,263.50	682,695.40	5,373	10
		point31	31	1,554,238.90	682,784.20	5,374	0
		point99	99	1,554,228.60	682,820.80	5,374	0
		point72	72	1,554,209.90	682,886.20	5,375	0
		point73	73	1,554,181.80	682,983.80	5,375	12
		point32	32	1,554,152.10	683,079.40	5,376	12
		point74	74	1,554,115.50	683,196.90	5,377	0
		point98	98	1,554,105.40	683,228.80	5,377	0

Parsons Brinckerhoff for ITD

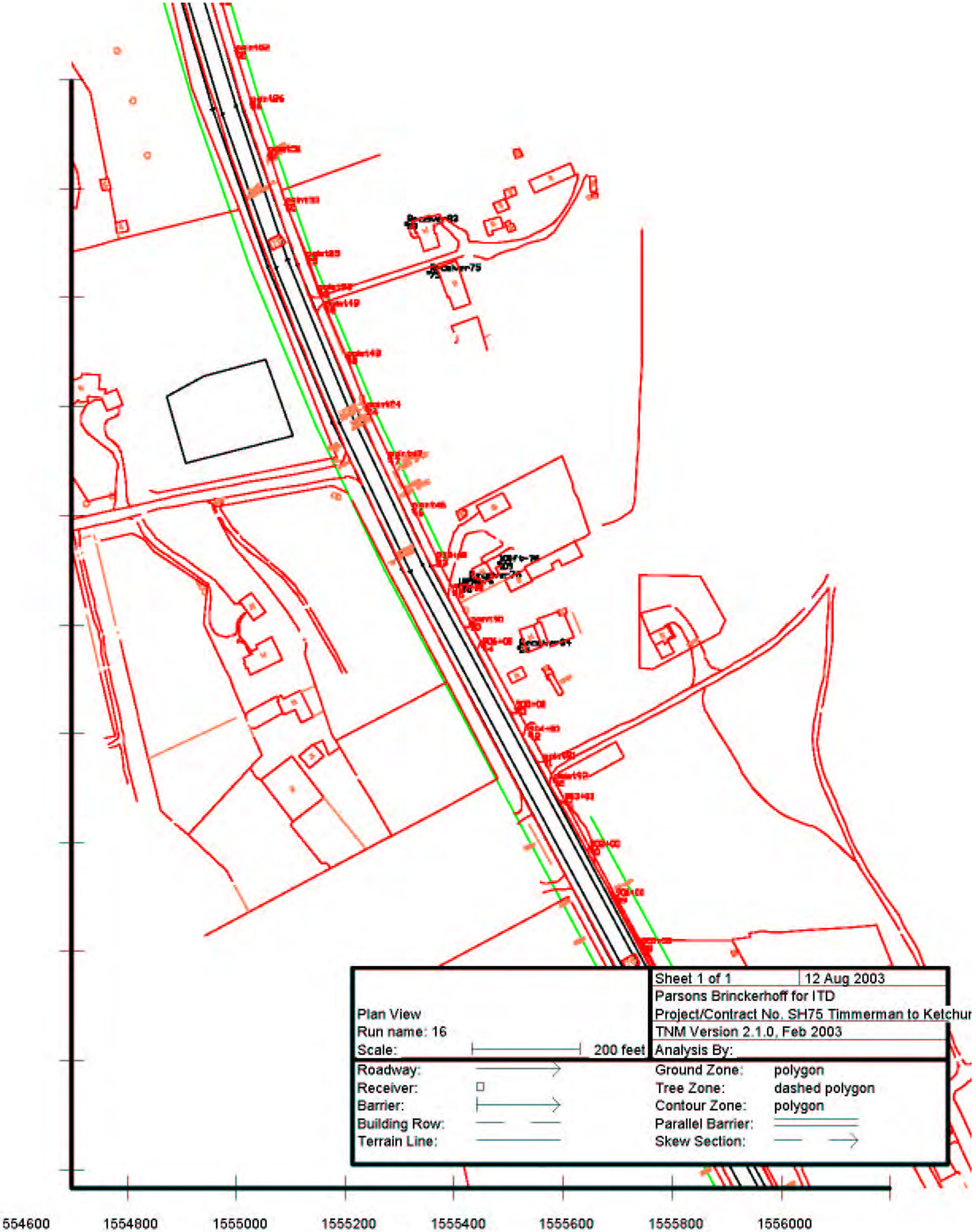
31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Wall 16-1

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact		Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
100ft-79	95	1	0	64.2	66	64.2	15	----	61.4	2.8	5	-2.2
10ft-79	94	1	0	74	66	74	15	Snd Lvl	64.1	9.9	10	-0.1
Receiver79	79	1	0	70.7	66	70.7	15	Snd Lvl	65.7	5	5	0
10ft-80	88	1	0	73.9	66	73.9	15	Snd Lvl	61.9	12	10	2
Receiver80	80	1	0	67.8	66	67.8	15	Snd Lvl	62.7	5.1	5	0.1
100ft-80	90	1	0	64.5	66	64.5	15	----	60.8	3.7	5	-1.3
Receiver72	72	1	0	63.6	66	63.6	15	----	63.3	0.3	5	-4.7
Receiver74	74	1	0	59.8	66	59.8	15	----	58.5	1.3	5	-3.7
100ft-73	98	1	0	63.7	66	63.7	15	----	61.6	2.1	5	-2.9
10ft-73	97	1	0	73.9	66	73.9	15	Snd Lvl	63.1	10.8	10	0.8
Receiver73	73	1	0	70.5	66	70.5	15	Snd Lvl	64.5	6	5	1
100ft-81	103	1	0	63.7	66	63.7	15	----	62.6	1.1	5	-3.9
100ft-16	101	1	0	63.9	66	63.9	15	----	62	1.9	5	-3.1
100ft-82	105	1	0	64.1	66	64.1	15	----	62.1	2	5	-3
Receiver82	82	1	0	68.1	66	68.1	15	Snd Lvl	65.4	2.7	5	-2.3
16 11761 SH75 24-3 mtr 0161	29	9	67.1	69	66	1.9	15	Snd Lvl	65.5	3.5	5	-1.5
Receiver81	81	1	0	67.5	66	67.5	15	Snd Lvl	66.7	0.8	5	-4.2
10ft-81	102	1	0	74.4	66	74.4	15	Snd Lvl	74.3	0.1	10	-9.9
10ft-16	100	1	0	74	66	74	15	Snd Lvl	65	9	10	-1
10ft-82	104	1	0	74.1	66	74.1	15	Snd Lvl	67.9	6.2	10	-3.8
Receiver83	83	1	0	59.9	66	59.9	15	----	59.8	0.1	5	-4.9
Receiver75	75	1	0	59.7	66	59.7	15	----	59.6	0.1	5	-4.9
100ft-76	109	1	0	64.3	66	64.3	15	----	63.1	1.2	5	-3.8
Receiver76	76	1	0	69.8	66	69.8	15	Snd Lvl	68.1	1.7	5	-3.3
10ft-76	108	1	0	73.9	66	73.9	15	Snd Lvl	72.3	1.6	10	-8.4
Receiver84	84	1	0	67.6	66	67.6	15	Snd Lvl	63.7	3.9	5	-1.1



Sheet 1 of 1
12 Aug 2003
Parsons Brinckerhoff for ITD
Project/Contract No. SH75 Timmerman to Ketchur
TNM Version 2.1.0, Feb 2003
Analysis By:
Plan View
Run name: 16
Scale:
200 feet
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone:
polygon
Tree Zone:
dashed polygon
Contour Zone:
polygon
Parallel Barrier:
Skew Section:
554600
1554800
1555000
1555200
1555400
1555600
1555800
1556000

SITE 29

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Wall 29-2
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver72	72	1	0	62.6	66	62.6	15	----	62.5	0.1	5	-4.9
T	58	11	60.9	60.1	66	-0.8	15	----	59.7	0.4	5	-4.6
Receiver78	78	1	0	65.1	66	65.1	15	----	63.2	1.9	5	-3.1
29 12457 SH75 Country Chalet TP	7	16	66.4	66.2	66	-0.2	15	Snd Lvl	63.5	2.7	5	-2.3
Receiver75	75	1	0	72.3	66	72.3	15	Snd Lvl	64.4	7.9	5	2.9
S	56	13	61.6	62	66	0.4	15	----	58.2	3.8	5	-1.2
100ft	85	1	0	63.2	66	63.2	15	----	58.2	5	5	0
10ft	83	1	0	75	66	75	15	Snd Lvl	62.4	12.6	10	2.6
Receiver77	77	1	0	58.2	66	58.2	15	----	55.5	2.7	5	-2.3
Receiver76	76	1	0	62.2	66	62.2	15	----	58.5	3.7	5	-1.3
Receiver73	73	1	0	72.2	66	72.2	15	Snd Lvl	63.8	8.4	5	3.4
Receiver74	74	1	0	57.4	66	57.4	15	----	57.1	0.3	5	-4.7

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		49	0.1	4.1	12.6
All Impacted		19	2.7	7.9	12.6
All that meet NR Goal		4	5	8.5	12.6

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Site# 29 mph

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				LAeq1h	Increase over existing			Type		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
29 12457 SH75 Country Chalet TP	7	16	66.4	63.2	66	-3.2	15	----		63.2	0	5	-5
S	56	13	61.6	59.3	66	-2.3	15	----		59.3	0	5	-5
T	58	11	60.9	58	66	-2.9	15	----		58	0	5	-5
Receiver72	72	1	0	61.6	66	61.6	15	----		61.6	0	5	-5
Receiver73	73	1	0	68.8	66	68.8	15	Snd Lvl		68.8	0	5	-5
Receiver74	74	1	0	55	66	55	15	----		55	0	5	-5
Receiver75	75	1	0	69	66	69	15	Snd Lvl		69	0	5	-5
Receiver76	76	1	0	59.5	66	59.5	15	----		59.5	0	5	-5
Receiver77	77	1	0	55.7	66	55.7	15	----		55.7	0	5	-5
Receiver78	78	1	0	62.2	66	62.2	15	----		62.2	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		47	0	0	0
All Impacted		2	0	0	0
All that meet NR Goal		0	0	0	0

Parsons Brinckerhoff for ITD

12-Aug-03
TNM 2.1

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Wall 29-2

Barriers

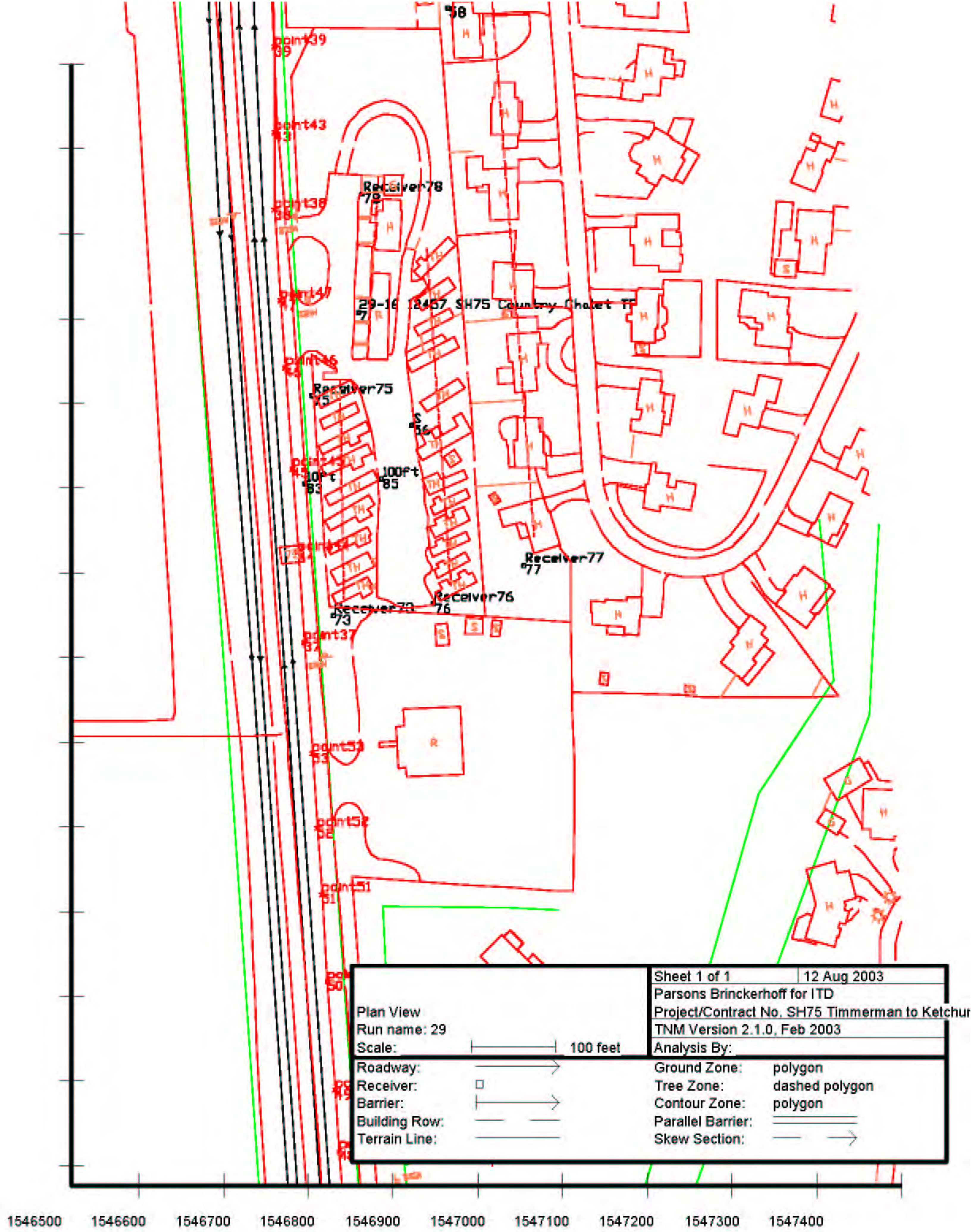
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Wall 29-2	W	2	9.55	12	652	6223				155568
									Total Cost:	155568

Parsons Brinckerhoff for ITD

12-Aug-03
TNM 2.1

INPUT: BARRIERS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:

Barrier		Points					
Name	Type	Name	No.	Coordinates (bottom)			Height at Point
				X	Y	Z	
				ft	ft	ft	ft
Wall 29-2	W	point36	36	1,546,744.20	715,122.90	5,648	0
		point48	48	1,546,736.90	715,223.70	5,648	0
		point49	49	1,546,732.10	715,295.40	5,649	0
		point50	50	1,546,723.00	715,422.80	5,649	0
		point51	51	1,546,716.20	715,525.10	5,649	0
		point52	52	1,546,711.00	715,602.20	5,649	0
		point53	53	1,546,705.10	715,690.00	5,650	10
		point37	37	1,546,695.80	715,821.00	5,650	10
		point44	44	1,546,688.80	715,926.10	5,652	12
		point45	45	1,546,682.00	716,024.50	5,654	12
		point46	46	1,546,673.60	716,143.30	5,657	0
		point47	47	1,546,667.60	716,222.10	5,659	10
		point38	38	1,546,660.80	716,327.90	5,661	2
		point43	43	1,546,660.80	716,419.40	5,662	0
		point39	39	1,546,660.80	716,519.30	5,663	0
		point41	41	1,546,657.90	716,617.80	5,663	0
		point42	42	1,546,656.90	716,721.20	5,664	0
		point40	40	1,546,657.50	716,818.20	5,664	0



point39
point43
Receiver78
point38
point47
29-16 12457 SH75 Country Chalet TP
point46
Receiver75
100ft
Receiver77
Receiver76
Receiver73
point37
point53
point52
point51
Sheet 1 of 1
12 Aug 2003
Parsons Brinckerhoff for ITD
Project/Contract No. SH75 Timmerman to Ketchur
TNM Version 2.1.0, Feb 2003
Analysis By:
Plan View
Run name: 29
Scale:
100 feet
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone: polygon
Tree Zone: dashed polygon
Contour Zone: polygon
Parallel Barrier:
Skew Section:
1546500
1546600
1546700
1546800
1546900
1547000
1547100
1547200
1547300
1547400

SITE 32

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Wall 32-1

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				LAeq1h		Increase over existing		Type Impact		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
Receiver75	75	1	0	67.9	66	67.9	15	Snd Lvl		62	5.9	5	0.9
32 12556 SH75	3	8	66.9	66.5	66	-0.4	15	Snd Lvl		59.9	6.6	5	1.6
Receiver73	73	1	0	69	66	69	15	Snd Lvl		59.3	9.7	5	4.7
Receiver76	76	1	0	63.8	66	63.8	15	----		57.8	6	5	1
100ft	83	1	0	65.1	66	65.1	15	----		58.1	7	5	2
Receiver77	77	1	0	65.6	66	65.6	15	----		58.6	7	5	2
Receiver79	79	1	0	69.7	66	69.7	15	Snd Lvl		59.3	10.4	5	5.4
10ft	81	1	0	71	66	71	15	Snd Lvl		58.8	12.2	10	2.2
Receiver78	78	1	0	68.4	66	68.4	15	Snd Lvl		60.5	7.9	5	2.9
Receiver72	72	1	0	68.6	66	68.6	15	Snd Lvl		62.4	6.2	5	1.2

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		17	5.9	7.9	12.2
All Impacted		14	5.9	8.4	12.2
All that meet NR Goal		17	5.9	7.9	12.2

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Site#32 mph

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver

Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
32 12556 SH75	3	8	66.9	63.7	66	-3.2	15	----	63.7	0	5	-5
Receiver72	72	1	0	65.7	66	65.7	15	----	65.7	0	5	-5
Receiver73	73	1	0	66.1	66	66.1	15	Snd Lvl	66.1	0	5	-5
Receiver75	75	1	0	65.1	66	65.1	15	----	65.1	0	5	-5
Receiver76	76	1	0	61.1	66	61.1	15	----	61.1	0	5	-5
Receiver77	77	1	0	62.9	66	62.9	15	----	62.9	0	5	-5
Receiver78	78	1	0	65.5	66	65.5	15	----	65.5	0	5	-5
Receiver79	79	1	0	66.8	66	66.8	15	Snd Lvl	66.8	0	5	-5

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	15	0	0	0
All Impacted	2	0	0	0
All that meet NR Goal	0	0	0	0

Parsons Brinckerhoff for ITD **12-Aug-03**
TNM 2.1

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Wall32-1

Barriers

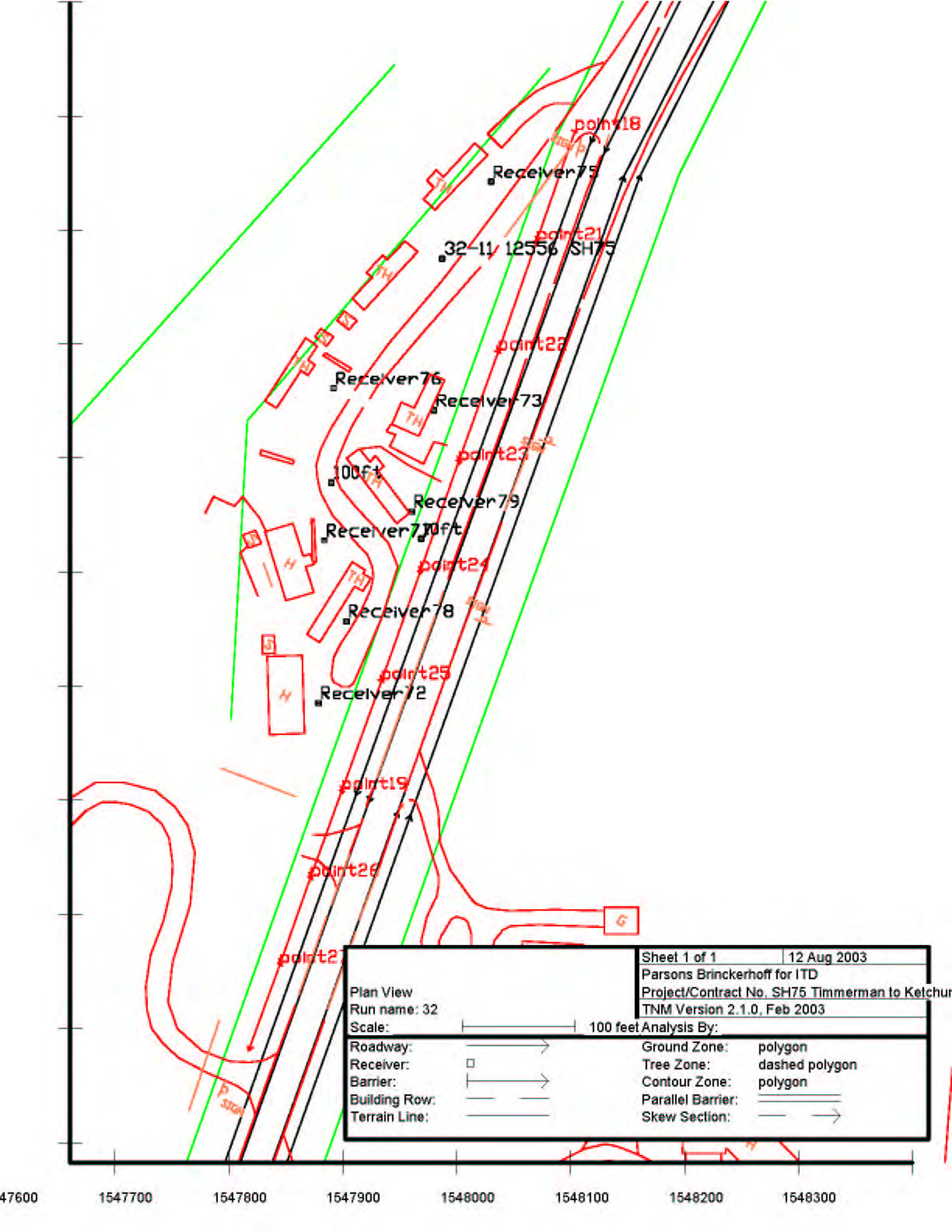
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Wall 32-1	W	8	8	8	611	4885				122136
									Total Cost:	122136

Parsons Brinckerhoff for ITD

12-Aug-03
TNM 2.1

INPUT: BARRIERS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:

Barrier		Points					
Name	Type	Name	No.	Coordinates (bottom)			Height at Point
				X	Y	Z	
				ft	ft	ft	ft
Wall 32-1	W	point18	18	1,548,002.00	721,586.10	5,688	8
		point21	21	1,547,968.90	721,489.60	5,688	8
		point22	22	1,547,934.90	721,393.50	5,687	8
		point23	23	1,547,900.80	721,297.40	5,687	8
		point24	24	1,547,867.00	721,201.30	5,687	8
		point25	25	1,547,833.00	721,106.30	5,686	8
		point19	19	1,547,798.60	721,010.30	5,686	0
		point26	26	1,547,771.20	720,934.70	5,684	0
		point27	27	1,547,744.80	720,859.00	5,682	0
		point20	20	1,547,717.60	720,783.40	5,680	0



point18
Receiver75
point21
32-11 12556 SH75
point22
Receiver76
Receiver73
point23
100ft
Receiver79
Receiver77
70ft
point24
Receiver78
point25
Receiver72
point19
point26
point27
Sheet 1 of 1
12 Aug 2003
Parsons Brinckerhoff for ITD
Project/Contract No. SH75 Timmerman to Ketchum
TNM Version 2.1.0, Feb 2003
Plan View
Run name: 32
Scale:
100 feet
Analysis By:
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone:
polygon
Tree Zone:
dashed polygon
Contour Zone:
polygon
Parallel Barrier:
Skew Section:
1547600
1547700
1547800
1547900
1548000
1548100
1548200
1548300

SITE A

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

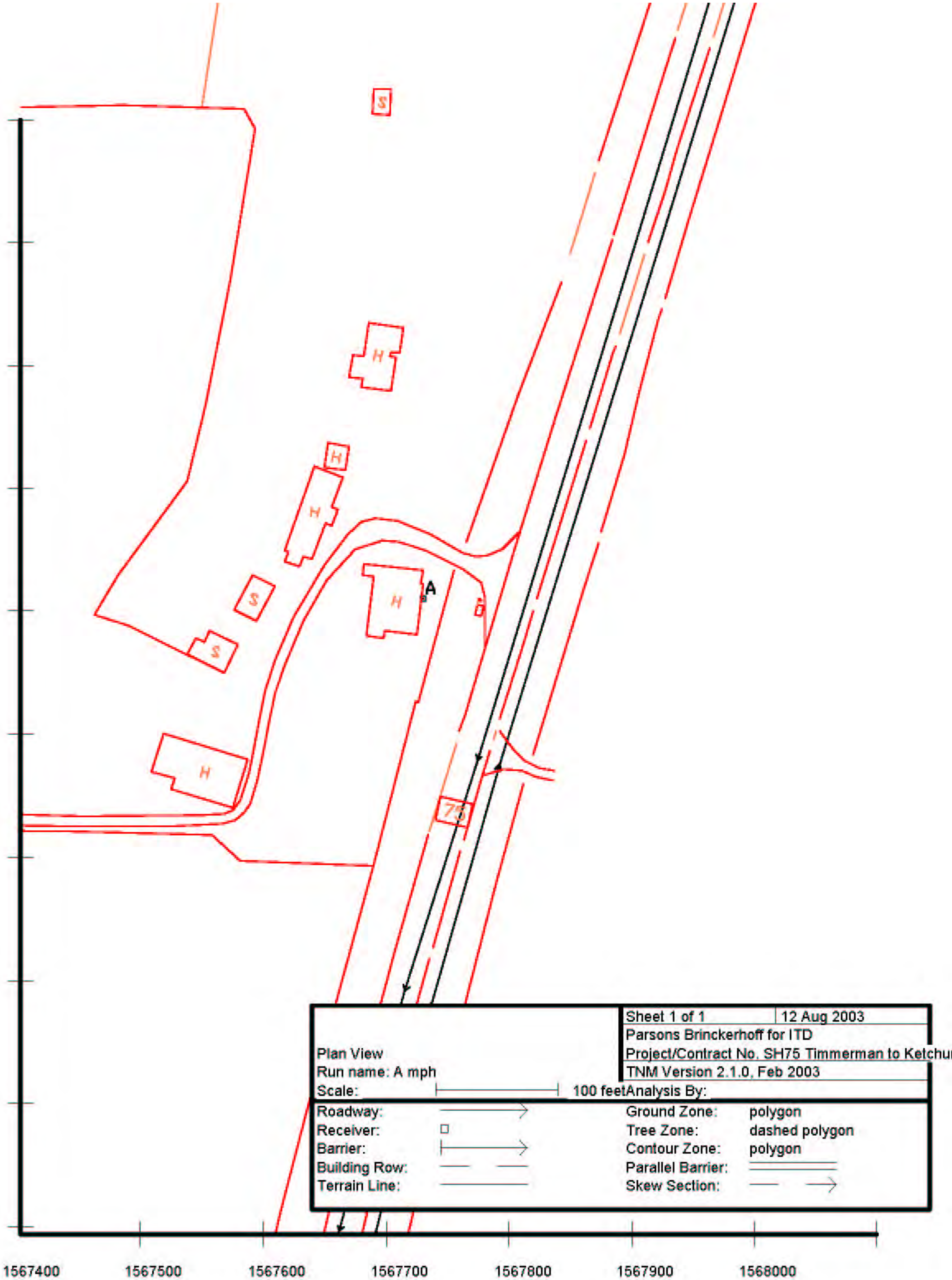
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Site# A mph

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless
a State highway agency substantiates the use
of a different type with approval of FHWA.

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
A	27	3	63.6	64.8	66	1.2	15	----	64.8	0	5	-5

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	3	0	0	0
All Impacted	0	0	0	0
All that meet NR Goal	0	0	0	0



S
H
H
H
A
S
S
H
75
Sheet 1 of 1
12 Aug 2003
Parsons Brinckerhoff for ITD
Plan View
Project/Contract No. SH75 Timmerman to Ketchur
Run name: A mph
TNM Version 2.1.0, Feb 2003
Scale:
100 feet
Analysis By:
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone: polygon
Tree Zone: dashed polygon
Contour Zone: polygon
Parallel Barrier:
Skew Section:
1567400
1567500
1567600
1567700
1567800
1567900
1568000

SITE AC

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Wall AC

ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				LAeq1h		Increase over existing		Type Impact		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
Receiver27	27	1	0	64.7	66	64.7	15	----		57.7	7	5	2
Receiver26	26	1	0	54	66	54	15	----		50.5	3.5	5	-1.5
AC	25	10	65.1	67.6	66	2.5	15	Snd Lvl		59	8.6	5	3.6
Receiver29	29	1	0	70.2	66	70.2	15	Snd Lvl		58.1	12.1	5	7.1

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	13	3.5	7.8	12.1
All Impacted	11	8.6	10.3	12.1
All that meet NR Goal	12	7	9.2	12.1

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Site#AC mph

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h	Increase over existing			Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
35 12749 SH-75 (Reinheimer Ranch)	1	3	62.6	64.4	66	1.8	15	----	64.4	0	5	-5
36 103 Garnet Street	3	6	63.4	62.7	66	-0.7	15	----	62.7	0	5	-5
37 409 S. Main (Ski View Lodge)	5	29	60.3	61.1	66	0.8	15	----	61.1	0	5	-5
AB	12	11	52.3	53.9	66	1.6	15	----	53.9	0	5	-5
AD	14	12	55	55.3	66	0.3	15	----	55.3	0	5	-5
AE	15	21	54.2	56.8	66	2.6	15	----	56.8	0	5	-5
AG	16	2	53.9	55.8	66	1.9	15	----	55.8	0	5	-5
AH	17	6	58	60.1	66	2.1	15	----	60.1	0	5	-5
AJ	18	5	52.3	54.6	66	2.3	15	----	54.6	0	5	-5
AI	19	1	55.8	58.1	66	2.3	15	----	58.1	0	5	-5
AF	23	9	55.9	58.9	66	3	15	----	58.9	0	5	-5
AC	25	10	65.1	64.7	66	-0.4	15	----	64.7	0	5	-5
Receiver26	26	1	0	53.1	66	53.1	15	----	53.1	0	5	-5
Receiver27	27	1	0	62.4	66	62.4	15	----	62.4	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		117	0	0	0
All Impacted		0	0	0	0
All that meet NR Goal		0	0	0	0

Parsons Brinckerhoff for ITD 12-Aug-03
TNM 2.1

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Wall AC

Barriers

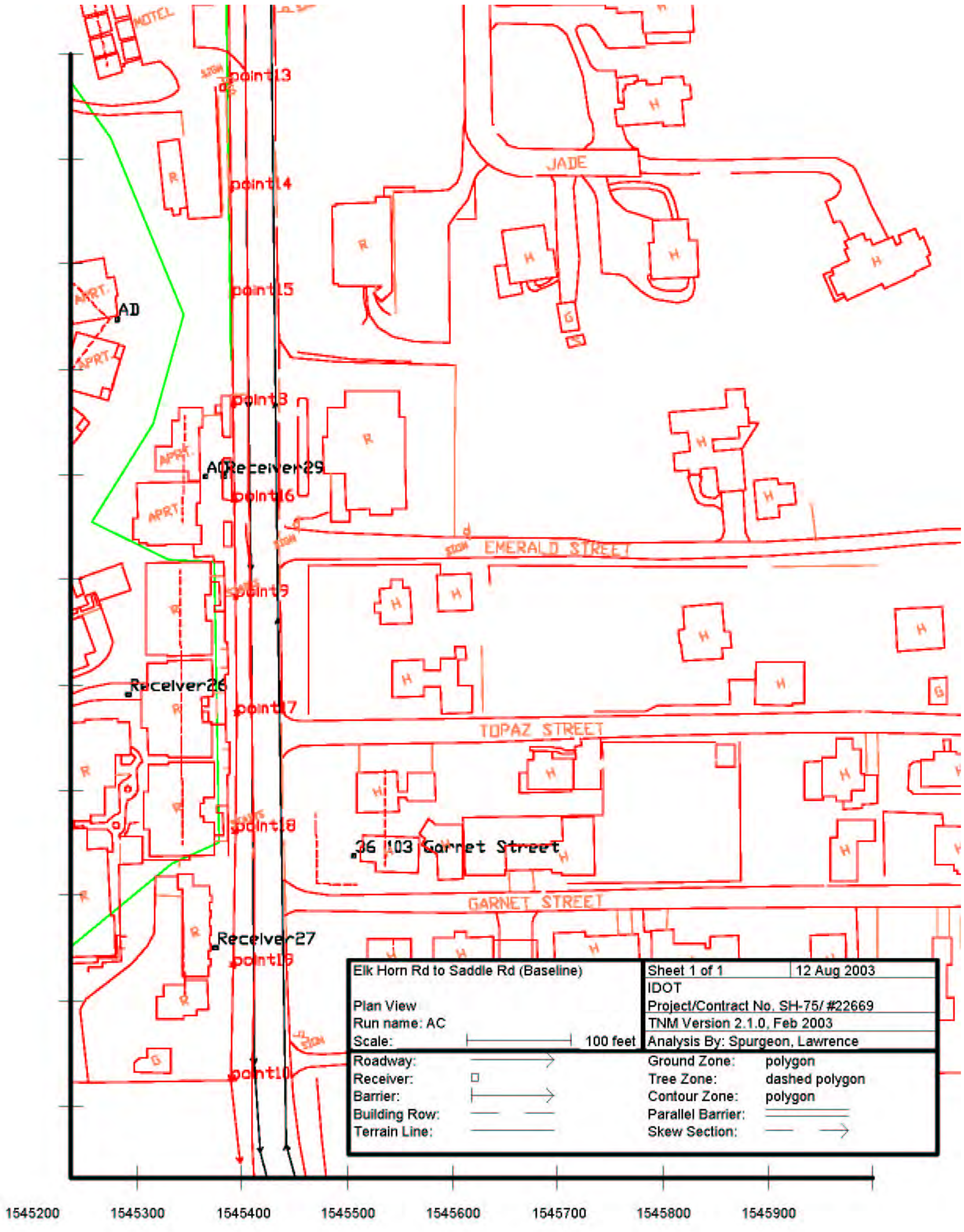
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Wall AC	W	4	6.52	10	637	4152				103793
									Total Cost:	103793

Parsons Brinckerhoff for ITD

12-Aug-03
TNM 2.1

INPUT: BARRIERS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:

Barrier		Points					
Name	Type	Name	No.	Coordinates (bottom)			Height at Point
				X	Y	Z	
				ft	ft	ft	ft
Wall AC	W	point7	7	1,545,286.90	732,773.80	5,814	0
		point12	12	1,545,288.10	732,672.70	5,814	0
		point13	13	1,545,289.50	732,570.70	5,814	0
		point14	14	1,545,290.60	732,468.40	5,815	0
		point15	15	1,545,291.80	732,368.20	5,815	0
		point8	8	1,545,292.90	732,265.00	5,815	10
		point16	16	1,545,293.80	732,174.00	5,816	8
		point9	9	1,545,294.90	732,083.60	5,817	6
		point17	17	1,545,296.00	731,973.20	5,816	6
		point18	18	1,545,294.50	731,862.20	5,816	6
		point19	19	1,545,292.20	731,735.60	5,816	4
		point10	10	1,545,290.80	731,628.10	5,815	0
		point11	11	1,545,299.10	731,550.20	5,814	0


MOTEL
point13
point14
point15
point8
point16
point9
point17
point18
point19
point10
JADE
AD
AC
Receiver29
Receiver26
Receiver27
APRT.
EMERALD STREET
TOPAZ STREET
GARNET STREET
36 103 Garnet Street
Elk Horn Rd to Saddle Rd (Baseline)
Plan View
Run name: AC
Scale:
100 feet
Sheet 1 of 1
12 Aug 2003
IDOT
Project/Contract No. SH-75/ #22669
TNM Version 2.1.0, Feb 2003
Analysis By: Spurgeon, Lawrence
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone: polygon
Tree Zone: dashed polygon
Contour Zone: polygon
Parallel Barrier:
Skew Section:
1545200
1545300
1545400
1545500
1545600
1545700
1545800
1545900

SITE W

Parsons Brinckerhoff for ITD

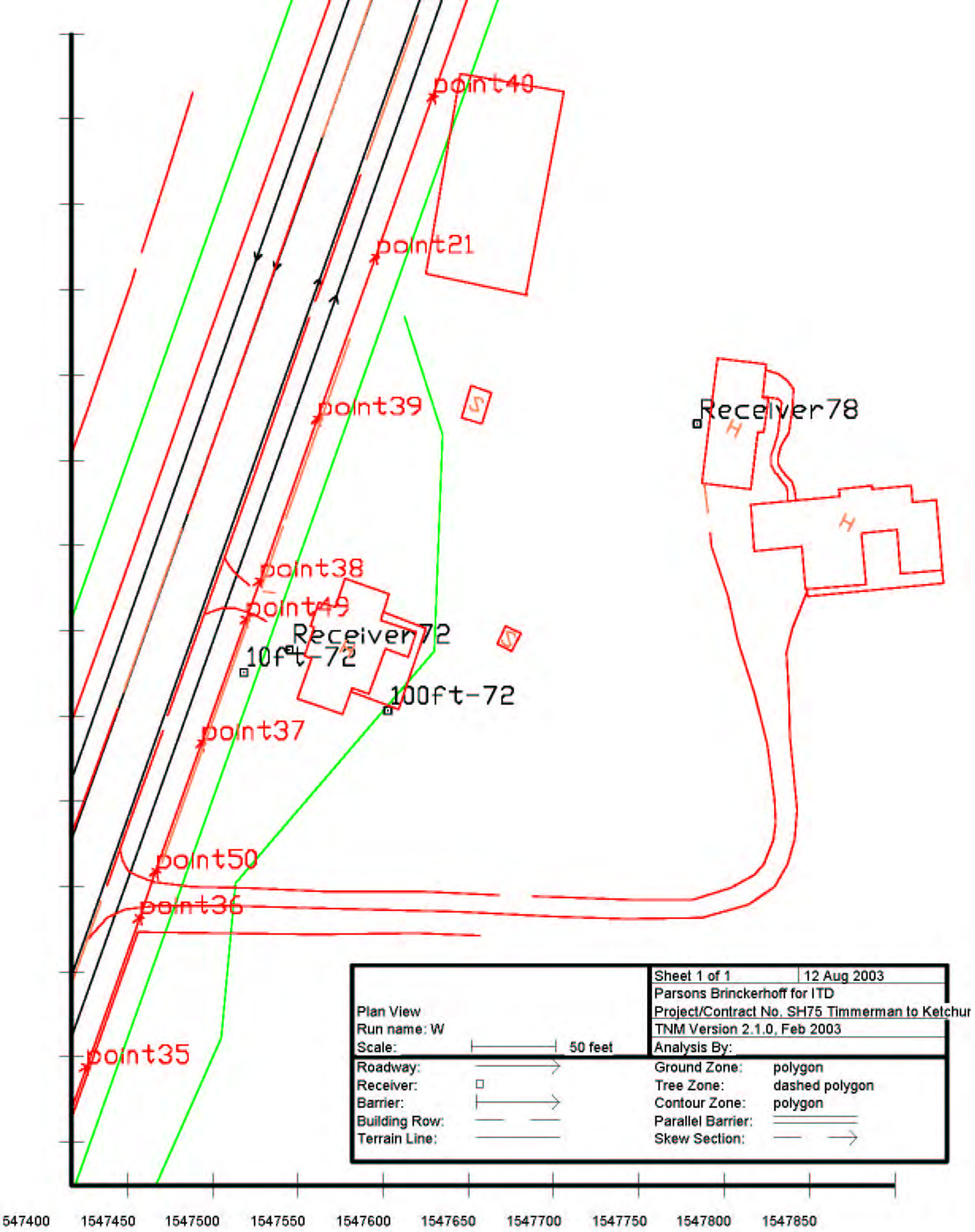
31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Wall W-2
ATMOSPHERICS: 68 deg F, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h		Increase over existing		Type	Calculated	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc	Impact	LAeq1h	Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
Receiver77	77	1	0	64.3	66	64.3	15	----	62.2	2.1	5	-2.9
100ft-W	82	1	0	65.3	66	65.3	15	----	61.5	3.8	5	-1.2
10ft-W	81	1	0	74.8	66	74.8	15	Snd Lvl	63	11.8	10	1.8
W	63	5	68.2	67.3	66	-0.9	15	Snd Lvl	61.8	5.5	5	0.5
Receiver74	74	1	0	67	66	67	15	Snd Lvl	64.7	2.3	5	-2.7
Receiver75	75	1	0	66	66	66	15	Snd Lvl	61	5	5	0
10ft-75	83	1	0	74.7	66	74.7	15	Snd Lvl	61.9	12.8	10	2.8
10ft-72	85	1	0	74.6	66	74.6	15	Snd Lvl	63.2	11.4	10	1.4
Receiver72	72	1	0	67.6	66	67.6	15	Snd Lvl	62.6	5	5	0
100ft-72	86	1	0	65.5	66	65.5	15	----	61.4	4.1	5	-0.9

Dwelling Units	# DUs	Noise Reduction		
		Min	Avg	Max
		dB	dB	dB
All Selected	14	2.1	6.4	12.8
All Impacted	11	2.3	7.7	12.8
All that meet NR Goal	10	5	8.6	12.8



point40
point21
point39
Receiver78
point38
point49
Receiver72
10ft-72
100ft-72
point37
point50
point36
point35
Sheet 1 of 1
12 Aug 2003
Parsons Brinckerhoff for ITD
Project/Contract No. SH75 Timmerman to Ketchur
TNM Version 2.1.0, Feb 2003
Analysis By:
Plan View
Run name: W
Scale:
50 feet
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone: polygon
Tree Zone: dashed polygon
Contour Zone: polygon
Parallel Barrier:
Skew Section:
547400
1547450
1547500
1547550
1547600
1547650
1547700
1547750
1547800
1547850

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Site#W mph

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver												
Name	No.	#DUs	Existing LAeq1h	No Barrier					With Barrier			
				LAeq1h	Increase over existing			Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
W	63	5	68.2	64.4	66	-3.8	15	----	64.4	0	5	-5
Receiver72	72	1	0	64.9	66	64.9	15	----	64.9	0	5	-5
Receiver74	74	1	0	64	66	64	15	----	64	0	5	-5
Receiver75	75	1	0	62.9	66	62.9	15	----	62.9	0	5	-5
Receiver77	77	1	0	61.6	66	61.6	15	----	61.6	0	5	-5
Receiver78	78	1	0	56.8	66	56.8	15	----	56.8	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		10	0	0	0
All Impacted		0	0	0	0
All that meet NR Goal		0	0	0	0

Parsons Brinckerhoff for ITD 12-Aug-03
TNM 2.1

RESULTS: BARRIER DESCRIPTIONS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Wall W-2

Barriers

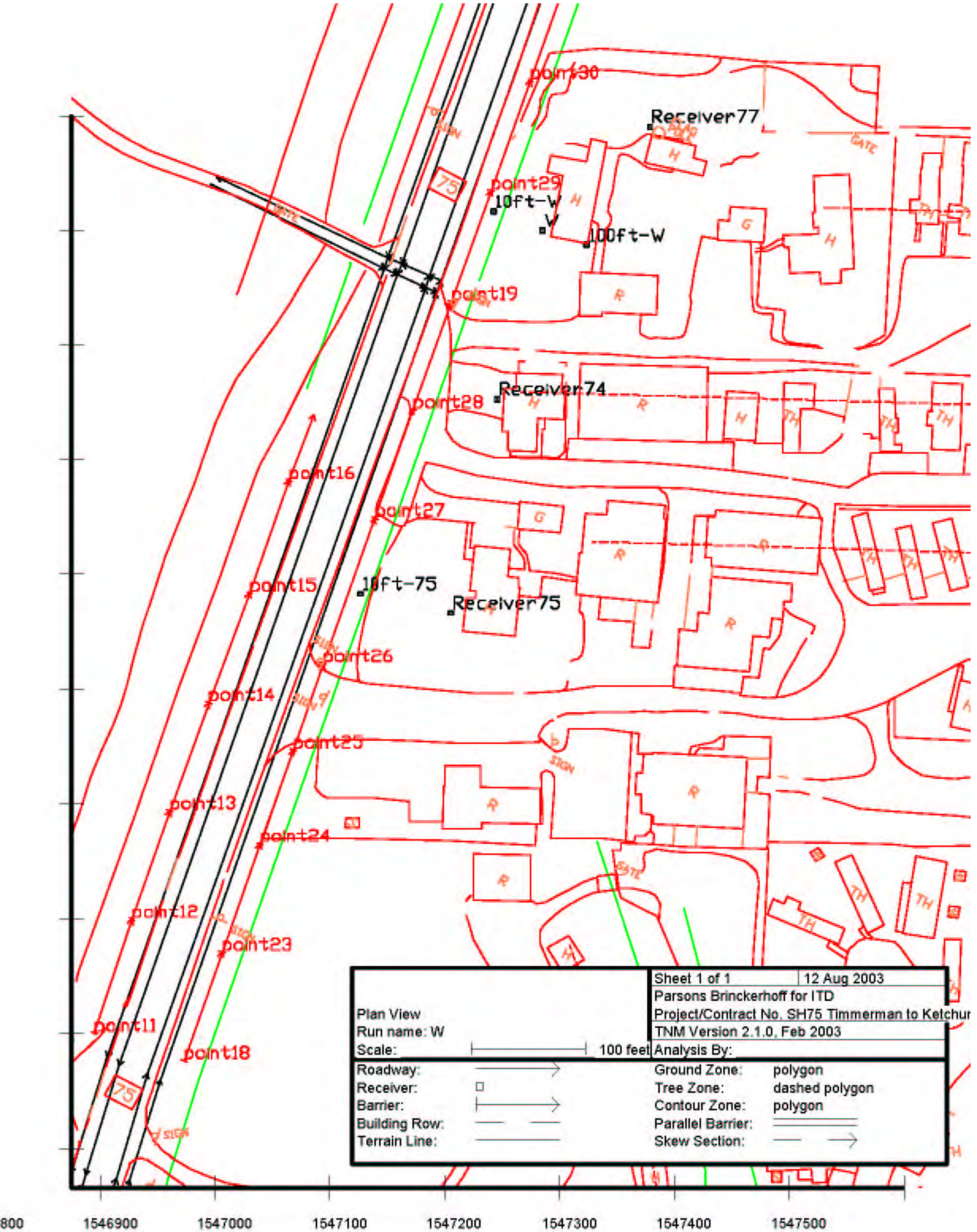
Name	Type	Heights along Barrier			Length	If Wall	If Berm			Cost
		Min	Avg	Max		Area	Volume	Top Width	Run:Rise	
		ft	ft	ft	ft	sq ft	cu yd	ft	ft:ft	$
Wall W-2	W	6	8.53	10	794	6769				169221
									Total Cost:	169221

Parsons Brinckerhoff for ITD

12-Aug-03
TNM 2.1

INPUT: BARRIERS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:

Barrier		Points					
Name	Type	Name	No.	Coordinates (bottom)			Height at Point
				X	Y	Z	
				ft	ft	ft	ft
Wall W-2	W	point18	18	1,546,873.20	718,179.40	5,678	0
		point23	23	1,546,906.40	718,273.40	5,679	0
		point24	24	1,546,939.50	718,367.50	5,680	0
		point25	25	1,546,968.10	718,448.90	5,681	0
		point26	26	1,546,994.00	718,523.40	5,683	10
		point27	27	1,547,039.00	718,649.50	5,684	10
		point28	28	1,547,072.10	718,743.60	5,685	0
		point19	19	1,547,105.20	718,837.60	5,686	8
		point29	29	1,547,139.40	718,933.20	5,686	8
		point30	30	1,547,173.60	719,028.90	5,686	0
		point20	20	1,547,207.80	719,124.60	5,686	0
		point31	31	1,547,241.50	719,219.10	5,686	0
		point32	32	1,547,275.40	719,313.60	5,686	0
		point33	33	1,547,309.10	719,408.10	5,685	0
		point34	34	1,547,342.90	719,502.60	5,685	0
		point35	35	1,547,376.80	719,597.00	5,685	0
		point36	36	1,547,408.00	719,684.10	5,685	0
		point50	50	1,547,417.50	719,711.10	5,685	8
		point37	37	1,547,444.20	719,786.00	5,685	10
		point49	49	1,547,469.90	719,858.10	5,685	0
		point38	38	1,547,478.00	719,880.50	5,684	8
		point39	39	1,547,511.90	719,975.00	5,684	6
		point21	21	1,547,545.60	720,069.50	5,684	0
		point40	40	1,547,579.10	720,163.20	5,684	0
		point41	41	1,547,612.50	720,257.00	5,684	0
		point42	42	1,547,646.00	720,350.80	5,685	0
		point43	43	1,547,679.40	720,444.50	5,685	0
		point44	44	1,547,712.90	720,538.20	5,685	0
		point45	45	1,547,746.40	720,632.10	5,685	0
		point46	46	1,547,779.80	720,725.80	5,685	0
		point47	47	1,547,813.20	720,819.60	5,686	0
		point48	48	1,547,846.60	720,913.30	5,686	0
		point22	22	1,547,880.10	721,007.10	5,686	0



point30
Receiver77
point29
10ft-W
W
100ft-W
point19
Receiver74
point28
point16
point27
point15
10ft-75
Receiver75
point26
point14
point25
point13
point24
point12
point23
point11
point18
75
Sheet 1 of 1
12 Aug 2003
Parsons Brinckerhoff for ITD
Plan View
Project/Contract No. SH75 Timmerman to Ketchum
Run name: W
TNM Version 2.1.0, Feb 2003
Scale:
100 feet
Analysis By:
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone:
polygon
Tree Zone:
dashed polygon
Contour Zone:
polygon
Parallel Barrier:
Skew Section:
1546900
1547000
1547100
1547200
1547300
1547400
1547500

SITE Y

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

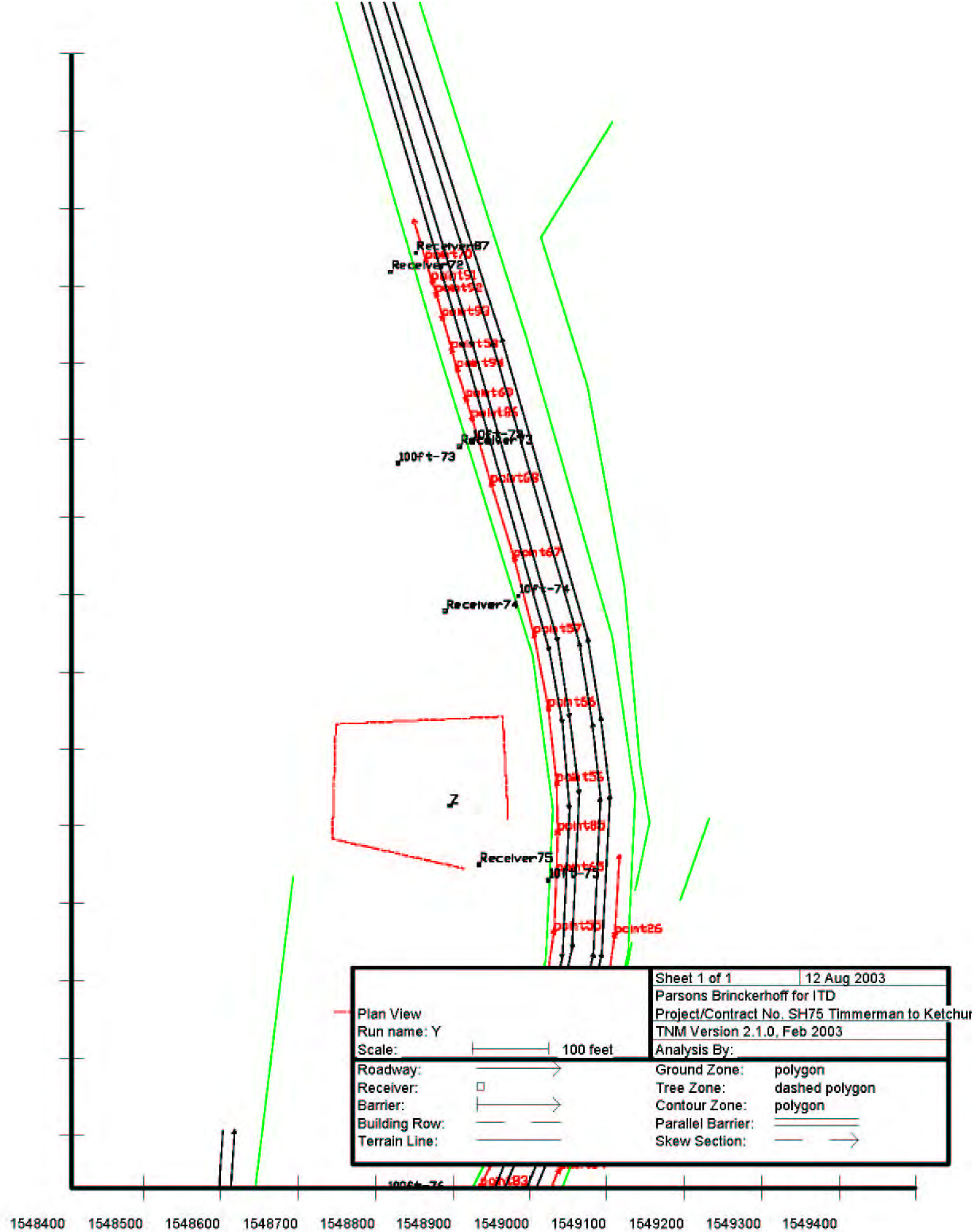
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Wall Y

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				LAeq1h		Increase over existing		Type Impact		Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
Receiver87	87	1	0	69.8	66	69.8	15	Snd Lvl		63.6	6.2	5	1.2
Receiver72	72	1	0	65	66	65	15	----		63.6	1.4	5	-3.6
100ft-73	85	1	0	61	66	61	15	----		59.5	1.5	5	-3.5
Receiver73	73	1	0	68.2	66	68.2	15	Snd Lvl		62.7	5.5	5	0.5
10ft-73	84	1	0	70.5	66	70.5	15	Snd Lvl		60	10.5	10	0.5
10ft-74	97	1	0	70.7	66	70.7	15	Snd Lvl		70.7	0	10	-10
Receiver74	74	1	0	61.3	66	61.3	15	----		61.1	0.2	5	-4.8
Z	68	11	59.4	58.9	66	-0.5	15	----		58.7	0.2	5	-4.8
Receiver75	75	1	0	61.7	66	61.7	15	----		61.5	0.2	5	-4.8
10ft-75	95	1	0	70.3	66	70.3	15	Snd Lvl		70.3	0	10	-10
Y	67	7	67.4	68.2	66	0.8	15	Snd Lvl		63.7	4.5	5	-0.5
10ft-Y	92	1	0	70.8	66	70.8	15	Snd Lvl		61.1	9.7	10	-0.3
100ft-Y	93	1	0	61.9	66	61.9	15	----		60.1	1.8	5	-3.2
100ft-76	90	1	0	62.1	66	62.1	15	----		60.8	1.3	5	-3.7
10ft-76	89	1	0	69	66	69	15	Snd Lvl		62.2	6.8	10	-3.2
Receiver76	76	1	0	67.9	66	67.9	15	Snd Lvl		65.9	2	5	-3
Receiver77	77	1	0	66.6	66	66.6	15	Snd Lvl		61.6	5	5	0
10ft-77	82	1	0	68.9	66	68.9	15	Snd Lvl		59.9	9	10	-1

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		34	0	3.7	10.5
All Impacted		17	0	5.4	10.5
All that meet NR Goal		4	5	6.8	10.5


Receiver87
Receiver72
Receiver73
100ft-73
10ft-73
10ft-74
Receiver74
Receiver75
Z
point26
1548400 1548500 1548600 1548700 1548800 1548900 1549000 1549100 1549200 1549300 1549400
Sheet 1 of 1
12 Aug 2003
Parsons Brinckerhoff for ITD
Project/Contract No. SH75 Timmerman to Ketchur
TNM Version 2.1.0, Feb 2003
Analysis By:
Plan View
Run name: Y
Scale:
100 feet
Roadway:
Receiver:
Barrier:
Building Row:
Terrain Line:
Ground Zone: polygon
Tree Zone: dashed polygon
Contour Zone: polygon
Parallel Barrier:
Skew Section:

Parsons Brinckerhoff for ITD

31-Jul-03
TNM 2.1
Calculated with TNM 2.1

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:
BARRIER DESIGN: Site#Y mph

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

ATMOSPHERICS: 68 deg F, 50% RH

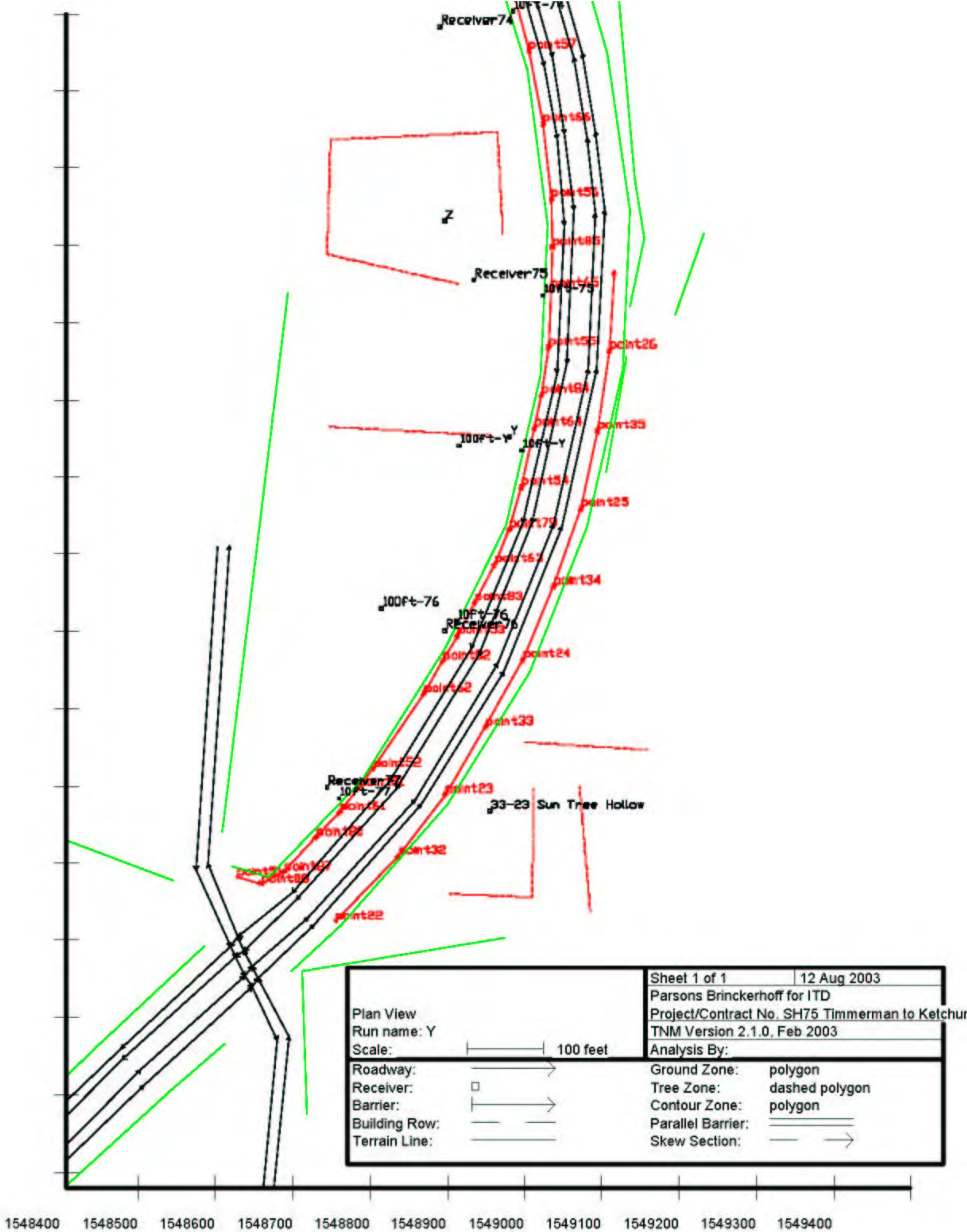
Receiver													
Name	No.	#DUs	Existing LAeq1h	No Barrier						With Barrier			
				LAeq1h	Increase over existing				Type Impact	Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc				Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB			dBA	dB	dB	dB
33-23 Sun Tree Hollow	1	12	63.1	62.5	66	-0.6	15	----		62.5	0	5	-5
Y	67	7	67.4	65.5	66	-1.9	15	----		65.5	0	5	-5
Z	68	11	59.4	57.1	66	-2.3	15	----		57.1	0	5	-5
Receiver72	72	1	0	62.5	66	62.5	15	----		62.5	0	5	-5
Receiver73	73	1	0	65.4	66	65.4	15	----		65.4	0	5	-5
Receiver74	74	1	0	59.2	66	59.2	15	----		59.2	0	5	-5
Receiver75	75	1	0	59.5	66	59.5	15	----		59.5	0	5	-5
Receiver76	76	1	0	65.2	66	65.2	15	----		65.2	0	5	-5
Receiver77	77	1	0	64.2	66	64.2	15	----		64.2	0	5	-5

Dwelling Units		# DUs	Noise Reduction		
			Min	Avg	Max
			dB	dB	dB
All Selected		36	0	0	0
All Impacted		0	0	0	0
All that meet NR Goal		0	0	0	0

Parsons Brinckerhoff for ITD 12-Aug-03
TNM 2.1

INPUT: BARRIERS
PROJECT/CONTRACT: SH75 Timmerman to Ketchum
RUN:

Barrier		Points					
Name	Type	Name	No.	Coordinates (bottom) X ft	Y ft	Z ft	Height at Point ft
Wall Y	W	point51	51	1,548,528.10	722,285.80	5,686	Wall is not feasible due to the number of dwellings with direct access onto SH-75.
		point88	88	1,548,559.40	722,276.80	5,686	
		point87	87	1,548,589.20	722,293.00	5,686	
		point80	80	1,548,630.50	722,337.50	5,687	
		point61	61	1,548,661.00	722,370.50	5,687	
		point81	81	1,548,685.20	722,402.10	5,688	
		point52	52	1,548,703.50	722,426.30	5,688	
		point62	62	1,548,769.10	722,523.00	5,688	
		point82	82	1,548,793.20	722,564.60	5,688	
		point53	53	1,548,812.00	722,597.70	5,688	
		point83	83	1,548,834.60	722,640.40	5,688	
		point63	63	1,548,860.50	722,689.80	5,688	
		point79	79	1,548,878.60	722,734.90	5,688	
		point54	54	1,548,894.40	722,789.40	5,688	
		point64	64	1,548,911.10	722,865.80	5,688	
		point84	84	1,548,920.60	722,908.10	5,688	
		point55	55	1,548,929.00	722,969.10	5,688	
		point65	65	1,548,932.20	723,044.50	5,689	
		point85	85	1,548,933.80	723,098.00	5,689	
		point56	56	1,548,932.80	723,160.60	5,689	
		point66	66	1,548,922.00	723,257.30	5,690	
		point57	57	1,548,903.60	723,351.40	5,690	
		point67	67	1,548,877.50	723,449.90	5,691	
		point68	68	1,548,848.10	723,545.60	5,692	
		point86	86	1,548,823.00	723,629.80	5,693	
		point69	69	1,548,815.40	723,655.40	5,693	
		point94	94	1,548,803.90	723,693.40	5,694	
		point58	58	1,548,796.90	723,717.90	5,694	
		point93	93	1,548,784.90	723,760.10	5,694	
		point92	92	1,548,776.50	723,790.50	5,695	
		point91	91	1,548,771.90	723,806.40	5,695	
		point70	70	1,548,763.60	723,833.80	5,696	
		point90	90	1,548,748.40	723,884.90	5,698	

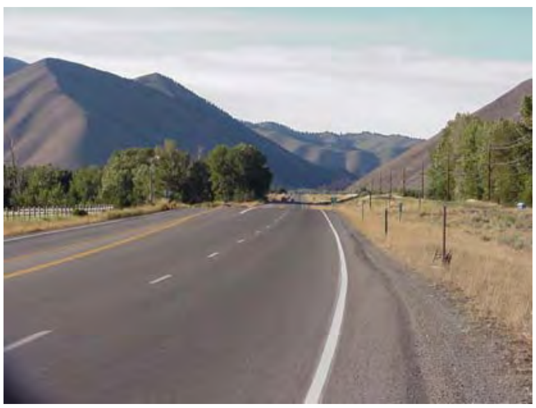


Receiver74
Z
Receiver75
10ft-75
point26
point35
100ft-Y
Y
10ft-Y
point25
point34
100ft-76
10ft-76
REceiver76
point24
point33
point52
Receiver77
10ft-77
point23
33-23 Sun Tree Hollow
point32
point22
Sheet 1 of 1
12 Aug 2003
Parsons Brinckerhoff for ITD
Plan View
Project/Contract No. SH75 Timmerman to Ketchum
Run name: Y
TNM Version 2.1.0, Feb 2003
Scale:
100 feet
Analysis By:
Roadway:
Ground Zone:
polygon
Receiver:
Tree Zone:
dashed polygon
Barrier:
Contour Zone:
polygon
Building Row:
Parallel Barrier:
Terrain Line:
Skew Section:
1548400
1548500
1548600
1548700
1548800
1548900
1549000
1549100
1549200
1549300
1549400

Timmerman to Ketchum Environmental Analyses

Project No. STP-F-2392 (035)
Key No. 3077
Agreement No. 4718

Baseline Transportation Conditions



May 2002

SH-75, Timmerman to Ketchum
Baseline Transportation Conditions

1.0 INTRODUCTION

This report summarizes the existing transportation conditions of the SH-75 corridor from Timmerman to Ketchum. It is a companion document to other reports that summarize the existing conditions for other environmental categories. The analysis documented in this report is based on the existing roadway configuration and roadway functional classification to accurately represent existing conditions. It is not intended to discuss possible alternative improvements to the highway, only to familiarize the reader with the current situation. It forms one input to the development of the Purpose and Need chapter for the project environmental document.

The SH-75 study corridor begins at the Timmerman Rest Area junction with US-20 (SH-75 milepost 102.1) and ends in Ketchum at the Warm Springs Junction (SH-75 milepost 128.5).

This report is organized to first provide an overview of the corridor's function and history. Also included in this report will be existing traffic and physical conditions, traffic counts and level-of-service, traffic control, accidents, travel characteristics, and the multimodal aspects of the corridor.

2.0 BACKGROUND

Figure 1 shows the study corridor. It is approximately 28 miles long. The route was formerly designated US-93 until that route was realigned through Carey. Improvements to the corridor have been made over the past 20 years. In the 1980's, ITD purchased the abandoned Union Pacific Railroad Right-of-way for the purpose of preserving transportation corridor options. This right-of-way eventually became the Wood River Trail, a pedestrian and bicycle pathway. In 1993-94, SH-75 was widened to five lanes through Hailey and through Bellevue. The widening of the section between Alturas and Timber Way began in 2001 and is scheduled for completion in early 2003.

3.0 ITD PROGRAMMED IMPROVEMENTS

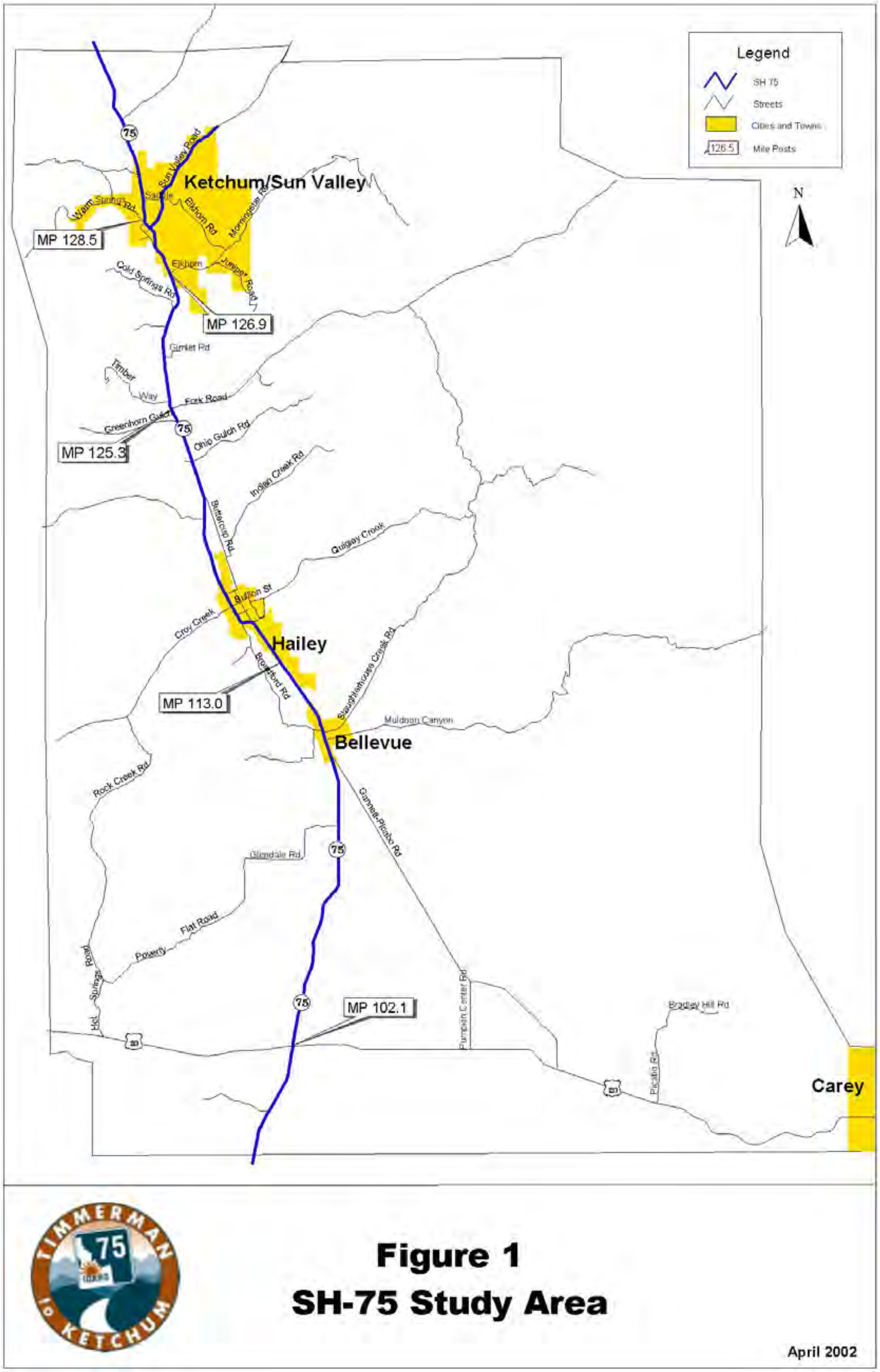
The Statewide Transportation Improvement Plan (STIP) for Fiscal Year 2002, 2003 and 2004 was approved by the Idaho Transportation Board in September 2001. The STIP includes a number of programmed improvement projects on or near the SH-75 corridor. The Timmerman to Ketchum Environmental Analyses (Project No. STP-F-2392 (035), Key No. 3077) project is currently underway. **Table 3-1** summarizes ITD's programmed improvements for the SH-75 corridor area.

Table 3-1. Summary of SH-33 Programmed Improvements

Key No.	Location	Begin Milepost	Fiscal Year	Cost ($,000)	Type of Project	Funding Source
3077	SH-75, Timmerman to Ketchum	102.1	PREL	5,920	Reconstruction/ Realignment	STP-State
7835	SH-75, Trail Creek Bridge, Ketchum	128.1	PREL	750	Bridge Replacement	STP-State
7836	SH-75, Bellevue to Hailey	112.8	PREL	4,700	Reconstruction/ Realignment	STP-State
8037	STC2815, Warm Springs, Ketchum	22.2	2002	589	Bicycle/Pedestrian Pathway	STP-Enhancement
8111	SH-75, Elkhorn Rd to Trail Creek Bridge, Ketchum	126.9	PREL	6,000	Major Widening	STP-State
8112	STC2818, East Fork Road	0.0	PREL	746	Reconstruction/ Realignment	STP-Rural
8252	SH-75S, Sun Valley Spur	0.0	2003	521	Rehabilitation & Resurfacing	State Funds
8381	SH-75, East Fork	122.0	2003	318	Scenic Easement	STP-Enhancement
8548	SH-75, Main Street, Hailey	115.9	2003	490	Rehabilitation & Resurfacing	State Funds
8549	SH-75, Main Street, Bellevue	111.0	2005	285	Pavement Rehabilitation	State Funds
8681	SH-75, Fox Acre Drive, Hailey	115.6	2003	418	Intersection Improvement	State Funds
8691	Ketchum Transportation Plan	N/A	2002	83	Transportation Plan	STP-Rural
PD4023	Ketchum/Sun Valley	N/A	2002	650	Transit Facility Exp/Capital	FTA 5309
Z4H1	Friedman Memorial Airport	N/A	2002	1,111	Update Master Plan; Improve ARFF Bldg	Fed/State/ Local
Z4H2	Friedman Memorial Airport	N/A	2003	1,111	Modify Terminal Access; Exp Terminal Apron	Fed/State/ Local
Z4H3	Friedman Memorial Airport	N/A	2004	722	Acq Snow Removal Equipment	Fed/State/ Local

Source: Statewide Transportation Improvement Program for FY 2002, 2003, 2004. Approved by the Idaho Transportation Board, September 2001.

Although officially in the STIP, projects 7835, 7836 and 8111 in Table 3-1 are not currently being advanced or developed, pending completion of the NEPA process on the SH-75 corridor.


Legend
SH 75
Streets
Cities and Towns
Mile Posts
N
Ketchum/Sun Valley
Hailey
Bellevue
Carey
MP 128.5
MP 126.9
MP 125.3
MP 113.0
MP 102.1
Figure 1
SH-75 Study Area
April 2002

4.0 SYSTEM LINKAGE AND FUNCTION

4.1 Functional Classifications and Route Continuity

SH-75 provides direct connections to the south (Shoshone, I-84, Twin Falls and Nevada via US-93) and north (Stanley and the Sawtooth National Forest). It connects to US-20, a National Highway System route that connects Mountain Home and Fairfield with Carey and Arco. SH-75 is classified as a Minor Arterial according to ITD's functional classification system. It is part of the US-93/SH-75 Nevada-to-Ketchum Interstate Corridor designated by the Idaho Transportation Board.

Although SH-75 is designated as a minor arterial, the roadway classification will be reviewed when alternatives are developed. Changes to roadway classification in some sections of the corridor may be warranted to reflect current land uses, roadway function, and other characteristics.

4.2 Access Control

Access management refers to a number of techniques that can be employed to more effectively manage access to properties adjacent to a roadway. ITD ties the highway's access control category to its functional classification. **Table 4-1** shows ITD's six access control categories, which range from Standard Approach to Full Control. In terms of access control, ITD has classified SH-75 as Partial Control, Class I south of Bellevue, and Partial Control Class II from Bellevue to Ketchum.

Table 4-1. ITD Access Control

<table>
<tr><th rowspan="2">Method of Access</th><th>Full Control</th><th colspan="4">Partial Control</th><th rowspan="2">Standard Approach</th></tr>
<tr><th>V</th><th>IV</th><th>III</th><th>II</th><th>I</th></tr>
<tr><td>Public Road Connections</td><td>Via Interchange Ramps Only (5)</td><td colspan="4">As shown on Project Plans or determined to be in the public interest (1)</td><td rowspan="3">See current ITD Right-Of-Way Use Policy</td></tr>
<tr><td>Existing Approaches</td><td>Access Road Service Only</td><td>Access Road Service Only (3)</td><td>Maximum per side: 5/2km, 4/mile (3) *See below</td><td colspan="2">As shown on Project Plans with no spacing restrictions</td></tr>
<tr><td>New Approaches</td><td>Access Road Service Only</td><td>Access Road Service Only (3) (6)</td><td>Access Road Service only, except in extreme cases (3) (6)

Maximum per side if located in Mile-Grid Local Roads System 2/km, 3/mile</td><td>Prohibited, except that Isolated Parcels shall be served (2)</td><td>Permitted at not less than two hundred (200) meters (six hundred sixty (660) feet) spacing between Approaches, (4) except that isolated parcels shall be served.</td></tr>
</table>

(1) For Type IV, partial Access Control, existing Public Road connections shall be shown on the Project Plans, with future Public Road Intersections limited to one (1) per mile on each side of highway.
(2) Isolated parcels are those Land Units adjacent to the Highway Right-Of-Way that have no Access due to Canals, Streams, Terrain, other Barriers or were created by property sale or exchange before the original Access purchase.
(3) Adequate Right-Of-Way for Access Roads may be obtained under Type III and Type IV Partial Access Control. Access Roads shall be provided when economically justified.

(4) The minimum Two Hundred (200) meter/(Six Hundred Sixty (660) Feet) approach spacing for the Type 1 partial Access Control may be increased and will be considered in the initial approval of that type of access.
(5) Full control of Access prohibits all at-grade intersections, including those with railroads.
(6) Right-Of-Way for Frontage Roads will be provided when appropriate.

4.3 Freight Classifications

ITD classifies state highways for freight based on pavement and roadway base conditions as well as other traffic conditions. This is known as Route Capacity. There are five route capacity classifications, which vary based on number of axles on heavy vehicles. SH-75 is the second highest classification, with the following weight restrictions: 28,500 pounds for single-axle trucks, 48,500 pounds for two-axle trucks, and 61,000 pounds for three-axle tandem trucks.

4.4 Scenic Byway Designation

The sections of the SH-75 corridor not located within incorporated city limits are designated as part of the Sawtooth Scenic Byway by ITD as of 1997. The Sawtooth Scenic Byway Corridor Management Plan was completed in February 2001. Completion of the plan makes the corridor eligible for additional funding for scenic byway improvements.

5.0 EXISTING TRAFFIC CONDITIONS

5.1 Traffic Control

Speed Limits

Entering the corridor on the south, the posted speed limit is 55 mph. It reduces to 45 mph and eventually to 25 mph as the highway enters and travels through Bellevue. The speed increases to 45 mph on the north side of Bellevue, and to 55 mph between Bellevue and Hailey. In Hailey, the speed is reduced to 45 mph and eventually to 25 mph through town. On the north side of Hailey, the speed limit increases to 45 mph and then to 55 mph. The posted speed limit remains at 55 mph until Elkhorn, where is has recently been reduced to 35 mph to the proximity of the Trail Creek Bridge, where the speed is reduced to 25 mph through Ketchum.

Traffic Control

Side streets and driveways are generally stop-sign controlled along the SH-75 corridor. At Timmerman, US-20 stops for SH-75.

There are 9 signalized intersections along the SH-75 corridor. A new signal was recently installed at the Albertson's store in north Hailey. **Table 5-1** lists the signalized intersections.

Table 5-1. SH-75 Signalized Intersections

Intersection With SH-75
Sixth Street (Ketchum)
Fifth Street (Ketchum)
Sun Valley Road (Ketchum)
First Street (Ketchum)
Elkhorn Road (Blaine County)
Hospital Road (Blaine County)
Albertson's (Hailey)
Bullion Street (Hailey)
Airport Way (Hailey)

5.2 Traffic Counts

Winter and Summer 2001 Peak Hour and 24-hour weekday and weekend counts along State Highway 75 were obtained.

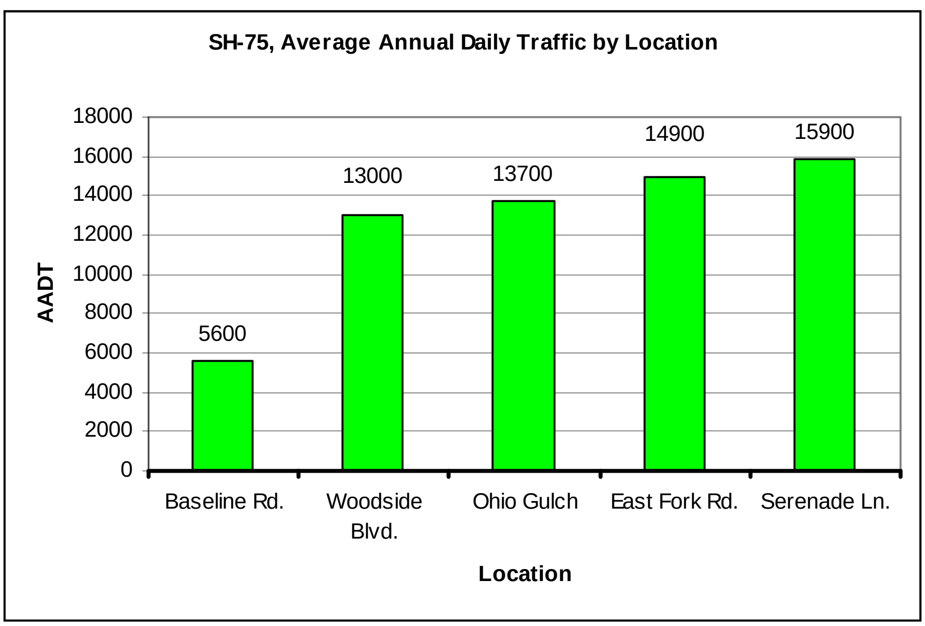
Peak hour turning movement counts were performed at 8 signalized intersections and 9 unsignalized intersections within the study corridor. Twenty-four (24) hour bi-directional hose counts were also conducted, at four locations along SH-75. The intersection turning movement counts were adjusted to coincide with the peak hour (8:00 am 24-hour) counts. This information was used to determine baseline traffic operations for the entire corridor.

5.3 Traffic Volumes

Figure 5-1 shows the Average Annual Daily Traffic (AADT) on SH-75 by corridor location. Traffic volumes increase from Bellevue to Ketchum with the largest volume increase occurring in Hailey near Woodside Boulevard. This large increase in traffic volume suggests that a large percentage of commuting traffic is originating in Hailey. Traffic volumes were obtained during March and August of 2001 and adjusted using month and day adjustment factors for 2001 to accurately reflect the AADT.

The monthly adjustment factor was obtained by averaging daily counts for an entire year and dividing by the average daily count for a specific month. This factor is used to either increase or decrease a traffic count due to the time the count was performed. For example traffic in the month of March in the corridor is typically less than the AADT, therefore the traffic has to be adjusted up to reflect the actual AADT. Averaging all weekly counts for 2000 and dividing the average weekly count by the average daily count calculated the daily traffic adjustment factor. Traffic during the week varies. For example, traffic on a Wednesday is greater than traffic on a Sunday, therefore traffic counts need to be adjusted to reflect an average day. Data for month and day adjustment factors were obtained from ITD's permanent automatic traffic recorder within the SH-75 corridor located in Blaine County, 3.5 miles north of Hailey at milepost 119.400.

Figure 5-1. SH-75, Average Annual Daily Traffic by Location



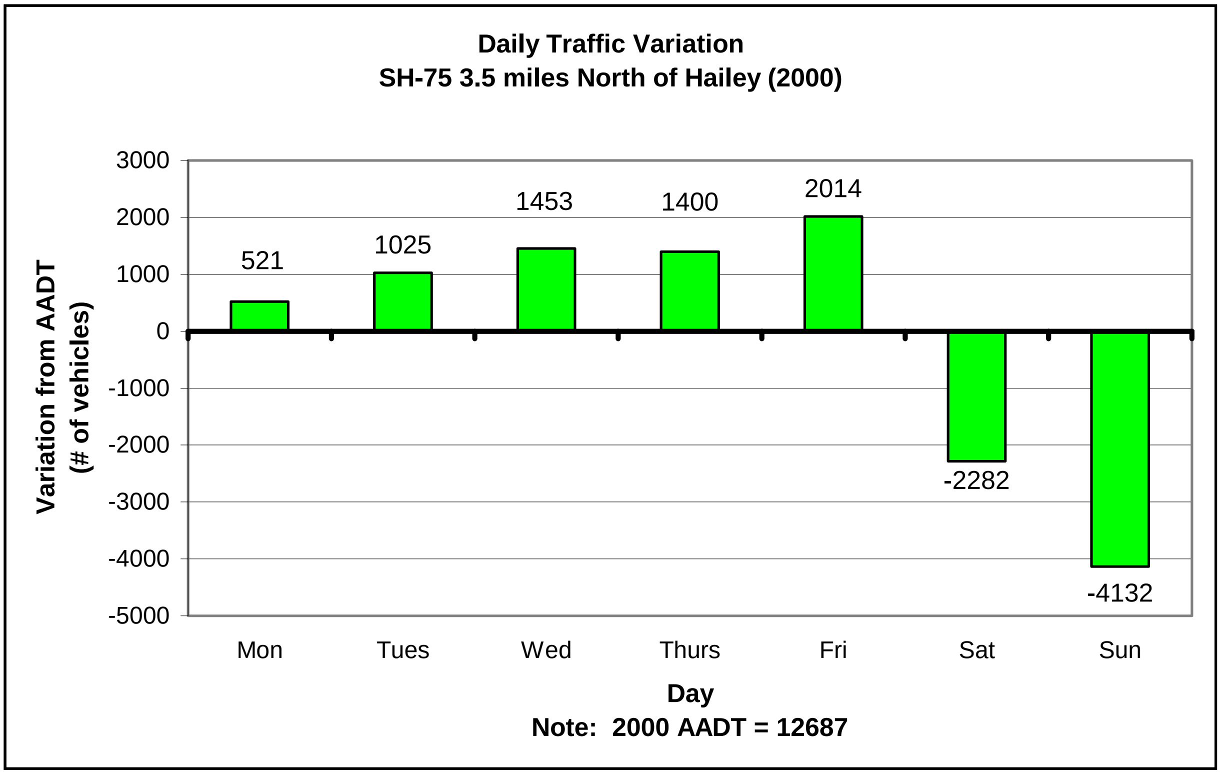
5.4 Seasonal Traffic Variation

Annual seasonal traffic variation was measured at ITD's permanent traffic recorder, located 3.5 miles north of Hailey. This data indicates that the traffic volumes are highest in July and August, and lowest in January and February.

5.5 Daily Traffic Variation

Figure 5-2 shows the daily traffic variation recorded in 2000 3.5 miles north of Hailey at ITD's automatic traffic recorder. The data show that Friday and Sunday vary most from the 2000 AADT, Friday having the heaviest traffic volume and Sunday having the lowest. Because most of the traffic is during the week this suggests that traffic is comprised mostly of commuting or working people.

Figure 5-2. Daily Traffic Variation



5.6 Hourly Traffic Variation

Figures 5-3 and 5-4 show how traffic volumes vary with time of day at points along SH-75. **Figure 5-3** shows weekday hourly traffic variation (on the hour) and **Figure 5-4** shows weekend hourly traffic variation. The data was recorded during 2000 at ITD's permanent automatic traffic recorder located 3.5 miles north of Hailey. **Figure 5-3** shows two distinct times of day when traffic is the heaviest, 7:00 to 9:00 am for northbound and 4:00 to 6:00 pm for southbound (a check of the counts using 30-minute intervals shows that the actual morning peak period is 6:30 to 8:30 a.m.). This suggests that during these peak times, commuters are primarily using the roadway. **Figure 5-4** shows that there is really not a peak time of day for the weekend and traffic volumes are considerably lower than on weekdays.

Figure 5-3. Weekday Hourly Traffic Variation

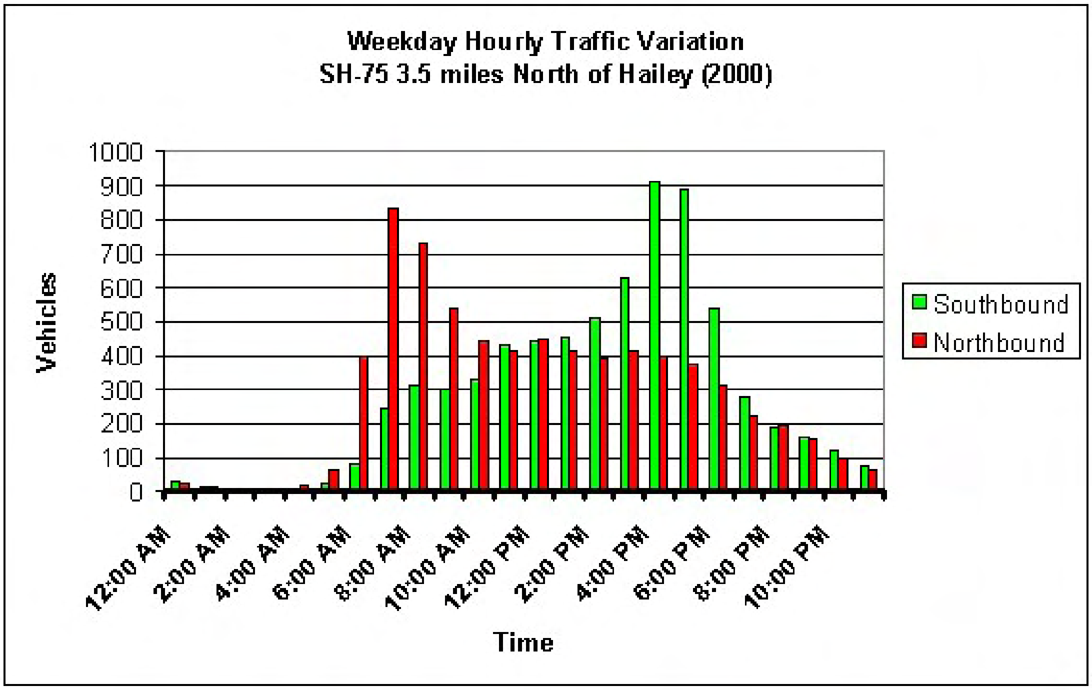
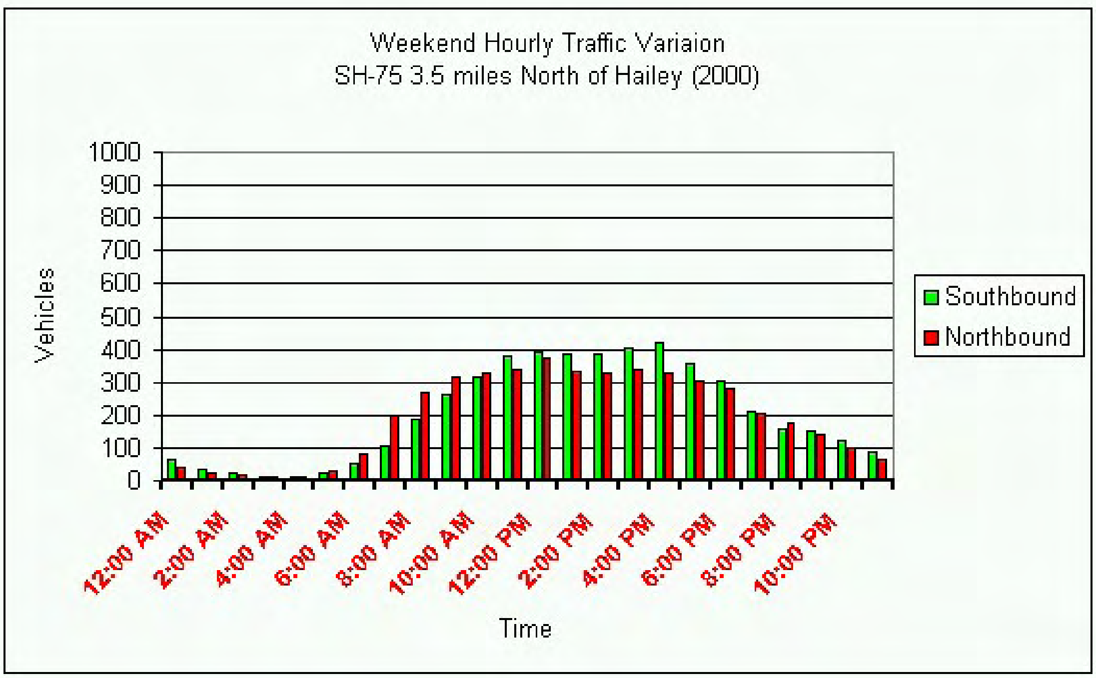


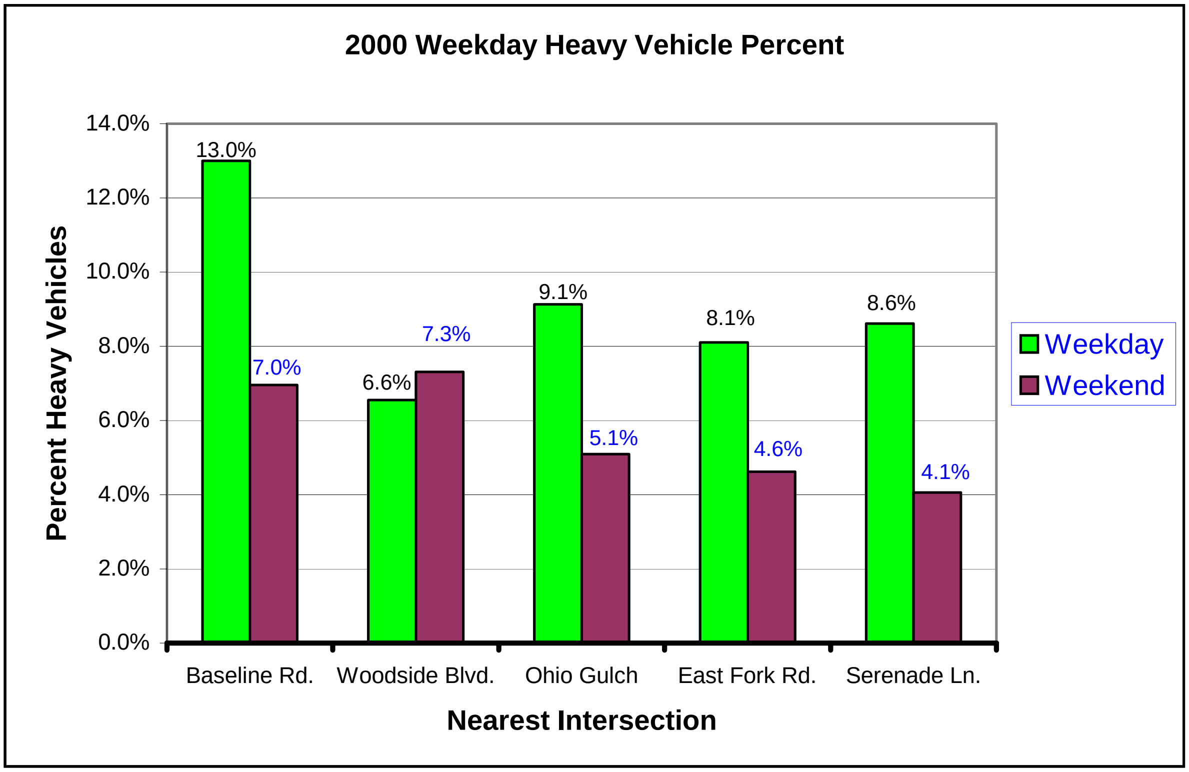
Figure 5-4. Weekend Hourly Traffic Variation



5.7 Heavy Vehicles

Figure 5-5 shows the weekday and weekend heavy vehicle percents. The heavy vehicle percents were obtained from traffic counts performed in March of 2000 at the specified locations. For the creation of these figures a heavy vehicle was defined as a bus, recreational vehicle, or large truck. **Figure 6** shows that weekdays typically have a higher percentage of heavy vehicles than weekends, with the exception of the Woodside Boulevard location.

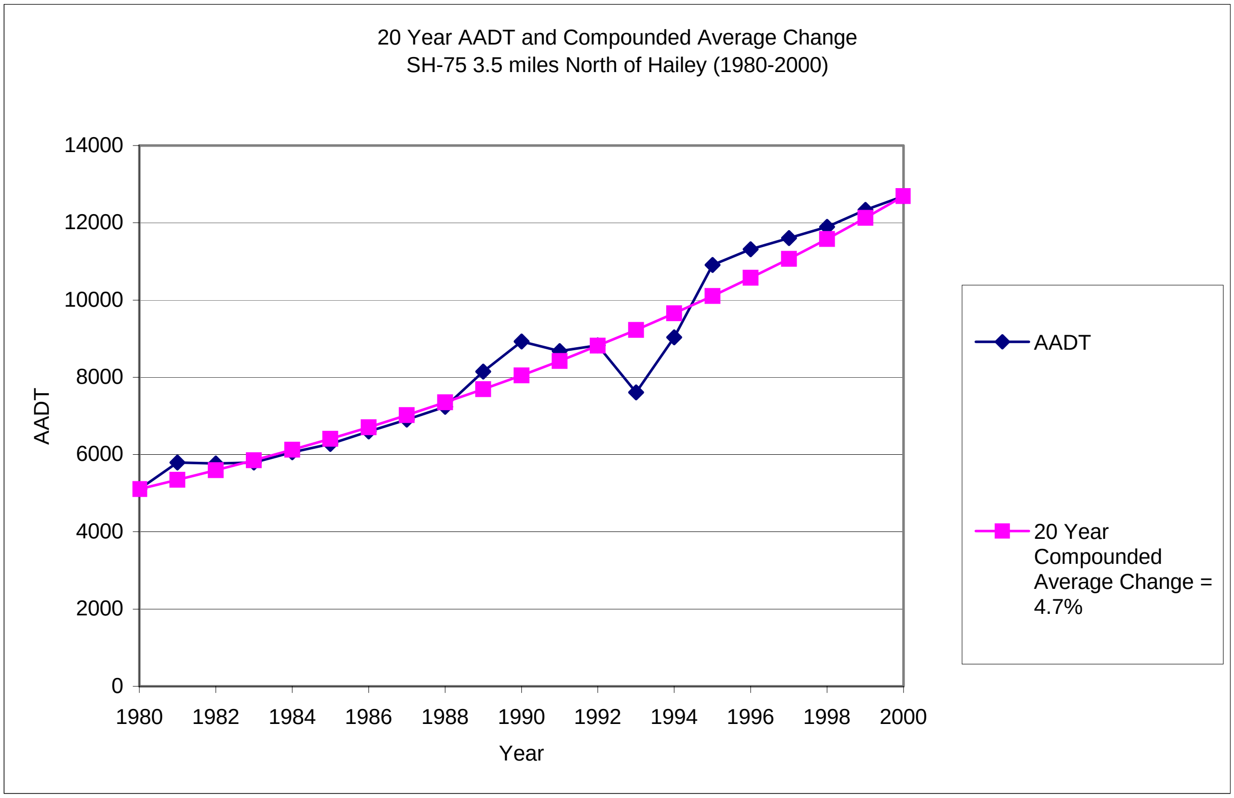
Figure 5-5. Weekday and Weekend Heavy Vehicle Percent



5.8 Traffic Growth Rates

Figure 5-6 shows the AADT and traffic growth rates for 1980 through 2000 at the automatic traffic recorder station 3.5 miles north of Hailey. The figure also shows the compounded 20-year average traffic growth rate, which is 4.7%. The 1990-2000 annual rate of traffic growth was similar at approximately 4.6%.

Figure 5-6. Traffic Growth Rates



5.9 Traffic Conditions

Capacity analyses were performed for four (4) selected roadway segments and for 16 intersections using the AM Peak Hour turning movement counts. Capacity analysis is the procedure used to compare the carrying capacity of a roadway with existing or forecasted traffic volumes. The volume to capacity ratio is a measure of roadway congestion, calculated by dividing the number of vehicles passing through a section of highway during the peak hour by the capacity of the section. As this technical memorandum documents existing conditions, the assumptions that are built into the capacity analysis are those for the existing roadway classification, posted speed, and existing geometry.

The ability of a roadway system to accommodate traffic demand is governed in part by the capacity of individual intersections. The key congestion points are generally located at the intersections. Thus, both roadway segment and intersection capacity analysis are principle tools used in traffic engineering to determine the adequacy of a system to meet traffic demands. Level of service (LOS) is a term used to describe the degree of traffic congestion. A LOS Fact Sheet has been developed for this project and is contained in the appendix.

In general, roadway segment levels of service are defined as follows:

<u>Level of Service A</u>- represents free flow.

<u>Level of Service B</u>- is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable.

Level of Service C- is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream.

Level of Service D- represents high-density but stable flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience.

Level of Service E- represents operating conditions at or above the capacity level. All speeds are reduced to a low but relatively uniform value.

Level of Service F- is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount that can traverse the point.

Source: Transportation Research Board, HCM 2000, Pg. 10-5.

The following sections document the traffic count data and apply those numbers to the existing capacity of the roadway segments, signalized intersections, and unsignalized intersections to develop LOS ratings.

5.10 Roadway Segment

A capacity analysis for roadway segments established by Chapter 15 of the Highway Capacity Manual was performed using facility type and speed. This methodology evaluates a roadway segment's capacity based on street width, number of lanes, the configuration of either the beginning or ending intersections and the two-way traffic volume. The facility type depends on the range of free-flow speed and average travel speed. **Table 5-2** shows the arterial classification and levels of service experienced for each classification type.

Table 5-2. Arterial Levels of Service

	ARTERIAL CLASSIFICATION			
	I	II	III	IV
Range of free-flow speeds	45 to 55	35 to 45	30 to 35	25 to 35
Typical free-flow speeds	50	40	33	30
LEVEL OF SERVICE	**AVERAGE TRAVEL SPEED**			
A	>42	>35	>30	>25
B	>34	>28	>24	>19
C	>27	>22	>18	>13
D	>21	>17	>14	>9
E	>16	>13	>10	>7
F	<16	<13	<10	<7
NOTE: Units are miles per hour.				

Source: Transportation Research Board, HCM 2000, page 15-3

Class I: Multilane divided or undivided/two-lane with shoulders; very low density access; no parking; separate left turn lanes; 0.5-2.0 signals/mi.; 45-55 mph speed limit; very little pedestrian activity; low density roadside development,

Class II: Multilane divided or undivided/two-lane with shoulders; low density access; no parking; separate left turn lanes; 1.0-5.0 signals/mi.; 40-45 mph speed limit; little pedestrian activity; low-medium density roadside development,

Class III: Multilane divided/undivided or one-way, two-lane; moderate density access; some parking; usually separate left turn lanes; 4.0-10.0 signals/mi.; 30-40 mph speed limit; some pedestrian activity; medium-moderate density roadside development,

Class IV: Undivided one-way, two-way, two or more lanes; high density access; significant parking; some separate left turn lanes; 6.0-12.0 signals/mi.; 25-35 mph speed limit; usually high pedestrian activity; high density roadside development.

Table 5-3 lists the roadway segments evaluated in this study and the resulting LOS.

Table 5-3. Existing Levels of Service for Roadway Segments

SH-75 Milepost	Nearest Intersection	LOS	HCM Classification
113.000	Woodside Boulevard	D	II
121.652	Ohio Gulch	A	I
125.300	East Fork Road	A	I
127.638	Serenade Lane	E	II

If roadway traffic volumes exceed those identified for Level of Service C, motorists may encounter difficulties entering or exiting the roadway in those areas of the segment where there is no access control, and will be limited in their ability to change lanes, pass, or travel at the posted speed limit. As corroborated by observations of the consultant team, the northern section of the corridor is currently operating at LOS E conditions.

5.11 Signalized Intersection

Capacity analyses for signalized intersections were performed using Highway Capacity Software (HCS), which utilizes the methodologies established by Chapter 16 of the Highway Capacity Manual.

Data parameters that are input into the analyses include the number of lanes, lane use, traffic volumes by turning movement, and signal cycle length. The primary output of the software is LOS.

The following seven signalized intersections were analyzed:

- Sixth Street and SH-75 (Ketchum)
- Fifth Street and SH-75 (Ketchum)
- Sun Valley Road and SH-75 (Ketchum)
- First Street and SH-75 (Ketchum)
- Elkhorn Road and SH-75 (Blaine County)
- Bullion Street and SH-75 (Hailey)
- Airport Way and SH-75 (Hailey)

The new signalized intersection at Albertson's was not analyzed, as no data is yet available for that intersection. The results of this analysis are summarized in **Table 5-4**.

Table 5-4. Existing Levels of Service for Signalized Intersections

Intersection With SH-75	Condition	Average Level of Service
Sixth Street	AM Peak Hour	A
Fifth Street	AM Peak Hour	A
Sun Valley Road	AM Peak Hour	B
First Street	AM Peak Hour	A
Elkhorn Road	AM Peak Hour	A
Hospital Road	AM Peak Hour	B
Bullion Street	AM Peak Hour	A
Airport Way	AM Peak Hour	A

All of the signalized intersections operate at LOS C or better. LOS A means there is very low control delay, and that delay will not exceed 10 seconds per vehicle; LOS B indicates that the control delay will be between 10 and 20 seconds per vehicle; and LOS C indicates that there will be delay between 20 and 35 seconds per vehicle.

5.12 Unsignalized Intersection

Nine unsignalized intersections within the study corridor that carry a significant amount of side-street traffic were examined. This included the following intersections:

- Serenade Lane and SH-75 (Ketchum)
- East Fork Road and SH-75 (Blaine County)
- Buttercup Road and SH-75 (Blaine County)
- Deer Creek Road and SH-75 (Blaine County)
- Empty Saddle and SH-75 (Ketchum)
- Myrtle Street and SH-75 (Hailey)
- Countryside Road and SH-75 (Hailey)
- Woodside Road and SH-75 (Hailey)
- Gannett Road and SH-75 (Bellevue)

The East Fork Road intersection was analyzed with the current Alturas to Timberway improvements in place. Section 5.13 documents this analysis with the pre-construction conditions at this location.

Capacity analysis for these unsignalized intersections was performed using the methodology in Chapter 17 of HCM 2000. The procedure is based on the use of both gap acceptance and empirical models to determine vehicle delay for the stop-controlled (minor) approaches and the left turning movements from the major streets at the intersection. LOS for an unsignalized intersection is determined by the control delay and is defined for each minor movement. LOS is not defined for the intersection as a whole and is not measured for the through traffic on SH-75. To analyze an intersection, it must be determined where the traffic conflicts exist between each minor street movement and the major street left turn movements. The size of the gaps needed to accommodate each of the these movements, through the conflicting traffic streams, is then determined. The average total delay for each of the movements is then estimated using empirical equations. The movement LOS depends on the average total delay per vehicle for that movement, as shown in **Table 5-5**.

Table 5-5. Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Total Delay (seconds/vehicle)
A	0-10
B	> 10-15
C	> 15-25
D	> 25-35
E	> 35-50
F	> 50

Source: Transportation Research Board, HCM 2000, pg. 17-2

Table 5-6 shows the nine unsignalized intersections that were examined and indicates the calculated level of service for the worst turning movement.

Table 5-6
Existing Capacity Analysis for Unsignalized Intersections

Intersection with SH-75	Condition	Worst Movement Level of Service
Serenade Lane	AM Peak Hour	B
East Fork Road	AM Peak Hour	C
Buttercup Road	AM Peak Hour	C
Deer Creek Road	AM Peak Hour	C
Empty Saddle Road	AM Peak Hour	B
Myrtle Street	AM Peak Hour	D
Countryside Road	AM Peak Hour	E
Woodside Road	AM Peak Hour	D
Gannett Road	AM Peak Hour	B

All intersections analyzed operate at an acceptable LOS with the exception of Countryside Road, which is at LOS E. LOS E is considered unacceptable under ITD standards. In all cases, the worst LOS movement was left turning vehicles from the side street intersecting SH-75.

5.13 East Fork Road and SH-75 Pre-Construction Conditions Analysis

The intersection of East Fork Road and SH-75 and SH-75 north of Ohio Gulch were also analyzed using the pre-construction roadway configuration. This portion of the highway had one lane in each direction. The intersection of East Fork Road did not have turn lanes. Using the same traffic volumes referenced elsewhere in this document and the same pre-existing roadway classification, prior to the Alturas to Timberway construction project, SH-75 north of Ohio Gulch operated at Level of Service D, at an average speed of 26 miles per hour during the morning peak period. For traffic entering the highway from East Fork Road, the northbound right turn operated at LOS D in the morning peak, while the southbound left turn operated at LOS F.

6.0 ACCIDENT ANALYSIS

A review of the collision history along the corridor was conducted and based on detailed records provided by the Idaho Office of Highway Safety for the period of January 1, 1998 to December 31, 2000. The accident history data is compiled from reports submitted by law enforcement agencies. The data lists all collisions that occurred in the corridor with a corresponding date, milepost, and the collision severity. The collision severity is based on the most severe injury that occurred in the collision and is based on the following scale:

- A Injury – Incapacitating injury which prevents the injured person from normally continuing the activities the person was capable of performing before the injury occurred, including severe lacerations, broken or distorted limbs, and scull or chest injuries.
- B Injury – Non-incapacitating injury which is evident to observers at the scene. Includes bumps, bruises, and minor lacerations.
- C Injury – Possible injury that includes claim of injuries not evident, limping, complaint of pain, nausea, and hysteria.
- PD/Rpt – Reportable property damage in excess of $750.
- Fatal – Injury results in death within 30 days of when injury occurred.

Table 6-1 compares the differing accident types with the severity at which they occurred.

Table 6-1. Differing Accident Types Compared with Severity

Accident Type	PD/Rpt	A-Inj-Acc	B-Inj-Acc	C-Inj-Acc	Fatal-Acc	Total	Percent
Angl Trning	25	1	3	2	0	31	9.5%
Angle	17	0	1	1	0	19	5.8%
Backed into	3	0	1	0	0	4	1.2%
Domstc Animl	0	0	1	0	0	1	0.3%
Embankment	2	0	0	0	0	2	0.6%
Fence	2	1	1	2	0	6	1.8%
Head-On	2	2	0	0	2	6	1.8%
Head-on Trng	6	0	5	2	0	13	4.0%
Jackknifed	1	0	0	0	0	1	0.3%
Oth-Non-Col	1	0	0	1	0	2	0.6%
Overturn	11	2	7	2	0	22	6.7%
Ovhd Sgn Sup	1	0	0	0	0	1	0.3%
Parked Veh	15	0	2	0	0	17	5.2%
Pedacycle	0	0	0	1	0	1	0.3%
Pedestrian	0	0	3	0	0	3	0.9%
Rear-end	83	3	9	24	0	119	36.5%
RearEndTrng	3	0	0	1	0	4	1.2%
SameDirTrng	10	1	0	2	0	13	4.0%
SS Opposite	6	3	2	4	1	16	4.9%
SS Same	17	1	1	2	0	21	6.4%
Tree	1	0	0	0	0	1	0.3%
Utility Pol	8	1	0	3	0	12	3.7%
Wild Anim	10	0	0	1	0	11	3.4%
Total	224	15	36	48	3	326	100.0%
Percent	68.7%	4.6%	11.0%	14.7%	0.9%		

Table 6-2 summarizes collision rates for different segments along the SH-75 corridor. The table is broken into segments between selected intersections along the corridor. It shows the collision rates occurring during 1998-2000, the Annual Average Daily Traffic (AADT), Vehicle Miles Traveled (VMT), and the Rate of accidents per 100 Million Vehicle Miles of travel (RMVM). All segments, with the exception of three, are well below the state average collision rate of 153 accidents per 100 million vehicle miles of travel. The three segments that were above the state average are downtown Hailey between Bullion Street and Myrtle Street, just south of Ketchum between Serenade Lane and Second Street, and through Ketchum between Second Street and Saddle Road, with RMVM values of 462, 527, and 455 respectively.

Table 6-2. Collision Rates for Different Roadway Segments

Roadway		Length	Total Accidents	RMVM
From	To			
US-20	Glendale	6.802	29	93.60
Glendale	Gannett	2.084	5	36.95
Gannett	Bullion	5.524	70	97.25
Bullion	Myrtle	0.382	29	462.20
Myrtle	Deer Creek	2.359	26	77.43
Deer Creek	Buttercup	0.614	4	45.77
Buttercup	East Fork	2.826	20	49.72
East Fork	Elkhorn	4.147	42	71.15
Elkhorn	Serenade	0.852	16	134.62
Serenade	Second St	0.662	54	527.58
Second St	Saddle	0.948	31	454.54

Of the three fatalities that occurred in the corridor, two occurred from head on collisions, and one was the result of a sideswipe from the opposite direction.

The three most common collision types were rear-end, angle turning, and overturned vehicles. Rear-end collisions are usually the result of high levels of congestion and following too closely. Angle collisions tend to occur where there is frequent, unsignalized side street access or driveways.

The following sections discuss the most common accident types in more detail.

6.1 Rear-End Collisions

Rear-end collisions were the most common type of collision in the corridor. From 1998 to 2000, 119 rear-end collisions occurred which account for 36.5% of all collisions. The most collision prone area was between Serenade Lane and Second Street, which had 37 rear-end collisions. Following is a list of areas with high levels of rear-end collisions.

- Between Gannett and Bullion: 32 rear-end collisions.
- Between East Fork and Elkhorn: 10 rear-end collisions.
- Between Bullion and Myrtle: 9 rear-end collisions.
- Between Second Street and Saddle Road: 9 rear-end collisions.

6.2 Angle Turning

An angle turning collision occurs when a vehicle makes a turn out of a driveway and is struck before it has the opportunity to establish itself into a lane. This type of collision accounts for 9.5% of all accidents occurring in the corridor. The area of most concern is between Gannett and Bullion Road where 14 angle turning accidents occurred. This type of accident generally occurs when traffic is heavy and the driver becomes impatient. When the driver becomes impatient he or she becomes more aggressive and will accept gaps in the traffic stream that are much smaller than those if traffic were less congested.

6.3 Overturn Vehicles

Overturn vehicles accounted for 22 accidents or 6.7% of all accidents that occurred on SH-75 between US-20 and Saddle Road during the three-year study period. The area of most concern for overturning vehicles is between East Fork and Elkhorn Road, which experienced 10 accidents. The other 12 accidents were distributed throughout the corridor and were not clustered.

6.4 High Accident Locations

The accident history data was also used to compile a statewide list of the top 20 High Accident Locations (HAL) for both roadway segments and intersections. The HAL analysis utilizes a new software program with a new HAL reporting methodology. The objectives of the new HAL program are to:

- Identify locations on the State Highway System with potential safety deficiencies;
- Systematically compare problem locations on a statewide basis; and
- Minimize the probability of identifying artificial problem areas.

The HAL program utilizes two separate methodologies: one to identify problem interchanges and intersections, and one to identify problem roadway segments. The HAL program uses collisions in a clustering process to identify roadway segments prone to non-intersection-related collisions.

The HAL program employs the same ranking criteria, with minor variations, for systematically ranking HAL on a statewide basis for both intersections and roadway segments. The position of a location in the HAL listing is determined by its statewide ranking in the following three categories:

- *Collision frequency* – Locations with a greater number of collisions rank higher than those locations with fewer collisions. To avoid bias toward urban locations with higher volumes, the HAL program combines collision frequency with severity and collision rate.
- *Severity (Economic Loss)* – Locations characterized by crashes of greater injury severity and economic costs to society are ranked higher. Severity is analyzed and ranked by three separate categories: (1) most harmful event, (2) collisions broken down into speed ranges, and (3) Federal Highway Administration (FHWA) injury cost estimates. Most harmful events and speeds are analyzed because certain types of accidents and higher speeds tend to influence accident severity and help to predict future severity ranges at locations. The FHWA cost is an economic evaluator based on cost data reflecting what people would be willing to pay to avoid types of injury accidents.

- *Collision rate* – Locations that tend to experience more collisions than expected based on the amount of vehicle travel are ranked higher. Accident rates are a tool used to account for the influence of vehicular volumes on accidents. Thus, accident comparisons that account for traffic volumes are less likely to be influenced by changing volumes and more likely focused on other roadway elements that may be influencing accident statistics.

Segment Analysis

The Idaho Office of Highway Safety's HAL report presents the top 20 accident segments within District 4 when compared to other facilities within the state of Idaho. Only one of the District's top 20 accident segments is within the SH-75 project study area. The statewide rankings are based on three years of collision data (1998-2000) as well as collision frequency, severity (economic loss), and collision rate. **Table 6-3** summarizes the accident ranking data.

Table 6-3. SH-75 Cluster Summary

Mileposts	Location Description	Length	District IV Rank	Avg Annual Accidents	Crashes per Mile
128.219-128.376	Between River Street and Second Street	0.157	13	6.67	127.39

Table 6-4 presents the types of accidents that occurred on the 0.157 mile segment of roadway between MP 128.219 and 128.376. The driver action category and the contributing circumstance category are not necessarily related.

Table 6-4. Accident Types at MP 114.492 to 114.772, SH-75

Driver Action	Count	Contributing Circumstance	Count
Going straight	27	Following too closely	10
Stopped in traffic	7	Inattention	4
Slowing in traffic	2	Other vehicle defect	2
Merging	2	Failed to yeild	1
Legally parked	2	Drove left of center	1
Avoiding veh/ped	2	Improper overtaking	1
Stariting In traffic	1	Distraction in/on vehicle	1
Changing lanes	1	Other	1
		Alchohol impared	1

The types of accidents occurring at this location suggest that drivers are following too closely.

Intersection Analysis

ITD's High Accident Location report presents the top 20 accident intersections within District 4 when compared to other facilities within the state of Idaho. None of the District's top 20 accident segments are along SH-75 within the study area.

7.0 TRIPS USING SH-75

In March and August of 2001, intercept surveys of SH-75 travelers were made by the consultant team to ascertain the travel characteristics of SH-75 users. Over 1500 surveys were taken during four weekdays and one weekend day. Surveys were conducted between

6:00 a.m. and 6:00 p.m. Information included trip origins and destinations, trip purpose, auto occupancy, time of day, and socioeconomic information.

The results will be used to calibrate a travel demand model for the SH-75 corridor. A separate report, SH-75 Origin-Destination Study, summarizes the results of that survey.

Some summary statistics are shown below. Average auto occupancy was 1.3 persons per vehicle. There is no transit route currently operating on SH-75. The parallel bicycle/pedestrian path is estimated to carry between one and two percent of the person trips occurring along the SH-75 corridor.

Figure 7-1 summarizes the trip origins and **Figure 7-2** the trip destinations using the corridor. The primary trip origins are Bellevue and Hailey and the primary destinations are Hailey and Ketchum/Sun Valley. Trips from outside of the study corridor (Shoshone, Twin Falls/Jerome) comprise approximately 18-25 percent of all traffic on the corridor. Trips destined north of the corridor to Stanley are more predominant in the summer than in the winter.

Figure 7-1. SH-75 Intercept Survey Trip Origins

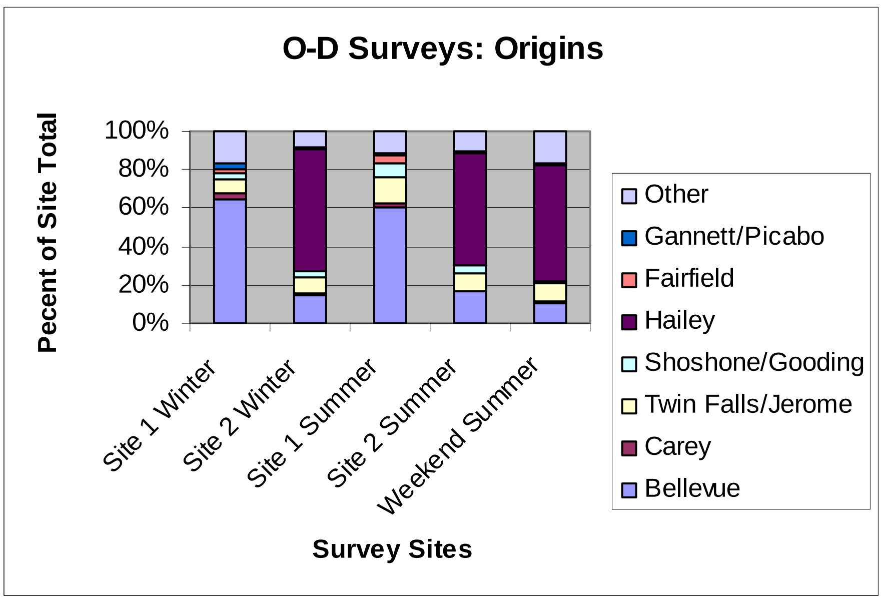


Figure 7-2. SH-75 Intercept Survey Trip Destinations

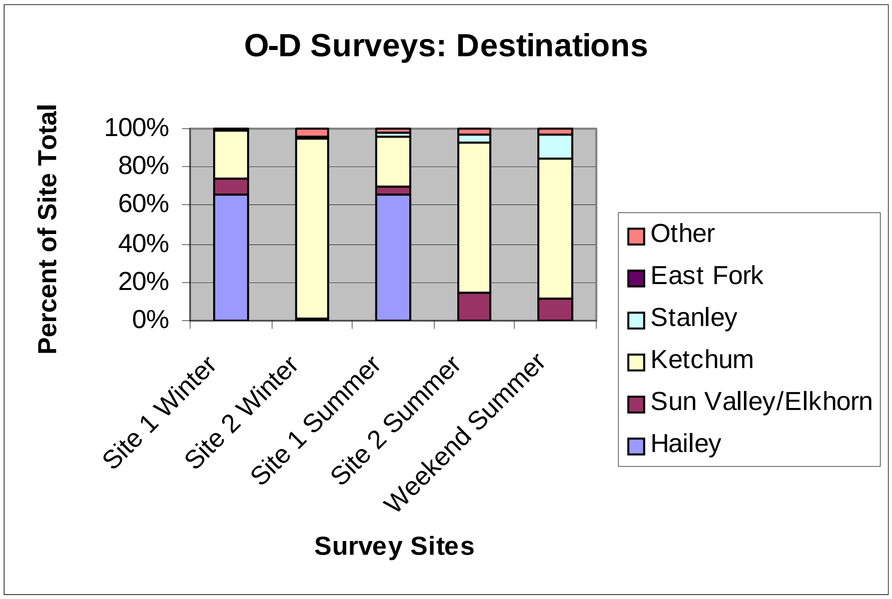
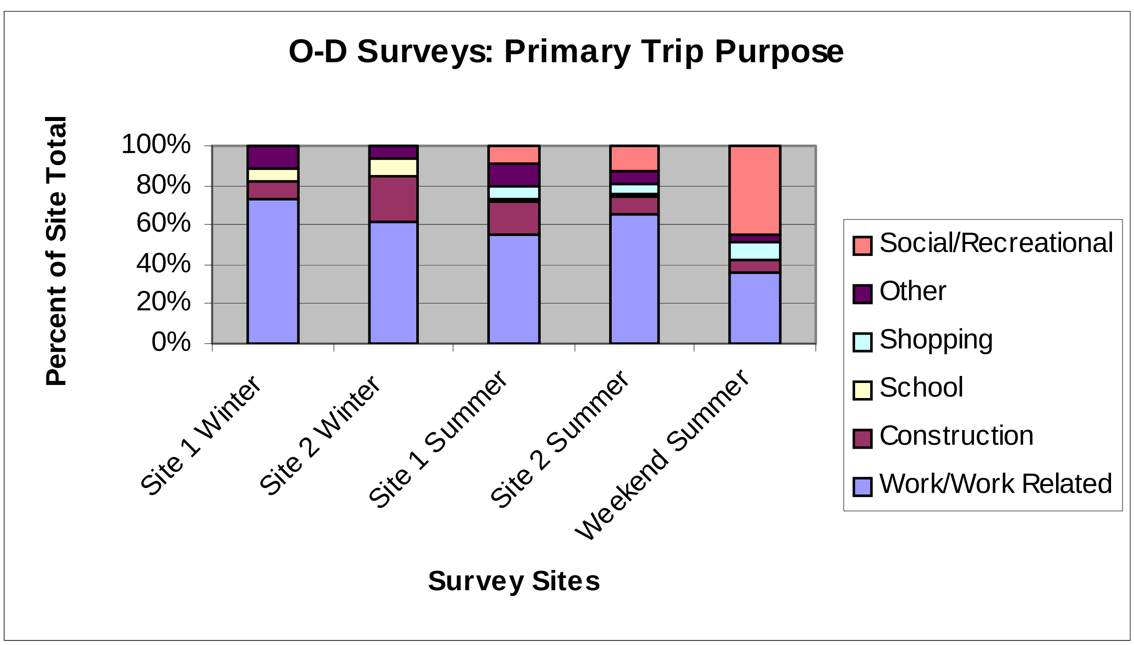


Figure 7-3 summarizes primary trip purpose. The predominant trip purpose is for work or work related purposes on weekdays, and social/recreational purposes on the weekend. Construction accounts for 5-13 percent of all weekday trips on the corridor. Weekday social/recreational trips are higher in the summer, reflecting trips to and through the corridor bound for recreational destinations north of Ketchum.

Figure 7-3. SH-75 Intercept Survey Trip Purposes



8.0 PHYSICAL CONDITIONS

Bridge structural sufficiency is rated on a scale of 0 (failing, needs immediate repair) to 100 (good to excellent condition). A rating of 50 or below puts the bridge on a programmed replacement or repair list. There are no bridges along the SH-75 study corridor that have a sufficiency rating of 50 or lower.

Pavement condition is rated on a scale of good, fair, poor, and very poor. Generally, SH-75's pavement condition is rated "Good", except for a section near US-20, which is rated "Fair", and the section of SH-75 spur between Ketchum and Sun Valley, which is also rated "Fair". There are no "Poor" or "Very Poor" pavement condition ratings within the study corridor.

9.0 OTHER TRANSPORTATION FACILITIES

9.1 Transit

The only existing transit system is the Ketchum Area Rapid Transit (KART) which provides periodic, fixed-route service between Warm Springs/Ketchum and Sun Valley/Elkhorn. Service headways are typically 20 minutes. Service is provided on two routes and is typically provided between 7:00 am and 12 midnight. Service schedules vary between the winter season and the summer season.

A new commuter service, scheduled for three runs during peak hours only, is scheduled to begin service between Bellevue and Ketchum in June 2002. This service will have bus runs that are 90 minutes apart.

Taxi service is available from several private transportation providers. Private transit service is also available from the Boise Airport to the Wood River Valley.

9.2 Bicycle/Pedestrian

Sidewalks exist intermittently in the urbanized sections of the corridor. There are sidewalks along SH-75 in sections through Bellevue between Chestnut and Ash Street. Sidewalks exist along SH-75 in Hailey from approximately Airport Way through Hailey to approximately Myrtle Street. In Ketchum, there are sidewalks along the improved section between Elkhorn and Serenade Lane, and in downtown Ketchum between 2nd Street and the end of the study corridor at Warm Springs Road. Sidewalks do not exist along the rural sections or in the urbanized section in Ketchum across the Trail Creek Bridge. The sections of SH-75 that do not have curb and gutter have shoulders that can be used by bicyclists.

9.3 Multi-use Paths

The Wood River Trail system and Sun Valley Trail system are paved bicycle and walkway systems connecting all the cities in the Wood River Valley. The pathways are open to biking, rollerblading, walking, running, horseback riding, and cross-country skiing in the winter.

The Wood River Trail extends approximately 22 miles along the former Union Pacific rail line between the towns of Ketchum and Bellevue. The pathway starts on the north side of Bellevue, travels along the east side of SH-75 to Hailey. The pathway then runs alongside Buttercup Road through Hailey. North of Hailey, the pathway again runs alongside the east side of SH-75 toward Ketchum, crossing SH-75 to the west side of the highway near St. Luke's Hospital. The trail extends through Ketchum and connects to the Sun Valley trail near Saddle Road.

The Sun Valley trail system connects to the Wood River trail system at Elkhorn Road and in the town of Ketchum. The Sun Valley trails total approximately 12 miles. The path runs along Sun Valley Road, continues beside the Big Wood River in Ketchum and circles around on Elkhorn Road through Sun Valley's Elkhorn Resort before passing near Sun Valley Lodge on Dollar Road.

In addition to providing a recreational outlet for Blaine County citizens, many people use the trail to commute to work and for other non-recreation trips.

9.4 Airport

Friedman Memorial Airport is located about one mile south of Hailey. The Airport is owned by the City of Hailey and serves greater Blaine County. Freedman Memorial Airport's service is primarily from Salt Lake City (Skywest) and Boise (Horizon Air). Another carrier is considering providing non-stop service between Los Angeles and Hailey. Several private transportation providers serve the airport.

Freedman Memorial Airport has approximately 23,600 flights a year. That equals approximately 11,800 incoming flights and 11,800 outgoing flights annually. Freedman Memorial Airport had 59,073 enplanements in FY 2001, and approximately the same number for deplanements.

The Magic Reservoir Airport is also close to the SH-75 corridor. The airport serves Blaine County and Camas County and is owned by the State of Idaho. The facility is located near the Magic Reservoir.

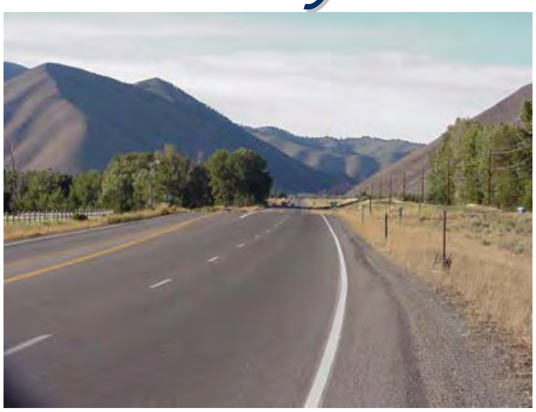
9.5 Rest Areas

ITD owns and maintains a rest area at Timmerman Junction at the intersection of SH-75 and US-20. It is classified as a "Deluxe" rest area and has traveler information and rest facilities. ITD is planning for a future "basic" rest area to be located north of Ketchum along SH-75.

Timmerman to Ketchum Environmental Analyses

Project No. STP-F-2392 (035)
Key No. 3077
Agreement No. 4718

Origin/Destination Intercept Study Technical Memorandum



February 2003

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APPENDICES

1.0 INTRODUCTION

Two origin-destination surveys were conducted in the Wood River Valley to obtain current travel information about trips that use State Highway 75 (SH-75); this information was used to develop data to build and calibrate a travel forecasting model for the Highway 75 Corridor. The data collected via these surveys was used to better understand who is using the highway, where they are coming from and where they are going, why they are traveling, and when. The model will be used to predict future highway use and demand in 20 years as future corridor improvements are considered.

2.0 METHODOLOGY

Two origin-destination intercept surveys were conducted during the spring and summer months of 2001. For the spring survey, approximately 600 randomly selected northbound drivers on SH-75 were waved-off the highway by ITD representatives to answer a series of questions pertaining to their household type and trip. For the summer survey, an additional 300 drivers were interviewed during a special Saturday survey (for a total of approximately 900 respondents). The surveys were conducted on the following dates and locations:

March 27 Woodside (Station 1)
March 28 Ohio Gulch/Alturas Way (Station 2)
August 15 Woodside
August 16 Ohio Gulch/Alturas Way
August 18 Ohio Gulch/Alturas Way (Saturday)

For the spring weekday surveys, crews were onsite continuously between 6:30 a.m. and 4 p.m. For the summer surveys, crews were onsite continuously between 6:30 a.m. and 6 p.m. on the weekdays, and from 9 am to 4 p.m. on Saturday. The weekday hours were extended during the August surveys to capture the “reverse commute,” or those who commute north in the afternoon.

Travelers were “intercepted” along SH-75 by state DOT vehicles, which flagged interview candidates over to the side of the road. A five to ten-minute interview was conducted, asking questions about trip purpose, socioeconomic characteristics, trip origin and destination, and other information to be used to create a travel model for the corridor. Appendix A contains the survey instrument.[1] Travelers were then assisted back onto the highway.

The intercept surveys coincided with traffic counts that were simultaneously collected in the corridor. The surveys were expected to include commuters, recreational visitors, construction workers, school trips, parents transporting children for non-school activities (e.g., “soccer moms”), and other trip types using the Highway 75 Corridor.

Advance notification of the surveys was given to the general public through the local media (radio and newspaper). In addition, a variable message sign was installed on SH-75 several days prior to the survey to advise highway users.

A sufficient number of interviews were conducted to develop a scientifically valid sample, using travel behavior categories such as household size, income, and auto ownership; employment characteristics; trip origin, and destination; trip purpose; and number of auto occupants.

[1] Parsons Brinckerhoff retained the services of CJ Olson Market Research, Inc. to assist in the design of the survey instrument, to provide field assistance for the survey, and to assist in analysis of the data collected.

3.0 INTERCEPT DATA SUMMARY

This section summarizes the origin-destination survey data.

Table 3-1 reports place of residence and place of work for work trips surveyed during the spring (comparable information has not been tabulated for the summer survey). The table indicates that the majority of respondents live in either Hailey or Bellevue (70%) and work in Ketchum (65%). Another 24% of survey respondents work in Hailey, followed by 3% of respondents who work in Sun Valley. A total of 13% of respondents reported their place of residence as 'OTHER.' Another 2% of survey respondents reported their place of work as 'OTHER.' The vast majority of survey respondents live in Blaine County.

Table 3-1
Work Trips by Place of Residence
and Place of Work (Spring Survey Only)
(Numbers shown are percentages)

Place of Residence	Place of Work: North/ West of Ketchum	Sun Valley	Ketchum	Hailey	Between Hailey / Ketchum	Bellevue	Twin Falls/ Jerome	Other	Total
North Ketchum	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.34
Ketchum	0.00	0.34	0.34	2.06	0.00	0.00	0.00	0.34	3.09
Hailey	0.00	0.34	30.93	0.69	0.00	2.75	0.34	1.38	36.43
Between Hailey and Ketchum	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.34
Bellevue	0.34	1.37	18.21	14.78	0.34	0.00	0.00	0.34	35.40
Shoshone	0.00	0.00	3.44	0.69	0.00	0.00	0.00	0.34	4.47
Twin Falls/ Jerome	0.34	0.34	4.12	2.06	0.00	0.00	0.00	0.00	6.87
Other	0.34	0.69	7.90	4.12	0.00	0.00	0.00	0.00	13.06
Total	**1.03**	**3.09**	**65.29**	**24.40**	**0.34**	**3.09**	**0.34**	**2.40**	**100.00**

Figure 3-1 shows the number of vehicles available to households making all trips. Auto ownership in the corridor is quite high; virtually all survey respondents reported having at least one vehicle available to their household. Vehicle ownership patterns did not differ significantly between the spring and summer surveys. More than 40% of households had two vehicles available, and another 25% had three vehicles available. Average auto ownership was 2.6 vehicles/household for households that were making work trips.

Figure 3-1: Households by Vehicles Available (All Trips)

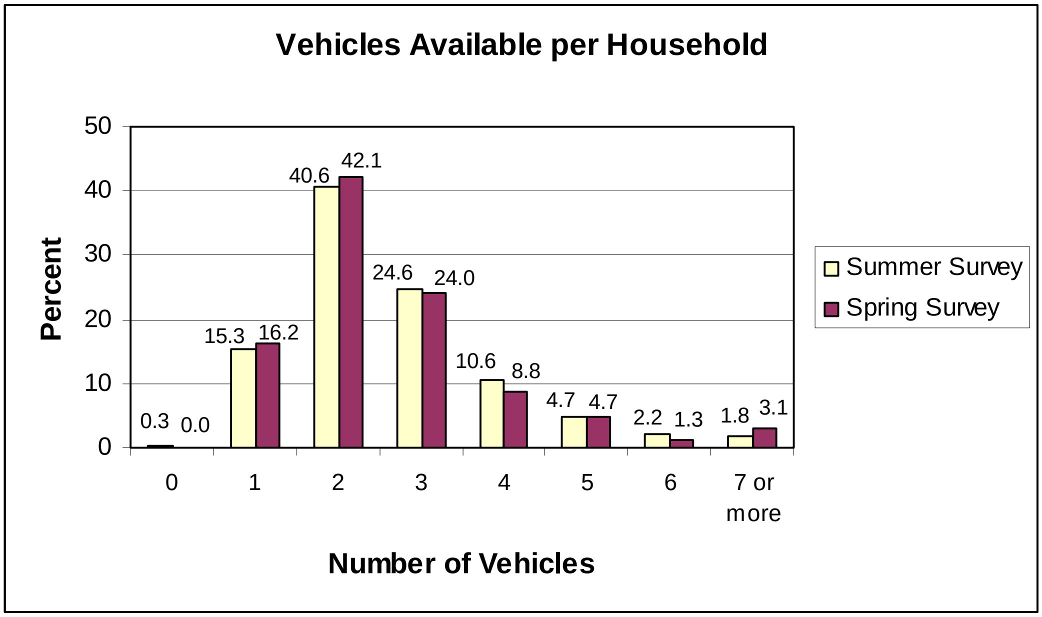


Table 3-2 shows the range of household sizes for households making all trips. Summer travelers have slightly larger households with an average size of 3, compared to 2.85 for spring travelers.

Table 3-2
All Trips by Household Size

Summer Household Size	Percent	Cumulative	Spring Household Size	Percent	Cumulative
1	12.8	12.8	1	14.0	14.0
2	32.2	45.0	2	33.9	47.9
3	19.0	64.0	3	19.9	67.8
4	18.2	82.2	4	20.3	88.1
5	10.2	92.4	5	9.2	97.3
6	5.1	97.5	6	2.4	99.7
7 or more	2.0	99.5	7 or more	0.4	100.0
No Data	0.4	100.0	No Data	0.0	100.0
Total	**100**		**Total**	**100**	

Table 3-3 shows the range of household incomes for households making all trips. Household incomes are roughly similar in all four ranges. Summer travelers appear to have somewhat higher overall incomes, although a relatively high non-response rate for this group (almost 10%) could exaggerate this pattern.

Table 3-3
All Trips by Household Income

Summer Household Income	Percent	Cumulative	Spring Household Income	Percent	Cumulative
< $15k	6.9	6.9	< $15k	7.6	7.6
$15 - 34.9k	21.5	28.4	$15 - 34.9k	26.4	34.0
$35 - 74.9k	34.5	62.9	$35 - 74.9k	37.7	71.7
> $75k	27.3	90.2	> $75k	24.2	95.9
Don't Know/Refused	9.7	100.0	Don't Know/Refused	4.0	100.0
Total	**100**		**Total**	**100**	

Table 3-4 shows the range of vehicle occupancies for households making all trips. In both the spring and summer, a large majority of trips are made by single-occupant vehicles. Average vehicle occupancy is higher in the summer at 1.5, compared to 1.3 in the spring.

Table 3-4
All Trips by Vehicle Occupancy

Summer Number of Occupants	Percent	Cumulative	Spring Number of Occupants	Percent	Cumulative
1	67.6	67.6	1	76.8	76.8
2	20.8	88.4	2	17.1	93.9
3	7.9	96.3	3	5.1	99.0
4	2.6	98.9	4	0.6	99.6
5	0.3	99.2	5	0.2	99.8
6 or more	0.7	100.0	6 or more	0.2	100.0
Total	**100**		**Total**	**100**	

For work trips, Table 3-5 shows that vehicle occupancies decline compared to non-work purposes; 80% of home-based work trips are made by single-occupant vehicles, and 20 percent are in carpools (there was no fixed-route transit service in effect at the time of the origin-destination surveys; this transit service was initiated approximately a year later). The 20 percent carpooling share is somewhat higher than national trends from the 2000 census, where an average 12 percent carpool to work (from the Census Transportation Planning Package [CTPP 2000]).

Table 3-5
Home Based Work Trips by Vehicle Occupancy

Summer Number of Occupants	Percent	Cumulative	Spring Number of Occupants	Percent	Cumulative
1	80.9	80.9	1	80.6	80.6
2	11.3	92.2	2	14.4	95.0
3	6.5	98.7	3	4.6	99.6
4	1.4	100.0	4	0.3	100.0
Total	**100**		**Total**	**100**	

Table 3-6 shows the percent of respondents that live in Blaine County. Slightly more of the spring survey households were Blaine County residents.

Table 3-6
Percent Blaine County Residents (All Trips)

Summer Blaine County Resident	Percent	Spring Blaine County Resident	Percent
Yes	72.9	Yes	75.8
No	27.0	No	24.1
Don't know	0.1	Don't know	0.1
Total	**100**	**Total**	**100**

For home-based work trips, in the summer 79.9% were Blaine County residents, whereas in the spring, 76.2% were Blaine County residents.

Table 3-7 shows the percent of trips originating from various activities. In both the spring and summer, the majority of trips originated from home. In the spring, 16% more trips originated from homes than in the summer. In the summer, 6% more trips originated from shopping or dining locations.

Table 3-7
Trip Origins by Activity Type (To All Destinations)

Summer Activity at origin	Percent	Spring Activity at origin	Percent
Home	52.0	Home	68.6
Office work	8.7	Office work	6.4
Construction site	4.4	Construction site	1.9
Other work	9.0	Other work	6.8
Shopping/Dining	12.2	Shopping/Dining	6.0
Gas station/convenience store	0.9	Gas station/convenience store	0.6
Hotel/Motel/Vacation home	1.1	Hotel/Motel/Vacation home	0.5
Airport	1.6	Airport	0.5
School/Daycare	2.3	School/Daycare	0.9
Other social/recreational	6.1	Other social/recreational	4.6
Other	1.6	Other	2.8
Missing	0.0	Missing	0.3
Total	**100**	**Total**	**100**

Table 3-8 shows the percent of all trips ending at various activities. In both summer and spring, the two most frequent destinations were office work followed by other work. In the summer, relatively more trips were destined for homes (7% more), recreation (5% more), hotels (2% more), and shopping/dining (3% more).

Table 3-8
Trip Destinations by Activity Type (From All Origins)

Summer Activity at destination	Percent Frequency	Spring Activity at destination	Percent Frequency
Home	17.1	Home	10.9
Office work	23.7	Office work	32.4
Construction site	12.0	Construction site	12.5
Other work	23.0	Other work	21.7
Shopping\Dining	6.7	Shopping\Dining	3.7
Gas station\convenience store	0.3	Gas station\convenience store	0.3
Ski area	0.2	Ski area	0.7
Hotel/Motel/Vacation home	3.1	Hotel/Motel/Vacation home	1.0
Airport	0.4	Airport	0.0
School/Daycare	1.0	School/Daycare	4.5
Other social/recreational	9.3	Other social/recreational	4.4
Other	3.3	Other	7.6
Missing	0.0	Missing	0.2
Total	**100**	**Total**	**100**

In the summer, 44% of all trips were home-based work trips, whereas in the spring, 55% of all trips were home-based work trips (separate data not shown in Table 3-9 above). Table 3-9 breaks these home-based work trips down further, and shows that office work was the primary destination in spring and summer. In the summer, twice as many respondents worked at home as in the spring.

Table 3-9
Home-Based Work Trips by Place of Work

Summer Activity at Destination	Percent Frequency	Spring Activity at Destination	Percent Frequency
Home	11.8	Home	4.3
Office work	44.2	Office work	51.3
Construction site	15.1	Construction site	18.7
Other work	28.9	Other work	25.7
Total	**100**	**Total**	**100**

Finally, the survey also asked respondents what they pay in out-of-pocket costs to park their car at work. Only one person answered that they pay for parking; the reported cost was $99/month. That person reported their work address at the intersection of 4th Street and Main Street in Ketchum.

APPENDIX A

INTERCEPT SURVEY QUESTIONNAIRE

CJ OLSON MARKET RESEARCH **SUN VALLEY ROADSIDE #21052**

DIRECTION DRIVING: 1…N 2…S	INTERVIEWER:
TIME OF INTERVIEW: 1 AM 2 PM	DATE:

BY OBSERVATION:

1. NUMBER OF OCCUPANTS (WRITE IN NUMBER) _____
2. TYPE OF VEHICLE
   NON-COMMERCIAL CAR, PICKUP, VAN 1
   MOTORCYCLE 2
   SEMI / HEAVY TRUCK WITH TRAILER 3
   COMMERCIAL CAR, PICKUP, VAN 4

FOR ALL FOLLOWING: ASK THE DRIVER

Hello. The Idaho Transportation Dept. has asked us to conduct a very short survey with drivers using this highway, and I'd like a moment of your time. (IF ASK WHY) The information will be used for planning improvements on this roadway.

3. Have you, personally, completed this roadside survey in the past few days? YES…1 NO/ DK…2
4. Thinking about where you started this trip, that is, when you last got into your vehicle, where were you…? (READ LIST AND RECORD BELOW UNDER 'OR') And what will be your next stop? (READ LIST AND CIRCLE CODE. RECORD BELOW UNDER 'DEST')

	OR1 *	OR2	DEST1*	DEST2
Home	1	1	1	1
Office work (includes business meetings)	2	2	2	2
Construction site	3	3	3	3
Other work	4	4	4	4
Shopping / Dining	5	5	5	5
Gas station / Convenience Store	6*		6*	
Ski area	7	7	7	7
Hotel / Motel / Vacation home	8	8	8	8
Airport	9	9	9	9
School / Daycare	10	10	10	10
Other social/ recreational	11	11	11	11
Someplace else (WRITE IN) ____________	97	97	97	97
REFUSED	99	99	99	99

*IF GAS STATION/ CONVENIENCE STORE, PROBE FOR PREVIOUS ORIGIN/ NEXT DESTINATION.

5. Looking at this map, what intersection or landmark is closest to where you started this trip? (RECORD BELOW UNDER 'ORIGIN.') And what intersection or landmark is closest to your next stop? (RECORD UNDER 'DEST.') (DO NOT RECORD GAS STATION / CONVENIENCE STORE.)

	ORIGIN	DEST.
INTERSECTION (EX: S RIVER ST & BULLION ST) OR LANDMARK		
CITY OR TOWNSHIP (EX: HAILEY)		
STATE & ZIP (EX: ID, 83333)		

6. (IF EITHER ORIGIN OR DESTINATION IS IN NORTH KETCHUM, ASK:) Did you or will you use State Highway 75 or Serenade Lane for your trip today? (CIRCLE BELOW UNDER Q6.)

	Q6	Q7
YES, SH 75	1	1
YES, SERENADE LANE	2	

7. (IF EITHER ORIGIN OR DESTINATION IS SOUTH OF BELLEVUE, ASK:) Did you or will you use State Highway 75

YES, GANNETT RD.......................... 3
NO.. 4 4
DON'T KNOW 5 5

or Gannett Road for your trip today? (CIRCLE ON LEFT UNDER Q7.)

8. How often do you make this trip? (WRITE IN ANSWER OR CIRCLE CODE)

__________ TIMES PER: (CIRCLE) DAY WEEK MONTH

97. OTHER (WRITE IN) ________________ 98. 1ST TIME EVER 99. VARIES/ NO REGULAR PATTERN

9. When you reach your next stop, will you have to pay for parking? (IF YES, ASK:) How much does it cost to park there? (ENTER AMOUNT AND CIRCLE TIME PERIOD

YES .... 1 COST _____ PER: HOUR DAY MONTH DK
NO 2
DON'T KNOW 3

10. These next questions will be used only to group your answers. First of all, are you a resident of Blaine County? (CIRCLE CODE)

YES .... 1 (SKIP TO Q12)
NO .... 2 (CONTINUE)
DON'T KNOW .... 3 (CONTINUE)

11. What city and state do you live in? (WRITE IN—CHECK SPELLING)

CITY ______________________________ STATE ________________________

12. Including you, how many people live in your household? (WRITE IN NUMBER) _____

13. Including cars, trucks and vans, how many vehicles are there in your household? (WRITE IN NUMBER) _____

14. Which letter best describes your total household income for last year, before taxes? (SHOW CARD TO DRIVER AND ASK THEM WHICH LETTER APPLIES)

Under $15,000 .... A...... 1
$15,000 - $34,999............................ B 2
$35,000 - $74,999............................ C...... 3
$75,000 or more............................... D...... 4
DON'T KNOW / REFUSED E...... 5

15. If we need to clarify any of this information, may we call you?
YES…1 (RECORD NAME/ NUMBER BELOW) NO …2

16. Would you be willing to participate in a 15-minute telephone interview regarding potential transit service in the State Highway 75 corridor?

YES…1 (RECORD NAME/ NUMBER BELOW) NO …2

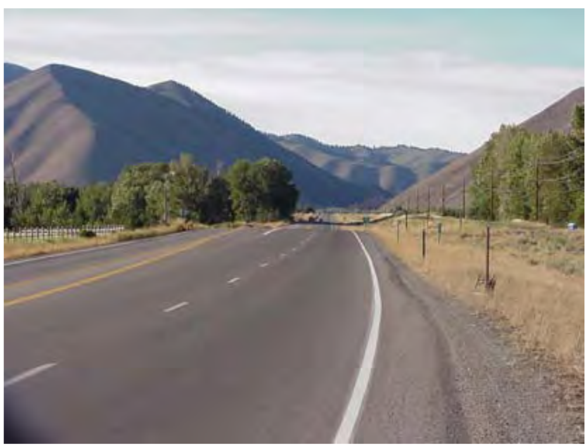
NAME: __________________________ PHONE: __________________________ PHONE IS:
1…HOME
BEST TIME TO CALL: MORNING…1 AFTERNOON…2 EVENING…3 2…WORK
____ 3…OTHER

THANK THEM, AND GIVE THEM SMALL REFRIGERATOR WHITEBOARD WITH MARKER.

Timmerman to Ketchum Environmental Analyses

Project No. STP-F-2392 (035)
Key No. 3077
Agreement No. 47 18

Transit Considerations



March, 2003

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1.0 INTRODUCTION

The Federal Highway Administration and the Idaho Transportation Department (ITD) are preparing an environmental impact statement (EIS) for Highway 75 from the Timmerman Junction at Highway 20 to Ketchum. This EIS is being prepared in accordance with the National Environmental Policy Act and FHWA Technical Advisory 6640.8A. This report is intended to provide the reader with a comprehensive description of transit considerations in the environmental impact statement process and documents the following:

1. Existing transit services in the Highway 75 corridor;
2. Previous transit studies for Blaine County;
3. State of Idaho transit programs;
4. Funding sources for transit;
5. Estimating future transit demand;
6. Travel demand mode split;
7. Transit components of project alternatives; and
8. Fixed guideway analysis.

2.0 EXISTING TRANSIT SERVICES AND FACILITIES

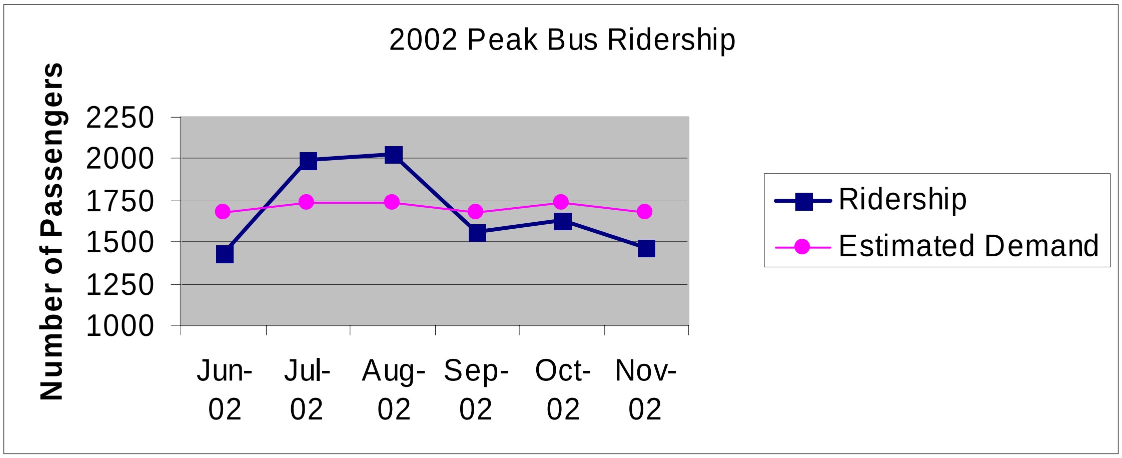
Ketchum Area Rapid Transit (KART) serves the cities of Ketchum and Sun Valley with 8 miles of bus service. In addition, KART offers a paratransit service for disabled riders. KART has 9 fixed route buses in its fleet and operates 6 during peak times, along 2 routes. Special services within the Ketchum/Sun Valley city limits are provided for American with Disabilities Act (ADA) certified riders and from North Fork to East Fork for elderly and handicapped persons.

No fares are charged to use the KART fixed route or demand response system. Funding is from a local option tax in both cities. KART receives about 25% of these tax revenues that fully fund the service. In addition, KART receives funding from their charter services and advertising.

In June of 2002, a regional peak hour express bus system, the Peak Bus, was implemented to provide peak hour transit service along Highway 75 from Bellevue to Ketchum. The service is contracted out and currently uses one vehicle to provide 3 runs each peak hour. A summary of ridership for the first six months of operation is shown in Table 1.

Peak Bus is funded from contributions made by local cities and Blaine County, from ITD, and federal grant monies.

Table 1
Peak Bus Ridership for 2002



3.0 PREVIOUS TRANSIT STUDIES

Several statewide transportation and transit plans have been developed that address public transportation. These include:

> *Movin' Idaho – Idaho Public Transportation Plan*, Approved 1995 by the Idaho Transportation Board.
>
> *Idaho Statewide Public Transportation Needs and Benefit 1996 Telephone Study*, a field research document.
>
> *Idaho Statewide Public Transportation Needs and Benefits Analysis Study,* a 1997 overview of existing public transportation services.

In 2000, Blaine County, with financial assistance from ITD, prepared a comprehensive transit feasibility study. This study is documented in the report <u>Blaine County Public Transportation Feasibility Study</u>, May 2001. It outlines a series of actions that the Wood River Valley could take to begin providing transit services to their residents and visitors. It also provides an overview of funding possibilities and needs to support implementation of public transit service.

Partly in response to the transit feasibility study, the Wood River Valley public entities worked together to plan and implement the Peak Bus system.

4.0 STATE TRANSIT PROGRAMS

Title 40 Highway and Bridges Chapter 21 Regional Public Transportation Authority of the Idaho Statutes provides the policy basis to support public transportation in the State of Idaho.

> 40-2102. POLICY OF STATE It is hereby recognized by the legislature of the State of Idaho that, as the population and economy of areas of this area grow, the total needs for mobility of commerce and people cannot be met solely with highway and road systems; that motor vehicle congestion and air quality problems

> result which may adversely affect health and safety; that there are a variety of persons who are elderly, who have disabilities, who live in rural areas or who otherwise require public transportation services for their general welfare; and that prosperous commerce and industry depend upon effective regional systems of transportation. It is therefore declared to be the policy of the state to maintain a state commitment to improve public transportation; to increase the use of transportation alternatives to single occupancy motor vehicles; to promote cooperative agreements among governmental entities in providing public transportation services, and to attain greater efficiency in the use of public transportation funds in a manner consistent with the needs, health, safety and general welfare of the people of Idaho.

Through Executive Order No. 2000-05 from the Office of the Governor, ITD and its Director are designated to receive and expend monies from the federal government for public transportation assistance as provided under applicable federal statutes. This Executive Order means that Federal Transit Administration (FTA) funds are available to ITD on a statewide basis. Allocation of those monies is then determined by ITD based on input from communities in the State.

Within ITD, the Division of Public Transportation provides statewide general program coordination, planning, grant project monitoring, and process management. The Division works with the Public Transportation Advisory Council (PTAC), the Interagency Working Group, and the public to develop policies that will help meet the transportation needs of the citizens of Idaho.

The Statewide Transportation Improvement Program for FY 2002, 2003, and 2004 outlines funding programs that are available to ITD for transportation, including transit.

The State Vehicle Investment Program funds must be applied to capital programs for vehicle investment. Both federal and local funds must be in place to obtain state funds under this program. Federal Surface Transportation Program funds can be used for transit purposes at the discretion of the Idaho Transportation Board.

5.0 FEDERAL FUNDING SOURCES FOR TRANSIT

Federal funding available for transit in areas with populations less than 50,000 is summarized in Table 2, and are applicable to Blaine County and the Wood River Valley. The recipient of these funds is ITD. Other federal funding programs exist for urban areas (Section 5307 funds) and for fixed guideway new starts projects. Details of these other programs can be found on the Federal Transit Administration's website at www.fta.dot.gov

Table 2
Federal Funds Available for Transit

	5309 Funds	5311 Funds	5310 Funds
Name	Bus and Bus Related	Nonurbanized Area Formula Grants	Elderly and Persons with Disabilities Grants
Eligible Purpose	Bus and bus-related capital projects.	Capital, operating, and administrative purposes.	Capital projects, contracted services, state program administration.
Allocation	Discretionary, Congressional earmarks	Statutory formula based on census data, for areas with populations less than 50,000.	Formula using number of elderly and disabled in the state.
Match Required	80% Federal, 20% Local	80% Federal for capital and administration. Maximum of 50% Federal for operating costs.	80% Federal and 20% local.
Funding Availability	Year appropriated plus 2 years (total of 3 years)	Year appropriated plus 2 years (total of 3 years).	

Source: Federal Transit Administration Program Fact Sheets (www.fta.dot.gov)

6.0 ESTIMATING FUTURE TRANSIT DEMAND

Based on public input during scoping, Blaine County's transit feasibility study, and actions taken by Blaine County and other public jurisdictions to implement peak hour bus transit, the EIS process recognized that transit can play a role in addressing future travel needs in the Wood River Valley. To help determine what that role could be, the EIS process conducted three surveys during the purpose and need phase of the environmental process. It then reflected the survey results in the travel forecasting model development, and in the development of project alternatives.

6.1 Origin and Destination Surveys

The origin and destination surveys were conducted in March of 2001 and August of 2001 to determine where users of Highway 75 were coming from and going to, and for what trip purpose. As part of the survey methodology, the number of occupants in each surveyed vehicle was recorded. These two surveys indicate that about 18% of current highway users carpool; this translates to an auto occupancy rate of 1.2. In comparison, the comparable rate for Ada County, Idaho, is 1.1 for home based work trips.

Details can be found in the resultant report, Timmerman to Ketchum Origin/Destination Intercept Survey, February 2003.

6.2 Stated Preference Transit Survey

A stated preference survey was conducted in the Wood River Valley to enable the development of travel models that can estimate the demand for carpooling and transit in the Highway 75 corridor for work trips. A Stated Preference (SP) survey presents the respondent with hypothetical situations and records how the respondent would behave with respect to those situations. The survey describes the hypothetical situations in sufficient detail such that survey respondents are forced to weigh the benefits and/or costs of each hypothetical alternative against the other. Because the SP survey collects information on hypothetical alternatives, it is capable of estimating the demand for modes that are not currently available to survey respondents, such as transit service in the SH75 corridor.

The resultant report, Stated Preference Survey Summary Report, August 2001, documents the methodology and results. The report can be found on the project website at www.sh-75.com

6.3 Transportation Demand Management Survey

ITD and FHWA recognize that transportation demand management strategies, inclusive of carpooling, flex time, guaranteed ride home programs, and other mechanisms can help to reduce the number of trips and/or the number of vehicles on Highway 75 during the peak hour. These programs are typically employer based. To that end, a survey of Wood River Valley employers and a follow-up meeting were held in January and February of 2001. This survey and its results are documented in the report Transportation Demand Management Survey Results, February 2001. This report can be found on the project website at www.sh-75.com

7.0 TRAVEL DEMAND MODEL MODE SPLIT

A travel demand forecasting model was developed for the Highway 75 Timmerman to Ketchum project. The development of this model is documented in the report Travel Model Development Report, December 2002. This model took into account the role of transit in meeting travel demands.

Table 3 summarizes the transit mode split for total trips and for home based work trips. The scenarios refer to alternatives developed during the NEPA process. Section 8.0 addresses these alternatives and their transit assumptions.

Table 3
Travel Demand Model Mode Split

Mode Split Summary – Total Trips (All Day)

Scenario	% Transit	% Non-Transit	Total
2000 Baseline	0.0%	100.0%	100.0%
2025 Baseline	1.1%	98.9%	100.0%
2025 4 Lane with 20-minute transit headways	1.9%	98.1%	100.0%
2025 HOV	1.6%	98.4%	100.0%
2025 LOS C Baseline with 20-minutes transit headways	1.9%	98.1%	100.0%
2025 TDM	2.0%	98.0%	100.0%

Mode Split Summary – Total Home Based Work Trips (All Day)

Scenario	% Transit	% Non-Transit	Total
2000 Baseline	0.0%	100.0%	100.0%
2025 Baseline	3.2%	96.8%	100.0%
2025 4 Lane with 20-minute transit headways	5.4%	94.6%	100.0%
2025 HOV	4.7%	95.3%	100.0%
2025 LOS C Baseline with 20 minutes transit headways	5.4%	94.6%	100.0%
2025 TDM	5.7%	94.3%	100.0%

8.0 TRANSIT COMPONENTS OF ALTERNATIVES

Meeting the future travel needs for the Wood River Valley along Highway 75 will require strategies that encompass transit and transportation demand management strategies. The alternatives were developed through analysis of future travel needs from the travel demand model, input from the community, and the results of the stated preference transit and transportation demand management surveys. The following alternatives have been developed through the EIS process and incorporate the transit levels as described in the following sections. Detailed definition of each of these alternatives will be documented in Chapter 2 of the Draft Environmental Impact Statement.

Transit systems nationwide were reviewed for what type of service could be provided in similar circumstances. For comparison, service levels were analyzed for several smaller systems such as C-TRAN in Vancouver, Washington, Boise Stages, CUBS in Kelso/Longview, Washington, and CHERRIOTS in Salem, Oregon. For most of those systems, the highest ridership routes tend to operate on 20 to 30 minute headways during peak periods.

Buses are assumed to be similar in capacity to the current Peak Bus, or approximately 40 seated passengers with room for 20 standees, or a total of 60 riders per bus. Future-year travel demand modeling indicates that during the AM and PM peak hours, buses may be running near or at capacity levels.

The travel demand model included a computerized representation of the transit network to coincide with the computerized highway network. The transit network allowed for potential riders to either walk or drive to transit. The potential for using transit depends on the proximity of residences or work sites from the bus stop (potential declines as distance from the stop increases).

The model contains a “mode choice” algorithm which compares the characteristics of each mode (i.e. drive alone, carpool, or transit) for each trip, and assigns each trip to a specific mode based on a relative probability that the trip maker would choose that mode.

Transit and carpool use also depends on parking costs at the trip destination. For the modeling for Highway 75, current parking policies in Ketchum were used as inputs to the model.

8.1 Alternative 1: No-Build

Alternative 1 is the Year 2025 No-Build scenario. It is based on planned and programmed projects in the Highway 75 corridor. There are two planned projects which are either complete or construction is planned for Spring 2003. No-Build assumes the existing highway infrastructure. The transit component of Alternative 1 takes into account both the existing Peak Bus system and the Ketchum Area Rapid Transit (KART) system. Peak Bus would continue operating on its current route with a bus every 60 minutes (three total runs during the AM peak and PM peak periods). For the 2025 analysis, it was assumed at some point between now and 2025, Peak Bus would acquire a second bus for commuter service on SH-75, which would provide for a fourth peak period run. KART would have two routes operating on 30-minute headways.

Transportation demand management (TDM) strategies, including carpooling, flexible work schedules, bicycling and walking, and telecommuting, would account for 20% of all work trips.

8.2 Alternative 2: 4-Lane with Center Turn Lane

Alternative 2 is defined generally as two lanes in each direction with a center turn lane where needed throughout the 27-mile long corridor. Peak Bus services would be increased to three buses running each peak hour, resulting in a bus every 20 minutes. TDM strategies would account for 20% of all work trips.

8.3 Alternative 3: 4-Lane with HOV and Center Turn Lane

Alternative 3 generally has the same physical footprint as Alternative 2. From McKercher in north Hailey to Elk Horn Road, the curb lane in the peak hour direction would be operated as a high occupancy vehicle lane (HOV). Peak Bus service and TDM strategies would be the same as for Alternative 2.

8.4 Alternative 4: Enhanced 2-Lane with Transit

Alternative 4 is based on a premise submitted by stakeholders that lane capacity can be greatly increased through access control and trips reduced through aggressive transit strategies. The number of trips using TDM strategies would increase by 5% to 25% of total work trips. Bus service would be increased to 4 buses per peak hour, resulting in 15-minute headways. Bus queue bypass lanes would be placed at key intersections.

8.5 Alternative 5: Level of Service C State Policy

Alternative 5 has the same configuration as Alternative 2 from Highway 20 to Buttercup Road just north of Hailey. To achieve the state policy of Level of Service (LOS) C between Buttercup and Elkhorn Road, 3 lanes in each direction and a center turn lane would be needed. Bus service and TDM strategies would be the same as Alternative 2.

8.6 Park and Ride Lots and Bus Stops

Alternatives 2, 3, 4, and 5 assume park and ride lots and bus stops at several location along Highway 75. The exact locations and placement of each lot and stop will be defined during the EIS process but are assumed to be generally at the following:

Park and Ride:

- South Bellevue at Gannett Road and Highway 75
- Existing Hailey City lot at Bullion and River Streets in Hailey
- North Hailey near McDonald’s and Albertsons
- Lewis Street and Northwood in Ketchum

Bus Stops:

- Guffy’s Gas Station in Bellevue (Highway 75 and Oak Street)
- North Bellevue (Valley Market between Spruce and Curtley)
- Balmoral/Woodside
- Meadows at the corner of Broadway Run and East Meadows, north of East Fork Road
- St. Luke’s Hospital
- Sturtevants in Ketchum (transfer to KART at Main Street and Sun Valley Road)
- Smith and Thunder Spring in Ketchum
- Sun Valley Sinclair Station
- Elkhorn at Elkhorn Resort

9.0 FIXED GUIDEWAY ANALYSIS

Since the beginning of the Highway 75 environmental process, several members of the public have asked about the feasibility of implementing light rail transit (LRT) service in the corridor. LRT is a proven transportation technology, with 25 communities across the nation currently carrying more than 320 million passengers annually helping to alleviate traffic congestion, promote transportation mobility, and improve local air quality.[1]

With this as background, this section discusses in conceptual terms the technical and financial feasibility of building and operating LRT service in the Highway 75 Timmerman Corridor, drawing on the experience of ten other communities where this type of service currently exists.

9.1 Light Rail Transit Defined

LRT uses lightweight passenger rail cars which can operate in shared or exclusive rights-of-way, either as multi-car trains or single cars. LRT is an electrically powered system, drawing its power from overhead lines (known as catenary) which allow the vehicles to accelerate and decelerate quickly meaning that they can efficiently serve closely spaced stations. Because of its lighter weight than conventional rail, LRT can be accommodated on bridges designed for automobile traffic. LRT vehicles can travel at speeds of up to 50 miles per hour and typically accommodate 130 individuals, with seating capacity of 60 to 65 people with another 60 individuals standing.

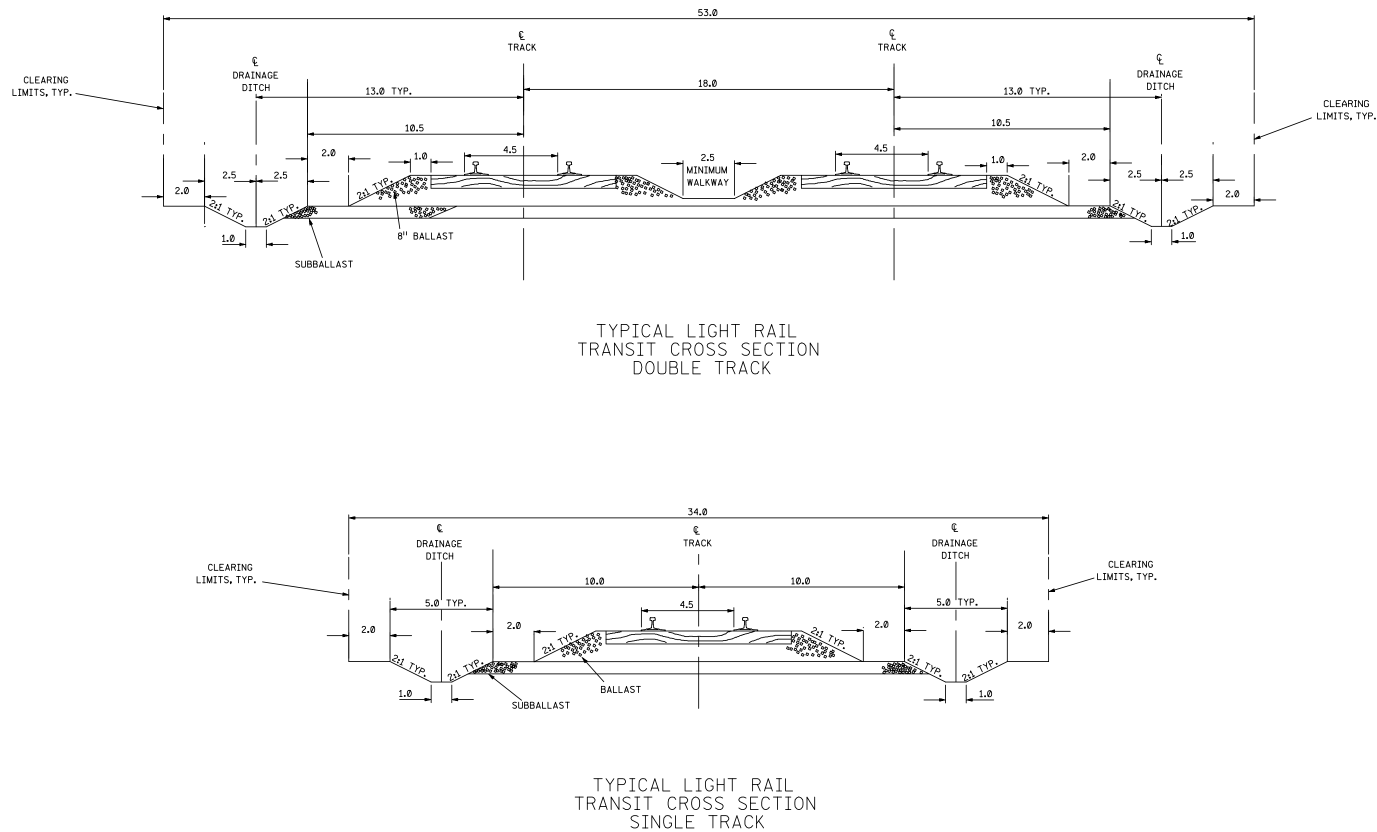
With LRT operating in an exclusive right-of-way, the system is fully grade separated which minimizes traffic and pedestrian conflicts.

Typical cross-section requirements are shown in Figure 1 for both double track and single track configurations. These cross-sections are actual ones taken from the construction drawings for the Utah Transit Authority's North-South LRT line in Salt Lake City, Utah. They reflect clearance and drainage requirements for a typical tie and ballast installation, the most likely application in the Wood River Valley. Photographs of the Salt Lake City LRT installation are shown in Figure 2.

Many urban areas integrate light rail operations into existing street operations. A semi-exclusive or shared right-of-way often requires design features that help avoid collisions between motor vehicles or between motor vehicles and pedestrians due to LRT operations. Figure 3 illustrates exclusive and shared (in-street) LRT operating concepts, respectively.

[1] Light Rail National Total Data, Fiscal Year 2002, American Public Transportation Association, 2002.

Figure 1 Light Rail Transit Typical Cross-Sections



SOURCE: UTAH TRANSIT AUTHORITY
NORTH/SOUTH LINE CONSTRUCTION DRAWINGS, 1997

Figure 2
Typical Light Rail System – Utah Transit Authority South Line

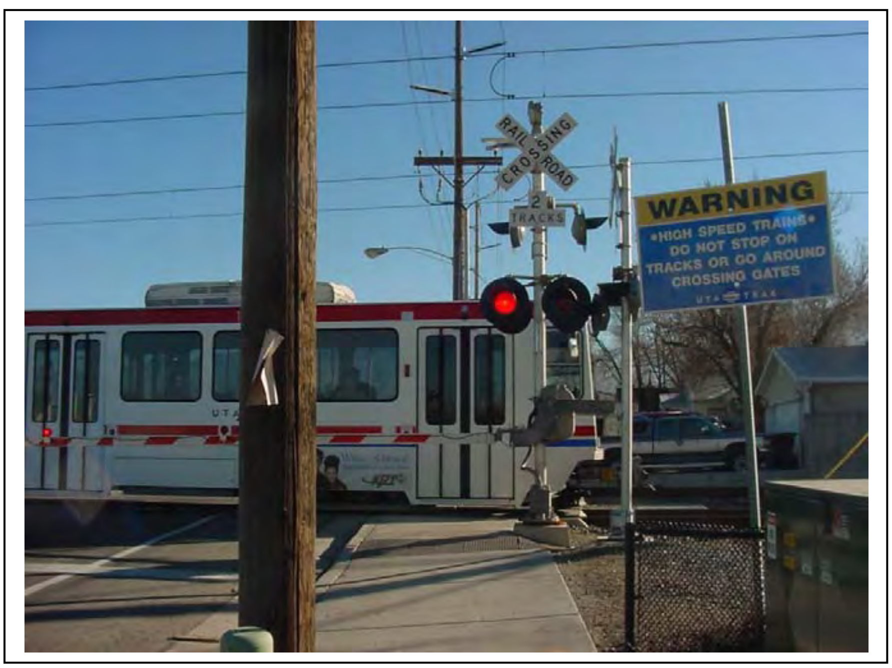
Typical Tie and Ballast Double Track –
North of Fashion Place West Station

Fashion Place West Station

At-Grade Street Crossing – Looking South
from Fashion Place West Station

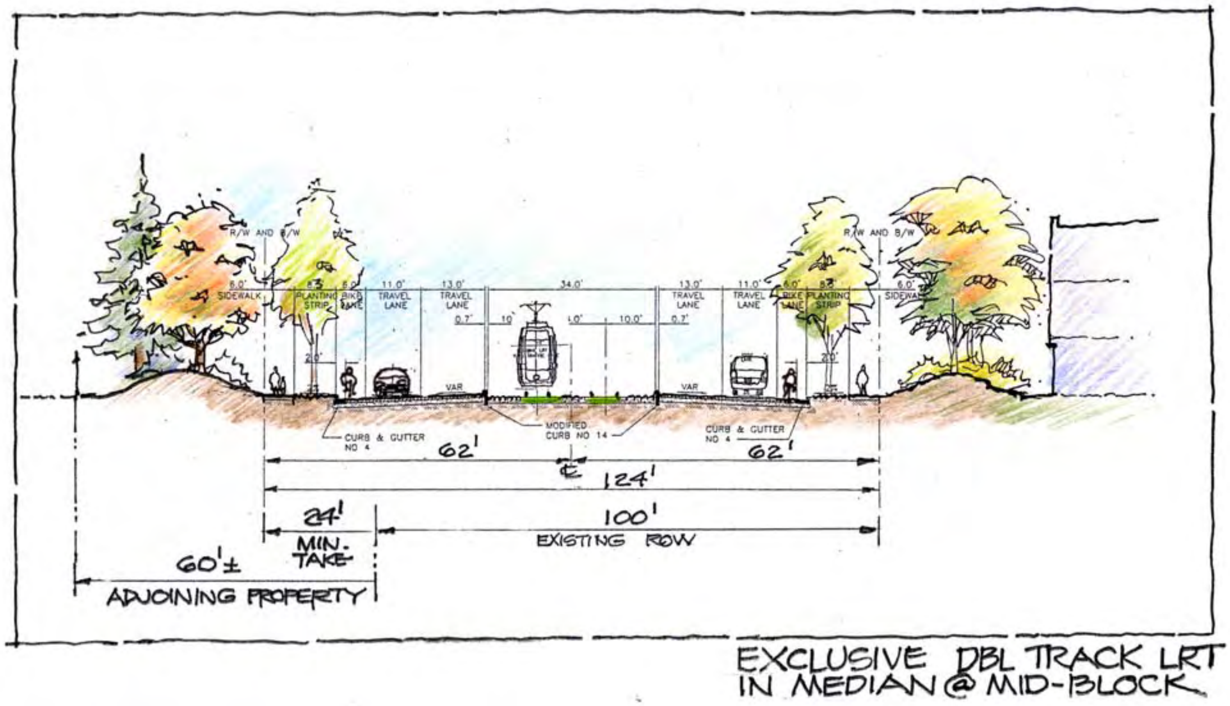
Figure 2 Continued

At-Grade Crossing – 6100 South and 300 West Streets



Vehicle crossing – crossing gates, warning signals –
Fashion Place West Station

Figure 3
LRT in Exclusive Right-of-Way
With Double Track Operation



LRT in Mixed Flow Operation

9.2 System Characteristics

From an evaluation of existing and future corridor population and employment growth, land use, and public bus transit service, a set of planning and operating assumptions have been developed to define and illustrate how LRT service might be built and operate between Bellevue and Ketchum. Like any form of public transit, LRT service must be designed so that it encourages ridership by providing convenient, accessible and frequent service for the traveling public. In the long term, maximizing ridership is key to the efficient and cost-effective operation of any type of public transit service.

9.2.1 Alignment and Station Stops

For this analysis, it is assumed that LRT service would operate in a 20-mile abandoned railroad corridor between Bellevue and Ketchum, with station stops located in Bellevue central/south, Bellevue north, Countryside/Airport, Hailey downtown/north, East Fork, Hospital, Elkhorn, Serenade, and central Ketchum. All of these stations would have pedestrian and bicycle access, with the Bellevue station having a park-and-ride (PNR) lot to accommodate 400 vehicles. Smaller PNR lots would be located at East Fork and potentially at the Countryside/Airport and Hailey stations. The LRT line would consist of a single track between Bellevue and Hailey, and double track from Hailey to Ketchum.

9.2.2 Ridership Factors

It is also assumed that the service would operate at a frequency of every 15 minutes during the weekday morning and afternoon peak commute periods, and 30 minutes during the off-peak portion of the day. For the purposes of this study, it also is assumed that all new trips generated by growth between now and 2025 will use the LRT system, generating approximately 11,700 weekday riders or 3,040,200 annual LRT riders by 2025. In actuality, this number will be lower as the travel demand model used for the Timmerman to Ketchum Environmental Analyses is suggesting that 10-15 percent of year 2025 trips are choosing to use transit, and others who do not choose to drive alone will choose to carpool to their trip destination. Based on transit operating characteristics developed for the Stated Preference Survey as well as the travel demand model, and to serve this ridership and peak operating levels, approximately 14 light rail vehicles (LRV) would be required and likely operate as two-car consists within the corridor.

9.2.3 Other Requirements

In addition to these transportation improvements, a light and heavy-duty LRV maintenance facility would need to be built in close proximity to the rail line. For this analysis, it is assumed that the facility would be located in Hailey or Bellevue and require an area of 15 acres for the storing and maintenance of the rail equipment.

While a detailed construction (capital) cost estimate has not been prepared as part of this analysis, many LRT rail lines around the country have been are built at a cost of $20 to $40 million per mile, including the purchase of rail car equipment.[2] The cost will vary considerably depending, for example, on the need to purchase right-of-way, the number of elevated

[2] An average construction cost per mile was derived from FTA New Starts project characteristics and construction costs estimates included in the Annual Report on New Starts – Proposed Allocations of Funds for FY 2003, prepared by the Federal Transit Administration.

structures or bridges required, the number of stations and park-and-ride lots, weather factors such as freeze/thaw on track design and ballast, the relocation of gas, sewer, and electrical utilities, and other factors. As part of this study, it has been conservatively assumed that at a cost of $35 million a mile, LRT construction costs would total approximately $700,000,000 (see Table 6 for costs of existing systems).

Similarly, annual operating costs for LRT systems can vary significantly based on the number of rail cars in operation, revenue hours consumed and miles traveled. From information contained in Table 6 presented later on in this analysis, it is assumed that operating costs will be between $10 and $15 million or more per year.[3] Actual operating costs shown in Table 6 may be higher.

9.3 FTA's New Starts Program

Given the significant capital cost of building an LRT system, many communities around the nation seek funding support from the federal government. Administered through the FTA , the principal source of construction funding is through the New Starts program, which has been established by the congress to fund the construction of fixed guideway systems. To qualify for federal New Starts funding—which can fund as much as 50% of the construction cost—transit properties must satisfy an FTA criteria-based evaluation process where projects are evaluated for both project justification and financial commitment. The projects are then rated as "highly recommended", "recommended", or "not recommended" for funding depending on how well they satisfy the criteria.[4] Additional information about the New Starts program can be obtained from FTA's Internet website at www.fta.dot.gov/library/policy/ns/ns.htm.

Project evaluation is an ongoing process, beginning during the planning phase of the project and continuing through preliminary and final engineering. Briefly, FTA's criteria include the following:

9.3.1 Project Justification

To determine whether a project can be technically justified, FTA uses a set of evaluation criteria consist of six individual criteria. Briefly, these criterions are described below.

- Mobility improvements, including travel time savings and the number of low-income households served.

- Environmental benefits, including the reduction of air pollution emissions, greenhouse gas emissions, and regional energy consumption, comparing the New Start investment to the no-build and TSM alternatives.

- Operating efficiencies, including changes in system wide operating costs per passenger mile in a future forecast year (e.g., 2025), comparing the New Start investment to the no-build or transportation systems management (TSM) alternatives.

[3] Average annual operating costs were derived from Fiscal Year 2000 data included in the National Transit Database, Federal Transit Administration.
[4] Federal Register, U.S. Department of Transportation, Federal Transit Administration, 49 CFR Part 611 Major Capital Investment Projects; Final Rule, December 7, 2000, pp. 76864-76884

- Cost effectiveness, including the incremental cost per incremental passenger in the forecasted year. This measure, expressed in current year dollar value, is based on the annualized total capital investment (Federal and local funds) and annual operating costs divided by the forecast change in annual transit system ridership, comparing the New Start investment with the no-build and TSM alternatives. For fiscal year (FY) 2000, FTA received New Start requests with cost-effectiveness indices ranging from $2.54 per new rider to $48.82 per new rider, with a median reported of $10.39 per new rider.[5] Table 6 shows actual indices ranging from $7.20 to $32.76 (excluding San Francisco).

- Transit supportive land use, including changes that would occur with implementation of the New Start investment to: existing land use, containment of sprawl, transit supportive corridor policies, supportive zoning regulations near transit stations; tools to implement land use policies, performance of land use policies, and other land use factors.

- Other factors, such as the project management capability of the project applicant, and the degree to which policies and programs (e.g., local transportation planning, programming and parking policies, etc.) are in place as assumed in the ridership forecasts.

Table 4 summarizes the New Starts project justification criteria.

9.3.2 Local Financial Commitment

With the federal government potentially providing up to 50% of the construction funds for the project, FTA also wants to determine the degree to which there is a local financial commitment to fully build and operate the transit project. The criteria for the evaluation of the local financial commitment to a proposed project are:

- The proposed share of total project costs from sources other than the New Starts program, including Federal formula and flexible funds, the local match required by Federal law and any additional capital funding (overmatch);

- The strength of the proposal capital financing plan; and

- The ability of the sponsoring agency to fund operation and maintenance of the entire system as planned once the guideway project is built.

Based on this criteria FTA then assigns an overall rating of either highly recommended, recommended, or not recommended to determine which projects will receive federal support. FTA's objective is to only support those New Start projects that can be technically and financially justified. As a result, there is considerable competition for New Starts funding. Table 5 shows current FTA funding commitments for FTA-approved preliminary engineering, final engineering, and for those projects that have received final FTA approval, or Full Funding Grant Agreements (FFGA).

[5] Annual Report on New Starts – Proposed Allocations of Funds for Fiscal Year 2000, prepared by the Federal Transit Administration, U.S. Department of Transportation.

Table 4
New Starts Criteria
FTA's New Starts Project Justification Criteria and Measures

Criteria	Measures
Mobility Improvements	• Hours of Transportation System User Benefits • Low-Income Households Served • Employment Near Stations
Environmental Benefits	• Change in Regional Pollutant Emissions • Change in Regional Energy Consumption • EPA Air Quality Designation
Operating Efficiencies	• Operating Cost per Passenger Mile
Cost Effectiveness	• Incremental Cost per Hour of Transportation System Benefit
Transit Supportive Land Use and Future Patterns	• Existing Land Use • Transit Supportive Plans and Policies • Performance and Impacts of Policies • Other Land Use Considerations
Other Factors	• Project benefits not reflected by other New Starts criteria

9.3.3 Funding Requirements

Given the significant investment cost to build and operate an LRT system, nearly all transit properties attempt to identify and secure funding from a variety of local, state and federal sources. As described above, while the federal government will contribute capital funds for project construction (i.e., the New Starts program), local and/or state matching funds are also required.

The levy and collection of passenger fares (i.e., farebox revenues) nearly always fails to cover the full cost of operating and maintaining (O&M) public transit service. Generally, farebox revenues will cover between 20% and 50%, with the remainder paid for by general fund revenues, taxes or other revenues. Federal funding is not available for O&M. As a result, having a stable, dedicated local funding source is critical to building and operating this type of public investment.

Table 5
Year 2002 Nationwide Allocation of New Starts Funding

Number of Transit Agencies	Funding Requests (Millions of Dollars)		
25	Existing FFGA	$2,237	
41	Existing Projects in Preliminary Engineering	$19,418	Projects in PE with funding requests submitted
14	Existing Projects in Final Design	$2,885	Projects in final design with funding requests submitted
	TOTAL REQUESTS	$24,510	
	FUNDING AVAILABLE		
	"As Is" Estimate	$8,000	Assumes FY 2004-2009 appropriations bill will maintain current funding levels
	APTA Estimate	14,000	Assumes FY 2004-2009 appropriations bill will double funds based on American Public Transportation's recommendation
	FUNDING SHORTFALL		
	"As Is" Estimate	($16,510)	$24,510 minus $8,000 = Shortfall
	APTA Estimate	($10,510)	$24,510 minus $14,000 = Shortfall

Source: American Public Transportation Association, November 2002.

9.4 Financial Feasibility Analysis

In the United States, LRT systems are almost always found in highly urbanized environments, with significant population, employment, and land use densities. Examples include Baltimore, MD; St. Louis, MO; Dallas TX; Sacramento, San Diego and Los Angeles, CA; Portland, OR; and Salt Lake City, UT. On one level then, it becomes difficult to compare on a system-by-system basis the feasibility of building and operating LRT service in a rural, recreational environment like the Highway 75 Timmerman Corridor and these urban examples. On the other hand, despite the system's location, projected ridership along with the capital and annual operating costs are important factors in determining the technical and financial feasibility of a proposed LRT project.

Using the set of assumptions outlined above, the following would characterize a light rail system in Blaine County:

System Length	20 miles (Bellevue to Ketchum)
Estimated Annual Ridership	3,040,200 (see Section 9.2.2)
Vehicles Required	14 (see Section 9.2.2)
Capital Cost (@ $35m/mile)	$700,000,000 (based on data in Table 6)
Cost per New Rider	$230.00 (cost divided by ridership)
Operating Cost/Year	$10 to $15 million/year

In comparison, Table 6 shows the FTA's summary of approved New Starts projects in the United States.

There are four major financial challenges that would need to be overcome for a New Starts project to be implemented in Blaine County:

1. **Cost Per New Rider**. In order for Blaine County to successfully compete for FTA News Starts funding, the proposed LRT line would need to have a cost of between $10 and $20 per new rider. A cost of over $100 per new rider would make it highly unlikely that FTA would agree to provide any federal funding towards the project.

2. **Satisfying New Starts Criteria**. Related to the issue of cost per new rider, the project would also need to compete against other New Start projects in terms of mobility and environmental benefits to the community, operating efficiency and cost-effectiveness, and strategies that would promote transit supportive development and complementary land use patterns.

3. **Capital Construction Cost**. The construction cost assumes a 20-mile long line at $35 million a mile, a cost that is relatively consistent when compared to other construction projects shown in Table 6. Even so, an estimate of $700 million to build the Timmerman Line would be a significant investment on the part of local residents and the State of Idaho. By way of comparison, the STIP has programmed $6,078,000 statewide for public transportation for Fiscal Year 2002, $2,696, 00 in Fiscal Year 2003, and $2,815,000 in Fiscal Year 2004.[6]

   Assuming the project could qualify for a 50% FTA New Starts funding match, Blaine County and the State would still need to provide $350 million for construction of the line. These funds would likely come from several new revenue sources, such as a dedicated sales tax devoted to transit, higher property taxes, developer mitigation fees, an increase in the state gas tax or some other local and/or state source. Since no statewide funding mechanism exists, it is unlikely that matching funds would be generated locally and bonded. With a current population of about 18,000 in Blaine County, the matching funds along (without the cost of bonding or interest on money) would cost each Blaine County resident over $19,000 to build the system.

[6] Statewide Transportation Improvement Program for FY 2002, 2003 and 2004, Approved September 2001, page 48.

Table 6 – Fixed Guideway New Starts Comparison

City	Project	Mileage	Stations	Total Capital Cost	Annual Operating Cost	Average Weekday Boardings	Daily New Riders	Capital Cost per Mile	Operating Cost per Mile	Average Boardings per Station	Published Cost-Effectiveness $/New Trip	Based on Published C/E $/Boardings
New Starts				millions	millions			millions	millions			
Salt Lake	Med Ctr Ext.	1.5	3	$89.4	$1.1	4,100	3,400	$59.6	$0.8	1,367	$13.40	$11.11
Seattle	Central Link	13.9	11	$1,979.5	$43.5	42,500	29,000	$142.4	$3.1	3,864	$15.60	$10.64
Austin	Rapid Transit	14.6	16	$665.7	$24.1	37,400	17,100	$45.6	$1.7	2,338	*$14.50*	*$7.07*
Charlotte	South Corridor	11.2	16	$309.4	$21.4	21,100	14,200	$27.6	$1.9	1,319	$7.20	$4.85
Cincinnati	Interstate 71	19.0	25	$776.3	$24.9	23,800	17,600	$40.9	$1.3	952	$17.60	$13.02
Columbus	North Corridor	13.0	14	$445.8	$10.2	17,400	6,800	$34.3	$0.8	1,243	$19.50	$7.62
Dallas	NW/Southeast	22.0	16	$1,036.4	$37.9	41,600	9,500	$47.1	$1.7	2,600	$13.10	*$2.99*
Denver	West Corridor	11.0	14	$554.7	$30.0	23,900	11,800	$50.4	$2.7	1,707	$22.80	$11.26
Los Angeles	Eastside Corridor	5.9	8	$748.5	$23.1	15,000	7,000	$126.9	$3.9	1,875	$28.15	$13.14
Los Angeles	Mid-City	9.6	10	$314.7	$20.6	20,500	6,200	$32.8	$2.1	2,050	$16.50	$4.99
Louisville	South Central Corridor	15.0	18	$596.4	$28.8	15,950	11,000	$39.8	$1.9	886	$12.60	$8.69
St. Louis	St. Clair Extension	26.0	10	$509.5	$44.2	16,000	8,800	$19.6	$1.7	1,600	*$32.76*	*$18.02*
San Francisco	Third Street LRT	5.4	19	$557.9	$13.3	71,000	670	$103.3	$2.5	3,737	*$296.79*	*$2.80*
Under Construction												
Dallas	North Central	12.5	9	$532.5	*$22.2*	17,000	6,800	$42.6	*$1.8*	1,889	*$30.51*	*$13.02*
Denver	Southeast	19.1	13	$828.8	*$53.6*	38,100	12,900	$43.4	*$2.8*	2,931	*$29.65*	*$10.71*
Minneapolis	Hiawatha	11.6	17	$675.4	*$23.8*	24,800	19,300	$58.2	*$2.1*	1,459	*$12.93*	*$10.73*
Portland	Interstate	5.8	10	$350.0	*$11.9*	18,100	8,400	$60.3	*$2.1*	1,810	*$15.23*	*$7.54*

C/E for Austin, St. Louis, San Francisco, and all Under Construction are calculated. Published numbers were not available.
Baltimore Double-Track project was not considered a suitable comparison
Numbers in red are estimates and are not from published data.

Source: Federal Transit Administration

4. **Annual Operating Cost**. Unlike construction costs, operating and maintenance (O&M) costs represent a continuing commitment on the part of the community to financially support its initial public investment. Again, based on the assumptions outlined earlier, it is projected that operating costs would total between $10 and $15 million a year. Based on actual operating costs for existing and planned systems in the United States, shown in Table 6, this estimate is likely low. Given FTA's requirement for a 50% local match, this would cost each current resident of Blaine County $556 to $833 per person per year.

   Over time the amount for O&M would increase due to inflation. At an initial cost of $15 million a year, an annual inflation rate of 3.5 over ten years would increase the annual operating cost to $21 million. Costs could also grow with the provision of more frequent LRT service, the purchase of additional light rail vehicles, and the hiring of additional transit system staff to operate and maintain the system.

   In addition to farebox revenues, Blaine County would need to create a consistent and stable local funding source for covering O&M costs. Again, this revenue source could be financial support from the state, a locally dedicated sales tax or some other source.

9.5 Railroad Corridor Impact Assessment

During the public scoping and subsequent public meetings and open houses, some residents in the Wood River Valley have indicated that the old railroad right-of-way should be used as the corridor for implementation of light rail system. This section describes this railroad corridor and its adjacent land uses.

Blaine County Recreation District manages a regional bicycle path facility within the existing railroad right-of-way. It is an important recreational feature in the Wood River Valley and well used by residents and visitors year-round.

Although a survey of the railroad right-of-way and deed research has not been done, ITD's ROW staff state that the railroad right-of-way is generally two hundred feet wide, with an area between East Fork Road and the Wood River Bridge narrrowing to 100 feet. The paved bicycle path is approximately 12 to 14 feet wide. Based on the typical cross-sections required for LRT shown in Figure 1, the total width for light rail and a bicycle path would be 65 to 67 feet, depending on the topography along the railroad right-of-way. Based on the total railroad right-of-way width only, there is adequate width to accommodate both a bicycle path and light rail tracks.

To understand the context in which a potential LRT system would be implemented, the May 2001 aerial photography for the corridor was reviewed to ascertain current adjacent land uses, and the number of roads and streets crossed by the railroad right-of-way. These corridor characteristics are summarized in Figure 4.

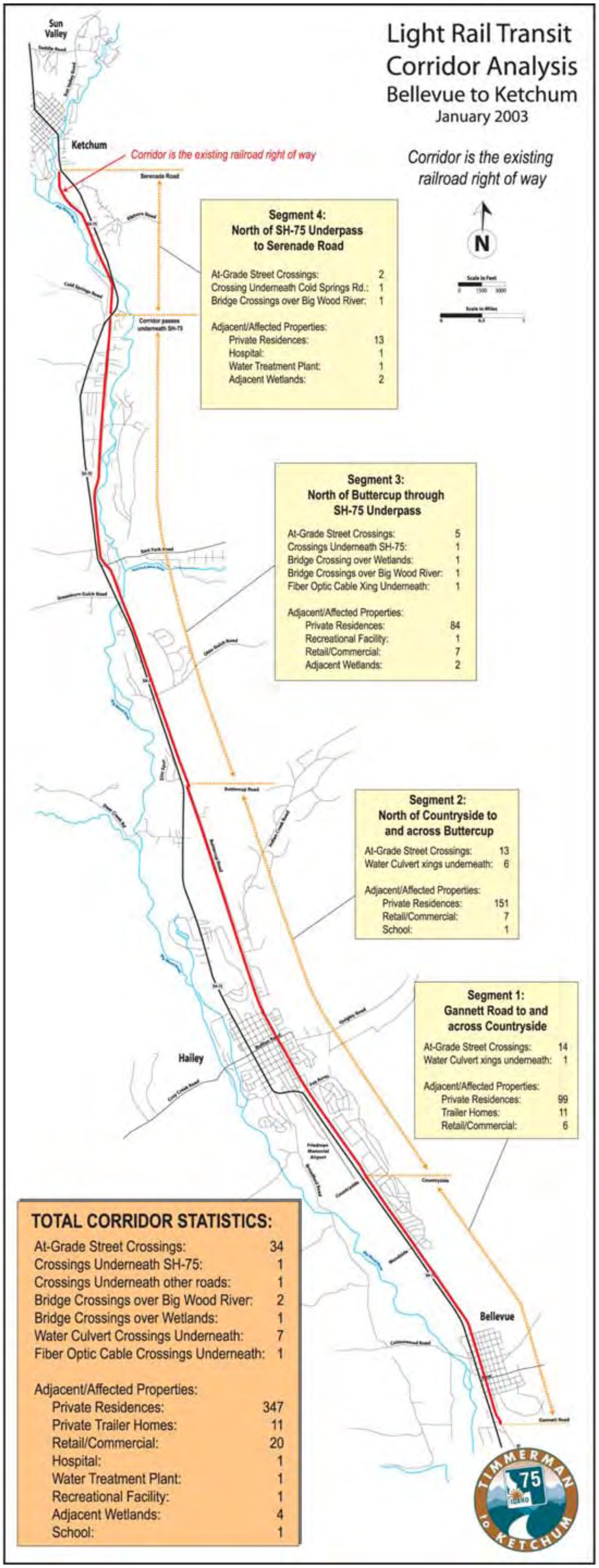


Figure 4
Railroad ROW Corridor Analysis

9.6 Feasibility Analysis

The feasibility of implementing light rail in Blaine County along the old railroad right-of-way was evaluated based on four criteria: visual, noise and vibration, local circulation, and funding. The characteristics of light rail technology and its impacts are well documented for existing LRT systems and their associated environmental documents and the FTA New Starts programs.

Visual

Maintaining the visual character of the Wood River Valley is a frequently heard objective expressed in public forums. The track and ballast, overhead catenary, and traction power stations associated with LRT systems would introduce significant new visual elements into the railroad corridor (see photographs in Figure 2). Although the light rail vehicles would pass by every fifteen minutes during the peak hour (maximum of every 7.5 minutes for two-way operation), their supporting infrastructure is a permanent visual element for those land uses immediately adjacent to the railroad right-of-way. This would likely adversely impact approximately 358 residences located adjacent to the railroad right-of-way, especially at at-grade crossings.

Noise and Vibration

Light rail technology is a relatively quiet technology. The industry uses specially designed noise and vibration dampening measures to reduce impacts. Each train passby, however, would introduce a new source of transportation noise into the adjacent residential communities.

Local Circulation and Safety

Light rail would operate at-grade along the railroad right-of-way. This means it would cross all existing streets and driveways at-grade. A visual analysis of the May 2001 corridor mapping indicates that 34 at-grade crossings would be required, the majority within Bellevue and Hailey. For safety reasons, at-grade crossings of streets are normally fitted with railroad crossing arms so that collisions between vehicles and light rail vehicles do not occur. A typical cross-arm installation is shown in Figure 2. As LRT is an operating railroad, the exclusive right-of-way would most likely be fenced for safety reasons, introducing an additional visual element. Assuming 15 minute headways, train pass-bys would occur one every 7.5 minutes for a two-way operation and would introduce some delay to east-west traffic crossings of the LRT tracks from existing streets.

Transit Supportive Land Uses

As discussed in Section 9.3 of this report, FTA gives considerable weight to communities that have land use planning strategies and densities in place that will support light rail transit. The existing comprehensive plans for Bellevue, Hailey and Blaine County do not provide for significant clusters of high density residential development. The existing land uses are typically low density, particularly within that portion of Blaine County between Hailey and Ketchum.

Funding

The capital and operations and maintenance funding requirements for light rail transit are discussed in detail in 9.4 of this report. Based on existing FTA New Starts criteria and actual capital costs and O&M costs for operating systems in the United States, Blaine County and the ITD do not have the ability to attain the required local match of $350,000,000 for capital costs alone. To do so would require extraordinary levels of local and state funding that are not reasonable or feasible. In addition, annual operating costs would range from $10 to $15 million annually. The local match for these operating costs would be $5 to $7.5 million per year.

9.6 Conclusion

Specific challenges to building and operating LRT service between Bellevue and Hailey include ridership potential, successfully satisfying FTA criteria for New Starts funding by receiving a “highly recommended” or “recommended” rating, and producing a funding plan that clearly identifies how the community intends to pay the significant capital and annual operating costs associated with building and operating a future LRT system.

10.0 BUS TRANSIT ONLY ANALYSIS

During the public scoping process and development of purpose and need, questions arose from members of the public and from elected officials concerning the ability of bus transit to accommodate the growth in future travel on Highway 75. This suggestion was intended to preclude the need for any widening of Highway 75.

10.1 Operating Characteristics

The operating characteristics of a bus system that would carry Year 2025 growth in transit trips on Highway 75 were defined based on the following assumptions:

1) The continuation of the current Peak Bus commuter morning and evening peak period route along Highway 75 (1 route only);
2) The addition of mid-day service between the morning and evening peak periods;
3) Year 2000 total person trips based on origin-destination survey results and traffic counts collected in corridor;
4) Year 2025 person trips based on results of the corridor travel demand model;
5) Use of 47-passenger buses, with 13 standees; and
6) Bus headways during peak hours of 3 to 5 minutes.

Based on these assumptions, another 29 buses would be needed to accommodate the growth in person trips. It would also require 29 new drivers, customer service personnel, dispatchers, maintenance facilities and employees, and the institutional infrastructure to support this level of transit operation.

10.2 Capital Costs

The capital costs associated with this level of bus system would include the following, based on costs from other bus systems (source: American Public Transit Association and Tri-Met).

• Purchase 29 new buses		= $8,352,000
• Purchase 2 used buses (reserve stock)		= $288,000
• Purchase 1 maintenance vehicle		= $45,000
• Purchase 2 staff vehicles		= $60,000
• Expanded and new park-and-ride facilities		= $1,000,000
• Transit Maintenance/Storage Facilities/Office Building		= $1,500,000
• Transit stop improvements		= $500,000
	Total	= $11,745,000

10.3 Operating Costs

In addition to the capital costs, annual operating costs would include the following, based on costs from other bus systems:

Salaries, wages, benefits	$2,457,000 per year
Materials and supplies	$351,000 per year
Other operating costs	$351,000 per year

Additional funds would be needed to provide parallel paratransit/demand response services in accordance with the Americans With Disabilities Act. These are assumed to be $351,000 per year.

Total possible annual operating costs would be in the order of $3.5 million. Depending on which federal funding program was used, up to a 50% local match would be required annually.

10.4 Feasibility Analysis

A bus transit only concept was evaluated. This concept assumed a significant increase in transit service, provision of additional TDM measures, and no additional vehicular capacity on Highway 75 through highway widening. This consisted of placing 20-minute headway transit service plus increased TDM on the 2025 No-build highway network. To assist in encouraging the use of transit, bus only queue bypass lanes were assumed at selected signalized intersections in the No-build model. These locations included McKercher, East Fork, the Hospital, and Elkhorn.

In order to meet the goal of reducing traffic congestion for trips in the corridor, all new trips between 2002 and 2025 would need to be placed on transit, and a significant amount of current trip making also would need to be placed on transit in order to maintain a minimum highway Level-of-Service D on the corridor.

The bus transit/TDM-only alternative was evaluated using the travel demand model developed for the Highway 75 project. The alternative achieved a 30 percent transit/carpool mode split in 2025, fifty percent higher than the 20 percent mode split achieved in the other modeled alternatives. This fifty percent increase in transit/carpool mode share is considered in the transit industry to be at the upper end of what would be considered a reasonably-expected mode shift. At a 30 percent mode split, the number of vehicular trips removed from Highway 75 is not sufficient to bring the highway to a minimum of LOS D in 2025 peak hour conditions without adding vehicle capacity.

The availability of funding to support this level of increased transit service and carpooling/vanpooling programs cannot be demonstrated for the Wood River Valley. This alternative assumed that in addition to the tripling of bus service, a significant public subsidy on the order of $250,000 per year would need to be spent on incentives to use non-vehicular or non-drive alone transportation modes.

Efforts to continue funding the existing level of Peak Bus service and Wood River Rideshare have encountered some resistance from local funding agencies, and there is no current plan to fund a significant increase in the level of TDM programs.

10.5 Conclusion

The bus transit only concept would not accommodate future year 2025 trips at a minimum LOS D in the peak hour and funding for the concept cannot be reasonably demonstrated in the Wood River Valley. The concept would not meet purpose and need for the project and is therefore not advanced for further consideration in the Draft Environmental Impact Statement.

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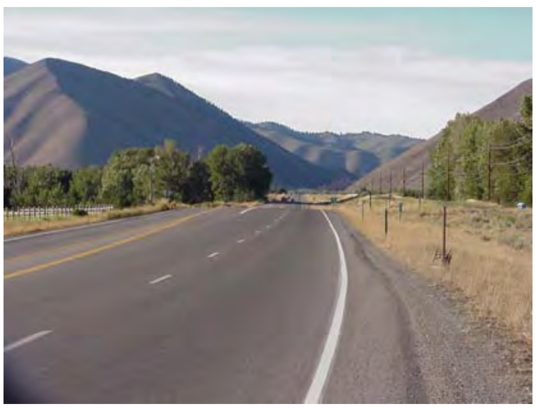
Timmerman to Ketchum Environmental Analyses

Project No. STP-F-2392 (035)
Key No. 3077
Agreement No. 4718

Transportation Demand Management Survey Results



February 2002

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1.0 INTRODUCTION

The Federal Highway Administration (FHWA), the Idaho Transportation Department (ITD), and the Parsons Brinckerhoff Project Team (PB Team) are preparing the technical analyses for the Highway 75 Timmerman to Ketchum Environmental Impact Statement. During the public meetings held in the fall of 2000, many area residents suggested alternative ways to accommodate commuters and area employers expressed concern that employees had difficulty in commuting to work on Highway 75. Managing the demand for travel on any highway can help to reduce congestion and improve overall travel time. As part of identifying a range of ways to improve travel on this highway, the PB Team has analyzed the role that Transportation Demand Management (TDM) may have in the Wood River Valley.

Transportation Demand Management (TDM) refers to a mix of strategies designed to increase vehicle occupancy, reduce travel time, and improve the efficiency of the existing transportation system. TDM strategies typically focus on reducing work trips during the morning and evening commute hours. For this reason, many TDM strategies are implemented through employer-based programs that encourage employees to switch from driving alone to carpooling, vanpooling, or using some other alternate means of travel. It can also involve changing the time or direction of travel in order to reduce traffic congestion within a defined geographic area. A Fact Sheet on TDM is contained in the Appendix.

Wood River Rideshare has been working to establish a carpooling program in the Wood River Valley. To gauge the potential additional use of TDM within the study corridor, information has been collected on the work-related travel patterns of Highway 75 users in the Wood River Valley.[1] As part of this data collection effort, an employer survey was distributed to nearly 180 local businesses in the corridor, which includes the communities of Hailey, Sun Valley-Ketchum, and Bellevue. The results of the survey are summarized in this report. In addition, conclusions regarding the potential effectiveness of the use of TDM in the corridor are made. The employer survey was prepared in consultation with Wood River Rideshare.

2.0 SURVEY METHODOLOGY

In the Wood River Valley, almost two thirds of peak hour vehicle trips are work trips, as verified in the origin/destination traffic survey conducted by the PB Team in March and August of 2001. Of these work trips, most travel from south to north during the morning peak period and in the reverse direction in the afternoon. The intent of the survey was to collect information from area employers on employee travel patterns to assess current commuter needs on Highway 75. This information can then be used to assess the potential benefits of employees using TDM strategies for work-related trips. In addition, the data can help match different types of employers with specific TDM measures. For example, a business that has its employees work a traditional 8 a.m. to 5 p.m. workday could help relieve traffic congestion by allowing its staff to work a flexible schedule, with some folks arriving and departing from work earlier, while others could choose to work later during the day.

[1] Please also see the *SH75/Timmerman's Pass to Ketchum Stated Preference Survey Report*, prepared by Parsons Brinckerhoff, October 1, 2001.

2.1 Survey Design

To determine the level of employer interest in TDM strategies, a survey questionnaire was developed (see Appendix A). The survey consisted of 21 questions designed to obtain information on the type and size of the business, the number of employees, travel patterns, and perceived acceptance of transit service, or other TDM options. Employers with more than one place of business in the Ketchum/Sun Valley area were asked to complete the survey for one worksite location.

Due to the variation in seasonal employment in the Valley, employers were asked to provide data on employee travel patterns when staffing levels were highest (e.g., peak season). Questions were grouped into four topical categories: Company Information, Business Operations, Transportation Environment and Transportation Options.

Except for the Ketchum/Sun Valley area, neither regularly scheduled, fixed route transit service nor demand-responsive (dial-a-ride type service) is available in the Valley. Survey questions were designed to assess the perception and potential use of transit services in the Valley, south of Ketchum. Questions on employees walking or bicycling to work were also asked to gain insight as to how receptive employees might be towards using that mode of travel. The last section of questions focused on specific incentives, policies and services complementing TDM that employers may have in place or could consider implementing in the future.

2.2 Survey Distribution

To establish a survey distribution list, a cross-section of different types of businesses was prepared using information from the Idaho Department of Labor, local chambers of commerce, and data from Wood River Rideshare. The list did not represent a random sampling of area-employers; rather, the list included all large employers (i.e., firms with more than 20 employees) and approximately 10 percent of the remaining employers that exist in the study corridor. As a result, the survey results should not be considered statistically valid. However, the use of a survey using a non-random sample is a commonly accepted means of collecting information on public attitudes concerning transportation issues. The data provides an indication of opportunities and obstacles. However, given the relatively high response rate, the project team believes the data provides a good basis for understanding commute patterns and issues.

Using this non-random sampling approach, a listing of nearly 180 employers (see Appendix B) was compiled consisting of:

- 41 firms which are members of the Hailey Chamber of Commerce,
- 72 companies which are members of the Sun Valley-Ketchum Chamber of Commerce, and
- 18 firms that are members of the Bellevue Chamber of Commerce.

2.3 Survey Response

The TDM survey was distributed using regular mail, computer email, or by fax on request beginning October 8, 2001 and ending on November 28, 2001. All surveys were returned either through use of a self-addressed, stamped envelope, email or by fax. From the 171 surveys that were mailed, 96 employers replied, producing a response rate of 56 percent. In addition, most of the respondents replied to all the questions included on the survey form.

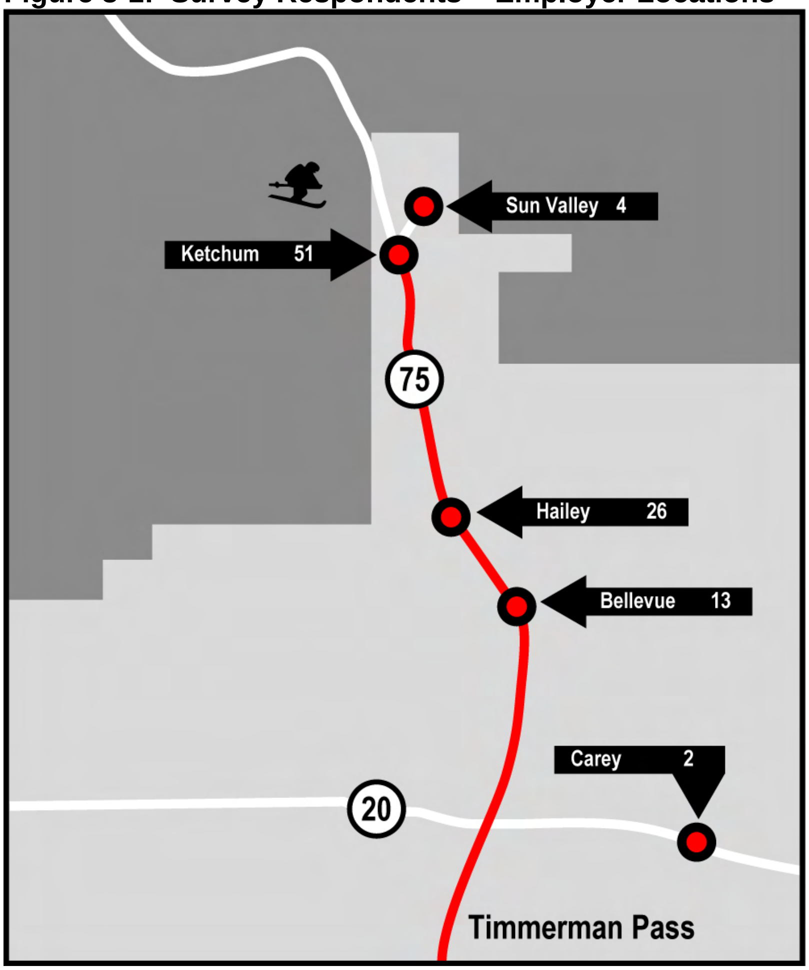
3.0 SURVEY RESULTS

The survey results are presented in the following section. The material is presented in the same topical format used for the survey questionnaire.

3.1 Company Information

Standard background information was requested for each company, including address, phone number, email address, and company contact. Each of the firms that responded provided information on the location of their business. Figure 3-1 represents the number of total returned surveys from each of the Valley locations. The results show that a majority of respondents (53 percent) were from Ketchum, which has the highest concentration of employment in the area.

Figure 3-1: Survey Respondents – Employer Locations

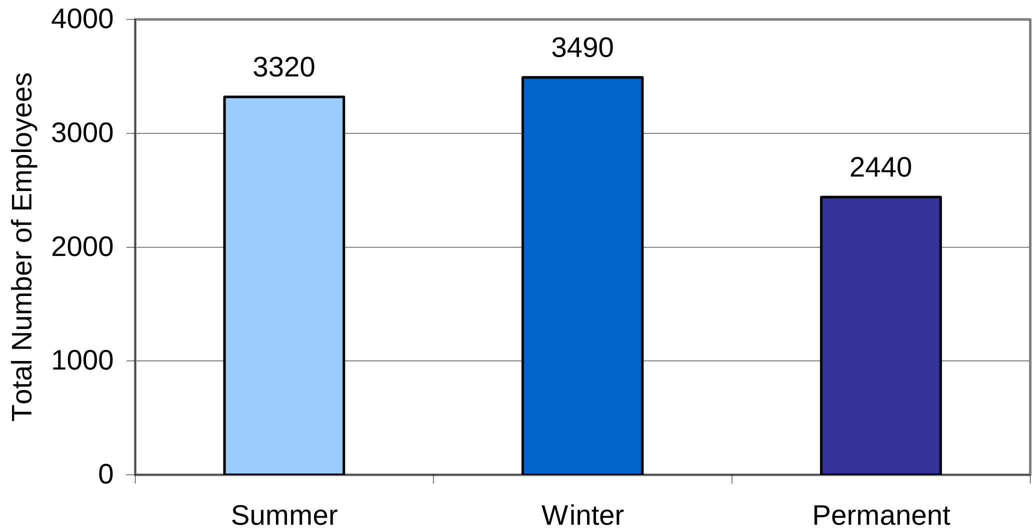


All respondents have at least one location in Blaine County. Of the total respondents, 50 indicated that they had one location in Blaine County, 39 had two to three locations, and 7 had 4 or more locations in the County.

3.2 Business Operations

Based on information provided by the respondents, employment levels are highest during the winter season, or December through March, reflecting the seasonal variation of the resort community. Employment also increases during the summer season (May through August). As in many tourist-based communities around the country, there are fewer full-time, year-round jobs in the study area. Seasonal staffing information for the survey respondents is presented in Figure 3-2.

Figure 3-2: Seasonal Variation in Employees (Based on Survey Respondents Only)



"Permanent" employees refer to year-round employees in Figure 3-2. "Summer" and "Winter" employees in this figure include both year-round and seasonal employees.

A review of the seasonality chart above suggests that a key focus may be differentiation between year round and seasonal workers. The nature of service needed for assisting the two groups will be somewhat different. The amount of assistance needed for helping seasonal workers will be greater than that required for year round workers. In budgeting Wood River Rideshare time and planning for services, this difference will need to be considered.

Based on the survey results, employment levels in the communities of Bellevue, Carey, and Hailey are relatively constant throughout the year. During the winter the largest employment location shifts from Ketchum to Sun Valley. As expected, the change is mostly due to seasonal staffing increases for the ski season at Sun Valley Company. Figures 3-3 and 3-4 show the percent of employees working in five areas along the Highway 75 corridor during summer and winter seasons.

Figure 3-3: Geographic Distribution of Summer Employment

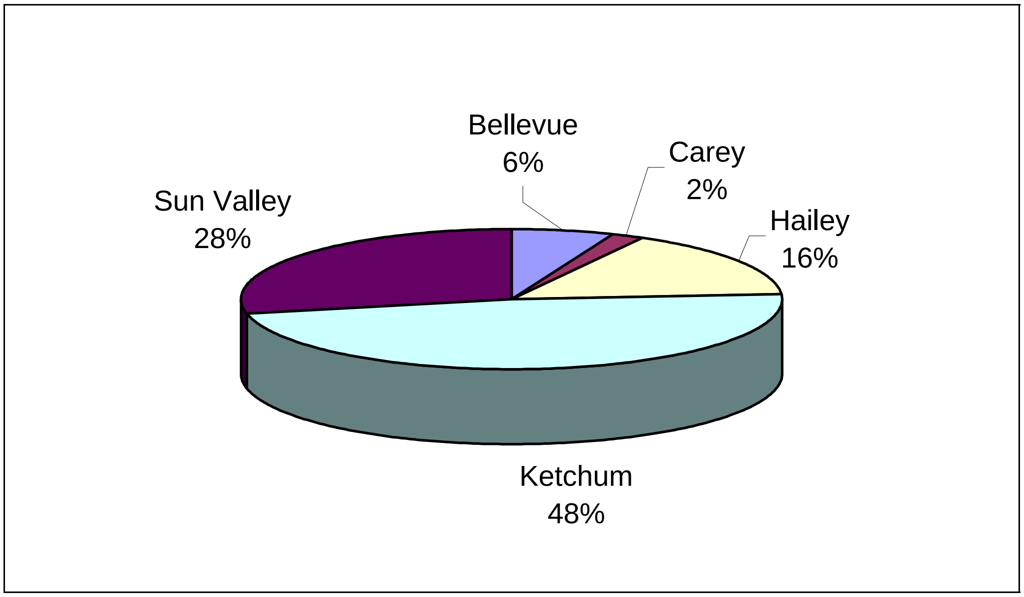
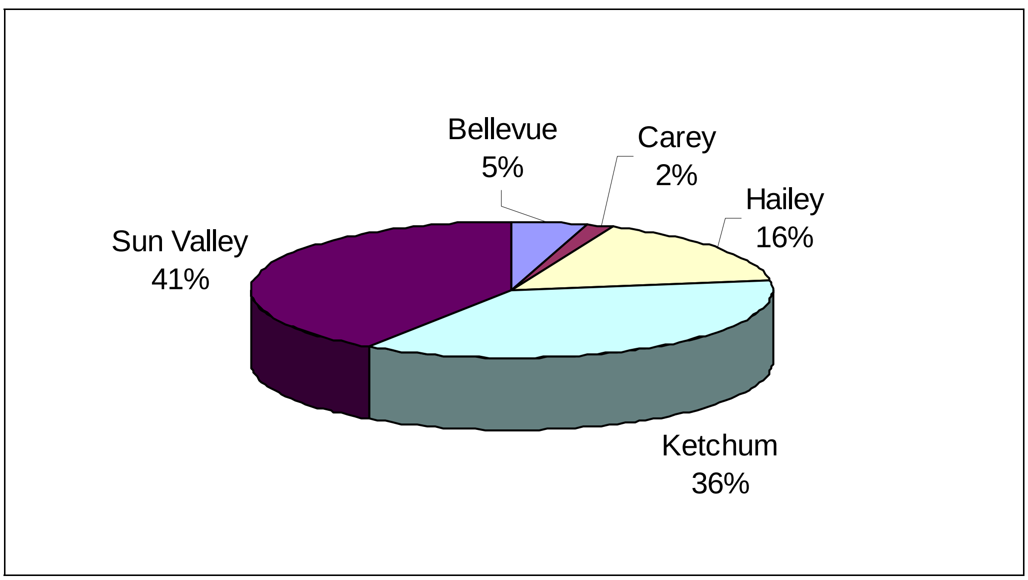


Figure 3-4: Geographic Distribution of Winter Employment



For the 96 employers who responded, nearly all of them are open for business Monday through Friday. A little more than half operate on Saturday, while a little fewer than half are open on Sundays regardless of the season. Table 3-1 shows the number of employers out of the 96 respondents who operate on any given day by season.

Table 3-1: Employer Operations – Day of the Week (Number of surveyed employers open for business in the indicated day of the week)

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Summer	95	95	95	95	95	55	41
Winter	95	95	95	95	95	54	41
Fall/Spring	90	89	92	91	90	50	34

Survey recipients indirectly provided information about employee travel times by answering questions related to work shift start and release times. The survey was designed to gather travel information during the AM and PM peak and shoulder travel periods. Work shift changes occurring outside these time periods were not requested. As shown in Table 3-2, the survey provided respondents ten “time frame” choices for the morning commute and eight for the afternoon. Survey recipients were asked to select no more than three time frames for the morning and afternoon commute periods, respectively.

Table 3-2: Employer Report and Release Times (These time periods were used in the surveys to allow employers to record which shifts they used.)

Morning Shift Start Times	Afternoon Shift Release Times
Before 6:00AM	Before 4:00PM
6:00-6:29AM	4:00-4:29PM
6:30-6:59AM	4:30-4:59PM
7:00-7:29AM	5:00-5:29PM
7:30-7:59AM	5:30-5:59PM
8:00-8:29AM	6:00-6:29PM
8:30-8:59AM	6:30-6:59PM
9:00-9:29AM	After 7:00PM
9:30-9:59AM	-
After 10:00AM	-

Businesses also were asked what time the majority of employees were required to report to work during their busiest season. Assuming that report and release times do not vary from season to season, Figures 3-5 and 3-6 show a linear interpolation spread of work hour start and stop times throughout both the morning and evening hours. From this information, it can be seen that, as expected, shift times coincide with peak commute times when Highway 75 is congested.

Figure 3-5: Morning Shift Start Times

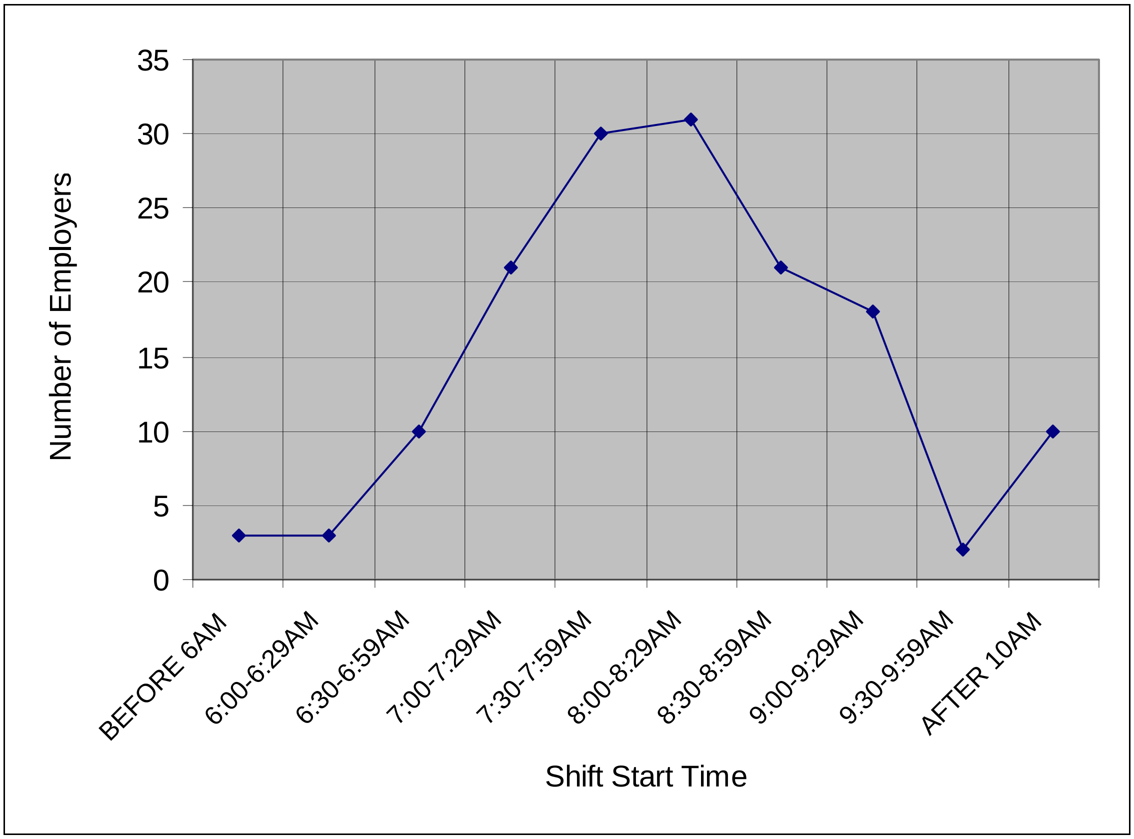
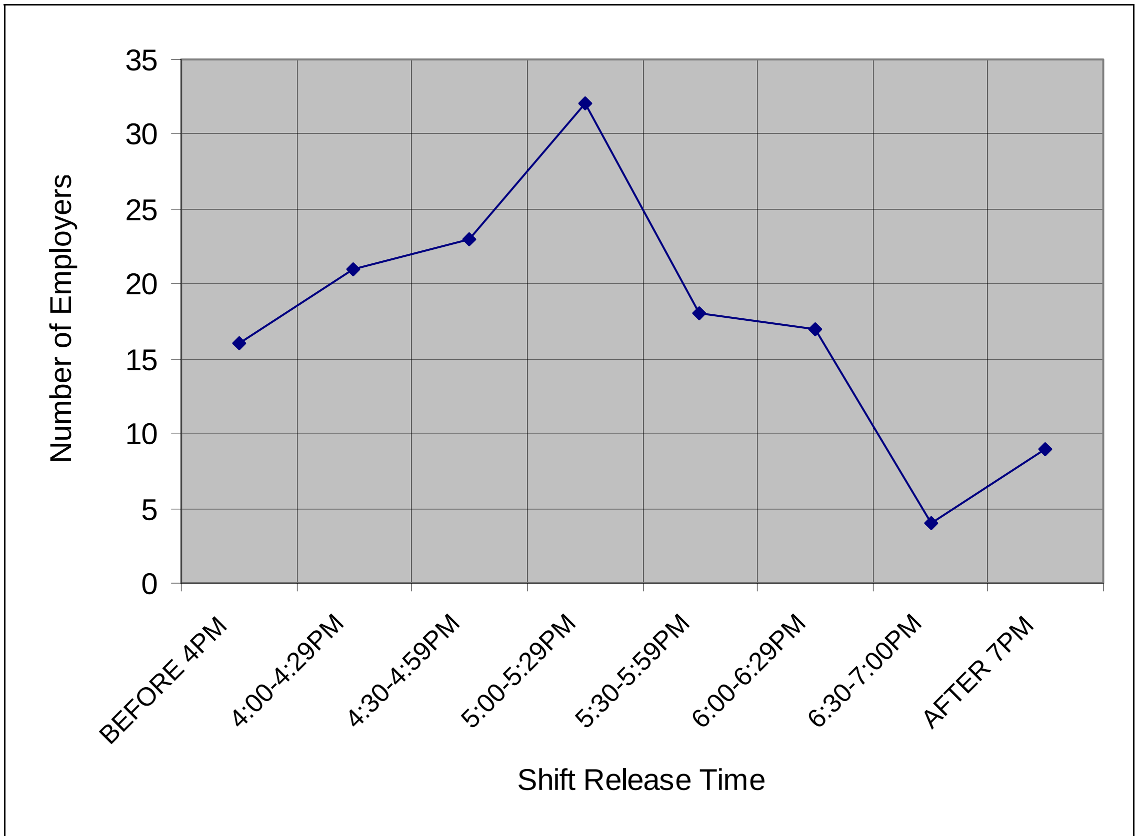


Figure 3-6: Afternoon Shift Release Times



Figures 3-5 and 3-6 show a significant peak relative to the rest of the day. If the peaks can be reduced by encouraging some employers to shift schedules somewhat, some roadway demand could be shifted.

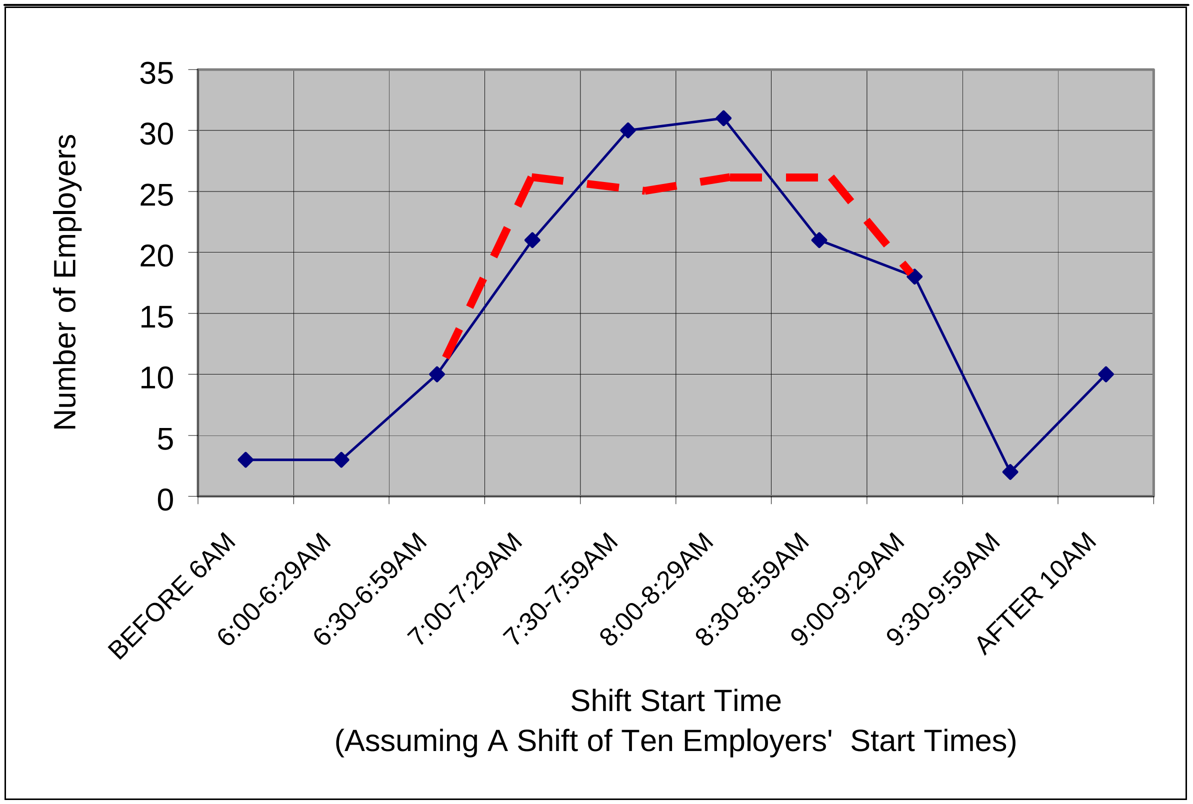
Employers were asked whether they could modify peak schedules to allow for flexible work periods to avoid peak hour travel times. Twenty-four employers thought that they could adjust their work schedules to make it easier for employees to get to work. Of the 70 employers who responded that they would be unable to make schedule adjustments, 61 provided some type of explanation, including:

- Set hours of operation
- School hours are not flexible
- Hours based on peak travel time
- Customers only excepting deliveries during certain times
- Require daylight hours
- Customer expectations

Employers who indicated a willingness to consider implementing flexible schedules were asked to estimate the percentage of their employees who might be eligible for the opportunity. Of the 22 firms that responded, the percentage ranged from none (no eligible employees) to 100 percent (eligible employees). Depending on the season, the total number of employees represented by this sample group eligible for work schedule adjustments ranged between 100 and 250 employees.

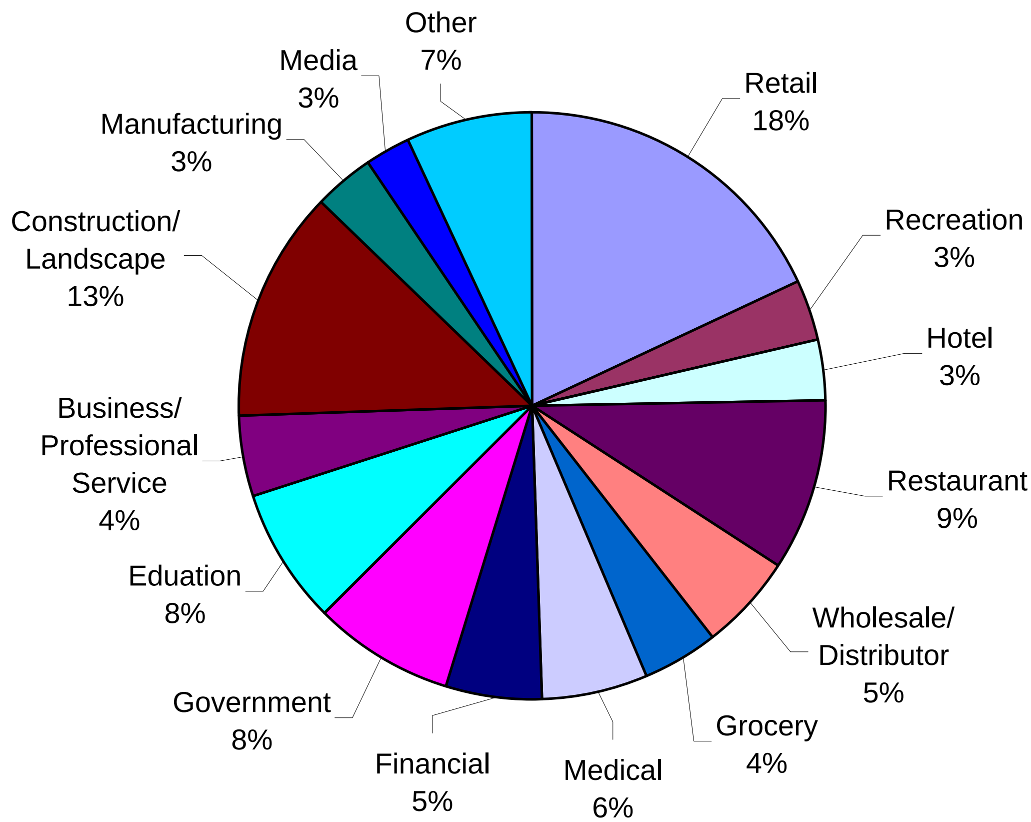
It appears highly worthwhile to consider the potential gains from changes in employer work shifts considering the apparent willingness shown in the survey. Figure 3-7 illustrates how the a.m. peak could be affected by shifting the work hours of ten employers assuming that five could be shifted one hour earlier and five shifted one hour later.

Figure 3-7: Morning Shift Change Illustration (Potential Effect of Shifting Employer Start Times for Ten Employers)



A final question was asked of each respondent to identify the type of business where he or she worked. In response, most of the respondents identified retail or construction and landscape as the type of business they operate, however, some businesses identified themselves with more than one category. Figure 3-8 represents the variety of businesses that participated in the survey.

Figure 3-8: Employer Types



3.3 Transportation Environment

Based on the survey and other study material, driving alone in a personal automobile is currently the most common mode used for work-related trips in the Valley. For example, the Stated Preference Survey, completed earlier, which analyzed data on vehicle occupancy and mode split, determined that the reported average vehicle occupancy is 1.27 persons per vehicle for commute trips and that almost 80 percent of the survey respondents drove alone to work.[2]

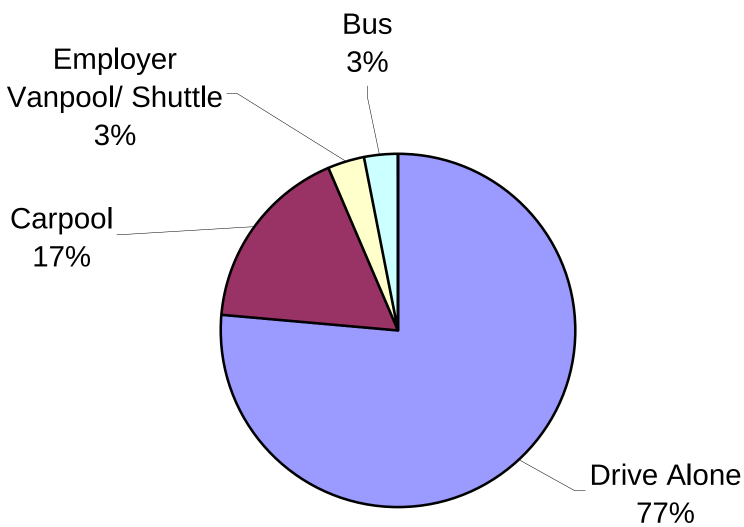
The TDM survey also asked questions pertaining to mode choice. Employers were asked to estimate the percentage of their employees traveling to work by different modes. Employers were given the following choices:

- Driving Alone
- Carpool
- Employer Vanpool/Shuttle
- Bus
- Walk
- Bike
- None: Work from Home

[2] *SH75Timmerman's Pass to Ketchum Stated Preference Survey Report*, prepared by Parsons Brinckerhoff, October 1, 2001.

Based on 93 respondents, Figure 3-9 summarizes how employees represented in the Employer Transportation Survey Report commute to work.

Figure 3-9: Summer Employee Commute Choice



Of the 85 percent of employees who travel by motorized transportation (e.g., drive alone, carpool, employer vanpool/shuttle, and bus) for work-based trips, the survey indicated that 77 percent of employees drive alone, 17 percent carpool, 3 percent utilize the KART bus system, and 3 percent use an employer shuttle or vanpool arrangement. This closely correlates to data reported in the Stated Preference Survey conducted during the summer of 2001.[3]

Employers also were asked to identify where their employees live, in order to identify where work-based commute trips begin. Ten employers either chose not to respond to this question or provided information that could not be used in the analysis. Figure 3-10 shows the percentage of total employees represented by the respondents of this question (86 employers). Regarding the percentages on the figure, the first value represents summer and the second refers to winter. For example, 12 percent of the employees live in Sun Valley during the summer whereas 17 percent live there in the winter. It is common for some of the larger employers operating in the northern portion of the corridor to have approximately half their staff living in Bellevue or Hailey.

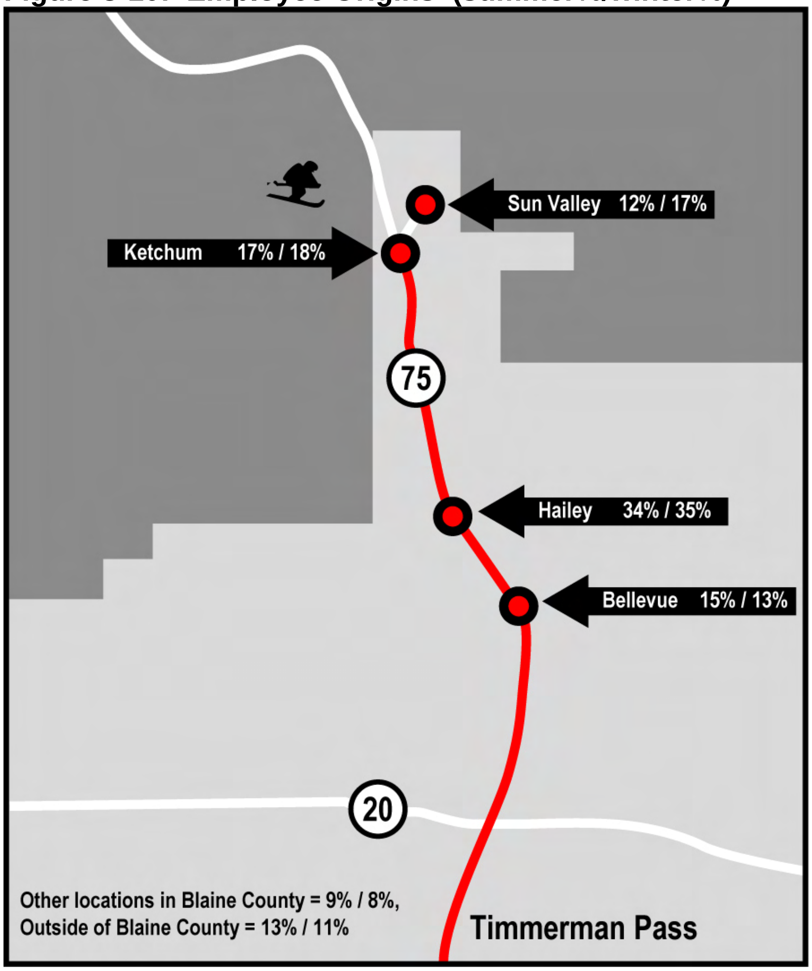
Several questions were asked concerning the availability and use of existing parking and what could be done to encourage employees to use carpooling or other alternate travel modes. Respondents were asked about the perceived availability of parking at their work sites. They were given the choices a parking shortage, adequate parking, or surplus of parking. Two employers indicated that available parking at their firm fell between a shortage and being adequate. From the remaining respondents, 24 thought they experienced a parking shortage, 56 thought their situation was adequate, and some employers felt they had a parking surplus. Of the 24 respondents that indicated a parking shortage, most are located in Ketchum as indicated in Table 3-3. Perceived parking shortages also were identified along Main Street in Bellevue and in Hailey.

[3] *SH75/Timmerman's Pass to Ketchum Stated Preference Survey Report*, prepared by Parsons Brinckerhoff, October 1, 2001, page 11.

Table 3-3: Locations of Employers Identifying Parking Shortages

Location	Number of Respondents
Ketchum	17
Hailey	4
Bellevue	2
Sun Valley	1

Figure 3-10: Employee Origins (summer%/winter%)



Respondents also were asked to identify where employees and customers park when they drive to work or to visit the business. Employers were given the following responses to choose from:

- Free parking lot on-site (adjacent to business)
- Paid parking lot on-site with estimated cost
- Free parking lot off-site
- Paid parking lot off-site with estimated cost
- Metered (paid) street parking with estimated cost

- Time limited free street parking
- Unrestricted street/neighborhood parking
- Other and a description

As shown by Table 3-4, only one employer has a parking arrangement where employees have to pay for parking. The business is a small employer (with three employees) and a worksite in Ketchum. The parking fee is $1.00 a day, which is reimbursed by the employer. Based on the survey, it appears that this employer is the only one that reimburses for parking expenses.

Table 3-4: Summary of Employee and Customer Parking Arrangements for 96 Surveyed Employers

Arrangement	For Employees	For Customers
Free parking lot on-site	75	75
Paid parking lot on-site	1	0
Free parking lot off-site	13	12
Paid parking lot off-site	0	0
Metered (paid) street parking	0	0
Time limited free street parking	7	20
Unrestricted street parking	35	27
Other	4	3

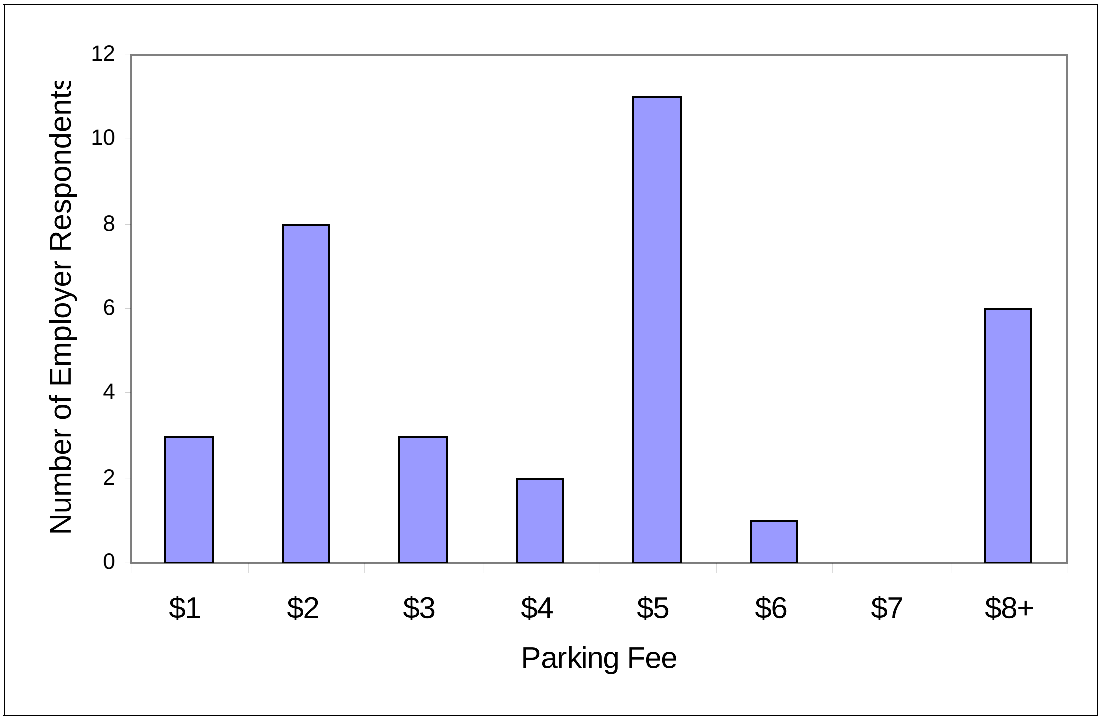
Employers were also asked about their perception of employee willingness to try another mode of traveling for work trips if parking fees were imposed. Fourteen employers chose not to respond. Thirty employers thought that employees might change mode based on price sensitivity. Figure 3-11 summarizes their responses. If more than one price was listed by an employer, the lowest price was used for this summary.

Employers were also asked to provide a written description of the most common concern employees voice about traffic, parking, and other transportation related issues. Twenty-one employers either did not answer the question or responded with a statement that their employees do not have problems commuting or parking because they travel against peak direction traffic, travel outside of congested times, or live and work in locations that are not affected by commuter traffic. The remaining 74 employers identified current problems regarding traffic and parking as well as provide suggestions on improvements. The two main comments concerned the following:

- Long commute times, traffic congestion, incidents, and volumes during the morning and evening commuter hours in the peak direction, and
- Lack of available parking.

In addition, four employers commented on the lack of transit options in the Valley. Two of these employers expressed specific interest in a bus system linking the southern portion of the Valley to the north going as far to say that they themselves would utilize it.

Figure 3-11: Local Employers' Views of Parking Price at Which Employees Might Change Travel Modes



A Ketchum employer wrote "I have a hard time hiring people from the south Valley to work in Ketchum because of the time required to commute due to traffic delays." Another Ketchum employer with a staff of 50 during the summer stated, "Employees are becoming frustrated with having to allocate more and more of their time to sitting in traffic. The noise and congestion are a complaint with our visitors as well. Everyone complains about the perceived lack of available parking in downtown Ketchum."

A number of employers also identified specific design components or traffic control features in their statements including:

- The need for a four-lane road through the entire Valley,
- Look at options of rerouting traffic and using grade-separation instead of traffic signals,
- Utilize one-way streets in Ketchum,
- Removing parking and making more pedestrian friendly communities,
- Inability to cross travel lanes,
- Poor signal timing (in particular at the hospital),
- Additional signal should be added at Myrtle and Main, and
- Motorists not yielding to emergency apparatus.

3.4 Transportation Options

Employers in the Ketchum area were asked if they were within proximity to a KART bus route, and 52 percent (of the 96 survey respondents) stated that they are located within a 10-minute walk to a bus route, (which operates in the Ketchum area only.)

A majority of employers (56 percent) thought that employees would consider transit options such as bus, shuttles and demand response service if it were convenient. In addition, 18 percent of the respondents thought that over half of their employees would consider some form of transit if it were available.

Fifty six percent of employers thought it feasible for employees to bike or walk to work if conditions (safety, lighting) and amenities (lockers, showers) were available. Ten percent of the respondents thought that one-quarter or more of their employees would consider biking or walking to work. In general, employers thought that the types of improvements needed along the Highway 75 corridor to encourage walking or bicycling to work include:

- Cross access for bikes to Wood River trails
- Lighting
- Wide, paved shoulders
- Rest stops (with shade and drinking fountains)
- Park and ride facilities

A few respondents noted that the bike path along the corridor is sufficient, but the winter weather inhibits bicycling. Others noted that the distance was too great and a park and ride facility would allow employees to drive part of the distance and bike for the remainder.

The last survey questions were formatted in such a way to assess the current and future use of specific TDM strategies, policies and incentives that were not discussed earlier in the survey. For example, employers were asked if they currently offer some type of TDM option for their employees. If not, they were also asked what TDM option they might be willing to provide in the future.

Employers chose from the following:

- Reserved parking spaces for carpools and vanpools
- Posted information about Wood River Rideshare and KART bus schedules available at your place of work
- Employer-owned vehicles for off-site meetings, sales calls, employee transport/shuttle, etc.
- Secure bicycle storage
- Telecommuting Policy (allowing employees to work from home or an alternate site)
- Flexible work schedules
- Services on-site or within walking distance that eliminate the need for workday vehicle trips (cafeteria, vending machines, coffee, ATM, postage, etc.)

Of the 96 respondents, 56 percent answered that they currently offer at least one of the seven TDM options. Figure 3-10 displays which of the options participating employers currently offer.

Forty-three percent of the employers felt that they could either expand the TDM options now provided to their employees or initiate new programs. Figure 3-13 shows which of the options employers might be willing to offer in the future that they do not provide now.

Figure 3-12: Existing Employer Options for the 96 Surveyed Employers

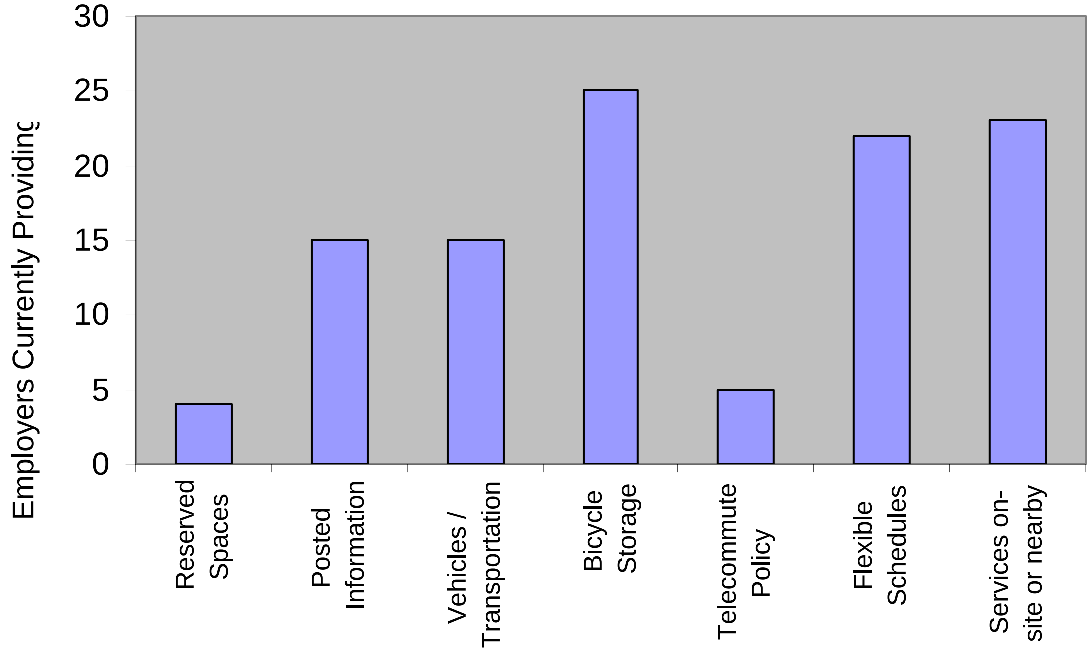
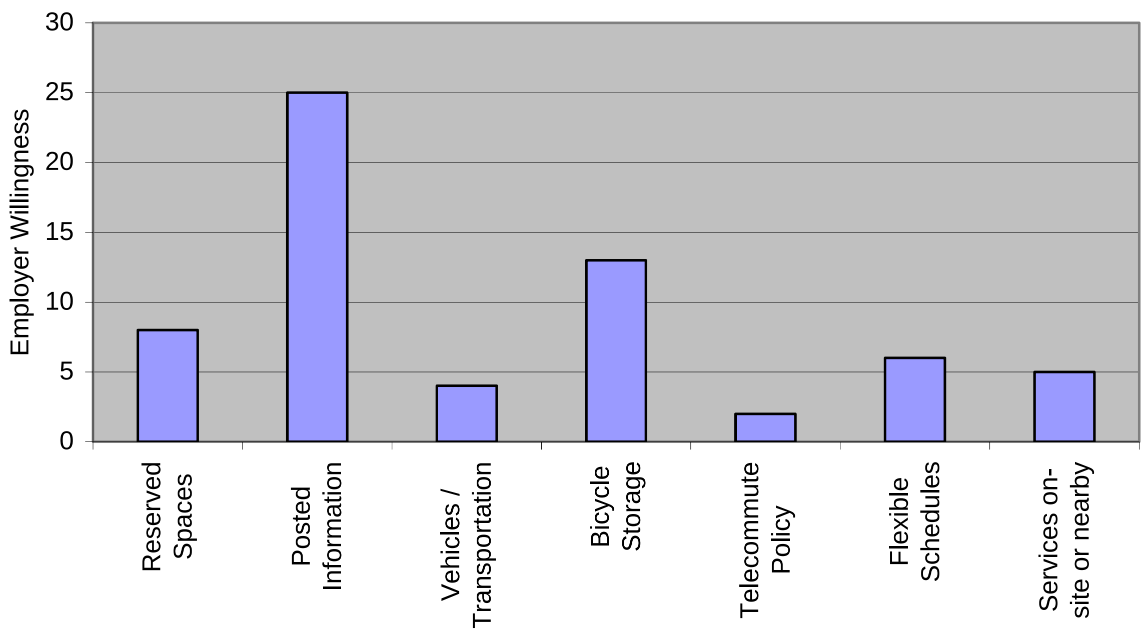


Figure 3-13: Transportation Options 96 Surveyed Employers May Be Willing To Offer



4.0 SURVEY SUMMARY

The purpose of conducting this survey was to draw some conclusions about employer attitudes concerning the role TDM might have in reducing traffic congestion in the Highway 75 Timmerman to Ketchum Corridor. These survey results, along with information gleaned from other tourist-based communities around the country, will enable Idaho Transportation Department (ITD) and its consultant team to more fully understand how employers and their employees might use TDM, and to gauge its potential effectiveness in helping reduce congestion and improve transportation mobility.

Highlights from the survey include the following:

- A large number of employers sent the survey chose to respond. Of the 171 employers queried, 96 companies responded, or 56 percent. Based on the data collected, employers in the Valley appear interested in transportation issues affecting travel in the corridor.
- The majority of respondents (57 percent) have businesses located Ketchum/Sun Valley area, which is consistent with the location of much of the commercial activity within the Valley.
- Area employment levels tend to be highest during the wintertime, or December through March. Significantly, approximately 27% of the summer employees and winter employees are seasonal (only working for that employer in the summer or winter season).
- Peak hour employment shift times are traditional, occurring primarily between 7:00 and 9:00 in the morning, and between 4:00 and 6:00 in the afternoon. Considering that 24 employers indicated a willingness to consider shifting shift times somewhat, there is some potential for reducing peak period travel using this means. This option appears very worthwhile considering the combination of apparent willingness and the expected low public cost associated with the action.
- The majority of employees currently drive to work alone (77 percent), but the percentage of individuals who carpool, vanpool or use the bus (23 percent) is relatively high for such a small geographic area. This indicates that a large number of individuals already recognize the benefits associated with ridesharing or using other similar transportation modes. It will be important to understand why these individuals recognize these benefits and whether that view can be extended to others in the valley, i.e., focus on what will encourage others to see these benefits. Among the potential reasons for these individuals may be cost and reliability of transportation. These features may be worth highlighting for other commuters in the area.
- Nearly all the employers surveyed provide free employee and/or customer parking. The availability of free parking can serve to discourage people from even considering other travel modes. In some resort communities like Lake Tahoe that want to promote increased transit use, the number of parking spaces in commercial areas is limited. In other communities, paid parking might be imposed to encourage pedestrian activity, bicycle use, or increased transit use.
- A number of employers (11) indicated that charging $5 or more per day for parking would likely cause their employees to consider changing their mode of travel to work. While parking fees can result in some employees shifting to alternative travel modes (e.g., carpooling, use of transit, etc.) and thereby helping reduce local traffic congestion, other employees who need or choose to drive their own vehicles may object to paying the cost for parking. This topic is commonly one of the most hotly debatable TDM issues.
- A wide variety of comments were provided about the need to improve Highway 75 between Timmerman and Ketchum, including improved signalization at intersections, widening the

highway, providing more on-street parking in Ketchum, and improving pedestrian and motorist safety. Many of these operational improvements would help improve vehicle access and movement through the corridor. The design and location of these improvements would be important to maintaining safe travel speeds, proper sight distances, adequate radii for turning movements, and protected areas for pedestrian crossings at busy intersections.

- A majority of the respondents (56 percent) indicated that their employees would consider using transit (e.g., bus, shuttles and demand response service) if it were convenient. A similar percentage of respondents also felt their employees would be willing to bike or walk to work if it were convenient and safe. As with the number of employers who are willing to consider shifting work start and stop times, the employers' views of their employees' willingness to use alternate modes suggests that an employer focus will be worthwhile.
- The data also suggests that many employers already recognize the value of providing TDM options or measures for their employees. Many employers, for example, now provide vanpooling information from Wood River Rideshare, bicycle storage lockers or racks, flexible work schedules, or amenities (e.g., on-site cafeteria, ATM machines, etc.) that reduce the need for vehicle trips. Other TDM measures such as using flex hours, providing employer-owned vehicles for off-site meetings, and offering employees the option to telecommute currently lack support given the types of businesses surveyed.

While the focus of this survey was to collect information about the potential use of TDM by area employers and employees, other travel markets likely exist that would consider using transit and other TDM measures. For example, in other resort communities, transit and resort shuttle services can offer visitors a viable alternative to renting an automobile for their personal travel. These types of service are currently offered in Park City, Utah and in the Lake Tahoe Basin in California.

5.0 NEXT STEPS

Using the survey results and other data collected as part of Highway 75 Timmerman to Ketchum Environmental Impact Statement, an effort will be made to quantify the existing role that TDM plays in the Valley and help determine the likely role of TDM in the future. In other resort communities like Park City, Utah and in Jackson Hole, Wyoming, successful TDM programs have been implemented that utilize a mix of complimentary strategies to reduce vehicle trips. Data collected from the Highway 75 Timmerman to Ketchum Employer Transportation Survey suggest that a similar type of program could be successful in the corridor.

Data from the survey will assist traffic modeling efforts in determining appropriate proportions of the traffic market to test the significance TDM and transit will have on the local transportation network. *The results of this survey alone will not provide a conclusive basis on future mode split in the region, but will be used as an indicator of what could be possible with varying degrees of employee and employers participation*. In addition, information obtained from local employers will be shared with Wood River Rideshare for use in the Smart Options for Commuting program, which is an employer support program established to serve employer transportation needs in the Valley. Follow-up meetings with interested employers are being organized to identify measures they can be taken to implement TDM use in the corridor. Wood River Rideshare will participate in the employer meetings.

6.0 REFERENCES

A Toolbox for Alleviating Traffic Congestion and Enhancing Mobility, prepared by Institute of Transportation Engineers, 1997.

Implementing Effective Travel Demand Management Measures, prepared by the Institute of Transportation Engineers, June 1993.

SH75/Timmerman's Pass to Ketchum Stated Preference Survey Report, prepared by Parsons Brinckerhoff, October 1, 2001.

APPENDIX A

Employer Transportation Survey

HIGHWAY 75 TIMMERMAN TO KETCHUM ENVIRONMENTAL STUDIES

EMPLOYER TRANSPORTATION SURVEY

As part of the Highway 75 Timmerman to Ketchum Environmental Impact Statement, the Idaho Transportation Department and the Parsons Brinckerhoff (PB) consultant team are gathering information on Highway 75 users, their travel patterns, and the employers in the Wood River Valley. This information will give us data that will help determine what combination of transportation solutions will best serve the valley. To date we have conducted origin/destination travel surveys on Highway 75, a transit telephone survey, and have taken new traffic counts along Highway 75.

Wood River Rideshare has been working with local employers to identify those businesses that might benefit from carpooling or other employee-based travel programs. As part of the Highway 75 project, and in consultation with Wood River Rideshare, a survey of employers throughout the Wood River Valley is being conducted. This information will be evaluated by PB staff and shared with Wood River Rideshare.

Please take a few moments to complete this survey. To make this more convenient for employers, a self-addressed, stamped envelope is attached. We would appreciate a response by October 19, 2001. If you would prefer to fill this form out electronically, please email your request to misteravich@pbworld.com. An electronic version will then be emailed to you. If you have questions about this employer survey, please contact:

Kate Misteravich
Parsons Brinckerhoff
(916) 567-2543
Email misteravich@pbworld.com

We recognize that this is a long distance call. Please leave your name and number and we will call back so that you do not incur the long distance charges.

Once we have received surveys and have analyzed the information, we plan to meet with interested employers and discuss how carpooling and other actions might be implemented for their employees.

For other questions about the Highway 75 project, please contact:

Chuck Carnohan, Environmental Manager
Idaho Transportation Department
208-886-7823

Diana Atkins, Project Manager
Parsons Brinckerhoff
801-288-3227

We thank you for your help in completing this survey. The results of the survey will be made available later this fall.

COMPANY INFORMATION

Company Name: ______________________________

Street Address: ______________________________

City: ______________ Zip: ______________

Mailing Address (if different): ______________________________

Office Phone Number: ______________ Fax Number: ______________

Contact Name: ______________ Contact Phone Number: ______________

Contact Email Address: ______________ Website Address: ______________

Please answer the following questions for one (1) worksite only. The worksite should correspond to the street address you provided above. If you have additional worksites, branches or offices in Blaine County, please check the box that corresponds to how many additional locations you have.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ Other _______

BUSINESS OPERATIONS

1. Please provide the following seasonal staffing information for your worksite.

	Summer Season (May – August)	Winter Season (December – March)
TOTAL # OF EMPLOYEES	____________	____________

2. Of the employees from question 1, how many are permanent, year-round employees?

TOTAL # OF PERMANENT (YEAR-ROUND) EMPLOYEES ____________

3. WHAT DAYS OF THE WEEK DOES YOUR COMPANY OPERATE? (CIRCLE ALL THAT APPLY)

Summer Season	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Winter Season	Mon	Tues	Wed	Thur	Fri	Sat	Sun
Off-season (Fall/Spring)	Mon	Tues	Wed	Thur	Fri	Sat	Sun

4. If your business requires employees to travel to work in the morning, what time are the majority of employees required to report to work during your busiest (highest staffed) season? (Please try to limit your answer to no more than three.)

☐ before 6:00 AM	☐ 6:00 – 6:29 AM	☐ 6:30 – 6:59 AM
☐ 7:00 – 7:29 AM	☐ 7:30 – 7:59 AM	☐ 8:00 – 8:29 AM
☐ 8:30 – 8:59 AM	☐ 9:00 – 9:29 AM	☐ 9:30 – 9:59 AM
☐ after 10:00 AM		

5. If your company has a work shift that ends during the afternoon hours, what time are the majority of employees released during your busiest (highest staffed) season? (Please try to limit your answer to no more than three.)

☐ before 4:00 PM	☐ 4:00 – 4:29 PM	☐ 4:30 – 4:59 PM
☐ 5:00 – 5:29 PM	☐ 5:30 – 5:59 PM	☐ 6:00 – 6:29 PM
☐ 6:30 – 6:59 PM	☐ after 7:00PM	

6. Could your company modify work schedules to make it easier for some employees to avoid peak travel times to get to work?

☐ No ☐ Yes

If you answered No, please explain why.

____

____

If you answered Yes, what percentage of total employees during your busiest (highest staffed) season might be eligible for a work hour adjustment?

Approximate percentage of employees eligible for work schedule adjustments ________ %

7. Which of the following describe your business? (Please check all that apply)

☐ Retail	☐ Recreation	☐ Real Estate
☐ Hotel/Accommodations	☐ Restaurant	☐ Wholesale/Distributor
☐ Grocery	☐ Medical	☐ Financial
☐ Government	☐ Utility	☐ Education
☐ Business/Professional Service	☐ Construction/Landscape	☐ Other ____________

TRANSPORTATION ENVIRONMENT

8. To the best of your knowledge, estimate the percentage of employees traveling to work in the following way during your busiest (highest staffed) season:

☐ Driving alone	______ %
☐ Carpool	______ %
☐ Employer Vanpool/Shuttle	______ %
☐ Bus	______ %
☐ Walk	______ %
☐ Bike	______ %
☐ None: Work from Home	______ %
☐ Other ______________	______ %
	100 %

9. Please approximate the percentage of employees residing in the following communities during your busiest (highest staffed) season:

☐ Ketchum	______ %
☐ Sun Valley	______ %
☐ Hailey	______ %
☐ Bellevue	______ %
☐ Blaine County (between Ketchum and Sun Valley)	______ %
☐ Blaine County (south of Bellevue)	______ %
☐ Blaine County (other)	______ %
☐ Outside Blaine County	______ %
	100 %

10. What is the availability of parking at your worksite during your busiest (highest staffed) season?

☐ Shortage ☐ Adequate ☐ Surplus

11. For your employees who drive to work, where do they park? (Check all that apply)

☐ A. Free parking lot on-site (adjacent to business)
☐ B. Paid parking lot on-site (Please estimate the cost per day for parking: $ ________)
☐ C. Free parking lot off-site
☐ D. Paid parking lot off-site (Please estimate the cost per day for parking: $ ________)

☐ E. Metered (paid) street parking (Please estimate the cost per day for parking: $ ________)
☐ F. Time limited free street parking
☐ G. Unrestricted street/neighborhood parking
☐ H. Other __________________

12. To the best of your knowledge, where do your customers park when they visit your worksite? (Check all that apply)

 A. Free parking lot on-site (adjacent to business)
 B. Paid parking lot on-site (Please estimate the cost per day for parking: $ ________)
 C. Free parking lot off-site
 D. Paid parking lot off-site (Please estimate the cost per day for parking: $ ________)
 E. Metered (paid) street parking (Please estimate the cost per day for parking: $ ______)
 F. Time limited free street parking
 G. Unrestricted street/neighborhood parking
 H. Other __________________

13. Does your company reimburse employees or directly pay for employee parking fees?

 No Yes

14. If parking fees were imposed, do you believe that your employees would be more inclined to consider ridesharing, transit or another alternate mode of transportation for work trips?

 No Yes

If Yes, at what daily parking price do you think employees would consider not driving alone to work?

 $0.50 $1 $2 $3 $4 $5 $6 $7 $8 or more

15. What are the most common concerns that your company hears about traffic, parking, and other transportation-related issues from employees?

____

____

____

TRANSPORTATION OPTIONS

16. If your business is located in the vicinity of Ketchum, is it near a KART bus route (e.g. within a ten-minute walk)?

 No Yes Don’t Know

17. If transit service (e.g., bus, demand response, shuttles) were more convenient for your employees, please estimate the percentage of employees who may switch from driving alone to transit?

Approximate percentage of employees who may consider transit__________ %

18. Is it feasible (based on distance, safety, and amenities at work) for some of your employees to ride a bicycle or walk to work that don't do so now?

☐ Yes ☐ No

If Yes, please try to estimate the percentage of additional employees who might consider biking or walking to work.

Approximate percentage of employees who may consider biking or walking __________ %

19. Please provide in the space below what, if any, improvements along the Highway 75 corridor would encourage walking or bicycling to work.

____

____

____

20. Which of the following does your company provide to encourage and support employees to choose a commuter method other than driving alone? (Check all that apply)

- ☐ A. Reserved parking spaces for carpools and vanpools
- ☐ B. Posted information about Wood River Rideshare and KART bus schedules available at your place of work
- ☐ C. Employer-owned vehicles for off-site meetings, sales calls, employee transport/shuttle, etc.
- ☐ D. Secure bicycle storage
- ☐ E. Telecommuting Policy (allowing employees to work from home or an alternate site)
- ☐ F. Flexible work schedules
- ☐ G. Services on-site or within walking distance that eliminate the need for workday vehicle trips (cafeteria, vending machines, coffee, ATM, postage, etc.)

21. Which of the following might your business consider providing in the future if they are not available now? (Check all that apply)

- ☐ A. Reserved parking spaces for carpools and vanpools
- ☐ B. Information at your place of business on Wood River Rideshare and transit service if it is implemented
- ☐ C. Employer-owned vehicles for off-site meetings, sales calls, employee transport/shuttle, etc.
- ☐ D. Secure bicycle storage
- ☐ E. Telecommuting Policy (allowing employees to work from home or an alternate site)
- ☐ F. Flexible work schedules
- ☐ G. Services on-site or within walking distance that eliminate the need for workday vehicle trips (cafeteria, vending machines, coffee, ATM, postage, etc.)

Thank You

APPENDIX B

Organizations Contacted to Participate in Survey

Organizations Contacted to Participate in Survey

1.	A-1 TAXI INC	46.	FELIX'S RESTAURANT
2.	ADAMSON'S	47.	FIRST BANK OF IDAHO
3.	AIRPORT INN	48.	FLOLOS PHOTOS
4.	AMERICAN EAGLE INC	49.	FRIEDMAN MEMORIAL AIRPORT
5.	ANDERSON GLASS & MIRROR INC	50.	FULL MOON STEAKHOUSE/FULL MOON
6.	ANDERSON INSULATION INC	51.	FUTURELINK
7.	ANIMAL SHELTER OF WOOD RIVER VALLEY	52.	G & H SHEETMETAL INC
8.	ASCENTE FINANCIAL INC	53.	GLASS MASTERS
9.	ATKINSON'S MARKET INC	54.	GLENNS GROCERY
10.	BANK OF AMERICA IDAHO	55.	GLOBUS INC
11.	BASE MOUNTAIN PROPERTIES	56.	GREAT AMERICAN LOG FURNITURE COMPANY
12.	BELLEVUE PRIMARY SCHOOL	57.	GRUMPY'S INC
13.	BIG WOOD BREAD COMPANY	58.	HAILEY ELEMENTARY SCHOOL
14.	BIG WOOD LANDSCAPE INC	59.	HAILEY MEDICAL CLINIC
15.	BIGWOOD GOLF COURSE	60.	HAILEY PLUMBING INC
16.	BILL MASON OUTFITTERS	61.	HARDMANS HARDWARE INC
17.	BISHOP BUILDERS INC	62.	HAYDEN BEVERAGE COMPANY
18.	BLAINE COUNTY	63.	HERTZ RENT-A-CAR
19.	BLAINE COUNTY SCHOOL DISTRICT #61	64.	HOLMENKOL/SPIRUKUT SPORTS PRODUCTS
20.	BLAINE COUNTY TITLE ASSOCIATES	65.	HOME MEDIA
21.	BLITZ CONSULTING INC	66.	HORIZON AIRLINES INC
22.	BUDGET RENT A CAR	67.	HOSPICE OF THE WOOD RIVER VALLEY INC
23.	CAREY PUBLIC SCHOOL	68.	IDAHO DEPARTMENT OF LABOR
24.	CARRERA	69.	IDAHO GLULAM
25.	CHANNEL 13 KWRV	70.	IDAHO HERITAGE TRUST INC
26.	CHATEAU DRUG CENTER	71.	IDAHO MOUNTAIN EXPRESS
27.	CHINA PEPPER	72.	IDAHO POWER CO
28.	CITY OF BELLEVUE	73.	IDAHO STATE FARM INSURANCE
29.	CITY OF HAILEY	74.	INTERMOUNTAIN GAS INC
30.	CITY OF KETCHUM	75.	INTERSTATE ELECTRIC SUPPLY
31.	CITY OF SUN VALLEY	76.	ISABELS NEEDLEPOINT INC
32.	CLARION INN OF SUN VALLEY	77.	J W THORNTON WINE IMPORTS INC
33.	CLEARWATER EQUIPMENT INC	78.	JANES PAPER PLACE INC
34.	CLEARWATER LANDSCAPING CO INC	79.	JAVA ON FOURTH
35.	C-M COPY & PRINT	80.	JAVA ON MAIN
36.	COLLEGE OF SOUTHERN IDAHO	81.	JOHN LLOYD CONSTRUCTION INC
37.	COMMUNITY LIBRARY ASSOCIATION	82.	JUST FLOWERS INC
38.	COMMUNITY SCHOOL INC	83.	KETCHUM KUSTOM WOODWORKS INC
39.	COTTONWOOD DELI & CATERING	84.	KETCHUM RANGER STATION
40.	ELEPHANT'S PERCH	85.	KSVT 13 & KSVX 14
41.	ERNEST HEMINGWAY ELEMENTARY	86.	LES SCHWAB
42.	ERWIN EXCAVATION	87.	LUTZ RENTALS
43.	EX LIBRIS BOOK STORE	88.	MATHER CAPITAL CORP
44.	EXPRESS PRINTING INC	89.	MCNAMARA COMPANY
45.	FEDERAL EXPRESS	90.	MICHALS MNT PRESCHOOL

Organizations Contacted to Participate in Survey (Continued)

91. MOUNTAIN DAIRIES INC	132. SUN VALLEY RESORT
92. MOUNTAIN LIVING REAL ESTATE INC	133. SUN VALLEY ROOFING
93. MOUNTAIN MEDICAL ASSOCIATES PA	134. SUN VALLEY SPORTS MEDICINE
94. MOUNTAIN VIEW GROCERY INC	135. SUN VALLEY SPORTS REHAB. CLINIC
95. PERRYS RESTAURANT	136. SUN VALLEY TITLE CO
96. PICCOLO	137. SUN VALLEY'S ELKHORN RESORT
97. PIONEER FEDERAL CREDIT UNION	138. SUTTON & SONS CHEVROLET
98. PIONEER MONTESSORI SCHOOL-CORP	139. THE APPLIANCE CO INC
99. PIONEER SALOON INC	140. THE CREATIVE EDGE INC
100. POWER ENGINEERS INC	141. THE CUTTERS OF IDAHO
101. PRACTICAL PLANTING INC	142. THE DONNELLY SCHOOL
102. PREMIER RESORTS SUN VALLEY	143. THE HISSING GOOSE LTD
103. RECYCLING SERVICES INC	144. THE JOHNSON COMPANY INC
104. RED ELEPHANT SALOON	145. THE KNEADERY
105. REDFISH INC	146. THE TOY STORE
106. SAMS CLUB	147. THE WIRTH COMPANY INC
107. SAWTOOTH ANIMAL CENTER INC	148. TOOLING EXPRESS INC
108. SAWTOOTH AUTO SALES INC	149. TOPNOTCH FINE FURNISHINGS
109. SAWTOOTH NATIONAL REC. AREA HDQ	150. TRINITY SPRINGS LTD
110. SAWTOOTH TACK & FEED INC	151. TRISTATE EXCAVATION
111. SAWTOOTH TITLE COMPANY	152. US BANK OF IDAHO
112. SAWTOOTH WOOD PRODUCTS INC	153. US FOREST SERVICE - KETCHUM RANGER DIST.
113. SCOTT USA	154. VENTURE OUTDOORS
114. SILVER CREEK OUTFITTERS INC	155. WALKABOUT CHILDRENS CENTER
115. SMITH SPORT OPTICS	156. WEBB LANDSCAPING
116. SO CENTRAL DIST HEALTH DEPT	157. WELLS FARGO BANK NA
117. SOUTH VALLEY PIZZERIA	158. WESTERN CAFÉ
118. SPLASH & DASH INC	159. WHITEHEAD LANDSCAPING & SNOW REMOVAL
119. ST. LUKE'S WOOD RIVER MEDICAL CTR	160. WILLIAMS MARKET
120. STOREY CONSTRUCTION INC	161. WILSON-BATES APPLIANCE STORES INC
121. SUN SUMMIT SKI & CYCLE	162. WOOD RIVER CHRISTIAN SCHOOL INC
122. SUN VALLEY ANIMAL CENTER INC	163. WOOD RIVER FIRE PROTECTION DIST
123. SUN VALLEY APPRAISAL COMPANY	164. WOOD RIVER HIGH SCHOOL
124. SUN VALLEY AVIATION INC	165. WOOD RIVER INSURANCE INC
125. SUN VALLEY BREWING COMPANY	166. WOOD RIVER JOURNAL
126. SUN VALLEY BRONZE INC	167. WOOD RIVER MIDDLE SCHOOL
127. SUN VALLEY CLEANERS & LAUNDRY INC	168. WOOD RIVER OUTFITTERS LLC
128. SUN VALLEY COMPANY	169. WOOD RIVER RUBBISH CO
129. SUN VALLEY CUSTOM WOOD PRODUCTS	170. PAUL'S MARKET AND DELI
130. SUN VALLEY ENTERTAINMENT REVIEW	171. WOOD RIVER VALLEY MARKET
131. SUN VALLEY MUSTARD	

APPENDIX C

TDM Fact Sheet

FACT SHEET

October 2001 *Fact Sheet #3*

Transportation Demand Management (TDM)

What is TDM?

Transportation demand management (TDM) refers to a mix of strategies designed to increase vehicle occupancy, reduce travel time, and improve the efficiency of the transportation system.

TDM strategies typically focus on reducing work trips during the morning and evening commute hours. For this reason, many TDM strategies are implemented through employer-based programs that encourage employees to switch from driving alone to carpooling, vanpooling, or using some other alternate means of travel. It can also involve changing the time or direction of travel in order to reduce traffic congestion within a defined geographic area.

Why use TDM in the Wood River Valley?

As part of the Highway 75 Timmerman to Ketchum Environmental Impact Statement, several traffic reduction options have been suggested by local residents and officials, including conventional roadway widening and the use of TDM. With this in mind, the Idaho Transportation Department (ITD) and the PB consultant team are evaluating the potential benefits of TDM in improving traveler mobility along the Highway 75 corridor and the Wood River Valley.

What has been done so far?

To gauge the potential use of TDM within the corridor, information is being collected on the work-related travel patterns of Highway 75 users in the Wood River Valley.

As part of this data collection effort, an employer survey has been distributed to nearly 180 local businesses. The data collected from these employers will provide meaningful information on current and future use of TDM strategies and their effectiveness in reducing traffic congestion.

The employer survey was prepared in consultation with Wood River Rideshare, a local organization dedicated to promoting carpooling, vanpooling, and implementation of other employer-based trip reduction programs.

What TDM Strategies Are Being Considered?

Some TDM strategies are now being used by employees in the valley. However, as part of this study we will be evaluating these and other strategies that have been used successfully in similar resort communities around the nation. The rest of this Fact Sheet briefly describes some sample strategies and their purpose in helping reduce local traffic congestion.

Transportation Management Association

A Transportation Management Association (TMA) is typically a non-profit organization providing localized transportation information and services. TMAs are effective for disseminating information, marketing and helping to implement other

TDM strategies. TMAs exist, for example, in Aspen, Colorado and Park City, Utah.

Area-wide Rideshare Programs
Rideshare programs offer commuters opportunities to participate in carpools and vanpools. Typically, a database of rideshare candidates is established from which rideshare matches are made. This is the approach that Wood River Rideshare is currently using. For example, the Truckee-North Tahoe TMA provides ride matching services for local hotel employees and others who wish to carpool or can't afford to own and operate their own vehicle.

Public and Private Transit Services
Providing reliable transit service can be an effective way to reduce single occupancy vehicle travel. Transit service may include fixed-route, paratransit, and shuttle services. Many resort communities provide both public and private transit services. KART is an example of a private transit service. Blaine County and the cities of the Wood River Valley are exploring opportunities and funding for peak hour bus service.

Park and Ride Lots
Park and Ride (P&R) lots provide a convenient place for commuters to park their vehicles outside a congested corridor and carpool or use transit.

Non-Motorized Commute Programs
Programs and incentives can be established to encourage people to walk or bike instead of using personal vehicles. Pedestrian and bicycle friendly facilities are needed to promote this type of program. The Wood River Valley has an extensive bicycle path network in place. Some communities with transit service also have bicycle racks on the buses to help encourage bicycle commuting on both ends of the transit trip

Employer-based Support Programs
Employers can take part in a variety of actions to assist employee transportation needs. Support programs might include designating a transportation coordinator, providing information on traffic conditions and commute options, and offering rideshare opportunities, incentives, transit subsidies and flexible work schedules.

Parking Incentive Programs
This type of program focuses on limiting or discouraging parking in frequently visited areas. This strategy could involve imposing parking fees or providing priority rideshare parking spaces.

High Occupancy Vehicle Lanes
These lanes provide a savings in commute time for those travelers who carpool, or who take transit. Typically, HOV lanes are restricted to vehicles carrying at least two passengers, transit vehicles, and in some cases, motorcycles. They can operate during the peak commute hour only, for the peak travel direction only, or all day. HOV lanes can be found in many larger cities (Salt Lake City) as well as in smaller communities like Aspen.

What are the next steps?

Once we have received the employer surveys and have analyzed the information, we will report back on the current use and potential markets for TDM in the valley. We will also meet with interested employers to discuss how carpooling and other employer actions could be implemented. The results of the survey will be provided to Wood River Rideshare to enhance their program.

RESOURCES FOR FURTHER INFORMATION

Further information on employer-based TDM can be obtained by contacting Wood River Rideshare (208/725-0963, the Association for Commuter Transportation www.tmi.cob.fsu.edu/act/act.htm), Institute of Transportation Engineers (www.ITE.org), and the American Planning Association (www.planning.org).

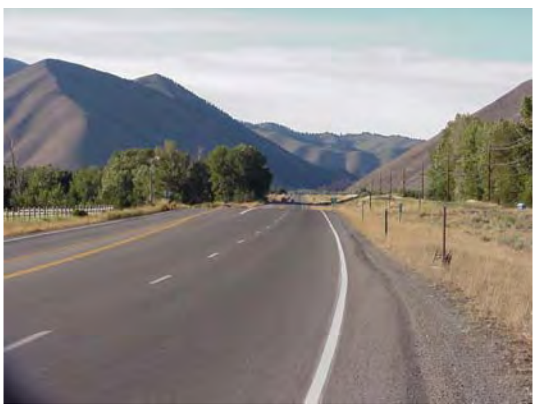
PROJECT CONTACTS

Idaho Transportation Department:
Chuck Carnohan 208-886-7823
Parsons Brinckerhoff
Diana Atkins 801-288-3227
Project website at
http://www.SH-75.com

Timmerman to Ketchum Environmental Analyses

Project No. STP-F-2392 (035)
Key No. 3077
Agreement No. 4718

Goods Movement Technical Memorandum



October 2002

Timmerman to Ketchum EIS
Goods Movement Survey Technical Memorandum

The Federal Highway Administration (FHWA) and the Idaho Transportation Department (ITD) are preparing an Environmental Impact Statement (EIS) for State Route Highway 75 from the Timmerman Junction to Saddle Road in Ketchum, Idaho. ITD has retained the services of Parsons Brinckerhoff Quade & Douglas, Inc. to assist with preparation of the EIS. The EIS is being prepared in accordance with the National Environmental Policy Act.

This technical memorandum documents the survey methodology and results from a survey of goods movement providers using Highway 75 into and through the Wood River Valley.

Project Background

The origin/destination surveys conducted in March and August of 2001 and the traffic counts from March 2000 showed a high percentage of truck traffic using Highway 75. This ranged from 13% on a weekday in the vicinity of Baseline Road to 7% at Woodside Boulevard.[1] Through the public involvement process, concern was expressed by some project participants that truckers, haulers and other goods movement users of Highway 75 were not represented in the project. Their needs and expectations were not represented in project development, nor on the project's community Work Group.

Survey Methodology

A survey form was developed to help determine which section of Highway 75 is used, how frequently, what times of the day, type of vehicles operated on the highway, how traffic congestion impacts operations, and opinions on what might help alleviate any problems on Highway 75. A copy of the survey form and cover letter are included as Appendix 1.

A mailing list of companies was compiled from the Wood River Valley telephone book yellow pages, the Twin Falls on-line telephone book, and recommendations from local trucking and excavating firms. A list of the firms is included as Appendix 2. It includes trucking/hauling, trucking/motor freight, paving contractors, courier services, landscaping, excavators, moving/storage, distributors, and gravel and concrete firms.

The survey was mailed to each company on this mailing list. It was also made available at the April 16, 2002 Storefront Office Open House at the Blaine County Courthouse. Respondents could leave a completed form at the open house, fax, or mail back the survey form.

Survey Results

A total of 32 survey forms were returned to the Project Team. The responses to each question were compiled and are included in Appendix 3. From the responses, the following observations can be made:

- Respondents use all sections of Highway 75 within the project corridor with the heaviest use between Bellevue to Hailey and Hailey to Ketchun/Sun Valley.
- Over 60% of the respondents use the highway for business 5 to 6 days a week.

[1] Timmerman to Ketchum EIS, <u>Baseline Transportation Conditions,</u> May, 2002.

- Almost half the respondents make over 5 trips per day on Highway 75; the remainder make 2 to 3 trips per day.
- About 70% of respondents drive Highway 75 in the peak hours and over 90% also use it during the non-peak daytime period.
- Almost 90% of the vehicles used are delivery or commercial trucks and 75% of the vehicles used are passenger vehicles. Many respondents have several different types of vehicles on the roadway. About 20% are passenger vehicles hauling trailers.
- Almost 85% of respondents indicate that Highway 75 congestion results in increased run times and difficulty in keeping schedules/appointments. 90% reported increased operating costs as a result of congestion. Less than 10% have experienced employee loss due to congestion.

When asked what other problems, if any, do respondents have operating on Highway 75, the following verbatim comments were received on the returned survey forms:

1. Left hand turns out of roads with no light onto highway; amount of time the traffic costs us.
2. Concerned about the safety of our employees with volume of traffic and small road.
3. Difficulties in left turns on and off the highway.
4. Road rage.
5. Lack of turning lanes.
6. Heavy traffic.
7. Safety issue entering and exiting the highway.
8. Access onto highway due to traffic volume.
9. Driver fatigue.
10. Accessing highway off side roads poor, lack of clear views when turning.
11. Dangerous.
12. Snow removal is sporadic; need barricades for snow drifts.

Responses to the question “In your opinion, what would help alleviate these problems?”, the following were received:

1. Four lanes with turn outs left and right. More traffic lights ok only if more lanes added. Light rail for commuters.
2. Four-lane highway with center lane for turning and emergency vehicles.
3. Four or five lanes.
4. Continue to widen to multiple lanes.
5. Four lanes from Highway 20 to Ketchum.
6. Need a four-lane highway with a center turn lane (5 total lane) with turn and acceleration lanes.
7. Two lane each direction with center turn lanes. Underpass or overpass in place of traffic signals.
8. More lanes to move traffic.
9. A separate carpool lane, (3 or more passengers) 2 lanes (each side). All the way into Ketchum. Two lanes to Elkhorn Road not enough.
10. Public transportation and left turn lanes.
11. Widen road.
12. We need four lanes.
13. Four lanes may help. Commuter train to decrease passenger car travel.
14. Four-lane highway with turn off and turn in lanes. Better traffic light operation (in sync with conditions).

15. New four lane with center turn lane. Remove traffic lights and add underpasses. Frontage roads acceleration and deceleration lanes.
16. Better timing on highway traffic signals.
17. Two lanes each way plus turn lanes.
18. More passing lanes from Timmerman to Ketchum. Better yet, 2 lanes all the way!
19. Four lanes top to bottom, and more traffic signals.
20. A four-lane highway from Timmerman to Ketchum. Turn out lanes at major intersections between Hailey and Ketchum.
21. Addition of more lanes would help.
22. Drift blocking barricades in some sections prompt plowing and sanding. Widen the road!

As a result of this informal survey, a representative from the excavation and trucking industry volunteered to participate in the project's Work Group to represent the goods movement industry's needs. Of the 22 respondents who responded to the last open-ended question, 20 indicated a preference for a four-lane highway. Some expressed a need for additional transit and/or carpooling.

APPENDIX 1
SURVEY FORM

Does Highway 75 Work For You?

Please tell us.

The Idaho Transportation Department (ITD) is working with the Federal Highway Administration to determine what improvements need to be made to Highway 75, from Timmerman Junction at Highway 20 into Ketchum. This is an important corridor for businesses that provide delivery, hauling, and other goods movement services. ITD is looking for information from you on how you use the highway and what problems you encounter.

If you use Highway 75, please take a few moments and complete this important survey.
Please return it in the stamped, self-addressed envelope provided. If you wish, you can give us your name and receive further mailings about the project, or you can leave it blank and remain anonymous. Any personal information will be kept confidential. Answers will be used for the sole purpose of developing appropriate improvements to the highway.

Which sections of Highway 75 [between Highway 20 (Timmerman junction) and Ketchum] do you use? *(check all that apply)*

- ❑ Hwy 20 to Bellevue
- ❑ Bellevue to Hailey
- ❑ Hailey to Ketchum/Sun Valley
- ❑ Ketchum northward

How much does your business use Highway 75? *(circle one for each)*

Days per week: 1 2 3 4 5 6 7

Trips per day: 1 2 3 4 5 more

Typically, what time of day do you operate on Highway 75? *(check all that apply)*

- ❑ Morning peak hour (6:30 to 8:30 a.m.)
- ❑ Evening peak hour (4 to 6 p.m.)
- ❑ During the day (8:30 a.m. to 4 p.m.)
- ❑ Nights

What kinds of vehicles does your business typically operate on Highway 75? *(check all that apply)*

- ❑ Passenger vehicle *(circle all that apply)*: car pickup van
- ❑ Delivery/Commercial Truck *(circle all that apply)*:
  truck truck+ trailer tractor + single trailer tractor + double tractor + triple
- ❑ Passenger vehicle with trailer

How does traffic congestion negatively affect trucking, delivery, and other business operations on Highway 75? *(check all that apply)*

- ❑ Does not negatively affect business
- ❑ Increased run times
- ❑ Difficult to keep delivery schedules/appointments
- ❑ Increased operating costs
- ❑ Loss of employees
- ❑ Other ______________________

What other problems, if any, do you have operating on Highway 75?

____

In your opinion, what would help alleviate these problems? *(Open question)*

____

____

____

Optional Information

Name:

____

Business Name:

____

Mailing Address:

____

Email Address (if available):

____

APPENDIX 2
Survey Mailing List

Trucking/Heaving Hauling
Monk Clark Excavation

Trucking-Motor Freight
Interwest Freight System, Inc.

Paving Contractors
Anderson Asphalt Paving
Valley Paving
Walker Sand & Gravel

Courier Service
Camas Courier
Federal Express
UPS

Landscaping
All Seasons Landscaping
Big Woods Landscape & Maintenance
C-U Next Storm Landscaping
ClearWater Landscaping
Cooper Landscapes & Home Care
Down to Earth Landscaping
Evergreen Landscaping
Green Cut Sprinklers & Landscaping
Green Thumb Lawn & Garden
Greenscape
Hailey Nursery
Hunter Landscaping
The Johnson Company, Inc.
Marr Landscaping
Millennial Landscape Services
Rainmaker
Sun Valley Garden Center
Swenke Landscape Company
Webb Landscape
The With Company, Inc

Excavating Contractors
Ace's Excavation
Burks Excavation
Erwin Excavation
KD Excavation
Katco Excavation, Inc
L & K Engkraf Construction
McStay Construction
Parke Excavation
Trask Construction
Wagstaff Excavating

Miscellaneous
Wood River Rubbish
Sun Valley Transfer & Storage
Bekins/Ford Transfer & Storage
Frontier Moving & Storage
Magic Valley Storage
Austin's Express, Inc.
Ida-Tran Freight Systems, Inc.
Skinner Trucking, Inc.
Truscott, Inc.
Sun Valley Express
Building Contractors of WRV

Distributors
Magic Valley Distributing, Inc.
Pepsi-Cola Bottling Company
Swire Coca-Cola Bottling Company
Watkins Distributing
Bald Mountain Taxi & Limousine
Sweet's Portable Toilets
North Side Bus Company, Inc.
Sun Valley Stages, Inc.
BriCo of Idaho, Inc.
United Oil Company
Roberts Electric
Central Idaho Construction
Walters Ready Mix
Glendale Redi-mix
Franklin Building Supply

APPENDIX 3
Summary of Results by Question

Responses to Goods Movement Survey Questions

1- Which sections of Highway 75 do you use?

75.0%	Hwy 20 to Bellevue
90.6%	Bellevue to Hailey
90.6%	Hailey to Ketchum/Sun Valley
84.4%	Ketchum northward

2- How much does your business use Highway 57?

Days per week		Trips per day	
0.0%	1	0.0%	1
0.0%	2	21.9%	2
3.1%	3	18.8%	3
0.0%	4	3.1%	4
28.1%	5	3.1%	5
34.4%	6	46.9%	More
21.9%	7		

3- Typically, what time of day do you operate on Highway 75?

71.9%	Morning peak hour (6:30 to 8:30 a.m.)
68.8%	Evening peak hour (4 to 6 p.m.)
90.6%	During the day (8:30 a.m. to 4 p.m.)
18.8%	Nights

4- What kinds of vehicles does your business typically operate on Highway 75?

75.0%	Passenger vehicle		
		6.3%	car
		56.3%	pickup
		12.5%	van
87.5%	Delivery/Commercial Truck		
		68.8%	truck
		62.5%	truck + trailer
		40.6%	tractor + single trailer
		3.1%	tractor + double
		0.0%	tractor + triple
21.9%	Passenger vehicle with trailer		

5- How does traffic congestion negatively affect trucking, delivery, and other business operations on Highway 75?

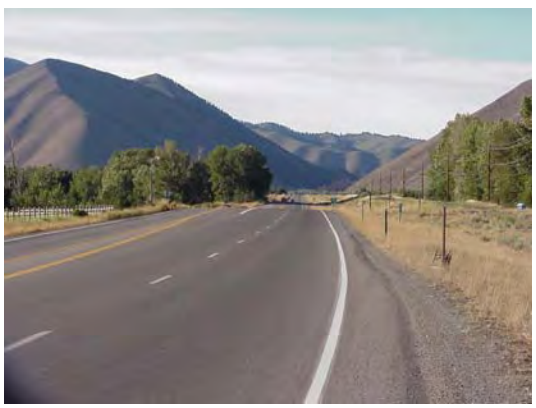
3.1%	Does not negatively affect business
84.4%	Increased run times
84.4%	Difficult to keep delivery schedules/appointments
90.6%	Increased operating costs
9.4%	Loss of employees
9.4%	Other

Timmerman to Ketchum Environmental Analyses

Project No. STP-F-2392 (035)
Key No. 3077
Agreement No. 4718

SUMMARY REPORT

STATED PREFERENCE SURVEY



October 1, 2001

SUMMARY REPORT
STATED PREFERENCE SURVEY

1.0 INTRODUCTION

A stated preference survey was conducted in the Wood River Valley to enable the development of travel models able to estimate the demand for carpooling and transit in the SH75 corridor for work trips. A Stated Preference (SP) survey presents the respondent with hypothetical situations and records how the respondent would behave with respect to those situations. The survey describes the hypothetical situations in sufficient detail such that survey respondents are forced to weigh the benefits and/or costs of each hypothetical alternative against the other. Because the SP survey collects information on hypothetical alternatives, it is capable of estimating the demand for modes that are not currently available to survey respondents, such as transit service in the SH75 corridor.

2.0 METHODOLOGY

A target of 250 completed surveys was the goal of the study. Persons were selected to participate in the survey via random telephone calls and from a list of potential respondents collected during a spring origin-destination survey on SH75. Each respondent was screened to ensure that they are employed, that they currently commute on SH75, between Bellevue and Sun Valley, for a distance of at least three miles and for at least five minutes, and that they live in either Blaine County, Lincoln County, or Twin Falls. Their home and ork address was collected, as well as their employment type and commute time. The recruitment questionnaire is contained in Appendix A.

If the respondent satisfied the criteria listed above, they were asked if they would participate in a 10 to 15 minute telephone survey. If they agreed, they were informed that they would receive a packet of information in the mail in the next week, and a convenient time and date was obtained to call back and conduct the survey. A packet of information was then mailed to the respondent on the next business day, containing a cover letter from the Idaho Transportation Department (ITD), a set of hypothetical commute scenarios, a set of maps of transit stops, and a picture of a bus. These materials are shown in Appendix B. A total of 366 participants were recruited to participate in the survey. The number of recruited persons is significantly higher than the desired number of completed surveys (250) because persons drop out of the interview process for various reasons after agreeing to participate (see Appendix C for tabulations).

At the designated callback time and date, the recruited household was called and asked whether they had received their packet in the mail. If not, another time and date was set to call back. If they had, the interview proceeds. Each respondent was asked about his or her last journey to work on SH75. Data was collected on:

- whether the respondent was a driver or passenger;
- the occupancy of, and who was in, the vehicle used for the commute;
- the time leaving home;
- the congested and the likely un-congested commute time;

- the parking cost if any; and,
- what type of stops were made on the journey, if any.

The respondent was asked to look at the maps contained in the packet. Each packet contained two overlapping maps of the north and south ends of the SH75 corridor. The maps showed either express or local bus stops along SH75. Each stop was clearly numbered. The respondent was asked to state the number of the stop that he or she would use to access bus service from his or her home, if he or she had to use the bus to get to work. The respondent was also asked to state the mode of access to the bus stop from home. Then the respondent was asked to state the bus stop that he or she would use to get off the bus at work, and the mode he or she would use to get to work from that stop. The maps are contained in Appendix B.

Then the respondent was presented with a set of 8 scenarios. Each scenario contained three modes; drive-alone, carpool, or transit. The set of alternatives that was mailed to each respondent was based on their reported trip origin and destination collected during the recruiting call. That is, a respondent who reports that he or she lives in Bellevue and works in Hailey would receive a set of alternatives where the descriptions of the modes in each scenario reflect *generally reasonable times for that particular origin/destination pair*. This is important for the design of an SP survey because it means that the respondent is more able to compare the hypothetical alternatives to his or her own commuting experience.

Based on their one-way commute times on Highway 75 between Bellevue and Sun Valley, respondents were sent one of the following sets of scenarios:

- 5 – 10 minutes: Set A (A1, A2, A3 or A4 for local bus, A5, A6, A7, or A8 for express bus)
- 11 – 20 minutes: Set B (B1, B2, B3 or B4 for local bus, B5, B6, B7, or B8 for express bus)
- Over 20 minutes: Set C (C1, C2, C3 or C4 for local bus, C5, C6, C7, or C8 for express bus)
- Starting in Twin Falls or Shoshone and ending between Hailey and Sun Valley: Set D (D5, D6, D7, or D8 for express bus).

Within each Set A, B and C, route maps were selected by alternating between local and express maps. All of those who qualified for Set D scenarios were sent express maps, based on the assumption that commuters from well outside the corridor, such as from Shoshone or Twin Falls/Jerome, would choose express bus service over a local bus. There were four different scenario sets for each Set A, B, and C, and map type local or express. For set type D, there were only four express bus packages of scenarios. The total number of scenario packages was therefore 28.

The respondent was asked to look at each scenario, and the times associated with each mode. The respondent was then asked to choose one mode from the three listed for each of eight scenarios. Although there were always three modes available for each scenario (drive-alone, carpool, or transit), the times and fares were varied for each scenario. Some of the travel times in the scenarios may be somewhat lower or higher than one might expect compared to current commute times, but the variance is required for proper model estimation. This characteristic is part of the design of every Stated Preference survey. The call ended with a few questions on household demographic information, and a general question on the importance of a few characteristics of transit service. The callback questionnaire is contained in Appendix D.

A sample of the hypothetical situations (for Set C1) are also given in Appendix B. Note that the travel times for drive alone and carpool are identical for most of the scenarios in this set. That is because this set is particularly geared towards trading off between driving and taking a bus. Other sets vary the travel times between driving alone and carpooling to a greater extent.

3.0 HOUSEHOLD AND PERSON DATA SUMMARY

The following section summarizes the household and person characteristics of survey respondents. Table 3-1 tabulates the reported trip origins and destinations for each completed response. The table indicates that the majority of responses live in either Hailey or Bellevue (70%) and work in Ketchum (almost 63%). Another 16% of survey respondents work in Hailey, followed by 9% of respondents who work in Sun Valley. A total of 38 respondents reported their place of residence as 'OTHER'. A tabulation of these places is given in Table 3-3. Another 7 survey respondents reported their place of work as 'OTHER'. Their reported workplaces are shown in Table 3-4. Table 3-6 shows all survey respondents by county of residence. The vast majority of survey respondents live in Blaine County.

Table 3-5 place of residence and place of work for work trips surveyed during the Spring Origin-Destination Roadside Intercept Survey. This survey was conducted at two locations on SH75 on two different survey days. Each location was surveyed in the northbound direction between the hours of 6:30 AM and 4 PM. Station 1 is located just north of Bellevue. Station 2 is located approximately midway between Hailey and Ketchum. The Origin-Destination (OD) surveys will be summarized under separate cover; tabulations from the OD survey are given for comparison to the SP survey in this report where appropriate.

Note that some differences may be present between the SP and OD data simply due to the sampling methodology used. The OD survey only sampled vehicles traveling in the northbound direction on SH75, while the SP survey can include southbound travel to work. Additional constraints were placed on the SP survey; respondents must travel for a distance of 3 miles or more, and must reside in either Blaine County, Lincoln County, or Twin Falls/Shoshone. The OD survey sampled all travelers on SH75. However, the SP data generally compares favorably to the OD data. Approximately 37% of all surveyed trips at both OD stations live in Hailey, and another 35% live in Bellevue, while approximately 46% of SP survey respondents live in Hailey, and another 25% live in Bellevue. However, Bellevue residents are approximately twice as likely to be included in the OD survey because both OD stations are north of Bellevue. Accounting for these probabilities would increase the fit between the OD data and the SP data.

The data also agrees well with respect to workplace. Approximately 65% of OD survey respondents report working in Ketchum, compared to 63% of SP survey respondents. 24% of OD survey respondents work in Hailey, compared to 16% of SP survey respondents. The conditions imposed on trip length and travel time for SP survey respondents could be contributing to this discrepancy.

Table 3-1: Frequency of Survey Respondents by Place of Residence and Work

Place of Work

Place of residence	North of Sun Valley	Sun Valley	Ketchum	Between Ketchum & Sun Valley	Hailey	Bellevue	Other	Total
Area north of Ketchum	0	0	1	0	1	0	0	2
Sun Valley	0	0	0	1	1	0	0	2
Ketchum	0	0	0	1	8	3	0	12
Near East Fork Road	0	0	11	1	0	0	0	12
Near Ohio Gulch	0	0	1	0	0	0	0	1
Hailey	1	14	86	2	0	8	4	115
Bellevue	0	2	35	1	21	0	3	62
Shoshone area	0	2	1	0	2	0	0	5
Twin Falls area	0	0	0	1	0	0	0	1
OTHER	0	5	22	1	8	2	0	38
Total	1	23	157	8	41	13	7	250

Table 3-2: Percent of Survey Respondents by Place of Residence and Work

Place of Work

Place of residence	North of Sun Valley	Sun Valley	Ketchum	Between Ketchum & Sun Valley	Hailey	Bellevue	Other	Total
Area north of Ketchum	0.00	0.00	0.40	0.00	0.40	0.00	0.00	0.80
Sun Valley	0.00	0.00	0.00	0.40	0.40	0.00	0.00	0.80
Ketchum	0.00	0.00	0.00	0.40	3.20	1.20	0.00	4.80
Near East Fork Road	0.00	0.00	4.40	0.40	0.00	0.00	0.00	4.80
Near Ohio Gulch	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.40
Hailey	0.40	5.60	34.40	0.80	0.00	3.20	1.60	46.00
Bellevue	0.00	0.80	14.00	0.40	8.40	0.00	1.20	24.80
Shoshone area	0.00	0.80	0.40	0.00	0.80	0.00	0.00	2.00
Twin Falls area	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.40
OTHER	0.00	2.00	8.80	0.40	3.20	0.80	0.00	15.20
Total	0.40	9.20	62.80	3.20	16.40	5.20	2.80	100.00

Table 3-3: Frequency and Percent of 'OTHER' Place of Residence

Other Place of Residence	Freq.	Percent	Cum.
Chantrelle	1	2.63	2.63
Cold Springs	2	5.26	7.89
Crow Creek	1	2.63	10.53
Curtiss	1	2.63	13.16
Deer Creek	2	5.26	18.42
Gannett	5	13.16	31.58
Gimlet	2	5.26	36.84
Green Horn	1	2.63	39.47
Heatherlands	3	7.89	47.37
Hidden Hollow	1	2.63	50.00
Hulen Meadows	1	2.63	52.63
Indian Creek	2	5.26	57.89
Indian Creek northeast of Hailey	1	2.63	60.53
Llama Ranch	1	2.63	63.16
North Ridge	1	2.63	65.79
Northridge	1	2.63	68.42
Picabo	1	2.63	71.05
Rainbow Bend	1	2.63	73.68
South of Ketchum	1	2.63	76.32
Starweather	3	7.89	84.21
Sun Rise Ranch	1	2.63	86.84
Woodside	4	10.53	97.37
Zinc Spur	1	2.63	100.00
Total	38	100.00	

Table 3-4: Frequency and Percent of 'OTHER' Place of Work

Other Place of Work	Freq.	Percent	Cum.
Between Bellevue and Hailey	1	14.29	14.29
Elk Horn	1	14.29	28.57
Elkhorn	1	14.29	42.86
Gimlet	1	14.29	57.14
North of Hailey	1	14.29	71.43
South of Hailey at the hospital	1	14.29	85.71
Woodside	1	14.29	100.00
Total	7	100.00	

Table 3-5: Spring Origin-Destination Survey Work Trips by Place of Residence and Place of Work

Place of Residence	Place of Work: North/ West of Ketchum	Sun Valley	Ketchum	Hailey	Between Hailey/ Ketchum	Bellevue	Twin Falls/ Jerome	Other	Total
North Ketchum	0.00	0.00	0.00	0.00	0.00	0.34	0.00	0.00	0.34
Ketchum	0.00	0.34	0.34	2.06	0.00	0.00	0.00	0.34	3.09
Hailey	0.00	0.34	30.93	0.69	0.00	2.75	0.34	1.38	36.43
Between Hailey and Ketchum	0.00	0.00	0.34	0.00	0.00	0.00	0.00	0.00	0.34
Bellevue	0.34	1.37	18.21	14.78	0.34	0.00	0.00	0.34	35.40
Shoshone	0.00	0.00	3.44	0.69	0.00	0.00	0.00	0.34	4.47
Twin Falls/ Jerome	0.34	0.34	4.12	2.06	0.00	0.00	0.00	0.00	6.87
Other	0.34	0.69	7.90	4.12	0.00	0.00	0.00	0.00	13.06
Total	1.03	3.09	65.29	24.40	0.34	3.09	0.34	2.40	100.00

Table 3-6: Stated Preference Survey Respondents by County of Residence

Residence county	Freq.	Percent	Cum.
BLAINE	244	97.60	97.60
LINCOLN	5	2.00	99.60
TWIN FALLS	1	0.40	100.00
Total	250	100.00	

Table 3-7 shows survey respondents by employment status. Approximately 14% of the respondents reported that they work part-time. The rest of survey respondents work full-time. Table 3-8 shows survey respondents by the highest level of education obtained. Although over 85% of the respondents reporting having had at least some college education, less than 50% of survey respondents completed a four-year college degree. Two respondents refused to report highest level of education obtained.

Table 3-7: Stated Preference Survey Respondents by Employment Status

Employment status	Freq.	Percent	Cum.
Full-Time Worker	214	85.60	85.60
Part-Time Worker	36	14.40	100.00
Total	250	100.00	

Table 3-8: Stated Preference Survey Respondents by Education Obtained

Education Obtained	Freq.	Percent	Cum.
High school or less	35	14.00	14.00
Some college	63	25.20	39.20
2 year college degree / technical degre	35	14.00	53.20
Bachelors degree (4 Year)	72	28.80	82.00
Some graduate school	18	7.20	89.20
Master's degree in business	5	2.00	91.20
Some other master's degree	11	4.40	95.60
Doctorate degree	7	2.80	98.40
Other graduate degree	2	0.80	99.20
Refused	2	0.80	100.00
Total	250	100.00	

Table 3-9 shows survey respondents by vehicle availability. Auto ownership in the corridor is quite high; all survey respondents reported having at least one vehicle available to their household. About 40% of all households had two vehicles available, and another 26% had three vehicles available. The tabulation of vehicles available for Stated Preference survey respondents compares favorably to the tabulation of vehicles available for work trips interviewed as part of the spring roadside origin-destination survey (Table 3-10), although the average auto ownership is a bit higher for stated preference survey respondents (2.63 vehicles/household for OD work trips versus 2.96 vehicles/household for SP survey respondents).

Table 3-9: Stated Preference Survey Respondents by Vehicle Availability

vehicles available	Freq.	Percent	Cum.
1	25	10.00	10.00
2	99	39.60	49.60
3	64	25.60	75.20
4	26	10.40	85.60
5	16	6.40	92.00
6	10	4.00	96.00
7	5	2.00	98.00
8	1	0.40	98.40
9	2	0.80	99.20
10	1	0.40	99.60
14	1	0.40	100.00
Total	250	100.00	

Table 3-10: Origin-Destination Survey Work Trips by Vehicles Available

Vehicles available	Freq.	Percent	Cum.
1	44	15.12	15.12
2	127	43.64	58.76
3	72	24.74	83.51
4	25	8.59	92.10
5	13	4.47	96.56
6	2	0.69	97.25
7	5	1.72	98.97
8	1	0.34	99.31
12	1	0.34	99.66
18	1	0.34	100.00
Total	291	100.00	

Stated Preference survey respondents by household size are shown in Table 3-11; one respondent refused to report household size. The average household size among survey respondents is quite high (2.9 persons/household). Less than 10% of all respondents live in single-person households. A tabulation of origin-destination work trips by household size is shown in Table 3-12. The tables compare favorably, though there is a slightly lower percentage of two person households in the origin-destination survey than the stated preference survey. The average household size for OD work trips is 2.88.

Table 3-11: Stated Preference Survey Respondents by Household Size

Household Size	Freq.	Percent	Cum.
1	24	9.60	9.60
2	97	38.80	48.40
3	50	20.00	68.40
4	49	19.60	88.00
5	20	8.00	96.00
6	6	2.40	98.40
7	2	0.80	99.20
9	1	0.40	99.60
Refused	1	0.40	100.00
Total	250	100.00	

Table 3-12: Origin-Destination Survey Work Trips by Household Size

Household size	Freq.	Percent	Cum.
1	35	12.03	12.03
2	100	34.36	46.39
3	63	21.65	68.04
4	59	20.27	88.32
5	27	9.28	97.59
6	7	2.41	100.00
Total	291	100.00	

Table 3-13 shows survey respondents by household income. The average household income (calculated using the mid-point of each income range) for respondents whose reported household income was less than $120,000/year is $57,700. This indicates a relatively high household income among survey respondents. Table 3-14 shows origin-destination survey work trips by household income. The income ranges do not exactly match between the two surveys; the origin-destination survey income ranges were kept to a minimum due to time constraints in survey administration. However the relative distribution is similar, although the average income among stated preference survey respondents is a bit higher than work trips sampled for the origin-destination survey. Approximately 23% of origin-destination survey work trip households earn over $75,000, while 33% of stated-preference survey households earn over $70,000. Approximately 4% of stated preference survey households earn less than $20,000, while 6% of origin-destination work trips earn less than $15,000 annually.

Table 3-13: Stated Preference Survey Respondents by Household Income

Total Household Income	Freq.	Percent	Cum.
Less than $10,000	1	0.40	0.40
Between $10,000 and $20,000	8	3.20	3.60
Between $20,001 and $30,000	19	7.60	11.20
Between $30,001 and $40,000	39	15.60	26.80
Between $40,001 and $55,000	42	16.80	43.60
Between $55,001 and $70,000	45	18.00	61.60
Between $70,001 and $95,000	33	13.20	74.80
Between $95,001 and $120,000	26	10.40	85.20
Over $120,000	27	10.80	96.00
REFUSED	10	4.00	100.00
Total	250	100.00	

Table 3-14: Origin-Destination Survey Work Trips by Household Income

Household Income	Freq.	Percent	Cum.
Under $15,000	19	6.53	6.53
$15k to $35k	79	27.15	33.68
$35k to $75k	122	41.92	75.60
$75k or more	66	22.68	98.28
refused	5	1.72	100.00
Total	291	100.00	

4.0 REVEALED PREFERENCE DATA SUMMARY

The following section explores the data reported for the actual commute trip reported by the Stated Preference survey respondents. Table 4-1 tabulates survey respondents by when their last commute trip on SH75 occurred. The majority of respondents reported travelling for work on SH75 within the last day. The majority of respondents also reported driving to work, as opposed to being a passenger (Table 4-2).

Table 4-3 shows the occupancy of the last commute trip of survey respondents. The reported average auto occupancy (calculated using an average of 5.5 persons per vehicle for vehicles with 5 or more occupants) is 1.27 persons per vehicle. Almost 80% of survey respondents drove alone to work; 15% reported travelling with one other person. The vehicle occupancy for the revealed trips in the stated preference survey compares very favorably to the work trips surveyed in the origin-destination survey (Table 4-4).

Table 4-1: Stated Preference Survey Respondents by When Last Commute Trip Occurred

Last Trip Occurred	Freq.	Percent	Cum.
TODAY	166	66.40	66.40
YESTERDAY	41	16.40	82.80
2-3 DAYS AGO	27	10.80	93.60
4-6 DAYS AGO	7	2.80	96.40
7-14 DAYS AGO	9	3.60	100.00
Total	250	100.00	

Table 4-2: Stated Preference Survey Respondents by Driver or Passenger of Last Commute Trip

driver	Freq.	Percent	Cum.
Driver	243	97.20	97.20
Passenger	7	2.80	100.00
Total	250	100.00	

Table 4-3: Stated Preference Survey Respondents by Occupancy of Last Commute Trip

Occupancy	Freq.	Percent	Cum.
JUST ME/NO ONE ELSE	199	79.60	79.60
TWO	38	15.20	94.80
THREE	10	4.00	98.80
FOUR	2	0.80	99.60
FIVE OR MORE	1	0.40	100.00
Total	250	100.00	

Table 4-4: Origin-Destination Survey Work Trips by Occupancy

Number of occupants	Freq.	Percent	Cum.
1	235	80.76	80.76
2	43	14.78	95.53
3	11	3.78	99.31
4	2	0.69	100.00
Total	291	100.00	

Table 4-5 summarizes those respondents with multiple occupants in their vehicle during their last commute trip. The table shows who was accompanying the respondent for that trip. Note that there are 51 survey respondents with more than one person in the vehicle (Table 4-3) It is possible for persons to be driving with more than one type of person in the car, therefore there are more than 51 responses tabulated in Table 4-5. Almost half of the surveyed commuters with multiple occupants were travelling with a non-household fellow worker (45%). Most of the other half were divided evenly into those travelling with another adult from the household or a child going to school or daycare.

Table 4-5: Survey Respondents with Multiple Occupants; Tabulation of Persons in Vehicle

Type of Occupant(s)	Freq.	Percent
Another adult from your household going to work	12	23.53
Another adult from your household traveling for another reason	6	11.76
A child from your household going to school or daycare	13	25.49
Part of an organized carpool or vanpool	3	5.88
Another adult you work with	23	45.10
Someone else	5	9.80

Table 4-6 shows the time leaving home for survey respondents. Over half of the respondents leave either before 7 AM or between 7 and 8 AM. Over 20% of survey respondents commute between 20 and 25 minutes to work in the morning. The average one-way commute time is 27.15 minutes. Note that there is a tendency for survey respondents to report trip times and distances in five-minute increments.

The survey also asked respondents to report their one-way commute time if SH75 was not congested. The average reported uncongested one-way commute time is 18 minutes. The average perceived one-way time lost due to congestion is approximately 9 minutes. The survey asked respondents what they pay, if anything, in out-of-pocket costs to park their car at work. Only one person answered that they pay for parking; the reported cost is \$99/month. That person's work address is at the intersection of 4th Street and Main Street in Ketchum.

Table 4-6: Survey Respondents by Time Leaving Home

Time leaving home	Freq.	Percent	Cum.
Before 7:00 am	68	27.20	27.20
Between 7:00 and 7:59am	66	26.40	53.60
Between 8:00 and 8:59 am	44	17.60	71.20
Between 9:00 and 9:59 am	33	13.20	84.40
After 10:00 am	39	15.60	100.00
Total	250	100.00	

Survey respondents were asked what type of stops, if any, were made on the journey to or from work. The survey respondents with reported stops by type are shown in Table 4-7. Almost half of all surveyed commuters made a stop to shop or perform other errands. A total of 174 (70%) respondents reported making at least one stop (tabulation not shown) on the way to, or while returning from, work. Again, note that the responses shown in Table 4-7 are not cumulative because it is possible for the respondent to make and report more than one type of stop on their journey.

Finally, survey respondents were asked to report the type of schedule that they work. Their response is shown in Table 4-8. Less than one-third of survey respondents work a schedule with a fixed start time. The majority of respondents have some flexibility in their schedule or plan their own work hours.

Table 4-7: Survey Respondents by Type of Stops Made To or From Work

Type of Stop	Freq.	Percent
Stop to drop-off or pickup children	29	11.60
To drop off or pick up partner, colleagues, or other adults	27	10.80
To shop or perform other errands	124	49.60
To go for meals, recreation, or entertainment	55	22.00
To make work-related stops	87	34.80
Other stop	5	2.00

Table 4-8: Survey Respondents by Work Hours Reported

Work Hours	Freq.	Percent	Cum.
Fixed start time	69	27.60	27.60
Some flexibility	86	34.40	62.00
Plan own work hours	90	36.00	98.00
Other	4	1.60	99.60
Refused	1	0.40	100.00
Total	250	100.00	

Figure 4-1: Reported One-Way Commute Time Frequency Distribution

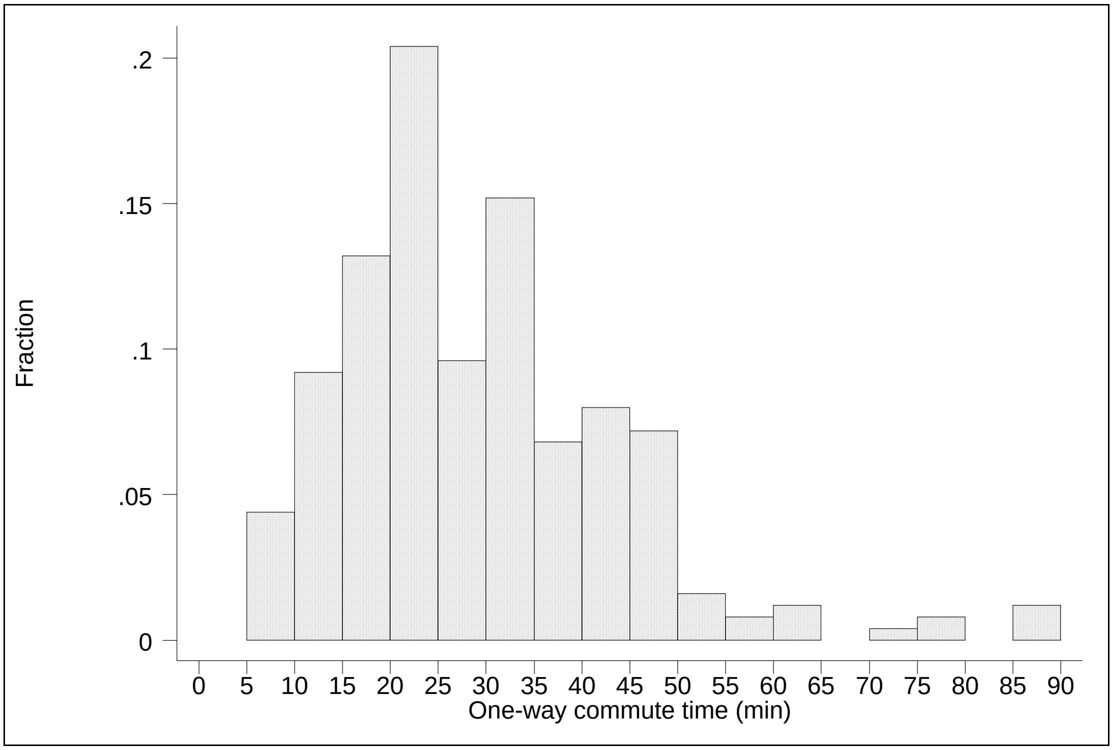
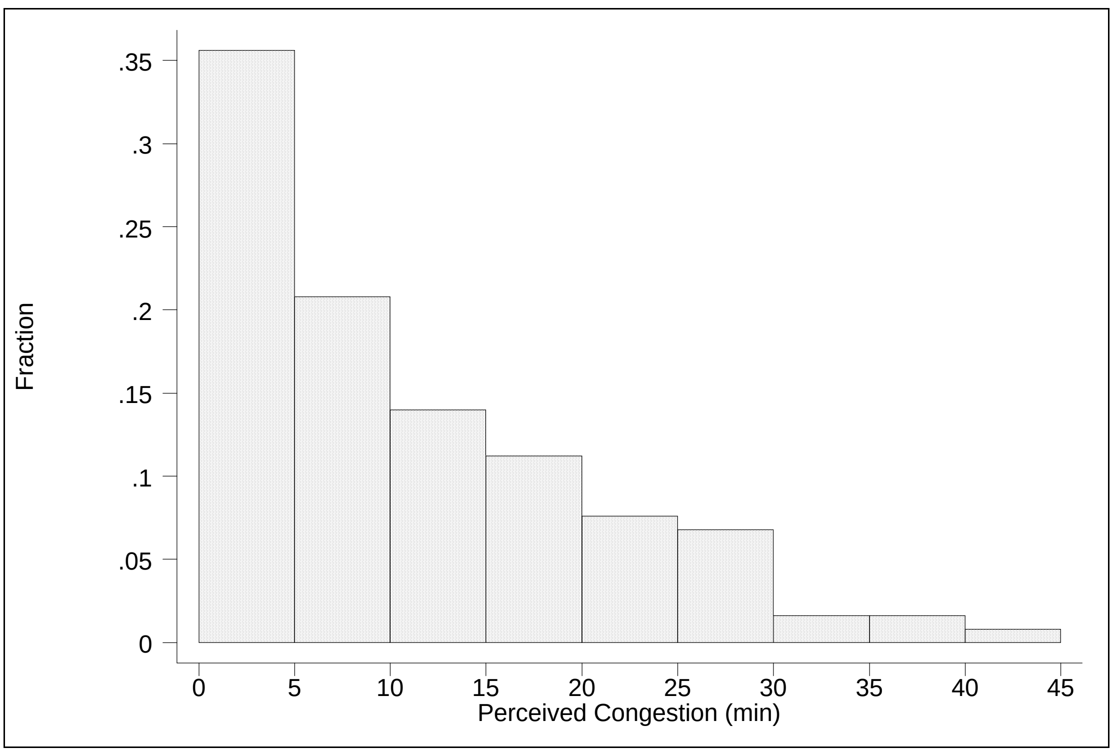


Figure 4-2: Reported Uncongested One-way Commute Time Frequency Distribution



5.0 STATED PREFERENCE DATA SUMMARY

This section of the report describes the scenarios that were actually distributed as part of the Stated Preference portion of the survey, tabulations of the modes selected for each scenario (irrespective of the attributes of those modes) and the attitudes towards transit reported by participants.

As explained above, survey respondents were sent a scenario set based on their reported work trip origin and destination. Respondents were grouped by commute distance, and allocated to one of four groups. In each set A, B, and C, there are four local bus scenarios (for example A1, A2, A3, and A4) and four express bus scenarios. One of these bus types and scenarios were chosen at random for persons included in each group. However, set D only contains express bus scenarios as only those living in Twin Falls or Shoshone, and working in the corridor, were included in set D, and express bus is the only type of service that made sense for these commuters. The difference in the maps sent with each alternative is the location and number of stops.

Table 5-1 shows the scenarios that were sent to survey respondents and the route maps that accompanied those scenarios. Note that most respondents were included in Set C, as commuters living in either Hailey or Bellevue and working in Ketchum were included in this Scenario Set. Note also that the distribution of surveys within each set (ie, 1, 2, 3, or 4) were fairly evenly distributed. There were four surveys that were sent with inconsistent maps (1 local bus map was sent with Set B7, 1 express bus map was sent with C2, 1 local bus map was sent with Scenario C5 and one local bus map was sent with Scenario C8). Those surveys will be dropped from model estimation.

Table 5-1: Survey Respondents by Scenario Set and Route Map Type

Scenario	Route maps		
Set	LOCAL	EXPRESS	Total
SET A1	5	0	5
SET A2	7	0	7
SET A3	6	0	6
SET A4	6	0	6
SET A5	0	6	6
SET A6	0	4	4
SET A7	0	6	6
SET A8	0	6	6
SET B1	5	0	5
SET B2	5	0	5
SET B3	3	0	3
SET B4	4	0	4
SET B5	0	3	3
SET B6	0	4	4
SET B7	1	3	4
SET B8	0	4	4
SET C1	27	0	27
SET C2	18	1	19
SET C3	19	0	19
SET C4	21	0	21
SET C5	1	22	23
SET C6	0	19	19
SET C7	0	19	19
SET C8	1	18	19
SET D5	0	2	2
SET D6	0	1	1
SET D7	0	1	1
SET D8	0	2	2
Total	129	121	250

Each survey respondent was asked to choose a boarding stop near her home and an alighting stop nearest to her workplace. The respondent was asked how she would access the stop from home and what mode would be utilized to access work from the alighting stop. The respondent was also asked to give the access time to the stop from home and the egress time from the stop to work, based on the reported access or egress mode.

Table 5-2 shows survey respondents by preferred mode of access to the bus stop nearest their home. The distribution reflects the low-density development that is characteristic of the Wood River Valley; almost half of survey respondents would have to drive to the nearest stop. Their average reported access time (shown in Table 5-3) is between 5 and 8 minutes. The majority of survey respondents can walk to their workplace from their alighting stop, as shown in Table 5-4. The average reported egress time is approximately 9 minutes (Table 5-5). For those persons reporting other for their mode of egress, 9 respondents reported that their mode would be bicycle, and 9 respondents reported that their mode would be carpoool. These were not options on the survey, but indicate that bicycle racks would be desired on bus service. Note that there are only 224 observations in Table 5-3 and Table 5-4. A total of 26 survey respondents reported that, due to the nature of their work, bus was not a viable alternative for them.

Table 5-2: Survey Respondents by Mode of Access to Nearest Bus Stop From Home

Access Mode	Freq.	Percent	Cum.
Walk	102	45.54	45.54
Drive & park near stop	107	47.77	93.30
Get a ride/dropped off at stop	4	1.79	95.09
Bike	9	4.02	99.11
Other	2	0.89	100.00
Total	224	100.00	

Table 5-3: Mean Reported Access Travel Time by Access Mode

Access Mode	Mean (min)
Walk	7.5
Drive & park near stop	8.3
Get a ride/dropped off at stop	4.5
Bike	6.3

Table 5-4: Survey Respondents by Mode of Egress from Nearest Bus Stop to Workplace

Egress Mode	Freq.	Percent	Cum.
Walk	189	84.38	84.38
Taxi	7	3.13	87.50
Other	19	8.48	95.98
Don’t Know	9	4.02	100.00
Total	224	100.00	

Table 5-5: Mean Reported Egress Travel Time by Egress Mode

Egress Mode	Mean (min)
Walk	9.2
Taxi	10.0

Table 5-6 and Table 5-7 tabulate survey respondents by their chosen mode for each of 8 scenarios. The tables show that, although drive alone is, on average, chosen to a greater extent than carpool or bus, the distribution of responses does depend on the attributes given for each scenario. In other words, there is variation in the frequency of modes chosen by each scenario. Note that, in order to make bus in-vehicle times realistically competitive with the drive-alone mode, it was assumed that bus service would be traveling in a High-Occupancy Vehicle lane or busway. If this assumption was not made, the frequency of persons choosing bus would be quite low and the estimation procedure would most likely not be able to produce reliable parameter values. Estimation results will be presented in a subsequent memorandum.

Table 5-6: Frequency Chosen Modes By Scenario

Scenario	Drive Alone	Carpool	Bus	Refused	Total
Scenario A	121	49	80	0	250
Scenario B	145	57	47	1	250
Scenario C	133	62	54	1	250
Scenario D	144	37	66	3	250
Scenario E	132	55	60	3	250
Scenario F	143	69	36	2	250
Scenario G	111	46	92	1	250
Scenario H	124	34	91	1	250

Table 5-7: Percent Chosen Modes By Scenario

Scenario	Drive Alone	Carpool	Bus	Refused	Total
Scenario A	48.40	19.60	32.00	0.00	100.00
Scenario B	58.00	22.80	18.80	0.40	100.00
Scenario C	53.20	24.80	21.60	0.40	100.00
Scenario D	57.60	14.80	26.40	1.20	100.00
Scenario E	52.80	22.00	24.00	1.20	100.00
Scenario F	57.20	27.60	14.40	0.80	100.00
Scenario G	44.40	18.40	36.80	0.40	100.00
Scenario H	49.60	13.60	36.40	0.40	100.00

Finally, survey respondents were asked to rate a series of attributes of transit service in importance on a scale of 1 to 10, with one rated as not at all important, and 10 being most important. The responses are shown in Table 5-8. Table 5-9 shows the percent of survey responses for each attribute, and Table 5-10 shows the mean and standard deviation for each attribute. It is clear from these tables that the most important attribute of transit service to survey respondents is reliability. 68% of all survey respondents rated this attribute a 10. The mean score for reliability of service is 9.2. Weather protection at bus stops is also rated fairly high, with an average score of 8.1, and discounted monthly passes is a close third with an average score of 8.0. It is also quite apparent that offering coffee machines at transit stops is the least important perceived attribute of transit service, with an average score of only 2.8.

Table 5-8: Survey Respondents by Transit Attribute Ratings

Attribute	Rating 1	2	3	4	5	6	7	8	9	10	Ref	Total
Reliability	2	1	0	0	4	3	8	29	29	170	4	250
Seat Comfort	15	9	10	9	74	28	32	35	8	25	5	250
Chance of Empty Seat	12	10	6	2	41	13	30	36	21	75	4	250
Weather Protection At Stops	8	2	1	4	18	6	30	48	26	103	4	250
Coffee Vending Machines	134	23	13	12	33	1	9	7	4	10	4	250
Discounted Monthly Passes	6	2	4	1	26	7	29	49	17	105	4	250
Heating,AC, Lighting	6	2	7	6	30	11	36	59	20	69	4	250
Midday,Late Evening Service	8	5	7	5	24	9	33	50	14	90	5	250

Table 5-9: Percent of Survey Respondents by Transit Attribute Ratings

Attribute	Rating 1	2	3	4	5	6	7	8	9	10	Ref	Total
Reliability	1	0	0	0	2	1	3	12	12	68	2	100
Seat Comfort	6	4	4	4	30	11	13	14	3	10	2	100
Chance of Empty Seat	5	4	2	1	16	5	12	14	8	30	2	100
Weather Protection At Stops	3	1	0	2	7	2	12	19	10	41	2	100
Coffee Vending Machines	54	9	5	5	13	0	4	3	2	4	2	100
Discounted Monthly Passes	2	1	2	0	10	3	12	20	7	42	2	100
Heating,AC, Lighting	2	1	3	2	12	4	14	24	8	28	2	100
Midday,Late Evening Service	3	2	3	2	10	4	13	20	6	36	2	100

Table 5-10: Mean and Standard Deviation of Transit Attribute Ratings

Attribute	Mean	S.D.
Reliability	9.2	1.39
Seat Comfort	5.9	2.37
Chance of Empty Seat	7.1	2.65
Weather Protection At Stops	8.1	2.21
Coffee Vending Machines	2.8	2.61
Discounted Monthly Passes	8.0	2.22
Heating,AC, Lighting	7.5	2.24
Midday,Late Evening Service	7.6	2.45

APPENDIX A
RECRUITMENT QUESTIONNAIRE

RECRUITING SCREENER

SAMPLE PAGE # ____________________ START: ____________________
END:_________________

Name:____________________________________ Phone
(H):___________________________________

Mailing Address:__________________________________ Phone
(W):____________________________

City:____ State:_______
Zip:_____________

Date & Time to Call
Back:____

Interviewer:______________________________________ Date:________
Supervisor:_______________

Intro

ASK TO SPEAK WITH AN ADULT IN THE HOUSEHOLD.

Hello, this is ____ with Olson Research, an independent market research firm, calling on behalf of the Idaho Transportation Department. We are conducting a short study about travel in the State Highway 75 corridor, and we would like to ask you a few questions about your commuting patterns to and from work. We're not selling anything and no salesperson will call as a result of this study.

A. What is your current employment status? Are you…**(READ LIST AND CIRCLE CODE)**

Employed full-time………………………..	1}**CONTINUE**
Employed part-time……………………….	2}**CONTINUE**
In school…………………………………...	3}**THANK, TERMINATE & TALLY AS QA**
Unemployed……………………………….	4}**THANK, TERMINATE & TALLY AS QA**
Retired…………………………………….	5}**THANK, TERMINATE & TALLY AS QA**
Homemaker………………………………..	6}**THANK, TERMINATE & TALLY AS QA**

OTHER (WRITE IN)__________________ 7}**THANK, TERMINATE & TALLY AS QA**

(IF NOT EMPLOYED FULL- OR PART-TIME, ASK TO SPEAK WITH SOMEONE ELSE IN THE HOUSEHOLD WHO IS)

B. To get from home to work, do you typically travel on State Highway 75 between Bellevue and Sun Valley for a distance of 3 miles or more?

Yes .... 1}**CONTINUE**

No. .... 2}**THANK, TERMINATE & TALLY AS QB**

(IF DON'T TRAVEL TO WORK ON SH 75, ASK IF THERE IS SOMEONE ELSE IN THE HOUSEHOLD WHO DOES)

C. Which town or rural subdivision do you live in (north to south)? (**CIRCLE CODE)**

Area north of Ketchum .... 1}**CONTINUE**

Sun Valley .... 2}**CONTINUE**

Ketchum.. 3}**CONTINUE**

Near East Fork Road .... 4}**CONTINUE**

Near Ohio Gulch .... 5}**CONTINUE**

Hailey .... 6}**CONTINUE**

Bellevue .... 7}**CONTINUE**

Carey .... 8}**CONTINUE**

Shoshone area... 9} **CONTINUE**

Twin Falls area.. 10} **CONTINUE**

OTHER (WRITE IN)

______________________________________ 11}**CONTINUE**

D. And which town or place do you work in (north to south)? (**CIRCLE CODE)**

Area north of Ketchum .... 1}**CONTINUE**

Sun Valley...................................... 2}**CONTINUE**

Ketchum... 3}**CONTINUE**

Between Ketchum and Hailey......... 4}**CONTINUE**

Hailey .... 5}**CONTINUE**

Hailey Airport Area.......................... 6}**CONTINUE**

Bellevue .... 7}**CONTINUE**

Shoshone area................................ 8} **CONTINUE**

Twin Falls area................................ 9} **CONTINUE**

OTHER (WRITE IN)________________________ 10}**CONTINUE**

(IF LIVE AND WORK IN THE SAME CITY, ASK IF THERE IS ANOTHER ADULT IN THE HOUSEHOLD WHO WORKS IN A DIFFERENT CITY. OTHERWISE, THANK, TALLY & TERM)

E. Approximately how many minutes of your one-way commute time do you spend driving on State Highway 75?

__________Minutes **(WRITE IN NUMBER. CLARIFY FOR SINGLE NUMBER, NO RANGES)**
LESS THAN 5 MINUTES............ 1} **THANK, TALLY & TERM**

F. In what county do you live? **(CIRCLE CODE)**

BLAINE ....1**(CONTINUE)**
LINCOLN..................2**(CONTINUE)**
TWIN FALLS............3**(CONTINUE)**
OTHER (WRITE IN)
_________________...4**(THANK, TALLY & TERM)**

INVITATION:

We are recruiting people like yourself from your area to participate in the State Highway 75 environmental impact statement sponsored by Idaho Transportation Department. Your involvement would consist of a 10-15 minute interview over the phone sometime in the next two weeks. If you agree to participate, we will mail you a packet of information for you to refer to during the interview.

G. Can we count on you to participate? **(CIRCLE CODE)**

YES... 1 **} GET ALL INFORMATION, RECORD (PLEASE PRINT CLEARLY) ON FRONT OF SCREENER**

NO... 2 **} THANK, TERMINATE & TALLY AS QR**

MAYBE .... 3 **} SET TIME/DATE FOR CALLBACK**

Thank you for your help today. I just need to get your name and address so we can mail the information to you and a convenient time to call you back next week.

(INTERVIEWERS, PLEASE BE SURE TO ASK FOR THE CORRECT SPELLING OF NAMES AND ADDRESSES AND PRINT THE INFORMATION CLEARLY ON THE FRONT OF THE SCREENER. WHEN ASKING FOR A DATE TO CALL THEM BACK, BE SURE TO ALLOW FOR ONE WEEK'S TIME TO MAIL THE PACKET. FOR EXAMPLE, IF YOU ARE CALLING ON A MONDAY, THE FIRST DAY TO TRY AND SCHEDULE A CALLBACK WOULD BE THE NEXT MONDAY.)

APPENDIX B
SURVEY MAIL PACKET MATERIALS

Dear Highway 75 traveler,

Thank you for agreeing to participate in this transportation study. You will find information in this packet which we will ask you to refer to when we call to interview you over the phone. Please keep the materials close to the phone. When the interviewer calls, s/he will tell you what page to look at for each group of questions. As we mentioned earlier, your answers will be confidential and the interview will only take from 10 – 12 minutes.

You are very important to the success of this research study.

Sincerely,

Carolyn J. Olson
President/Owner
ph. 1.800.788.0085

Dear Survey Participant:

As part of the Highway 75 Environmental Impact Statement process, the Federal Highway Administration (FHWA) and the Idaho Transportation Department (ITD) are asking you to help us understand future transportation options in the Wood River Valley. During the public meetings last fall, we learned a great deal about the communities' opinions about transportation needs. The recent travel survey we conducted in late March told us a lot about who is currently using Highway 75, where they are coming from and going to, as well as for what purpose.

This telephone survey focuses on how Highway 75 users and Wood River residents and businesses would use various forms of transportation, if they were available. Please take a moment to review the enclosed materials.

Why is this survey necessary? The survey will provide FHWA and ITD, Blaine County and the cities with information that will help us predict future travel needs and options, including possible transit use.

Why should I participate? We appreciate the participation of the residents, businesses, and local governments in our work for the Highway 75 environmental impact statement to date. We are now at a stage in the project where we need information from people like you to help us forecast future travel.

Is the information I provide confidential? Absolutely. Your name and other personal information are not attached to the information you provide. All responses to this telephone survey are grouped together with those of the other 250 respondents.

How do I participate? Please take a moment to review the enclosed materials and instruction sheet. Keep the materials near your telephone so you will be ready when the telephone interviewer calls. The firm of C.J. Olson Market Research, Inc. has been authorized by ITD to conduct this survey on our behalf. At the time their representative calls, the interviewer will help you through the materials and answer any questions related to the survey.

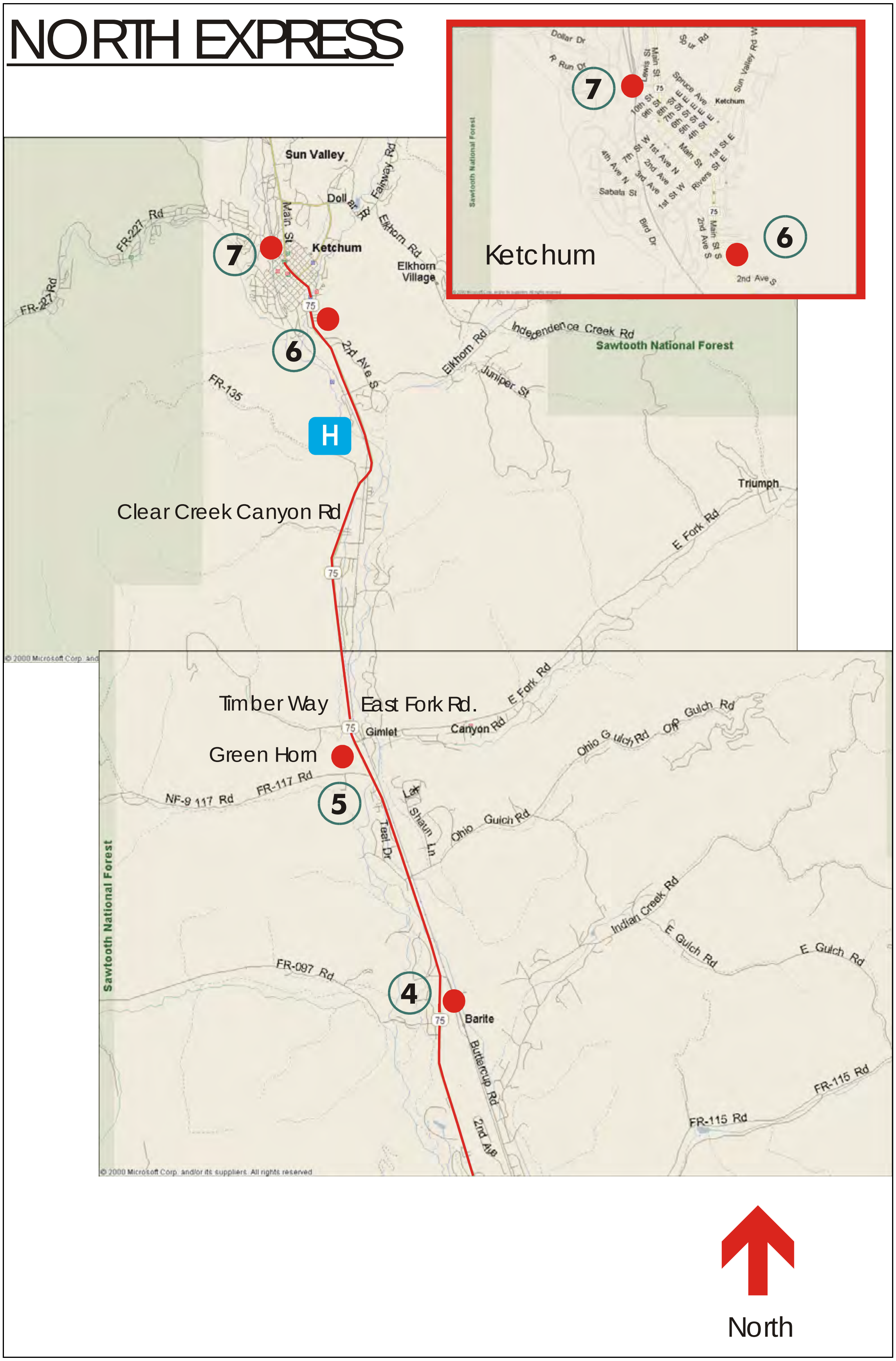
Who do I contact if I have questions? The consulting firm of Parsons Brinckerhoff is conducting the overall Highway 75 environmental project. For information on the survey, please contact Chuck Green at (503) 274-7223) or Diana Atkins at (503) 288-3227. As these are long distance calls for you, we will call you right back. Alternatively you can contact them by email at GreenC@pbworld.com or atkins@pbworld.com.

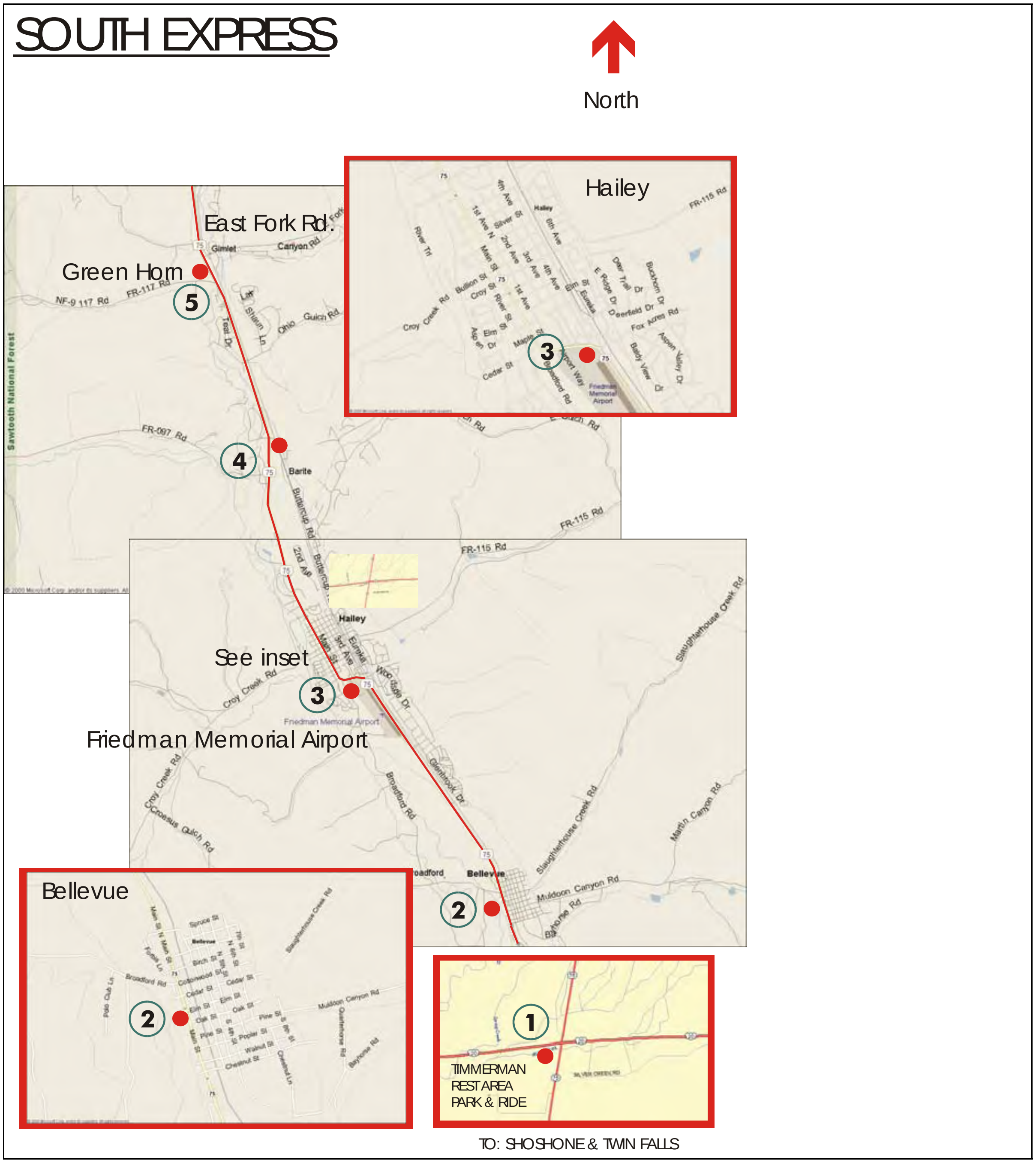
Thank you for taking part in this telephone survey.

Sincerely,
IDAHO TRANSPORTATION DEPARTMENT

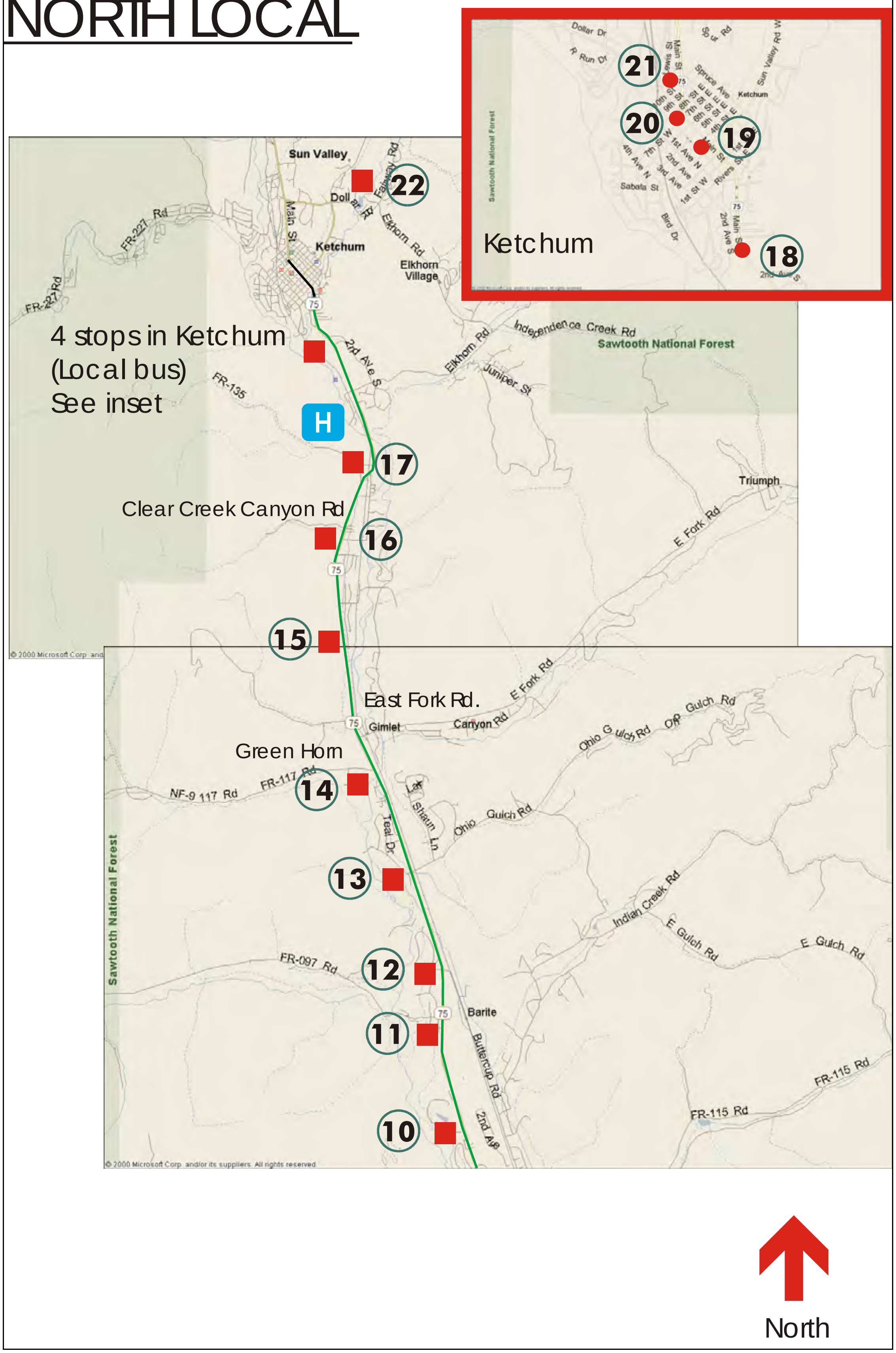
Charles (Chuck) Carnohan
Environmental Manager

NORTH EXPRESS

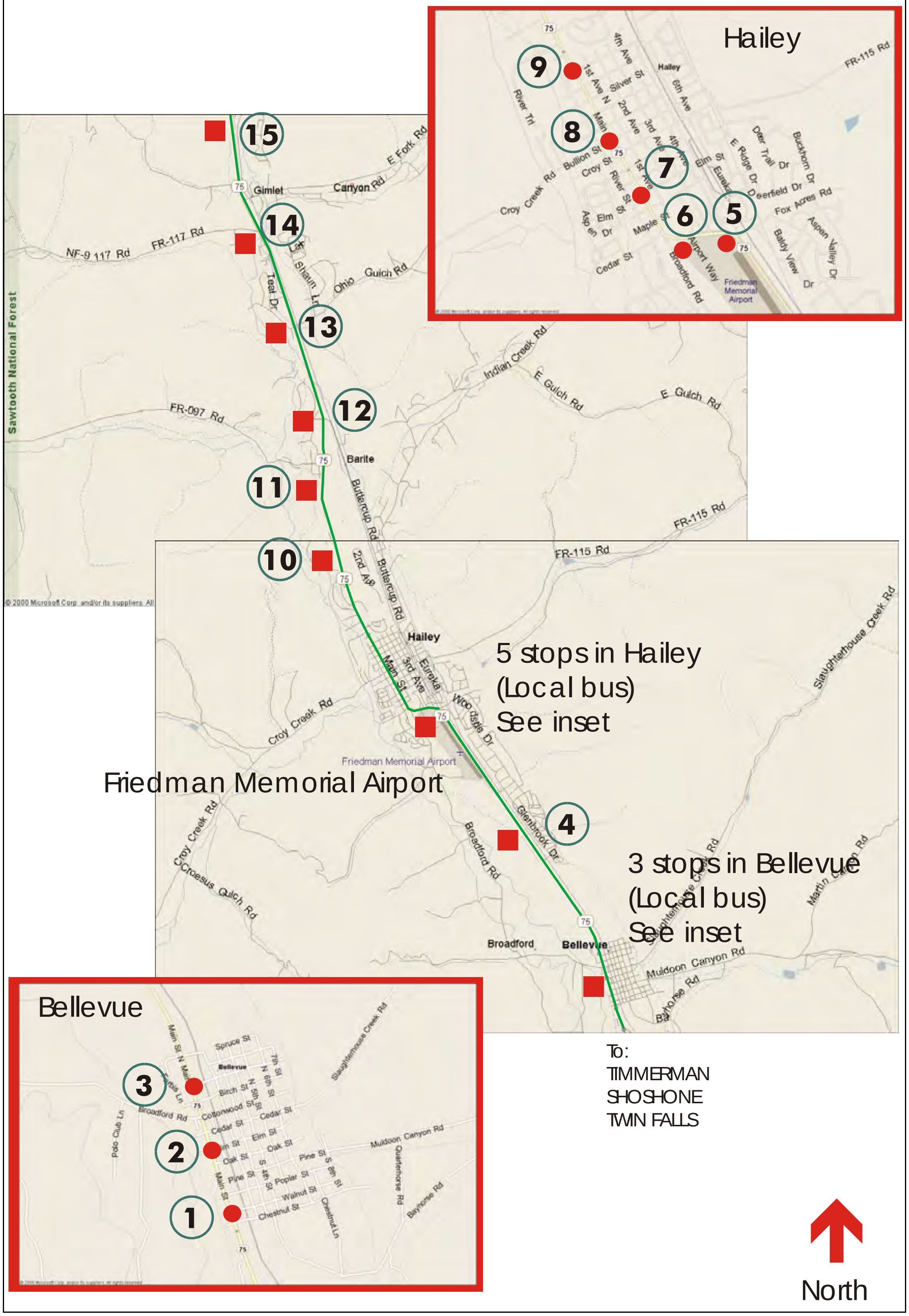



SOUTH EXPRESS
North
Hailey
East Fork Rd.
Green Horn
5
4
3
See inset
Friedman Memorial Airport
Bellevue
2
1
TIMMERMAN
REST AREA
PARK & RIDE
TO: SHOSHONE & TWIN FALLS

NORTH LOCAL


Ketchum
21
20
19
18
Sun Valley
22
Ketchum
Elkhorn Village
4 stops in Ketchum
(Local bus)
See inset
H
17
Clear Creek Canyon Rd
16
15
East Fork Rd.
Gimlet
Green Horn
14
13
12
Barite
11
10
Sawtooth National Forest
Triumph
North

SOUTH LOCAL


Hailey
9
8
7
6
5
15
14
13
12
11
10
Gimlet
Barite
Hailey
5 stops in Hailey
(Local bus)
See inset
Friedman Memorial Airport
4
3 stops in Bellevue
(Local bus)
See inset
Broadford
Bellevue
Bellevue
3
2
1
To:
TIMMERMAN
SHOSHONE
TWIN FALLS
North

Situation A **(set C1)**

Drive alone	Carpool (2 or more persons)	Take the bus
• The travel time is **20 minutes**	• Separate carpool/bus lane • The travel time is **20 minutes**	• Separate carpool/bus lane • The time in the bus is **30 minutes** • A bus comes every **10 minutes** • The one-way fare is **50 cents** • The time to and from the bus stops is as you told us

Situation B **(set C1)**

Drive alone	Carpool (2 or more persons)	Take the bus
• The travel time is **50 minutes**	• The travel time is **50 minutes**	• The time in the bus is **55 minutes** • A bus comes every **60 minutes** • The one-way fare is **$2.00** • The time to and from the bus stops is as you told us

Situation C **(set C1)**

Drive alone	Carpool (2 or more persons)	Take the bus
• The travel time is **40 minutes**	• Separate carpool/bus lane • The travel time is **35 minutes**	• Separate carpool/bus lane • The time in the bus is **40 minutes** • A bus comes every **30 minutes** • The one-way fare is **0 (free)** • The time to and from the bus stops is as you told us

Situation D **(set C1)**

Drive alone	Carpool (2 or more persons)	Take the bus
• The travel time is **30 minutes**	• The travel time is **30 minutes**	• The time in the bus is **30 minutes** • A bus comes every **20 minutes** • The one-way fare is **$1.00** • The time to and from the bus stops is as you told us

Situation E **(set C1)**

Drive alone	Carpool (2 or more persons)	Take the bus
• The travel time is **20 minutes**	• The travel time is **20 minutes**	• The time in the bus is **20 minutes** • A bus comes every **30 minutes** • The one-way fare is **$2.00** • The time to and from the bus stops is as you told us

Situation F **(set C1)**

Drive alone	Carpool (2 or more persons)	Take the bus
• The travel time is **30 minutes**	• Separate carpool/bus lane • The travel time is **25 minutes**	• Separate carpool/bus lane • The time in the bus is **25 minutes** • A bus comes every **60 minutes** • The one-way fare is **0 (free)** • The time to and from the bus stops is as you told us

Situation G **(set C1)**

Drive alone	Carpool (2 or more persons)	Take the bus
• The travel time is **50 minutes**	• Separate carpool/bus lane • The travel time is **35 minutes**	• Separate carpool/bus lane • The time in the bus is **35 minutes** • A bus comes every **20 minutes** • The one-way fare is **50 cents** • The time to and from the bus stops is as you told us

Situation H **(set C1)**

Drive alone	Carpool (2 or more persons)	Take the bus
• The travel time is **40 minutes**	• The travel time is **40 minutes**	• The time in the bus is **40 minutes** • A bus comes every **10 minutes** • The one-way fare is **$1.00** • The time to and from the bus stops is as you told us

APPENDIX C

FINAL DIALING RESULTS/ DISPOSITION OF ALL SAMPLE NUMBERS

A total of 13,697 phone numbers were received from a sample vendor and from those persons intercepted during the Spring Roadside Origin-Destination Survey who agreed to participate in the Stated Preference Survey. To begin recruiting for the survey pre-test, a 1 was added to 396 of the phone numbers for a total of 14,093 numbers.

The table below shows the results for each phone number, and sums to the total number of phone numbers included in the sample.

X – completed recruiting screener for participation…...	**366**
NA/AM –no answer or answering machine……………	**2971**
LM – left message………………………………………..	**19**
BZ – busy signal………………………………………..	**229**
CB – callback……………………………………………	**159**
1st RF – refused to participate…………………………..	**1343**
2nd RF – refused second attempt to recruit…………….	**51**
BG/ FAX – Business or fax line………………………….	**2360**
DS – disconnected number……………………………..	**2661**
DL – deaf or language barrier…………………………..	**211**
DUPLICATE – duplicate number……………………….	**59**
TM – terminate interview in progress………………….	**57**
W# - wrong number……………………………………	**177**
NV – targeted respondent is not available during entire data collection process………………………………….	**63**
QA – not employed……………………………………	**1314**
QB – no traveling on SH75 for 3+ miles…………..	**1767**
QC – not live in correct area……………………….	**14**
QD – live and work in same city…………………..	**16**
QE – one-way commute less than 5 minutes…………..	**8**
QF – live in incorrect county……………………………	**59**
QR – qualified, but refused to participate………………	**135**
Not work in correct area………………………………..	**50**
Cell	**1**

phone……………………………………………….	
Pay phone………………………………………………..	**2**
Children's line…………………………………………...	**1**
TOTAL…………………………………………….	**14,093**

FULL TALLY OF ALL DIALINGS

The table below shows the results of each individual call made during the recruitment and interview process. Total dialing results:

X – completed recruiting screener for participation…...	**366**
NA/AM –no answer or answering machine……………	**30273**
LM – left message……………………………………..	**235**
BZ – busy signal………………………………………	**2618**
CB – callback………………………………………….	**2253**
1st RF – refused to participate…………………………..	**2286**
2nd RF – refused second attempt to recruit…………….	**63**
BG/ FAX – Business or fax line………………………	**3232**
DS – disconnected number……………………………..	**3064**
DL – deaf or language barrier…………………………..	**380**
DUPLICATE – duplicate number………………………	**90**
TM – terminate interview in progress………………….	**106**
W# - wrong number……………………………………	**288**
NV – targeted respondent is not available during entire data collection process………………………………….	**94**
QA – not employed…………………………………….	**1715**
QB – no traveling on SH75 for 3+ miles………………	**2355**
QC – not live in correct area……………………………	**32**
QD – live and work in same city……………………….	**18**
QE – one-way commute less than 5 minutes…………..	**28**
QF – live in incorrect county……………………………	**110**
QR – qualified, but refused to participate………………	**120**
Not work in correct area…………………..	**50**
Incomplete recruiting screeners, unable to reach finish recruiting………………………………………………..	**150**
Cell phone……………………………………………….	**1**

Pay phone……………………………………………..	**2**
Children's line………………………………………...	**1**
TOTAL…………………………………………………	**49780**

There were also 294 persons contacted during the Spring Roadside OD survey who agreed to participate in the Stated Preference Survey. 82 persons completed the SP survey. The tally for all persons contacted is as follows:

TALLY	TOTAL
Completed	**82**
No Answer/Answering Machine	**51**
Left Message	**5**
Call Back	**4**
First Refusal	**22**
Second Refusal	**1**
Business/Government/Fax #	**9**
Disconnected	**18**
Deaf/Language Barrier	**2**
Duplicate Number	**7**
Qualified Refusal	**16**
Terminated Interview	**3**
Wrong Number	**2**
Not Available during interview period	**7**
Unemployed	**20**
Doesn’t travel SH 75 3 miles or more	**31**
Travels SH 75 less than 5 minutes	**1**
Not in targeted counties	**9**
Retired	**4**
Total	**294**

Of the total 250 completed interviews, there were several that needed to be called back for clarifications. This is how many attempts were made to finish.

X – completed clarifications from data processing……..	**69**
NA/AM –no answer or answering machine……………	**1055**
LM – left message………………………………………..	**210**
BZ – busy signal…………………………………………	**108**
CB – callback…………………………………………….	**343**
BG/ FAX – Business or fax line………………………….	**11**
DS – disconnected number……………………………..	**9**
TOTAL……………………………………………………..	**1805**

These are the figures from the 366 recruiting screeners that became the sample to complete interviews with.

X – completed interviews………………………………..	**250**
NA/AM –no answer or answering machine……………	**862**
LM – left message………………………………………..	**191**
BZ – busy signal…………………………………………	**89**
CB – callback…………………………………………….	**326**
BG/ FAX – Business or fax line………………………….	**7**
DS – disconnected number……………………………..	**2**
TOTAL……………………………………………………..	**1502**

The Data Collection department made a grand total of 53,745 phone calls for this project.

APPENDIX D
CALLBACK QUESTIONNAIRE

START	END
RESPONDENT NAME	
HOME PHONE	WORK PHONE
NEAREST INTERSECTION:	
STREET 1:	STREET 2:
INTERVIEWER	DATE
SUPERVISOR	

(ASK FOR LISTED PERSON)

INTRO:
Hello, this is ______ calling from C. J. Olson Research. We're calling you back today on the State Highway 75 Travel Study.

1. Did you receive your packet of information? **(CIRCLE CODE)**

   YES................. 1} CONTINUE

   NO................... 2} **(THANKS FOR YOUR INTEREST IN PARTICIPATING. WE MAY CALL BACK WITHIN A FEW DAYS, OR YOU MAY CALL US AT 1-800-788-0085 WHEN YOUR PACKET ARRIVES - ASK FOR JOE)**

2. In the last two weeks, have you made a commute trip, that is a trip to or from work, by car on State Highway 75 for a distance of 3 miles or more, either as a driver or a passenger? **(CIRCLE CODE)**

   YES .... 1}(SKIP TO Q.3)

   NO .... 2}(GO TO Q.2A)

2a. Is there another adult in your home who has? (CIRCLE CODE)

   YES .... 1(ASK FOR THAT PERSON, REPEAT INTRO & ASK HIM/HER TO GET PACKET)

   NO .... 2 (THANK, TALLY Q.2a & TERM)

I'd like to ask some questions about your most recent work trip on State Highway 75.

3. How long ago did you make that work trip? (CIRCLE CODE)

TODAY	1
YESTERDAY	2
2-3 DAYS AGO	3
4-6 DAYS AGO	4
7-14 DAYS AGO	5
MORE THAN 14 DAYS AGO	6 (THANK, TALLY & TERM Q.3)
DK/RF	7 (THANK, TALLY & TERM Q.3)

4. Were you the driver or passenger in the vehicle? (CIRCLE CODE)

DRIVER	1
PASSENGER	2

5. How many people rode in the vehicle on your most recent work trip, including yourself? (CIRCLE CODE)

JUST ME/NO ONE ELSE	1} GO TO QUESTION 7
TWO	2} CONTINUE
THREE	3} CONTINUE
FOUR	4} CONTINUE
FIVE OR MORE	5} CONTINUE

6. Who were the other people in the vehicle with you on that work trip?
(READ LIST, CIRCLE CODES, MULTIPLE RESPONSES ACCEPTIBLE)

	YES	NO
Another adult from your household going to work	1	2
Another adult from your household traveling for another reason	1	2
A child from your household going to school or daycare	1	2

Part of an organized carpool or vanpool..................................	1	2
Another adult you work with..	1	2
SOMEONE ELSE **(WRITE IN)**		
____	1	2

7. What time did you leave home to begin that trip? (READ & CIRCLE CODE)

before 7:00 am...............................	1
between 7:00 and 7:59am	2
between 8:00 and 8:59 am	3
between 9:00 and 9:59 am	4
after 10:00 am OR after	5

8. About how many minutes did it take you to get from home to work, one way, on that trip?

(WRITE IN) __________ MINUTES

9. How many minutes do you think it would have taken you to get from home to work, that is one way, on that trip if there was no traffic congestion?

(WRITE IN) __________ MINUTES

10. What, if anything, did you pay out of pocket to park the car?

(WRITE IN) **$**___________

PARKING IS FREE/NOTHING	0} SKIP TO Q12
DID NOT PARK	96} SKIP TO Q12

11. Is that ...? **(READ AND CIRCLE CODE)**

Per day...	1
Per week..	2
Per month	3
Per year	4

12. Did you make any of the following types of stops on the way to work or on the way back home from work on that particular day?

(READ LIST AND CIRCLE CODES – MULTIPLE RESPONSES ACCEPTABLE)

	YES	NO
To drop off or pick up children	1	2
To drop off or pick up partner, colleagues, or other adults	1	2
To shop or perform other errands..................	1	2
To go for meals, recreation or entertainment	1	2
To make work-related stops............................	1	2
OTHER **(WRITE IN)** ______________________	1	2

13. Which of the following best describes your work hours? **(READ LIST AND CIRCLE CODE)**

You work a shift with a fixed start time	1
You have some flexibility, but have to be at work by a certain time	2
You can plan your own work hours	3
OTHER **(WRITE IN)** ______________________	7

14. Next, I'd like you to refer to the materials in the packet we mailed to you –

I'd like you to imagine that a regular bus service were to run along State Highway 75 between Timmerman and Ketchum. The service would use modern transit buses such as the one shown in the picture included in your packet.

Also included in your packet are north and south maps of the region that show where some transit routes and stops might possibly be located.

Which route maps did you receive in your packet? **(CIRCLE CODE)**

LOCAL route maps	1
EXPRESS route maps...	2

14a. Look at the route maps. The dark circles or squares show the location of stops that might be on the bus route. Notice that there are enlargements for Bellevue, Hailey, and Ketchum. Each stop is numbered. Now, suppose you were to use the bus for your morning work trip. On a typical day, to which stop on the route maps would you go to catch the bus from your home? Assume that you can park and ride the bus at any stop shown, if necessary.

STOP # ON ROUTE MAP	________
NONE/REF/WOULDN'T USE	96 **(SKIP TO Q.21)**
DK	99

15. On a typical day, if you were to use the bus for a commute trip such as the one you made, how would you usually get from home to that bus stop? **(READ & CIRCLE CODE)**

Walk..	1
Drive & park near stop	2
Get a ride/dropped off at stop	3
OTHER (WRITE IN)	
________________________________	7
DON'T KNOW	9

16. About how many minutes would it take you to get from home to that stop if you (Q15 ANSWER)?

WRITE IN)____________ MINUTES
DK……………………….99

17. Where would your work destination be for that trip? Please give the name of the town or area and the nearest road or street intersection. **(ASK FOR SPELLINGS OF TOWN AND STREETS. ASK ROAD TYPE AND DIRECTION.)**

TOWN ____

INTERSECTION ____

18. Looking again at the route maps, supposing you were to use the bus for your morning commute. At which stop # would you get off the bus to get to that work location?

STOP # ON ROUTE MAP _______

19. If you were to use the bus, how would you get from that bus stop to work? **(READ CIRCLE CODE)**

Walk..	1
Go by taxi.................................	2
OTHER**(WRITE IN)**	
___________________________	7
DK	99

20. About how many minutes would it take you to get to your workplace from the stop where you would <u>get off</u> the bus?

(WRITE IN) ___________ MINUTES
DK…………………………… 99

21. Next, please look at the sheets with the eight scenarios on them.
What is the label in the top right hand side of each sheet? **(CIRCLE CODE**

SET A1	1
SET A2	2
SET A3	3
SET A4	4
SET A5	5
SET A6	6
SET A7	7
SET A8	8
SET B1	9
SET B2	10
SET B3	11
SET B4	12
SET B5	13
SET B6	14
SET B7	15
SET B8	16
SET C1	17
SET C2	18
SET C3	19
SET C4	20
SET C5	21
SET C6	22
SET C7	23
SET C8	24
SET D1	25
SET D2	26
SET D3	27
SET D4	28
SET D5	29
SET D6	30

(READ SLOWLY AND CAREFULLY)
Each scenario on the sheet describes a different situation for a commute trip such as the one you made. In each situation, you can choose between taking the car to work alone or with others or going by bus on a new service. You can assume that going by car is the same as it is now, except that the travel time by car might change due to the level of congestion on the roads.

For the bus service, the sheet shows the amount of time you would spend in the bus. In addition to that would be the time required to get to and from the bus stops on each end, which you have just estimated for us, plus any time you would have to wait for the bus. You can assume that the buses would run at the intervals shown.

In some of the scenarios, the buses would run in the same lanes and face the same traffic that the rest of the vehicles would. In other scenarios, the buses could use a new traffic lane that is only open to buses and carpools of two or more people.

Do you have any questions about the sheets?

22. What is your commuting preference for each of the 8 scenarios, beginning with scenario A on the first sheet. You can take your time to look each one over carefully. For each scenario, please tell me how you think you would have gotten to work for a commute trip such as the one you described – do you think you would drive alone, carpool, or use the bus service? **(CIRCLE CODE)**

SCENARIO	DRIVE ALONE	**CARPOOL**	**BUS**
a.	1	2	3
b.	1	2	3
c.	1	2	3
d.	1	2	3
e.	1	2	3
f.	1	2	3
g.	1	2	3
h.	1	2	3

23. In addition to the items mentioned in the scenarios, some other aspects of a bus service might be important to you. Please tell me, on a scale of 1 to 10 where 1 means not at all important and 10 means very important, how important each of the following items are in your decision to commute by bus. You may select any number on the scale.

(START WITH CHECKED ITEM, READ EACH ONE, ROTATING ORDER, CIRCLE CODE)

	Not at all Important ... Very Important	DK
a. The reliability of the buses to run on time	1...2...3...4...5...6...7...8...9...10	99
b. The comfort of the seats in the buses	1...2...3...4...5...6...7...8...9...10	99
c. The chance of getting an empty seat in the bus	1...2...3...4...5...6...7...8...9...10	99
d. Protection from weather at the stops	1...2...3...4...5...6...7...8...9...10	99
e. Having coffee vending machines at the stops.....	1...2...3...4...5...6...7...8...9...10	99
f. Selling discounted monthly passes for regular users	1...2...3...4...5...6...7...8...9...10	99
g. The quality of heating, air conditioning and lighting in the buses...	1...2...3...4...5...6...7...8...9...10	99
h. Running some buses also during the midday and late evening hours.....................................	1...2...3...4...5...6...7...8...9...10	99

Now, some final questions to sort your answers. The information you provide will not be used for any other purposes outside of this study.

24. What was your age on your last birthday?

(WRITE IN) ___________

25. What is the highest level of education you've completed? Stop me when I get to your education level **(READ & CIRCLE CODE)**

High school or less	1
Some college	2
2 year college degree / technical degree	3
Bachelors degree (4 Year)	4
Some graduate school	5
Master's degree in business	6
Some other master's degree	7
Doctorate degree	8
Other graduate degree	9
RF/NA	99

26. How many vehicles, including cars, pick-ups, vans, utility vehicles and motorcycles are available for use by members of your household?

(WRITE IN)____________

27. What is the total number of people living in your household, including yourself?

(WRITE IN)____________ **IF ONLY 1 PERSON, SKIP TO Q 30**

28. How many children are there in your household under five years of age?

(WRITE IN)____________

29. How many children are there in your household between the ages of five and including seventeen?

(WRITE IN)____________

30. Which of the following categories best describes your total household income, before taxes? Please stop me when I get to the correct category...

(**READ LIST, CIRCLE CODE)**

Less than $10,000……………………………	1
Between $10,000 and $20,000……………	2
Between $20,001 and $30,000……………	3
Between $30,001 and $40,000…………	4
Between $40,001 and $55,000……………	5
Between $55,001 and $70,000……………	6
Between $70,001 and $95,000……………	7
Between $95,001 and $120,000…………	8
Over $120,000…………………………..	9
REFUSED……………………………………	99

FILL IN FIRST PAGE INFORMATION, THANK AND END INTERVIEW.
ASK FOR SPELLINGS OF STREETS. ASK ROAD TYPE AND DIRECTION.

INTERVIEWER: BEFORE TURNING IN THE QUESTIONNAIRE TO THE SUPERVISOR, CHECK TO MAKE CERTAIN THAT THE QUESTIONNAIRE IS COMPLETE, AND ALL OPEN QUESTION RESPONSES ARE WRITTEN LEGIBLY AND HAVE BEEN FULLY PROBED AND CLARIFIED.