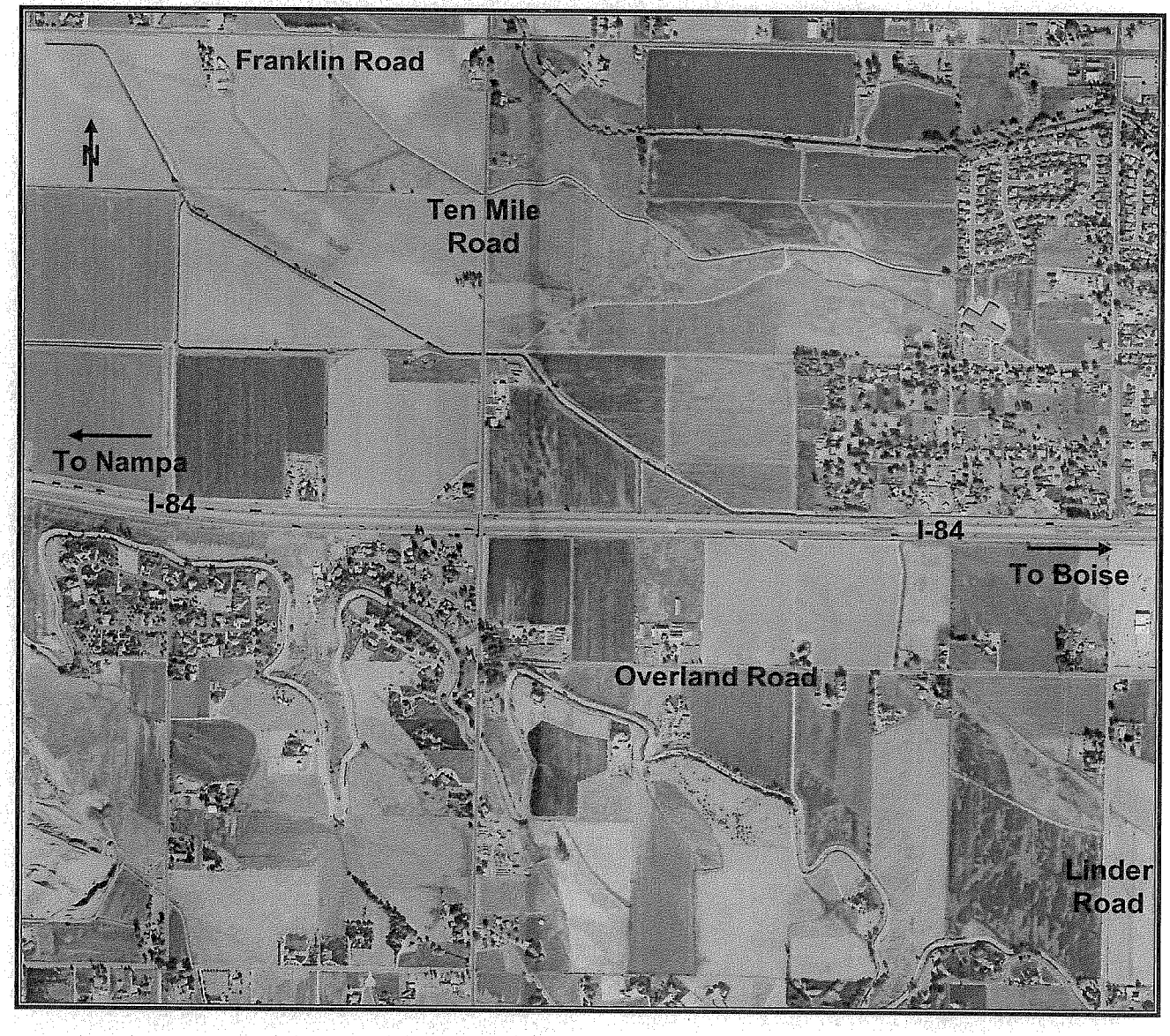
I-84, TEN MILE ACCESS STUDY

Project No. ST-84-1(542)42 Agreement No. 5851 Key No. 9349



Prepared for: **Idaho Transportation Department**

Prepared by: **H. W. Lochner, Inc.**

April 2005

U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
IDAHO DIVISION
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June 27, 2005

Reply To: HFO-ID

Mr. David S. Ekern, Director
Idaho Transportation Department
P.O. Box 7129
Boise, ID 83707

Attention: Mr. Steve Hutchinson

RE: I-84 Ten Mile Road Interchange, Project ST-84-1(543)43, Key 9349

Dear Mr. Ekern:

Your request for additional access at the proposed interchange location referenced above, dated May 4, 2005, has been reviewed by FHWA Idaho Division staff. The request submittal describes new interchange construction that is proposed to improve safety by reducing traffic conflicts and improve traffic flow. Implementation of this proposal would provide an additional access point for a full interchange (type still undecided) that would be constructed at this location. Access control would be full, since access to I-84 would continue to be limited to the interchange.

Based on the information provided in the submittal, the proposed access point is acceptable from an engineering and operational standpoint as an alternative in the NEPA process. Final approval of an interchange type and location may be given upon the completion of the environmental process.

Please contact Ross Blanchard at 334-9180, ext. 112 for further assistance.

Sincerely,

(Original signed by)

Edwin B. Johnson
Field Operations Engineer

E-Mail cc: Moreno, Sigel, Johnson, Blanchard
ITD: Dave Eckern, Steve Hutchinson, Loren Thomas, Eric Shannon

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SUMMARY

The purpose of this report is to assess the impacts associated with the addition of a new interchange on Interstate 84 (I-84) at Ten Mile Road in accordance with FHWA regulations. Key findings of the analyses conducted as part of this access study show the following:

- The existing transportation network of interstate, interchanges and local roads and streets in the corridor can not provide the adequate access nor can be improved to satisfactorily accommodate the design year traffic demands.
- All reasonable alternatives for design options, location and transportation system management type improvements have been considered and the impacts assessed to accommodate future need.
- The proposed interchange at Ten Mile Road does not have a significant adverse impact on the safety and operation of the interstate facility and that the new interchange with associated freeway widening will maintain or improve design year traffic conditions.
- The new interchange will connect to Ten Mile Road, north and south of I-84 and meets the criteria of connecting with a public road.
- The new interchange at Ten Mile Road and I-84 is consistent with regional, county and local plans.
- The new interchange at Ten Mile Road and I-84 is consistent with the master planning for the area.
- A new interchange at Ten Mile Road would be more beneficial in relieving traffic congestion at the existing interchange at Meridian Road than a new interchange at an alternative location.
- The new interchange at Ten Mile Road is consistent with and would support the land use and development plans for the area.
- Based on the Environment Scan of the study area, no significant environmental constraints were identified that would prohibit or affect the implementation of this project.
- A National Environmental Protection Act (NEPA) Environmental Assessment (EA) would appear to provide the appropriate documentation for this project.

The layout of this report was developed to display pertinent information in accordance with the federal requirements and criteria for the development of an 8-Point Access Study. The traffic analysis worksheet summaries for freeway and intersection level of service as well as merge/diverge analyses are contained in a separate appendix.

PROJECT DESCRIPTION

The I-84 / Ten Mile Road Interchange Project is being developed to relieve congestion at the existing I-84 / Meridian Road Interchange, provide local access to the growing area west of Meridian Road, and serve as a future maintenance of traffic route for the eventual reconstruction of the I-84/Meridian Road Interchange.

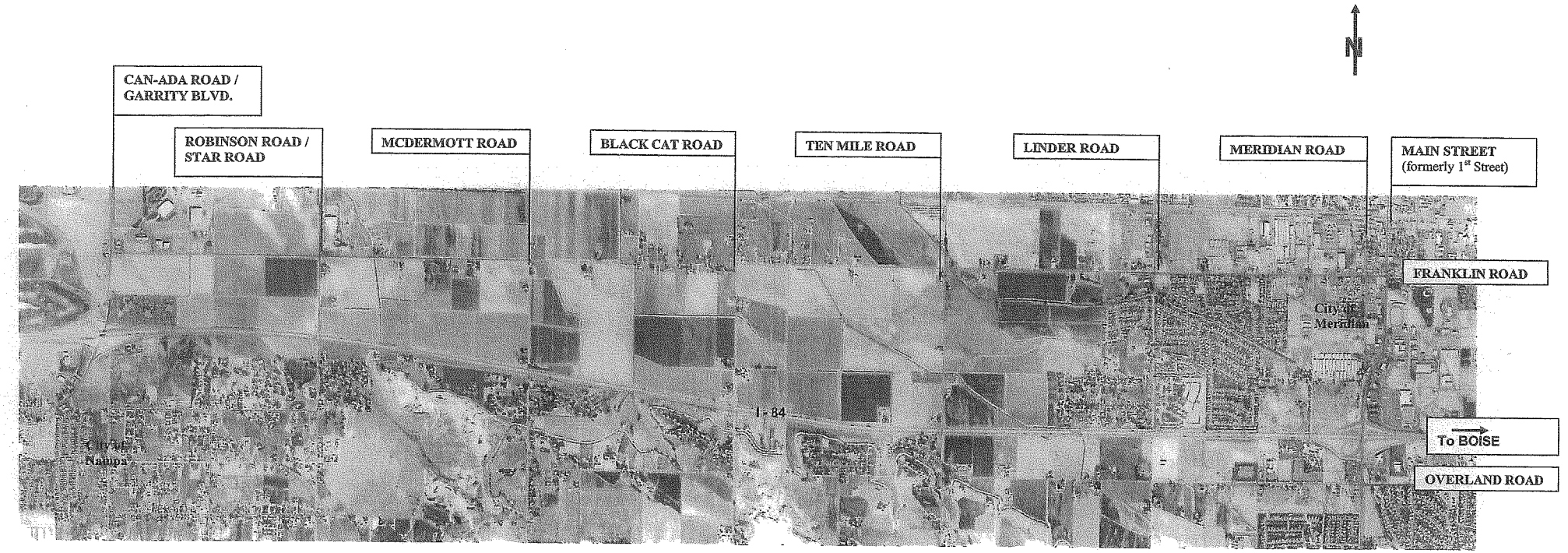
A vicinity map showing the location of the proposed Ten Mile Interchange with its relationship to existing interchanges is displayed on Figure 1. The existing Meridian Road/I-84 Interchange is approximately two miles east of the proposed Ten Mile Interchange and the existing Garrity Road/I-84 Interchange is about four miles to the west. I-84 is currently a four-lane facility with cross street passing over the interstate at Ten Mile Road, Black Cat Road and Robinson Road. These structures as well as the Meridian Road structure limit the widening of the interstate without completely rebuilding these structures. East of the Meridian Interchange, I-84 was recently widened to an eight-lane facility with the inside lane merging prior to the interchange and the outside lane ending at the Meridian Interchange ramps.

Currently, Ten Mile Road is a 2-lane minor arterial with one lane in each direction. Ten Mile Road connects US 20/26 in the north and to the town of Kuna about six miles south of I-84. The existing Ten Mile Road/I-84 overpass has one lane in each direction. The land area around the site is currently agricultural and a residential development in the southwest quadrant of Ten Mile Road and I-84. The area north of I-84 is designated as Mixed Use-Regional by the City of Meridian. This designation provided for development under a master or conceptual plan with innovative and flexible design. Multi-family residential uses are encouraged at a density of 3 to 40 units per acre. There is no upper limit for non-residential use and may include entertainment, major employment centers and clean industry. South of I-84, the area is designated as commercial, which includes retail, wholesale, service office and limited manufacturing uses.

There are five alternative interchange concepts being considered for the Ten Mile Interchange. The alternative interchange concepts include a standard diamond, an off-set diamond, an offset single point urban interchange, a modified SE-loop interchange, and a modified SW-loop interchange. Conceptual layouts of these alternative concepts are shown on Figures 2-6. The final configuration of the interchange will be identified through the environmental and preliminary engineering process with public involvement.

The proposed interchange improvement project includes the widening of Ten Mile Road between Franklin Road in the north and Overland Road to the south. The widening of I-84 from a four-lane facility to a six-lane facility between the existing Meridian Interchange to the new Ten Mile Road Interchange is also proposed. To accommodate the widening of I-84 to three lanes in each direction, some temporary modifications to the existing Meridian Interchange are also included. These temporary modifications included the relocation of the SE-loop ramp and the reduction of some shoulder widths under the existing Meridian Road structure. A deviation to current design standards will be needed for the temporary reduction in shoulder widths. If the deviation is not allowed, then an auxiliary lane will be added between the proposed Ten Mile Road Interchange and the existing Meridian Interchange, connecting the corresponding on- and off-ramps.

Depending on available funding and environmental process, the construction of the proposed improvements could be completed by 2010. Initially, the new overpass and eastside ramps would be built as well as the widening to I-84 and modifications to the existing Meridian Interchange. Ten Mile Road traffic would then be shifted to the new overpass structure, the existing Ten Mile Road overpass would be demolished and the Westside ramps construction. The widening of Ten Mile Road is to occur with new developments along the roadway.



TEN MILE ACCESS STUDY AREA

LOCHNER

FIGURE 1: VICINITY MAP

I-84 Ten Mile Access Study

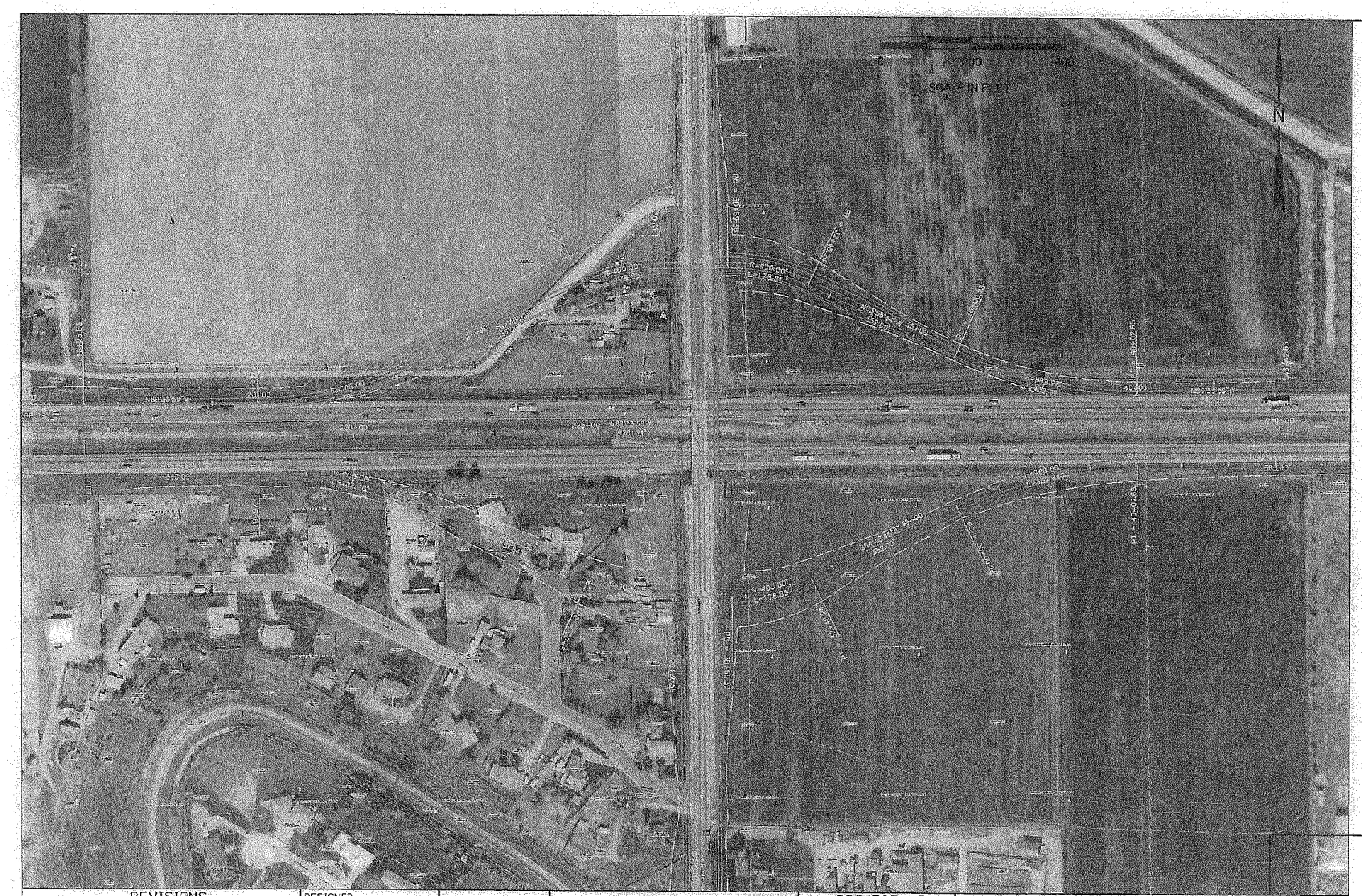


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Figure No 2

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PROJECT NO.	PROJECT PLAN SHEET	English
ST-84-1 (542) 42	I-84 - TEN MILE INTERCHANGE ALT-1: STANDARD DIAMOND	COUNTY Ada KEY NUMBER 9349 SHEET 1 OF 5

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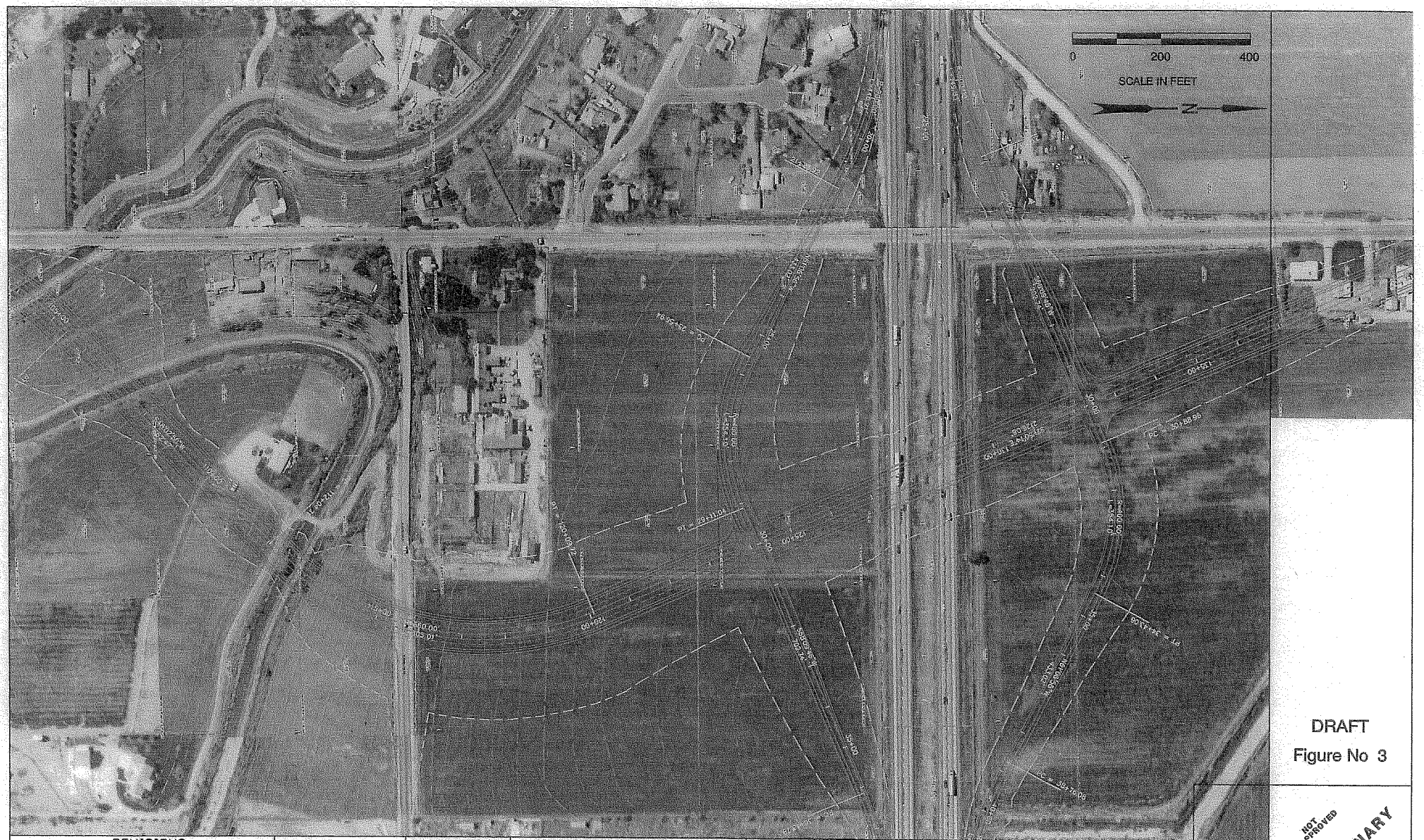

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IDAHO TRANSPORTATION DEPARTMENT

PROJECT NO. ST-84-1 (542) 42

PROJECT PLAN SHEET

I-84 - TEN MILE INTERCHANGE

ALT-2: OFFSET DIAMOND

English

COUNTY Ada

KEY NUMBER 9349

SHEET 2 OF 5

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PROJECT NO.

ST-84-1 (542) 42

PROJECT PLAN SHEET

I-84 - TEN MILE INTERCHANGE

ALT-3: MODIFIED SE-LOOP

English

COUNTY Ada

KEY NUMBER 9349

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PROJECT NO.	PROJECT PLAN SHEET	English
ST-84-1 (542) 42	I-84 - TEN MILE INTERCHANGE ALT-4: MODIFIED SW-LOOP	COUNTY Ada KEY NUMBER 9349 SHEET 4 OF 5

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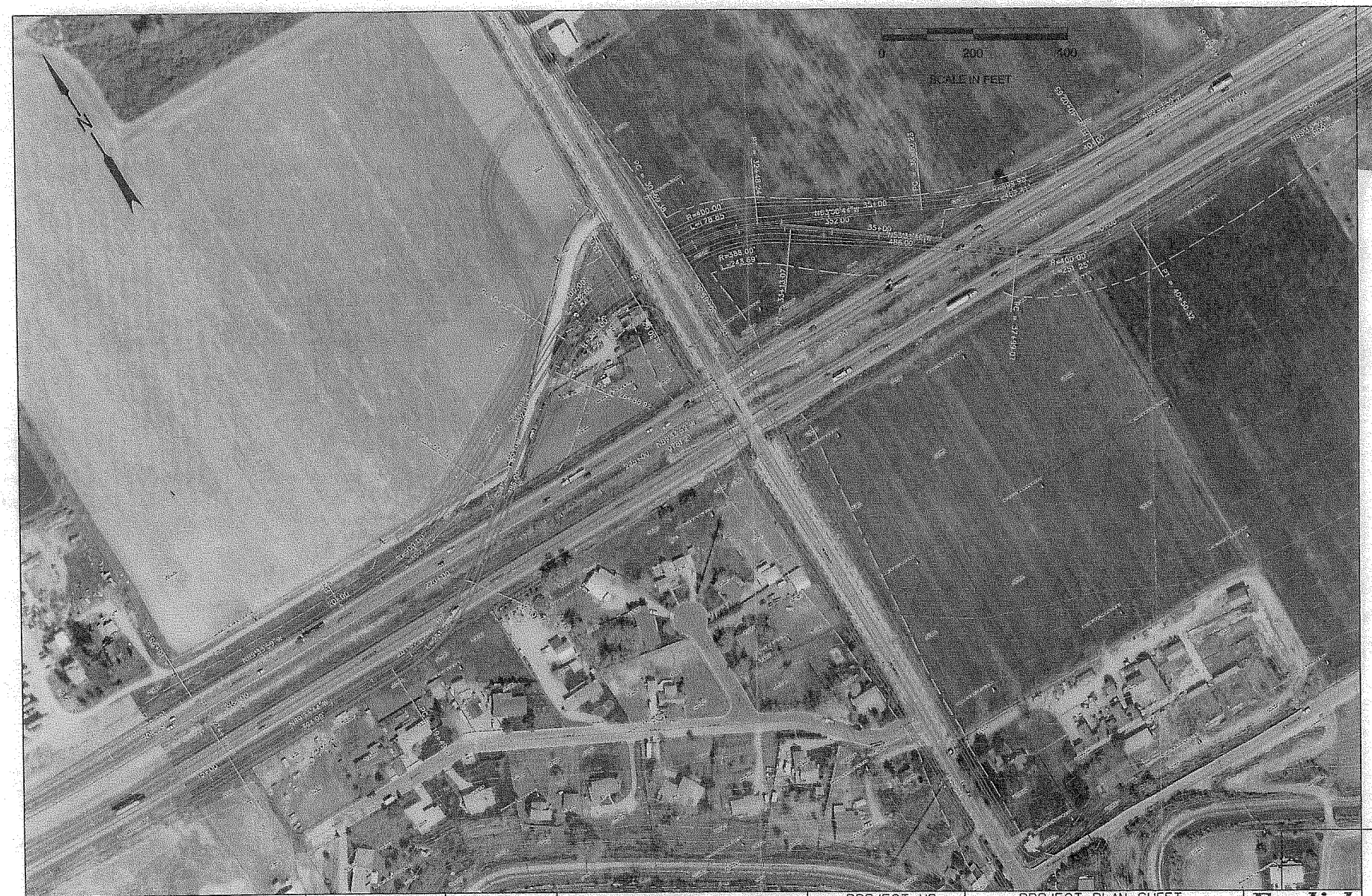

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DESIGN CHECKED Bob Munchinski			
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PROJECT PLAN SHEET

I-84 - TEN MILE INTERCHANGE

ALT-5: OFFSET SINGLE POINT

English

COUNTY Ada

KEY NUMBER 9349

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POLICY 1: EXISTING SYSTEM IS INCAPABLE OF ACCOMMODATING THE TRAFFIC

"The existing interchange and/or local roads and streets in the corridor can neither provide the necessary access nor be improved to satisfactorily accommodate the design year traffic demands while at the same time providing the access intended by the proposal." (Federal Register 2/11/1998 Vol. 63, No. 28, Page 7046)

The analysis indicated that the existing transportation network of interstate, interchanges and local roads and streets in the corridor can not provide the adequate access nor be improved to satisfactorily accommodate the design year traffic demands.

No-Build Assumptions

The existing Meridian Road/I-84 Interchange was analyzed for 2010 and 2030 horizons. In each case, improvements to the local roadway network to improve capacity were considered and appropriate demographic changes were assumed in accordance with 2010 and 2030 land use forecasts. A list of the 2010 improvements without access or capacity changes to the interstate system between the Meridian and Garrity Interchanges is presented in Table 1. The locations of the major 2010 improvement projects are displayed on Figure 7. All of the 2010 improvements are included in the Ada County Highway District's *Five Year Work Program Budget FY 2005-2009*, *Statewide Transportation Improvement Program FY 2004-2007*. In addition, a 25 percent mode split was assumed in the traffic forecast to account for transit, HOV, bicycle and pedestrian trips. This increase in mode split resulted in a lower amount of vehicular traffic being assigned to the transportation network.

For the 2030 horizon, transportation improvements identified in the Ada County Highway District's *Five Year Work Program Budget FY 2005-2009*, *Statewide Transportation Improvement Program FY 2004-2007*, *Destination 2030 Regional Transportation Plan* and the *I-84 Corridor Study* completed in 2001 were included in the base network. A list of the additional 2030 improvements is presented in Table 2. The locations of the major 2030 improvement projects are displayed on Figure 8. Two 2030 No-Build scenarios were considered in developing 2030 traffic forecasts. The first scenario (2030 No-Build A) assumes no access or capacity changes to the interstate system between the Meridian and Garrity interchanges, however improvements to the Meridian and Garrity Interchanges are included. The second scenario (2030 No-Build B) includes some additional capacity and other access improvements to the interstate system between the Meridian and Garrity Interchanges in accordance with the Long Range Transportation Plan for the region. In addition, a 25 percent mode split was also assumed in both 2030 scenarios for transit, HOV, bicycle and pedestrian trips which resulted in a lower amount of vehicular traffic being assigned to the transportation network.

The Travel Forecasting Model developed by the Community Planning Association (COMPASS) of Southwest Idaho for its Destination 2030 Limited Plan Update was used to forecast future travel demand within the study area. The Model was developed in cooperation with the Idaho Transportation Department (ITD), Ada County, Canyon County, and local jurisdictions. The model was designed to be sensitive to changes in land use and transportation characteristics.

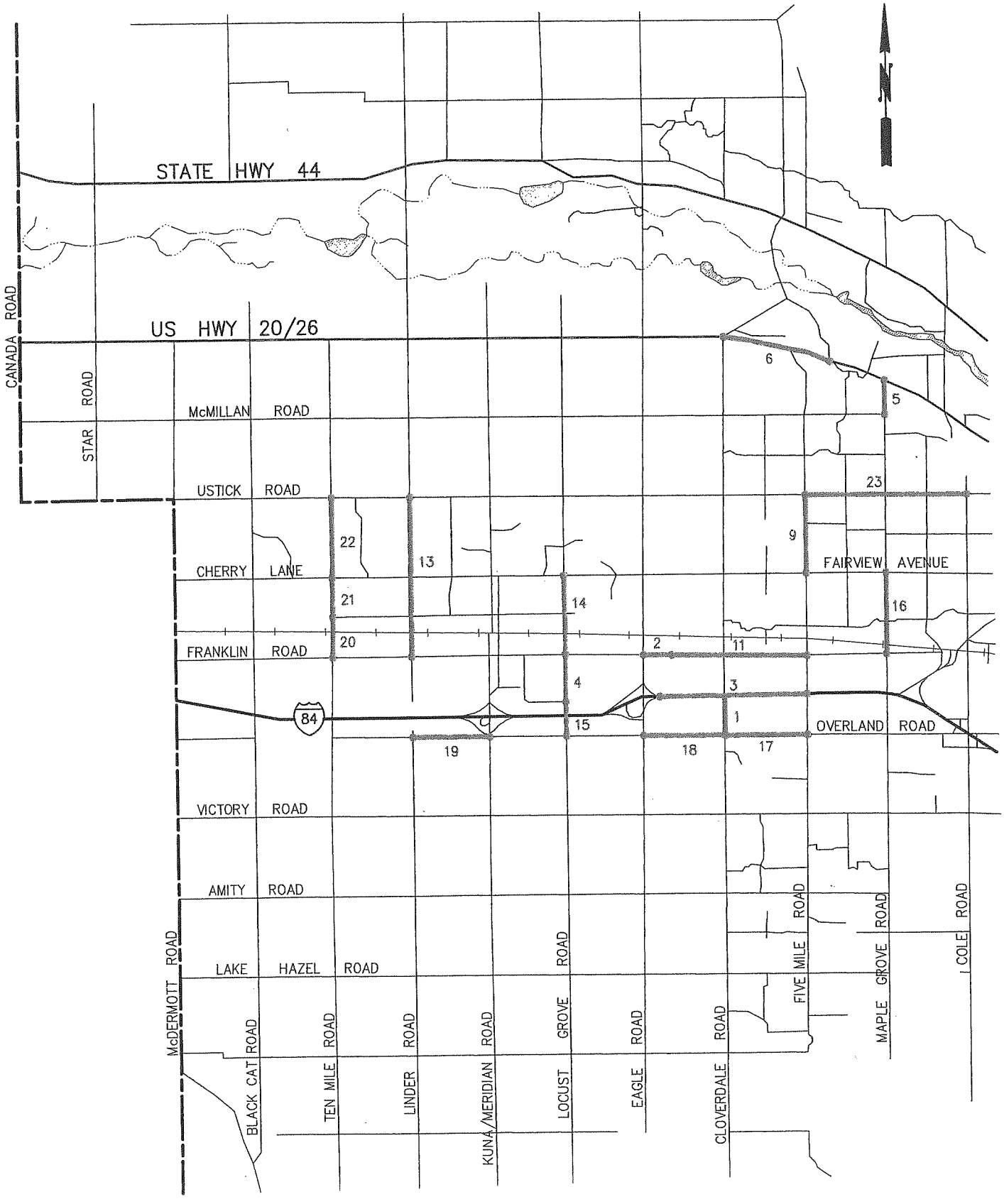
Traffic Analysis

The traffic volumes generated by COMPASS' Travel Forecasting Model were analyzed using the procedures from the current *2000 Highway Capacity Manual*. This operational analysis indicates that the existing system will not satisfactorily accommodate 2010 and 2030 traffic.

TABLE 1: IMPROVEMENT PROJECTS INCLUDED IN 2010 BASE NETWORK

Projects Completed By	No.	Project	Location	No. of lanes	Key No.	Regionally Significant	Estimated Costs (millions)
2005	1	Cloverdale Rd	Overland Rd to I-84	3	RD201-02	No	$2.5
	2	Franklin Rd	Eagle Rd - Touchmark	5	RD202-02	Yes - Principal Arterial	$1.0
	3	I-84 Mainline	Meridian IC to Five Mile Overpass	8	TBD	Yes - Interstate	completed
	4	Locust Grove Rd	Bentley – Franklin Rd	5	RD157.01/ 2025-28	No	$4.3
	5	Maple Grove Rd Extension	McMillan Rd – Chinden Blvd	5	RD066/ 2025-32	No	$5.9
	6	US 20/26	Cloverdale Rd – Joplin Rd	5	7148 / 6299	Yes -Principal Arterial	$8.0
2009	7	30th St (new road)	Main St – Rose St	3	RD202-09/ 2025-1	No	$4.5
	8	36th St	Hill Rd to Cartwright Rd	3	RD307/ 2025-2	No	$1.3
	9	Five Mile Rd	Fairview Ave - Ustick Rd	5	RD195A/ 2025-12	No	$5.0
	10	Floating Feather Rd	Eagle Rd - Edgewood Dr	3	RD257	No	$1.4
	11	Franklin Rd	Touchmark - Five Mile Rd	5	8698/ 2025-14	Yes - Principal Arterial	$8.7
	12	Hill Rd	State St - Horseshoe Bend Rd	3	RD308	No	$5.0
	13	Linder Rd	Franklin Rd to Ustick Rd	5	RD077/ 2025-24	No	$8.6
	14	Locust Grove Rd	Franklin Rd – Fairview Ave	5	RD054/ 2025-27	No	$4.4
	15	Locust Grove Rd Grade Separation (Overpass)	Overland Rd – Bentley	5	8048/ 2025-29	No	$7.0
	16	Maple Grove Rd	Franklin Rd - Fairview Ave	5	7192	Yes - +45K ADT	$8.4
	17	Overland Rd	Cloverdale Rd – Five Mile Rd	5	RD202-53/ 2025-	Yes - +45K ADT	$1.4
	18	Overland Rd	Topaz Avenue – Cloverdale Rd	5	RD072	No	$1.8
	19	Overland Rd	Linder Rd – Meridian Rd	5	RD290	No	$4.1
	20	Ten Mile Rd	Franklin Rd – Pine Ave	5	RD309/ 2025-43	No	$3.6
	21	Ten Mile Rd	Pine Ave – Cherry Ln	5	RD057/ 2025-44	No	$1.8
	22	Ten Mile Rd	Cherry Ln – Ustick Rd	5	RD188/ 2025-45	No	$5.1
	23	Ustick Rd	Five Mile Rd – Cole Rd	5	RD222	No	$9.9

Key No:
6299 = ITD Key Numbers are from the TIP State Transportation Improvement Program and are strictly numeric
RD169 = ACHD GIS Number are alpha numeric identification numbers
2025-4 = These numbers are from Destination 2025, Chapter 5, Table 12, pages 75-77
2030-11= These numbers are from Destination 2030 Limited Update, Chapter 5.



I-84
TEN-MILE ACCESS STUDY

LOCHNER

MAJOR AREA IMPROVEMENT PROJECT
SCHEDULED FOR COMPLETION
BY 2010

FIGURE
7

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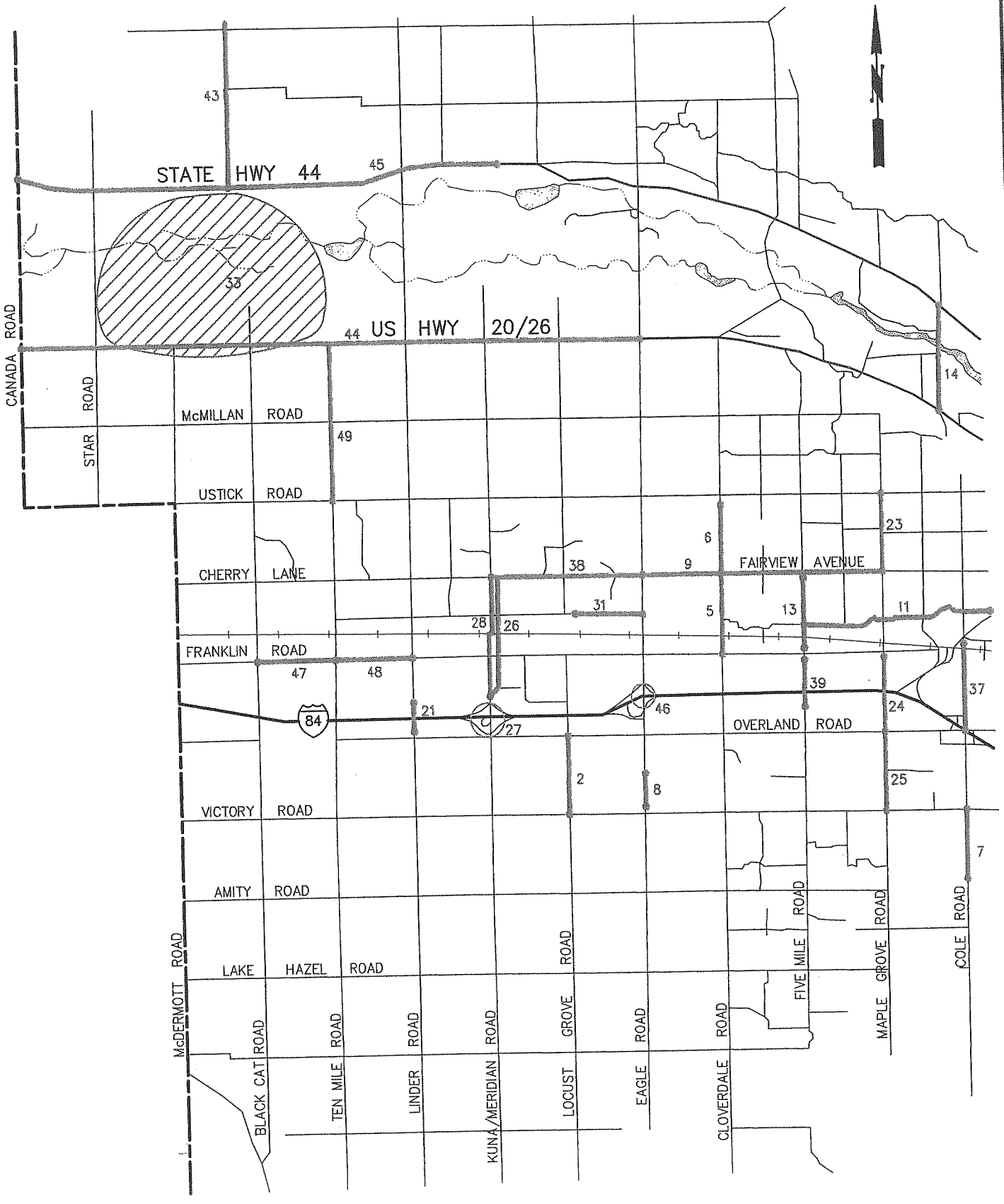
TABLE 2: IMPROVEMENT PROJECTS INCLUDED IN 2030 BASE NETWORKS

Projects Completed By	No.	Project	Location	No. of lanes	Key No.	Regionally Significant	Estimated Costs (millions)
2025	1	3 City's River Crossing (new road)	Chinden Blvd – State St	5	9189/ 2025-47	Yes - Principal Arterial	$16.5
	2	36th St	Extend 36th St to Cartwright Rd and Bogus Basin Rd	3	RD202-04/2025-2	No	$2.7
	3	Amity Rd	Federal Way – Surprise Wy	3	2025-3	No	$2.1
	4	Broadway IC	Reconstruct – add new ramps and lanes	N.A.	2025-5	Yes - Interstate	$13.5
	5	Cloverdale Rd	Franklin Rd – Fairview Ave	5	RD202-14	No	$5.3
	6	Cloverdale Rd	Fairview Ave – Ustick Rd	5	RC0087	No	$4.8
	7	Cole Rd	Amity Rd – Victory Rd	5	RC0094	No	$1.9
	8	Eagle Rd	Victory Rd – Ridenbaugh Canal	5	RD203-07	No	$2.3
	9	Eagle Rd & Fairview Ave	Construct Urban IC	N.A.	2025-8	Yes - Principal Arterial	$7.0
	10	Eckert Rd	Realign across Boise River - Amity Rd	3	2025-9	No	$2.7
	11	Emerald St	Five Mile Rd - Orchard St	5	2025-10	Yes - +45K ADT	$9.2
	12	Federal Way	Isaac Canyon IC - S/o SH 21	5	2025-11	No	$1.0
	13	Five Mile Rd	Franklin Rd - Fairview Ave	5	7238/ 2025-13	Yes -Principal Arterial	$7.8
	14	Glenwood St	Chinden Blvd - State St	7	2025-15	Yes - Principal Arterial	$3.5
	15	Glenwood St / Cole Rd couplet	Two way couplet to Mountain View Dr	3	2025-16	Yes - Principal Arterial	$2.6
	16	Hill Rd	Gary Ln – 36th St.	3	2025-17	No	$5.5
	17	I-84	Curtis Rd – Broadway Ave	8	2025-22	Yes - Interstate	$123.6
	18	I-84 (Meridian to Ten Mile not in 2030 No-Build-A)	Ten Mile Rd – Eagle Rd	8	2025-20	Yes - Interstate	$17.5
	19	I-84 widening (Excluded from 2030 No-Build-A)	Garrity Rd IC – Ten Mile Rd IC	6	2025-19	Yes - Interstate	$12.2
	20	Kuna Mora Rd & SH 69 (Kuna-Meridian Rd)	Extend Kuna Mora Rd & SH 69 (Kuna-Meridian Rd) to connect	3	2025-23	Yes - Principal Arterial	$8.0
	21	Linder Rd extension / overpass	Extend over I-84	3	2025-25	Yes - Interstate	$1.0
	22	Locust Grove Rd	Victory Rd - Overland Rd	5	2025-26	No	$2.5
	23	Maple Grove Rd	Fairview Ave – Ustick Rd	3	RD196A	No	$3.4
	24	Maple Grove Rd	Overland Rd - Franklin Rd	5	2025-30	Yes - +45K ADT	$7.5
	25	Maple Grove Rd	Victory Rd - Overland Rd	3	2025-31	No	$1.9
	26	Meridian Rd / Main (E. 1st St), 1 way pair	Fairview Ave to I-84	3	2025-33	No	$2.5

TABLE 2: IMPROVEMENT PROJECTS INCLUDED IN 2030 BASE NETWORKS

Projects Completed By	No.	Project	Location	No. of lanes	Key No.	Regionally Significant	Estimated Costs (millions)
2025	27	Meridian Rd IC	Improvement: cloverleaf ramp for WB I-84 to SB SH 69 (Kuna-Meridian Rd)	N.A.	2025-34	Yes - Interstate	$22.2
	28	Meridian Rd widening	Franklin Rd - Cherry Ln	3	2025-35	No	$0.5
	29	Orchard IC	Reconstruct – add new ramps and lanes	N.A.	2025-36	Yes - Interstate	$17.0
	30	ParkCenter East Bridge	ParkCenter Blvd - Warm Springs Ave	4	MA203-02	Yes - Principal Arterial	$11.0
	31	Pine St - new	Locust Grove Rd – Eagle Rd	3	2025-38	No	$1.8
	32	RR / Creek Crossing in Kuna	Location subject to evaluation	3	2025-39	No	$8.0
	33	SH 16 (Emmett Hwy) river crossing (connection location to be evaluated in the near future)	Network assumes @ Ten Mile Rd to connect SH 16 (Emmett Hwy) - I-84	5	2025-40	No	$22.9
	34	SH 55	N/o Beacon Light Rd	5	2025-41	Yes - Principal	$1.8
	35	Technology Way - new road	S/o Micron to Isaac's Canyon IC	5	2025-42	No	$3.3
	36	Vista IC	Reconstruct – add new ramps and lanes	N.A.	2025-48	Yes - Interstate	$15.2
2030	37	Cole Rd.	Overland Rd. to Franklin Rd.	5	2030-1	Yes - Principal Arterial	$4.3
	38	Fairview Ave.	Meridian Rd. to Maple Grove Rd.	7	2030-2	Yes - Principal Arterial	$16.6
	39	Five Mile Rd. Overpass	North of Overland Rd. to South of Franklin Rd.	4	2030-3	Yes - Principal Arterial	$4.6
	40	State St.	Gary Ln. to 28th St.	7	2030-9	Yes - Principal Arterial	$42.8
	41	I-84	Broadway IC to Gowen IC	8	part 2030-12	Yes - Interstate	$176.0
	42	Gowen IC	Reconstruct – add new ramps and lanes	N.A.	2030-17	Yes - Interstate	$18.0
	43	SH 16	State St. to Ada/Gem County Line	5	2030-18	Yes - Principal Arterial	$63.0
	44	Chinden Blvd. (US 20/26)	Ada/Canyon County Line to Eagle Rd.	5	2030-19	Yes - Principal Arterial	$21.8
	45	State St. (SH 44)	Ada/Canyon County Line to Ballantyne Rd.	5	2030-20	Yes - Principal Arterial	$39.0
	46	SH 55 (Eagle Rd)	I-84 westbound on-ramp – Franklin Rd	6	2030-22	Yes -Principal Arterial	$0.5
	47	Franklin Rd.	Black Cat Rd. to Linder Rd.	5	9637	No	$6.0
	48	Franklin Rd.	Linder Rd. to Ten Mile Rd.	5	9504	No	$6.1
	49	Ten Mile Rd.	Ustick Rd. to US 20/26	5	N.A.	No	Not available

Key No:
6299 = ITD Key Numbers are from the TIP State Transportation Improvement Program and are strictly numeric
RD169 = ACHD GIS Number are alpha numeric identification numbers
2025-4 = These numbers are from Destination 2025, Chapter 5, Table 12, pages 75-77
2030-11= These numbers are from Destination 2030 Limited Update, Chapter 5, Table 5.2, pages 73-74



I-84 TEN-MILE ACCESS STUDY	LOCHNER	MAJOR AREA IMPROVEMENT PROJECT PROPOSED COMPLETION BY 2030	FIGURE 8

A summary of the operational analysis for the 2010 No-Build Alternative is displayed on Figure 9. Summaries for the two 2030 No-Build scenarios are shown on Figures 10 and 11.

The freeway analysis indicated that the freeway operations will continue to operate in LOS E during the morning peak hour in the eastbound or peak direction of travel with ramp merge and diverge conditions operating at LOS F. During the afternoon peak hour, traffic in the westbound direction is expected to operate at LOS F with ramp merge and diverge conditions also operating at LOS F between the Meridian Interchange and the Garrity Interchange.

The intersection analysis of ramp terminals with cross streets also indicate that certain intersection movements lack the necessary capacity to avoid long delays and exiting traffic backups onto the interstate system. The 2030 intersection analysis includes the addition of a new loop off-ramp at the Meridian Interchange to separate the westbound I-84 traffic to southbound Meridian Road from the northbound Meridian Road exiting traffic. Similarly, a new fly-over off-ramp at the Garrity Interchange is added to separate the westbound I-84 traffic to southbound Garrity Road from the northbound Garrity Road exiting traffic on the existing ramp.

A summary of the 2010/2030 No-Build I-84 ramp terminal intersection analyses is presented below.

2010 / 2030 No-Build Conditions AM / PM Peak Hour Levels of Service

Ramp Intersections	2010 No-Build			2030 No-Build A			2030 No-Build B		
	LOS	Delay	V/C	LOS	Delay	V/C	LOS	Delay	V/C
Northside WB Meridian Interchange									
AM Peak Hour	D	38.3	0.96	F	96.8	1.21	F	90.0	1.25
PM Peak Hour	F	146	1.35	F	353	1.81	F	280	1.83
Southside EB Meridian Interchange									
AM Peak Hour	D	40.6	1.20	F	156	1.50	F	148	1.47
PM Peak Hour	A	7.8	0.84	F	86.9	1.21	F	68.0	1.15
Northside WB Garrity Interchange									
AM Peak Hour	B	15.8	0.74	B	12.8	0.67	A	6.0	0.51
PM Peak Hour	F	96.3	1.19	C	28	1.17	A	9.7	0.65
Southside EB Garrity Interchange									
AM Peak Hour	B	17.5	0.82	E	73.6	1.16	C	23.5	0.87
PM Peak Hour	B	16.1	0.73	C	32.3	1.01	B	12.9	0.81

Notes: LOS = Level of Service, based on 2000 Highway Capacity methodology using Synchro software
Delay = Average intersection delay expressed in seconds per vehicle
V/C = Volume to capacity ratio for signalized intersection

The queue delay on the westbound off-ramp at the Meridian Interchange is longer than two minutes during the PM peak hour and longer than 1.5 minutes at the westbound off-ramp at the Garrity Interchange. By adding a direct westbound to southbound ramp at the Garrity Interchange by 2030 the delay is reduced to about one half minute. By 2030 at the Meridian Interchange, the level of service and delay is expected to substantially increase for all ramp movements even with the addition of the new westbound to southbound ramp.

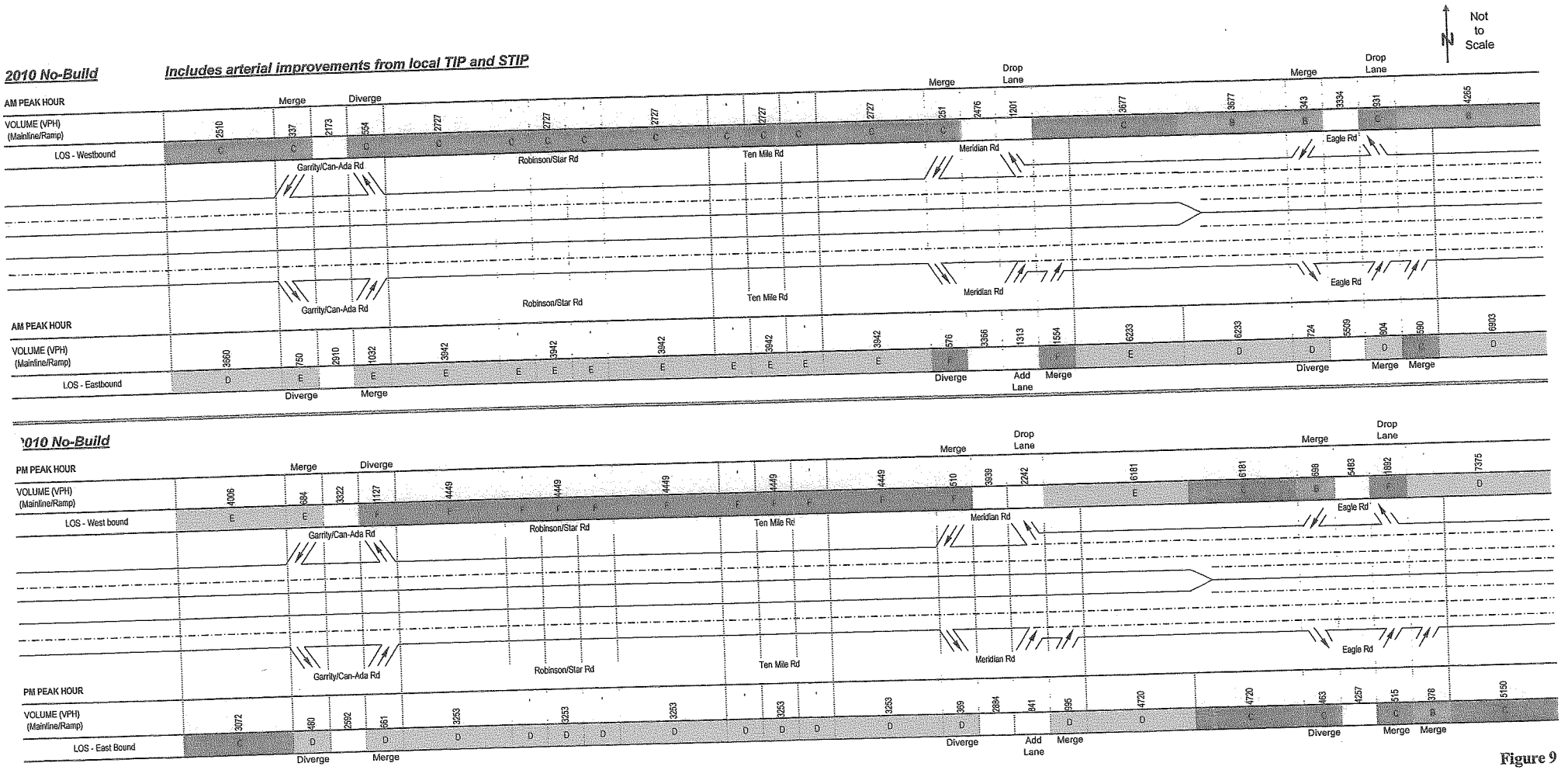


Figure 9

2010 No-Build - AM and PM Peak Hour Traffic Volumes and Levels of Service

I-84, Ten Mile Road Access Study, Ada County, Idaho

LOCHNER

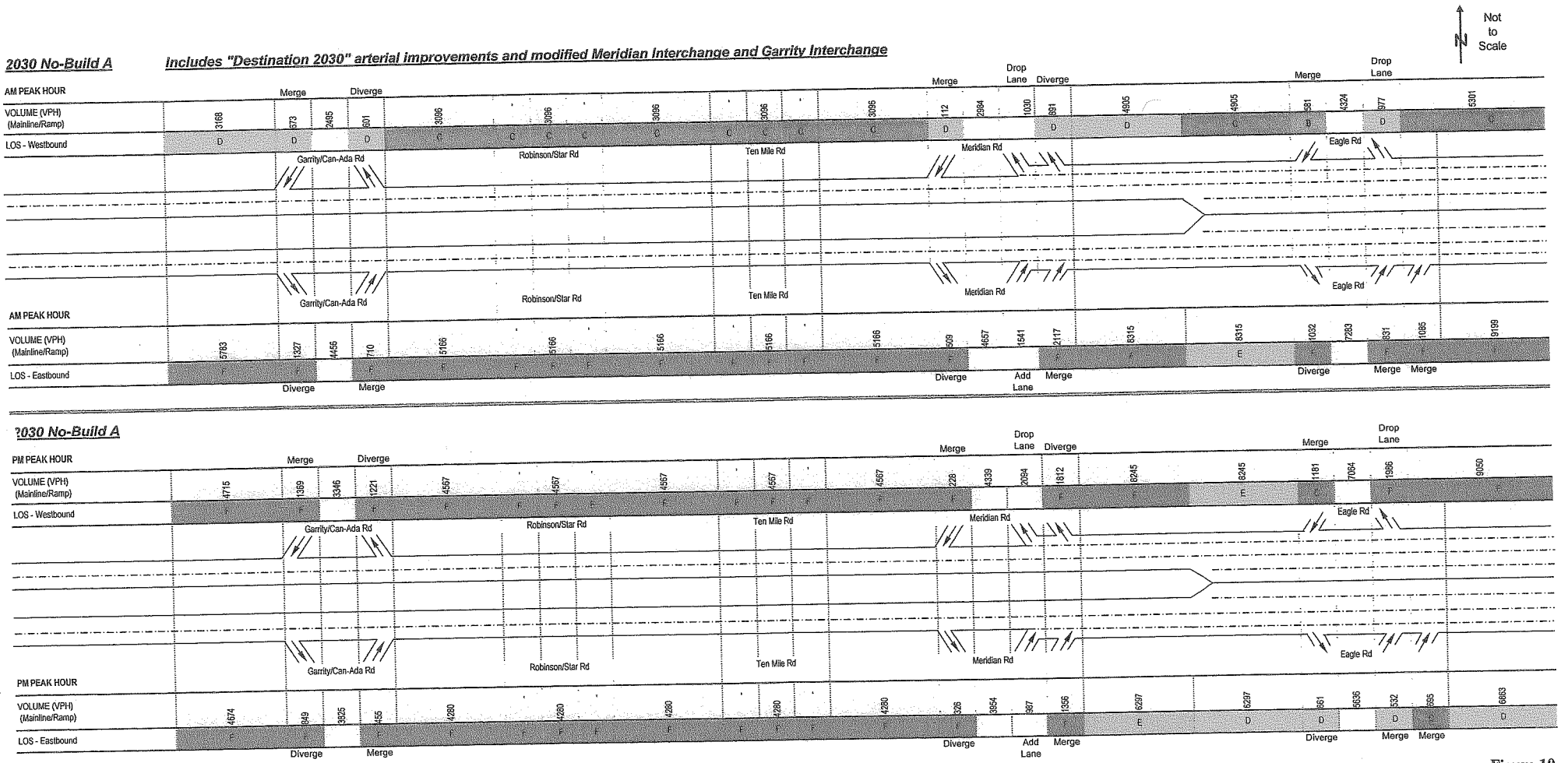


Figure 10

2030 No-Build A - AM and PM Peak Hour Traffic Volumes and Levels of Service

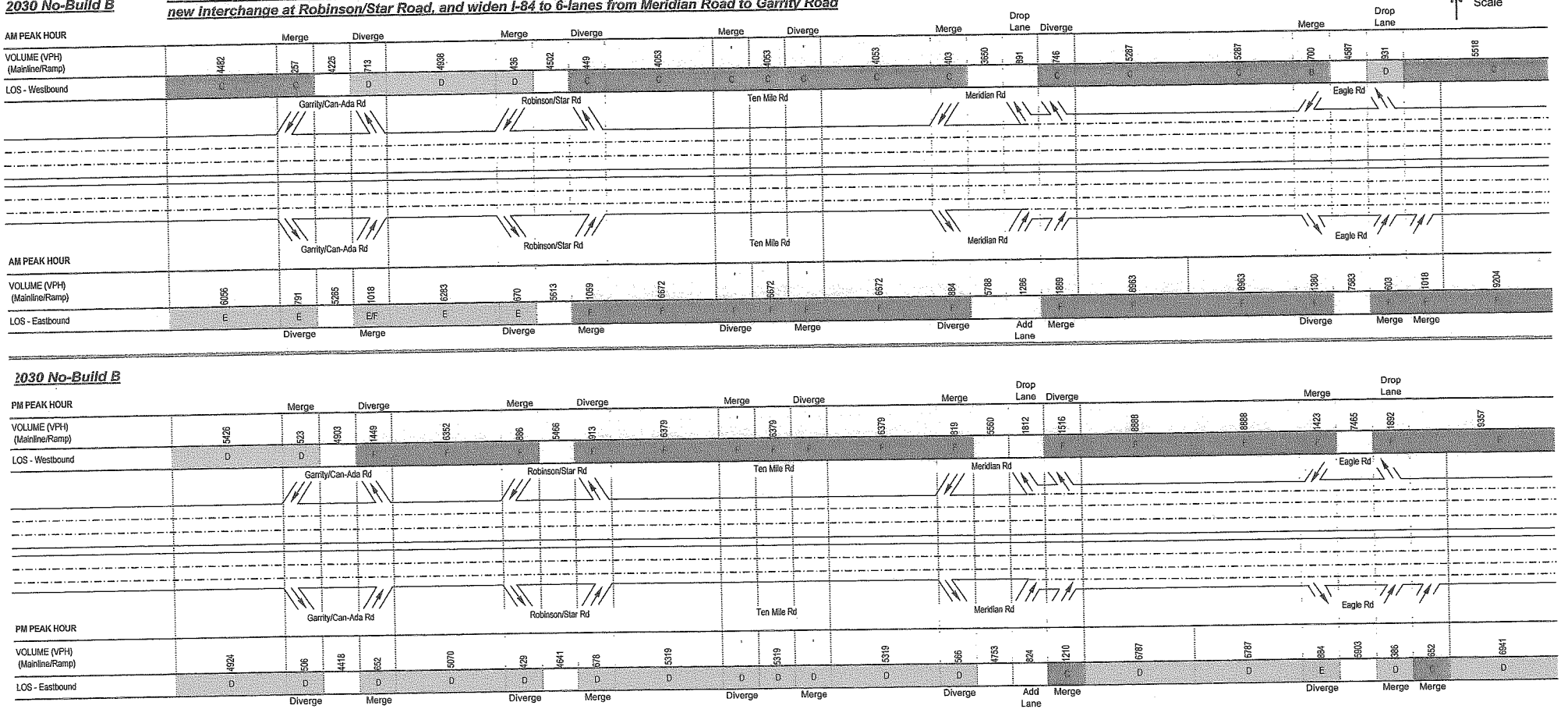
I-84, Ten Mile Road Access Study, Ada County, Idaho

LOCHNER

2030 No-Build B

Includes "Destination 2030" arterial improvements, modified Meridian Interchange and Garrity Interchange, new interchange at Robinson/Star Road, and widen I-84 to 6-lanes from Meridian Road to Garrity Road

Not to Scale



2030 No-Build B

Figure 11

2030 No-Build B - AM and PM Peak Hour Traffic Volumes and Levels of Service

I-84, Ten Mile Road Access Study, Ada County, Idaho

LOCHNER

Vehicle queuing on the Meridian Interchange ramps is also expected to increase between 2010 and 2030. Vehicle queues during the afternoon peak hour in 2010 are expected to continue backing up onto the freeway mainline. By 2030 westbound exiting traffic during the afternoon peak hour at the Meridian Interchange are expected to have longer vehicle queues especially for the new westbound to southbound loop ramp. A detailed queuing analysis was conducted using the Synchro software.

Accident Analysis

The accident analysis covered the three-year period from January 2002 through December 2004. The data used in the analysis were provided by the ITD Traffic Safety section for the segment along I-84 from MP 37.619 to MP 44.249 as well as for the Meridian Interchange and Garrity Interchange ramps. Summaries of the accident data are presented on Tables 3 and 4.

TABLE 3: I-84 MAINLINE ACCIDENT SUMMARY

I-84 MAINLINE	2002	2003	2004	Total	Average Per Year	Percent of Total
Accidents						
Total Accidents	108	134	134	376	125.3	
Accidents with Injuries	41	44	47	132	44.0	35%
Accidents with Fatalities	2	4	1	7	2.3	2%
Total Injuries	66	64	67	197	65.7	
Total Fatalities	2	5	1	8	2.7	
Type of Accidents						
Loss Control	12	25	28	65	21.7	17%
Ran Off Road	12	18	15	45	15.0	12%
Rear-end	64	74	70	208	69.3	55%
Side Swipe	8	10	14	32	10.7	9%
Other	12	7	7	26	8.7	7%
Contributing Factors						
Alcohol/Drugs	6	6	7	19	6.3	5%
Follow Too Close	30	21	30	81	27.0	22%
Inattention	25	17	25	67	22.3	18%
None Reported	12	54	45	111	37.0	30%
Too Fast For Conditions	8	9	6	23	7.7	6%
Other Factors	27	27	21	75	25.0	20%

Over the three-year period, there were 376 accidents reported along I-84, 28 accidents on or related to the Meridian Interchange and 48 accidents on or related to the Garrity Interchange. There were 197 injuries related to 132 accidents and 7 fatalities along this segment of I-84 over the three-year period. No fatalities were related to either the Meridian Interchange or Garrity Interchanges; however there were 11 accidents with injuries associated with the Meridian Interchange and 16 accidents with injuries associated with the Garrity Interchange.

The primary type of accident was rear-end collisions which accounted for over half of all accidents followed by accidents resulting from driver's loss of control. The primary contributing factors reported were driver inattention and following too close.

TABLE 4: MERIDIAN AND GARRITY INTERCHANGE ACCIDENT SUMMARY

MERIDIAN INTERCHANGE	2002	2003	2004	Total	Average Per Year	Percent of Total
Accidents						
Total Accidents	11	8	9	28	9.3	
Accidents with Injuries	4	4	3	11	3.7	39%
Accidents with Fatalities	0	0	0	0	0.0	0%
Total Injuries	5	4	4	13	4.3	
Total Fatalities	0	0	0	0	0.0	
Type of Accidents						
Loss Control	2	1	5	8	2.7	29%
Ran Off Road	1	0	0	1	0.3	4%
Rear-end	6	6	4	16	5.3	57%
Side Swipe	0	0	0	0	0.0	0%
Other	2	1	0	3	1.0	11%
Contributing Factors						
Alcohol/Drugs	2	1	2	5	1.7	18%
Follow Too Close	1	3	1	5	1.7	18%
Inattention	3	1	1	5	1.7	18%
None Reported	1	3	4	8	2.7	29%
Too Fast For Conditions	1	0	1	2	0.7	7%
Other Factors	3	0	0	3	1.0	11%

GARRITY INTERCHANGE	2002	2003	2004	Total	Average Per Year	Percent of Total
Accidents						
Total Accidents	11	18	19	48	16.0	
Accidents with Injuries	5	2	9	16	5.3	33%
Accidents with Fatalities	0	0	0	0	0.0	0%
Total Injuries	9	2	11	22	7.3	
Total Fatalities	0	0	0	0	0.0	
Type of Accidents						
Loss Control	3	1	3	7	2.3	15%
Ran Off Road	1	2	4	7	2.3	15%
Rear-end	5	8	12	25	8.3	52%
Side Swipe	1	1	0	2	0.7	4%
Other	1	6	0	7	2.3	15%
Contributing Factors						
Alcohol/Drugs	1	1	2	4	1.3	8%
Follow Too Close	0	1	3	4	1.3	8%
Inattention	4	4	4	12	4.0	25%
None Reported	2	9	7	18	6.0	38%
Too Fast For Conditions	2	0	1	3	1.0	6%
Other Factors	2	3	2	7	2.3	15%

POLICY 2: ALL REASONABLE ALTERNATIVES TO A NEW INTERCHANGE HAVE BEEN CONSIDERED

"All reasonable alternatives for design options, location and transportation system management type improvements (such as ramp metering, mass transit and HOV facilities) have been assessed and provided for if currently justified, or provisions are included for accommodating such facilities if a future need is identified." (Federal Register 2/11/1998 Vol. 63, No. 28, Page 7046)

All reasonable alternatives for design options, location and transportation system management type improvements have been considered and the impacts assessed to accommodate future need.

Alternative Development

Various No-Build and Build Alternatives were considered in analyzing the impact of adding a new access point to the interstate system at Ten Mile Road. The following summarizes a description of these alternatives.

No-Build Alternative Development

2010 No-Build: The analysis of the freeway existing system along I-84 between the Meridian Interchange and the Garrity Interchange was first analyzed with local roadway improvements to determine if these improvements would handle the congestion problems at the Meridian Interchange. For 2010 base alternative, all of the 2010 improvements, included in the Ada County Highway District's *Five Year Work Program Budget FY 2005-2009* and the *Statewide Transportation Improvement Program FY 2004-2007,* were included in the baseline network. The 2010 local system improvements within the vicinity of the study area were previously shown in Figure 7.

2030 No-Build: For the 2030 analysis, additional transportation improvements identified in the *Destination 2030 Regional Transportation Plan* and the *I-84 Corridor Study* completed in 2001 were also included. Two 2030 No-Build scenarios were considered in developing 2030 traffic forecasts. The first scenario (2030 No-Build A) assumes no access or capacity changes to the interstate system between the Meridian and Garrity interchanges. The second scenario (2030 No-Build B) includes some additional freeway capacity and other access improvements to the interstate system between the Meridian and Garrity Interchanges in accordance with the Long Range Transportation Plan for the region but without the proposed Ten Mile Interchange or improvements to Ten Mile Road from Overland Road to Franklin Road. The additional 2030 improvements within the vicinity of the study area were previously shown in Figure 8.

For the 2030 No-Build Alternatives, capacity improvements to the Meridian and Garrity Interchanges are added. At the Meridian Interchange, a new westbound to southbound loop off-ramp was added to remove the high volume of left turning traffic at the ramp terminal. At the Garrity Interchange, a new westbound to southbound direct fly-over ramp was added to the existing westbound off-ramp to remove the high volume of left turning traffic at the ramp terminal.

Alternative Travel Modes: A 25 percent mode split was assumed in the traffic forecast for other alternative travel modes to account for shifts from single occupancy vehicle (SOV) trips to transit, HOV, bicycle and pedestrian trips. This increase in mode split resulted in a lower amount of vehicular traffic being assigned to the transportation network.

Build Alternative Development

Based on the work previously completed in the *I-84 – Ten Mile Interchange Preliminary Concept Report* prepared for the City of Meridian, five alternatives were carried forward for additional analysis and four were eliminated. A summary of these alternatives are presented below.

Alternatives Considered but Eliminated from Detailed Study: Four alternatives were eliminated in the previously completed in the *I-84 – Ten Mile Interchange Preliminary Concept Report.* Three of these alternatives were:

- **Standard Single Point Urban Interchange:** A Standard Single Point Urban Interchange is usually constructed in tight urban areas where existing developments are adjacent to the interstate and right-of-way costs are high. This alternative was rejected because there is available undeveloped land in the vicinity of Ten Mile Road and this alternative was more expensive than other options.
- **Ten Mile Road Off-Ramp:** This alternative was designed to offset Ten Mile Road and have the eastbound off-ramp connected to the old Ten Mile Road alignment. Existing traffic that wanted to go north on Ten Mile Road would now have to proceed south along the old Ten Mile Road alignment, turn left onto Overland Road to the new Ten Mile Road alignment, and turn left again to proceed north. This alternative was rejected because it violated driver expectations.
- **Overland Road Off-Ramp:** This alternative was designed with the eastbound on- and off-ramps directly connected to Overland Road instead of Ten Mile Road to reduce impacts to the residential area in the southwest quadrant of the proposed site. This alternative was rejected because it violated driver expectations and may confuse drivers by using Overland Road.

The fourth alternative previously eliminated was the **Full Realignment of Ten Mile Road**. This alternative was originally eliminated because of its impact on a farm which may have historical significance and its impact to the Ridenbaugh Canal. Based on the environmental scan, the farms in the southeast quadrant of the site are described by the Ada County Historic Preservation Council as "contributing" rather than eligible for the National Register of Historic Places. Since there are existing roadway crossing of the canal, a Section 404 Permit and/or a Nationwide Permit 14 would apply. Because neither of these environmental issues are considered to be fatal flaws in the design, this alternative is being carried forwarded for more detailed analysis.

Alternatives Carried Forward: Five alternatives were recommended for more detailed analysis in the previously completed *I-84 – Ten Mile Interchange Preliminary Concept Report.* One of these (Offset Diamond Alternative which re-aligned Ten Mile Road to Overland Road) is replaced with the **Offset Diamond Alternative with the Full Realignment of Ten Mile Road.** These alternatives are described below:

- **Alternative 1, Standard Diamond Interchange:** This alternative is a standard diamond interchange with ramps in all four quadrants and designed to meet ITD current standards. Traffic control is initially programmed for stop signs at ramp terminals which will be converted to signalized intersections as traffic warrants. A layout for a Standard Diamond Interchange at Ten Mile / I-84 was previously shown in Figure 2.
- **Alternative 2, Offset Diamond Interchange:** This alternative is designed to avoid the residential area in the southwest quadrant of the Ten Mile Road / I-84 crossing and the farm building in the southeast quadrant. This alternative relocates Ten Mile Road east as it crosses

over I-84. The plan shows that the re-aligned Ten Mile Road will form at new "Tee" intersection with Overland Road and extend south across the Ridenbaugh Canal with three structures before returning to the original Ten Mile Road alignment. To avoid impacts with the Ridenbaugh Canal, this alternative could be shortened to terminate at Overland Road with traffic turning west of Overland Road and south at the existing Ten Mile Road/Overland Road intersection. Standard diamond ramps are added in all four quadrants and designed to meet ITD current standards. Traffic control is initially programmed for stop signs at ramp terminals which will be converted to signalized intersections as traffic warrants. A layout for an Offset Diamond Interchange at Ten Mile / I-84 was previously shown in Figure 3.

- **Alternative 3, Modified SE-Loop Interchange:** This alternative is a partial cloverleaf interchange, designed to avoid the existing residential area in the southwest quadrant of the Ten Mile Road / I-84 crossing. No ramps are included in the southwest quadrant. Instead a loop ramp is added in the southeast quadrant. Traffic control is initially programmed for stop signs at ramp terminals which will be converted to signalized intersections as traffic warrants. A layout for a Modified SE-Loop Interchange at Ten Mile / I-84 was previously shown in Figure 4.
- **Alternative 4, Modified SW-Loop Interchange:** This alternative is a partial cloverleaf interchange designed to reduce the number of intersections with Ten Mile Road in the Vicinity of I-84. For this alternative, Overland Road is re-aligned to intersect Ten Mile Road at the new ramp intersection. No ramps are included in the southeast quadrant. Instead a loop ramp is added in the southwest quadrant. Traffic control is initially programmed for stop signs at ramp terminals which will be converted to signalized intersections as traffic warrants. A layout for a Modified SW-Loop Interchange at Ten Mile / I-84 was previously shown in Figure 5.
- **Alternative 5, Offset Single Point Urban Interchange:** This alternative is designed to include all ramp junctions with Ten Mile Road at a single intersection approximately 260-feet north of the I-84. Two bridges are required for the south side ramps to span over I-84. Retaining walls are also required for the south side ramps to minimize right-of-way and to allow for grade differences between adjacent ramps. This alternative is designed to increase the distance between the Ten Mile Road/ramp terminal intersection and the Ten Mile Road/Overland Road intersection. Traffic control is initially programmed for stop signs at ramp terminals which will be converted to signalized intersections as traffic warrants. A layout for an Offset Single Point Interchange at Ten Mile / I-84 was previously shown in Figure 6.

POLICY 3: PROPOSAL DOES NOT ADVERSELY IMPACT THE FREEWAY

"The proposed access point does not have a significant adverse impact on the safety and operation of the Interstate facility based on an analysis of current and future traffic. The operational analysis for existing conditions shall, particularly in urbanized areas, include an analysis of sections of Interstate to and including at least the first adjacent existing or proposed interchange on either side. Crossroads and other roads and streets shall be included in the analysis to the extent necessary to assure their ability to collect and distribute traffic to and from the interchange with new or revised access points." (Federal Register 2/11/1998 Vol. 63, No. 28, Page 7046)

This section discusses the impacts associated with the five interchange configurations at Ten Mile Road previously presented with various operating assumptions, conditions and other improvements. A summary of the operating assumptions, travel forecasting approach, analysis methodologies and findings for the five interchange configurations with four operating environments compared with the No-Build conditions is presented below. Overall, the analyses show that the proposed interchange at Ten Mile Road does not have a significant adverse impact on the safety and operation of the interstate facility and that the new interchange with associated freeway widening will maintain or improve design year conditions.

Operating Assumptions

The operating assumptions, conditions and improvements for the four operating environments are as follows:

- **2010 Build A** assumes a new Ten Mile Interchange added to the base 2010 No-Build conditions and Ten Mile Road is widened to a five-lane facility between Franklin Road and Overland Road. There are no improvements to the Meridian and Garrity Interchanges and no widening to I-84 between Garrity Road and Meridian Road. Additional employment is added to the area in the vicinity of the Ten Mile Road Interchange to account for increased developments at freeway interchanges.
- **2010 Build B** assumes a new Ten Mile Interchange added to the base 2010 No-Build conditions and improvements. I-84 is widened to a six-lane facility between Meridian Road and Ten Mile Road and Ten Mile Road is widened to a five-lane facility between Franklin Road and Overland Road. There are no improvements to the Meridian and Garrity Interchanges. Additional employment is added to the area in the vicinity of the Ten Mile Road Interchange to account for increased developments at freeway interchanges.
- **2030 Build A** assumes a new Ten Mile Interchange added to the base 2030 No-Build conditions and improvements. I-84 is widened to a six-lane facility between Meridian Road and Garrity Mile Road and Ten Mile Road is widened to a five-lane facility between Franklin Road and Overland Road. By 2030, improvements are also assumed for the existing Meridian and Garrity Interchanges. A new westbound loop off-ramp is added to the Meridian Interchange to separate the westbound I-84 traffic to southbound Meridian Road from the northbound exiting traffic. Similarly, a new westbound fly-over off-ramp is added at the Garrity Interchange to separate the westbound I-84 traffic to southbound Garrity Road from the northbound exiting traffic. Additional employment is also added to the area in the vicinity of the Ten Mile Road Interchange to account for increased developments at freeway interchanges.

- **2030 Build B** also assumes a new Ten Mile Interchange added to the base 2030 No-Build conditions and improvements. A new interchange is also added between the Ten Mile Interchange and the Garrity Interchange in the vicinity of Robinson Road as described in the area's Long Range Transportation Plan. I-84 is widened to a six-lane facility between Ten Mile Road and Garrity Mile Road and to an eight-lane facility between Ten Mile Road and Meridian Road. Ten Mile Road is widened to a five-lane facility between Franklin Road and Overland Road. The same improvements to the existing Meridian and Garrity Interchanges, as described for 2030 Build A, are also assumed in the analysis. Additional employment is also added to the area in the vicinity of the Ten Mile Road Interchange to account for increased developments at freeway interchanges.

A comparison of the roadway and demographic assumptions assumed for each operating scenario is summarized in Table 5.

Travel Forecasting Model

The Travel Forecasting Model developed by the COMPASS for its Destination 2030 Limited Plan Update was used as a baseline to forecast travel demand within the study area for the I-84, Ten Mile Access Study. The COMPASS Model is a four step travel demand model used to forecast long-term travel demand for principal highway facilities in Ada and Canyon Counties. It includes trip generation, trip distribution, mode choice and trip assignment. Trip generation is based on the area's population, household and employment data using the area's trip generation rates. Trip distribution determines the productiveness and attractiveness of each traffic analysis zone (TAZ) in the area and determines their interaction through the use of a gravity model. The mode choice step decides which mode is used to make trips between TAZs. Trip assignment distributes trips on the highway network. A more detailed description of the COMPASS's Model can be found on the COMPASS web site. The 2030 Forecasting Model was developed by COMPASS in cooperation with the Idaho Transportation Department (ITD), Ada County, Canyon County, and local jurisdictions. The model was designed to be sensitive to changes in land use and transportation characteristics.

Base demographics used in conjunction with the Travel Forecasting Model were developed as part of their 2030 Trend Demographics analysis recently completed by COMPASS' Demographic Advisory Committee (DAC). The DAC is composed of demographers, developers, and representatives from local industries and governments. DAC develops the population and employment projections used by the travel demand model to generate ADT and VMT forecasts. Demographic projections made by the DAC are also endorsed and adopted by the COMPASS Board as the official population and employment projections for the Treasure Valley.

In March of 2004, the COMPASS Board approved countywide forecasted demographic control totals for 2005, 2010, 2015, 2025, and 2030. These control totals were then distributed in the model's traffic analysis zones (TAZ) according to a "trend" scenario, approved by the Demographic Advisory Committee. The "trend" scenario is based on the amount of vacant land, community redevelopment assumptions, current comprehensive plans, and existing densities. Overall, the "trend" scenario represents a continuation of the current land use, employment, and population growth trends.

As stated above, additional employment is added for the Build Alternatives to the area in the vicinity of the Ten Mile Road Interchange to account for increased developments at freeway interchanges.

TABLE 5: COMPARISON OF VARIOUS TRAVEL FORECASTING ALTERNATIVE ASSUMPTIONS

	2010 No-Build	2010 Build A	2010 Build B	2030 No-Build A	2030 Build A	2030 No-Build B	2030 Build B
Demographics	2010 Trend Demographics	2010 Trend Demographics; Additional Employment in 2 TAZs for Ten Mile Interchage	2010 Trend Demographics; Additional Employment in 2 TAZs for Ten Mile Interchage	2030 Trend Demographics	2030 Trend Demographics; Additional Employment in 2 TAZs for Ten Mile Interchage	2030 Trend Demographics	2030 Trend Demographics; Additional Employment in 2 TAZs for Ten Mile Interchage
Study Area Base Highway Network	2009 Base Network	2009 Base Network	2009 Base Network	2030 Base Network	2030 Base Network	2030 Base Network	2030 Base Network
I-84	2-lanes per direction from Meridian to Garrity	2-lanes per direction from Meridian to Garrity	3-lanes per direction from Ten Mile to Meridian and 2-lanes per direction from Ten Mille to Garrity	2-lanes per direction from Meridian to Garrity	3-lanes per direction from Meridian to Garrity	3-lanes per direction from Meridian to Garrity	4-lanes per direction from Meridian to Ten Mile; 3-lanes per direction from Garrity to Ten Mile
Meridian Road	5- lanes to Fairview Avenue Interchange with I-84	5- lanes to Fairview Avenue Interchange with I-84	5- lanes to Fairview Avenue Interchange with I-84	5- lanes, Interchange with I-84; Add WB off loop ramp to SB on Meridian	5- lanes, Interchange with I-84; Add WB off loop ramp to SB on Meridian	5- lanes, Interchange with I-84; Add WB off loop ramp to SB on Meridian	5- lanes, Interchange with I-84; Add WB off loop ramp to SB on Meridian
Linder Road	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes with I-84 New Overpass No interchange	2-lanes with I-84 New Overpass No interchange	2-lanes with I-84 New Overpass No interchange	2-lanes with I-84 New Overpass No interchange
Ten Mile Road	2-lanes with I-84 Overpass No interchange	5- lanes, Interchange with I-84	5- lanes, Interchange with I-84	2-lanes with I-84 Overpass No interchange	5- lanes, Interchange with I-84	2-lanes with I-84 Overpass No interchange	5- lanes, Interchange with I-84
Black Cat Road	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange
McDermott Road	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass
Robinson/Star Road	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange	4/5-lanes with I-84 Overpass No interchange	4/5-lanes with I-84 Overpass No interchange	5-lanes with New I-84 Interchange	5-lanes with New I-84 Interchange
Garrity/Can-Ada Road	5-lanes to Franklin Rd, Interchange with I-84	5-lanes to Franklin Rd, Interchange with I-84	5-lanes to Franklin Rd, Interchange with I-84	4/5-lanes to US 20/26, Interchange with I-84	4/5-lanes to US 20/26, Interchange with I-84	4/5-lanes to US 20/26, Interchange with I-84	4/5-lanes to US 20/26, Interchange with I-84
Franklin Road	5-lanes from Linder into Boise	5-lanes from Linder into Boise	5-lanes from Linder into Boise	5-lanes from Black Cat into Boise	5-lanes from Black Cat into Boise	5-lanes from Black Cat into Boise	5-lanes from Black Cat into Boise
Overland Road	5-lanes from Linder into Boise	5-lanes from Linder into Boise	5-lanes from Linder into Boise	2-lanes from Linder to Ten Mile 5-lanes from Linder to Meridian	2-lanes from Linder to Ten Mile 5-lanes from Linder to Meridian	2-lanes from Linder to Ten Mile 5-lanes from Linder to Meridian	2-lanes from Linder to Ten Mile 5-lanes from Linder to Meridian
Other Highway Network Changes							
I-84	4-lanes per direction from Meridian to Five Mile Road	4-lanes per direction from Meridian to Five Mile Road	4-lanes per direction from Meridian to Five Mile Road	4-lanes per direction from Meridian to Five Mile Road	4-lanes per direction from Meridian to Five Mile Road	4-lanes per direction from Meridian to Five Mile Road	4-lanes per direction from Meridian to Five Mile Road
SH 16	Does not cross Boise River	Does not cross Boise River	Does not cross Boise River	Cross Boise River and connects to US 20/26.	Cross Boise River and connects to US 20/26.	Cross Boise River and connects to US 20/26.	Cross Boise River and connects to US 20/26.
Meridian Rd/ Main Street				Becomes a one-way pair with 3-lanes NB and 3 lanes SB from the Fairview/Meridian int.	Becomes a one-way pair with 3-lanes NB and 3 lanes SB from the Fairview/Meridian int.	Becomes a one-way pair with 3-lanes NB and 3 lanes SB from the Fairview/Meridian int.	Becomes a one-way pair with 3-lanes NB and 3 lanes SB from the Fairview/Meridian int.
Linder Road	5 lanes from Franklin Rd to Ustick Rd (ACHD's 5 Yr Program, const. 2009)	5 lanes from Franklin Rd to Ustick Rd (ACHD's 5 Yr Program, const. year 2009)	5 lanes from Franklin Rd to Ustick Rd (ACHD's 5 Yr Program, const. year 2009)	5-lanes from Franklin Road to Ustick Road	5-lanes from Franklin Road to Ustick Road	5-lanes from Franklin Road to Ustick Road	5-lanes from Franklin Road to Ustick Road
Ten Mile Road	5 lanes from Franklin Rd to Ustick Rd (ACHD's 5 Yr Program, const. year 2007/8)	5 lanes from Overland Rd to Ustick Rd (ACHD's 5 Yr Program, const. year 2007/8)	5 lanes from Overland Rd to Ustick Rd (ACHD's 5 Yr Program, const. year 2007/8)	5-lanes from Franklin to SH 20/26	5-lanes from Overland to SH 20/26	5-lanes from Franklin to SH 20/26	5-lanes from Overland to SH 20/26

Combining the area demographic forecasts and local highway networks in COMPASS's validated Travel Demand Model, thirteen alternative simulations were run by COMPASS staff to project traffic in 2010, 2020 and 2030.

Traffic Volumes

Combining the area demographic forecasts and local highway networks in COMPASS's validated Travel Demand Model, the alternative simulations were run by COMPASS staff to project traffic in 2010 and 2030.

A summary of the average daily traffic (ADT) volumes for the four Build operating alternatives and the three No-Build alternatives for selected links on key roadways is displayed on Figure 12 for 2010 and Figure 13 for 2030. For modeling purposes, each of the five interchange configurations at Ten Mile Road have the same number of exits and entrances for traffic to and from I-84 and are not expected to change traffic volumes. For display purposes these configurations are shown as a simple diamond interchange.

For this analysis the key roadways are I-84, Garrity Road, Ten Mile Road, Meridian Road, Franklin Road and Overland Road. ADT for the ramps at the existing Garrity, Meridian and Eagle Interchanges and the proposed interchanges at Ten Mile Road and Robinson Road are also summarized.

A review of these ADT volumes reveals the following observations:

- A comparison of the 2010 No-Build Alternative with 2010 Build A Alternative shows that there is about a 5 to 6 percent increase in daily traffic on I-84 east of Ten Mile Road with the addition of the Ten Mile Interchange but there are significant decreases in traffic volumes on the Meridian Interchange and Eagle Interchange ramps, especially the westbound off ramps.
- A comparison of the 2010 No-Build Alternative with 2010 Build B Alternative shows a higher increase of traffic on I-84 with the addition of extra traffic lanes and a decrease of traffic on Overland Road and Franklin Road, east of Ten Mile Road. This shows that there is additional demand for travel on I-84 that is now using surface streets because of congestion on I-84.
- A comparison of the 2030 No-Build A Alternative with 2030 No-Build B Alternative shows that there can be approximately 8 to 31 percent increase of traffic on I-84 by increasing the lanes on I-84 to 3-lanes in each direction and adding the Robinson Interchange. It also shows that these changes will reduce the volumes on some of the Meridian Interchange and Eagle Interchange ramps where current congestion exists.
- A comparison of the 2030 No-Build A Alternative with 2030 Build A Alternative shows that the volume on I-84 is increasing by about 9 to 43 percent with the addition of the Ten Mile Interchange and widening of I-84. It also shows that the overloaded westbound off-ramps and eastbound on-ramps at the Meridian Interchange are significantly reduced. Similarly, the overloaded westbound off-ramp and eastbound on-ramps at Eagle Road are also reduced. Overall, traffic at the Meridian Interchange is expected to be reduced by about 20 percent and traffic at the Eagle Interchange is expected to be reduced by about five percent.
- A comparison of the 2030 No-Build B Alternative with 2030 Build B Alternative shows that the addition of the Ten Mile Interchange with I-84 widening to 4-lanes between Ten Mile

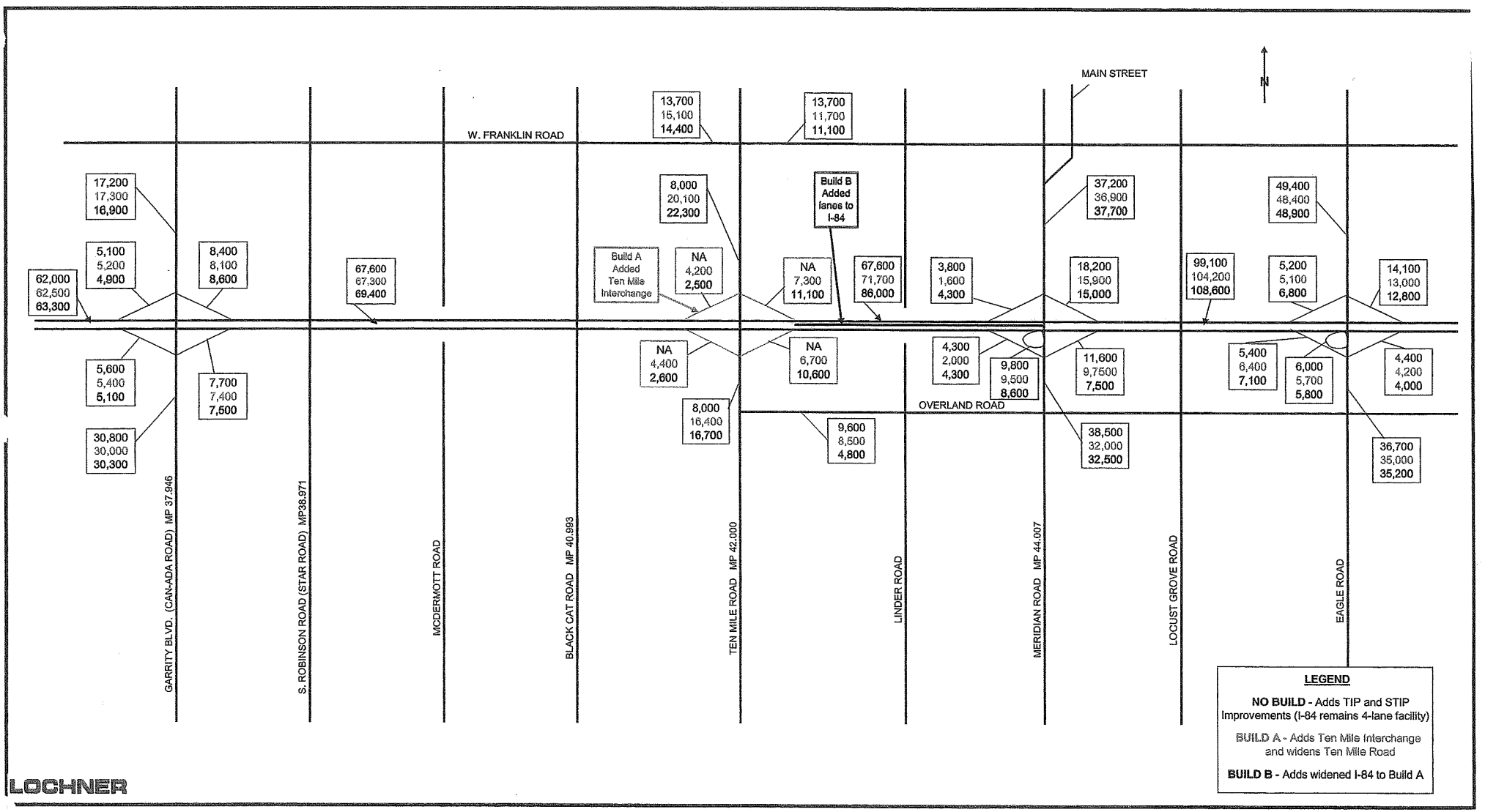


FIGURE 12
COMPARISON OF 2010 AVERAGE DAILY TRAFFIC VOLUMES
NO-BUILD, BUILD A AND BUILD B OPERATING SCENARIOS

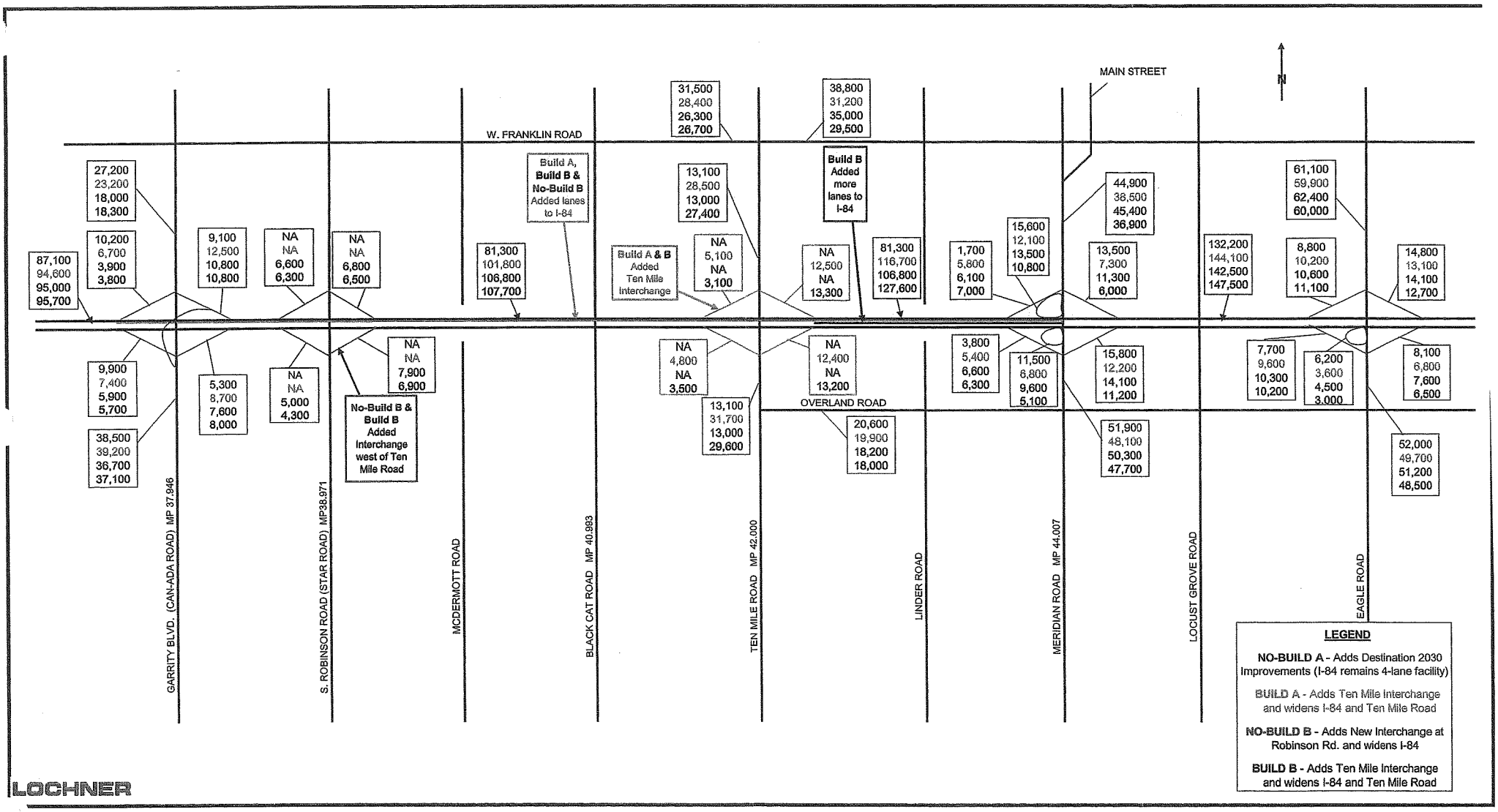


FIGURE 13
COMPARISON OF 2030 AVERAGE DAILY TRAFFIC VOLUMES
NO-BUILD A, NO-BUILD B, BUILD A AND BUILD B OPERATING SCENARIOS

Road and Meridian Road increases volume on I-84 between Ten Mile Road and Meridian Road by about 20 percent. On other segments of I-84, traffic volumes increase by less than 4 percent. It also shows that the ramps at the Meridian Interchange and Eagle Interchange are significantly reduced except for the westbound on-ramps. Overall, traffic at the Meridian Interchange is expected to be reduced by about 24 percent and traffic at the Eagle interchange is expected to be reduced by about eight percent.

Interstate Traffic Analyses

Traffic analyses were conducted for both the morning (AM) and afternoon (PM) design peak hours for the opening year (2010) and horizon year (2030). Daily to design peak hour (K) traffic volume factors and directional distribution factors were developed for each period based on actual traffic count data for I-84, Meridian Road, Garrity Road and Ten Mile Road and historical information from ITD. For this study, the following factors were assumed:

Factors	AM Peak Hour		PM Peak Hour	
K factor (daily to peak)	10%		11%	
D factor (Directional)				
I-84	67% / 33%		61% / 39%	
Cross Streets	Northside of Interchange	Southside of Interchange	Northside of Interchange	Southside of Interchange
Meridian	51% / 49%	68% / 32%	52% / 48%	61% / 39%
Ten Mile	51% / 49%	68% / 32%	52% / 48%	61% / 39%
Garrity	68% / 32%	51% / 49%	61% / 39%	52% / 48%

By applying these factors to the ADT volumes, AM and PM design peak hour traffic was developed.

The interstate traffic analyses were performed using the methodologies and procedures contained in the *2000 Highway Capacity Manual* (HCM). The interstate level of service (LOS) analysis was conducted using the *2000 Highway Capacity Software* (HCS) to analyze freeway operations and merge/diverge conditions at ramp locations. Because each interchange configurations at Ten Mile Road have the same number of traffic exits and entrances with the same traffic volumes and sufficient merging lengths, the interchange and ramp LOS analyses are also the same. The LOS for the 2010 and 2030 Build operating scenarios are summarized in Figures 14 thru 17.

By comparing these Build interstate LOS analyses with the previous No-Build analyses (Figures 9 thru 11), the following observations are noted:

- **2010 No-Build**: I-84 is expected to continue having capacity deficiencies between the Garrity and Meridian Interchanges in the peak direction during both morning and afternoon peak hours. (See Figure 9)

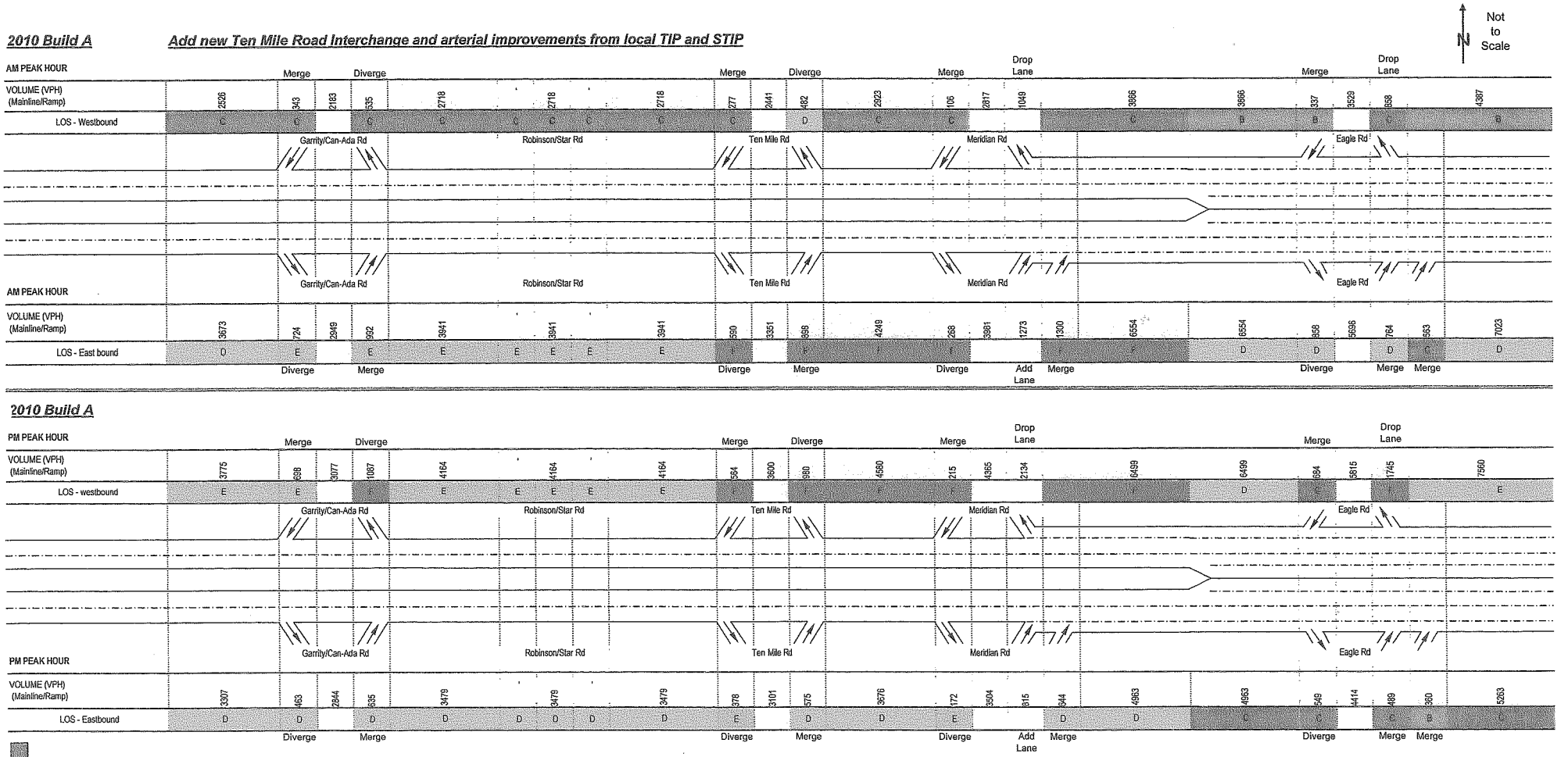


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Figure 14

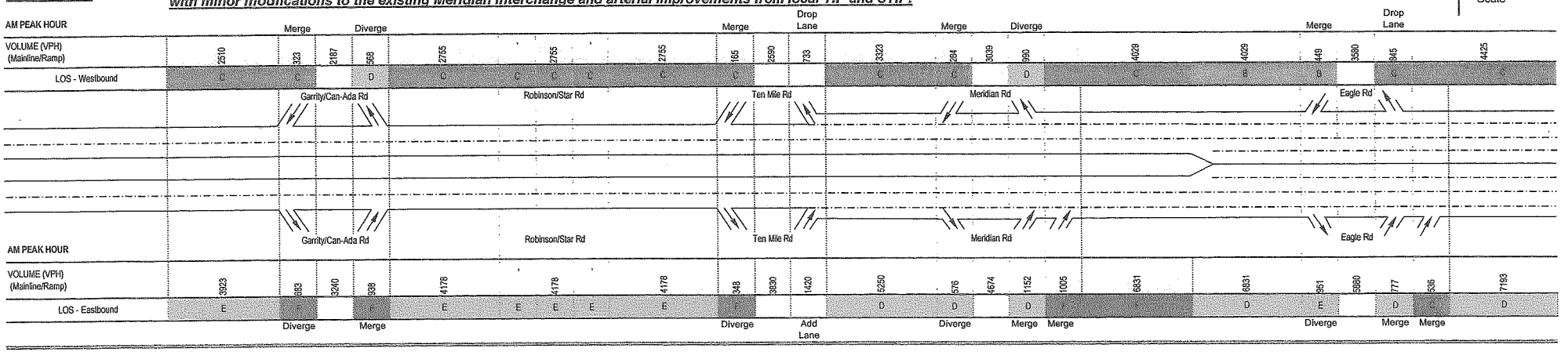
2010 Build A - AM and PM Peak Hour Traffic Volumes and Levels of Service

I-84, Ten Mile Road Access Study, Ada County, Idaho

2010 Build B

Add new Ten Mile Road Interchange and widen I-84 to 6-lanes from Ten Mile Road to Meridian Road with minor modfications to the existing Meridian Interchange and arterial improvements from local TIP and STIP.

Not to Scale



2010 Build B

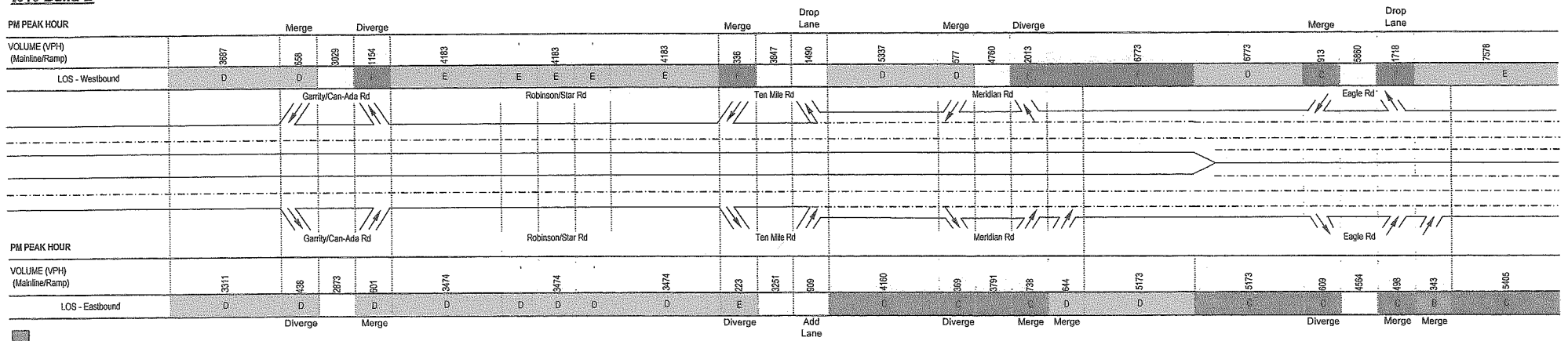


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Figure 15

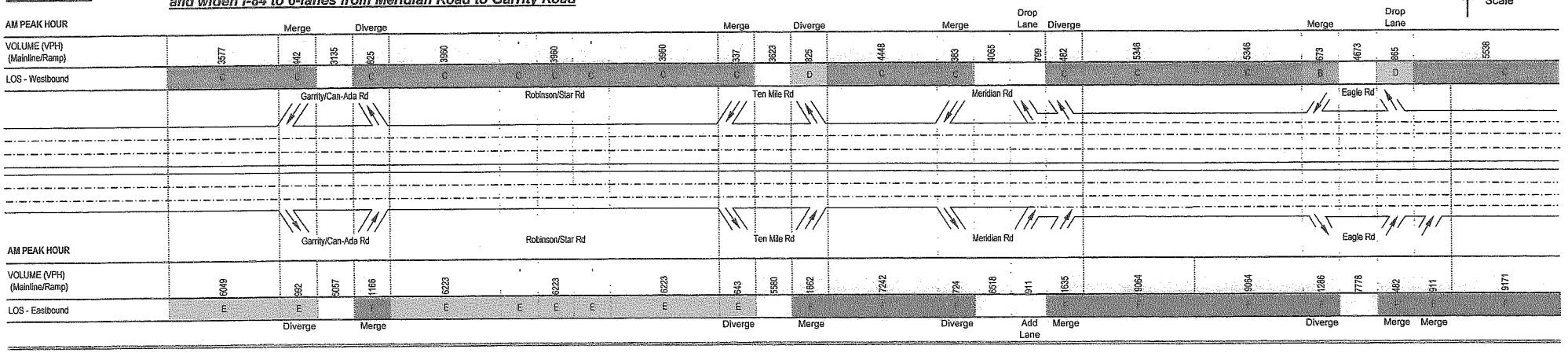
2010 Build B - AM and PM Peak Hour Traffic Volumes and Levels of Service

I-84, Ten Mile Road Access Study, Ada County, Idaho

2030 Build A

Add new Ten Mile Road Interchange, includes "Destination 2030" arterial improvements, modified Meridian Interchange and Garrity Interchange, and widen I-84 to 6-lanes from Meridian Road to Garrity Road

Not to Scale



2030 Build A

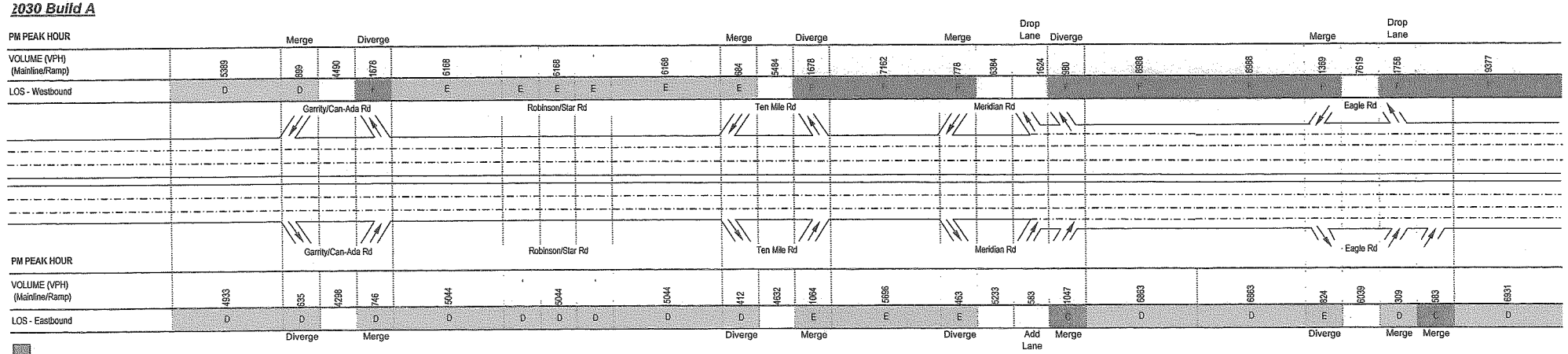


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Figure 16

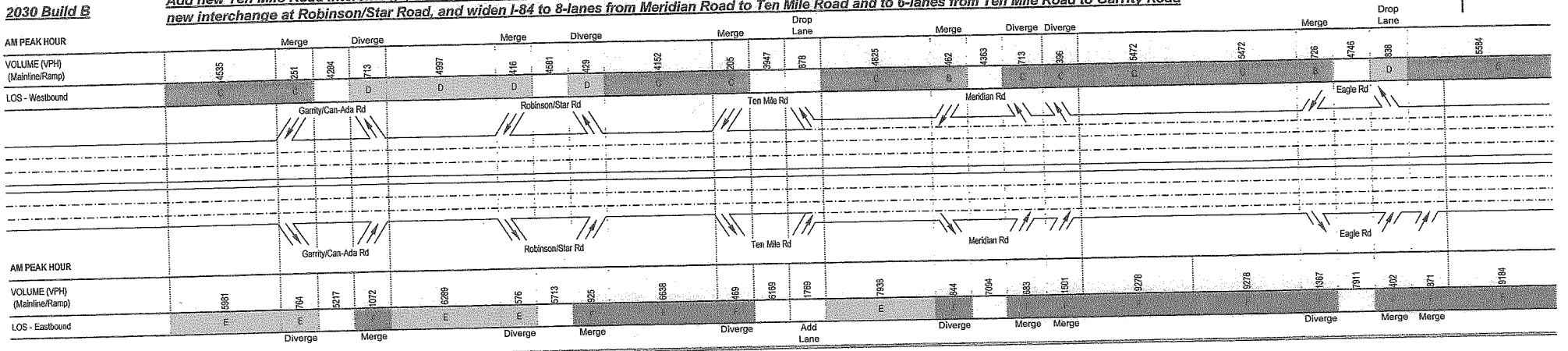
2030 Build A - AM and PM Peak Hour Traffic Volumes and Levels of Service

I-84, Ten Mile Road Access Study, Ada County, Idaho

2030 Build B

Add new Ten Mile Road Interchange, include "Destination 2030" arterial improvements, modified Meridian Interchange and Garrity Interchange, new interchange at Robinson/Star Road, and widen I-84 to 8-lanes from Meridian Road to Ten Mile Road and to 6-lanes from Ten Mile Road to Garrity Road

Not to Scale



2030 Build B

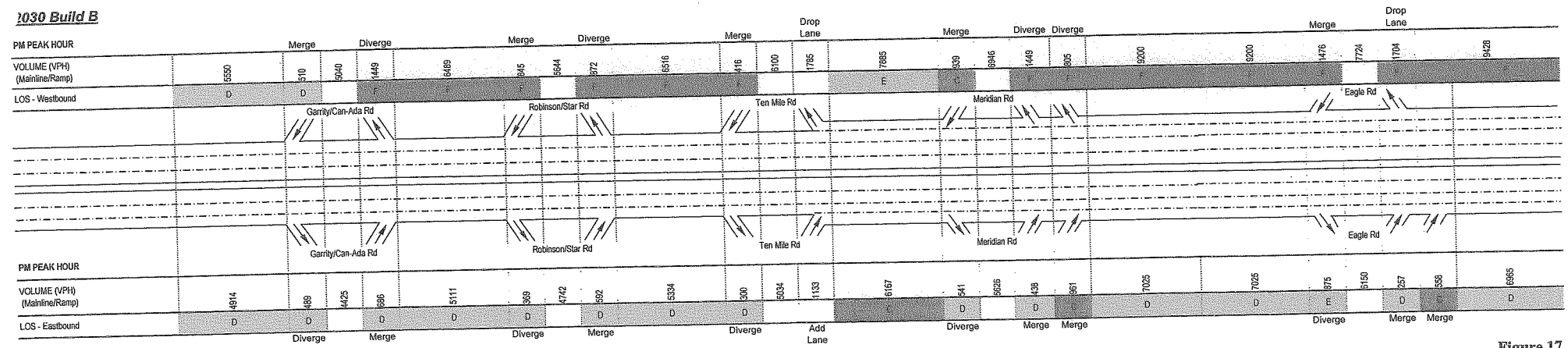


Figure 17

2030 Build B - AM and PM Peak Hour Traffic Volumes and Levels of Service

I-84, Ten Mile Road Access Study, Ada County, Idaho

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- **2010 Build A**: By adding the new interchange at Ten Mile Road, the morning peak hour, peak direction LOS on I-84 transitions from LOS E to LOS F between the Meridian and Ten Mile Interchanges; whereas, the afternoon peak hour, peak direction LOS transitions from LOS F to LOS E between the Garrity and Ten Mile Interchanges. These LOS changes are caused by the slight shifts in traffic volumes along sections of I-84 that are near the threshold volumes. Overall, the addition of the new interchange is not expected to have a significant adverse impact on the operation of the I-84. (See Figure 14)
- **2010 Build B**: By adding the new interchange at Ten Mile Road and widening I-84 to 3-lanes in each direction between the Meridian and the Ten Mile Interchanges, the overall traffic operation along I-84 is improved. The morning peak hour, peak direction LOS on I-84 transitions from LOS E to LOS D between the Meridian and Ten Mile Interchanges. Similarly, the afternoon peak hour, peak direction LOS on I-84 transitions from LOS F to LOS E between the Garrity and Ten Mile Interchanges and from LOS F to LOS D between the Meridian and Ten Mile Interchanges. (See Figure 15)
- **2030 No-Build A**: By 2030 with no improvement to I-84 capacity and no new interchange, operations along I-84 is expected to continue to degrade and will have capacity deficiencies between the Garrity and Meridian Interchanges in the peak direction during both morning and afternoon peak hours and also in the off-peak direction during the afternoon peak hour. (See Figure 10)
- **2030 Build A**: By adding the new interchange at Ten Mile Road and widening I-84 to 3-lanes in each direction between the Meridian and the Garrity Interchanges, these improvements will improve the LOS on I-84 in the off-peak direction during the afternoon peak hour. Also during the morning peak hour and afternoon peak hour traffic in the peak travel direction, the LOS on I-84 is expected to transition from LOS F to LOS E between the Garrity and Ten Mile Interchanges and to remain at LOS F between the Ten Mile and Meridian Interchanges. This implies that by adding the new interchange at Ten Mile Road and widening I-84 to 3-lanes in each direction between the Meridian and the Ten Mile Interchanges as proposed in the 2010 Build B Alternative, traffic operations along I-84 would be better than doing nothing. (See Figure 16)
- **2030 No-Build B**: By adding the new interchange at Star/Robinson Road and widening I-84 to 3-lanes in each direction between the Meridian and the Garrity Interchanges, I-84 is expected to continue having capacity deficiencies between the Garrity and Meridian Interchanges in the peak direction during both morning and afternoon peak hours; while traffic operations in the non-peak direction would improve. (See Figure 11)
- **2030 Build B**: By adding the new interchange at Ten Mile Road and widening I-84 to 4-lanes in each direction between the Meridian and Ten Mile Interchanges, these improvements will improve the afternoon peak hour LOS on the segment of I-84 between the Ten Mile and Meridian Interchanges in the off-peak direction from LOS D to LOS C. Similarly, the morning peak hour and afternoon peak hour LOS on the segment of I-84 between the Meridian and Ten Mile Interchanges is expected to transition from LOS F to LOS E in the peak travel direction. (See Figure 17)

In summary, the addition of an interchange at Ten Mile Road is not expected to have a significant adverse impact on the operation of the Interstate. In addition, by adding the interchange at Ten Mile Road and widening I-84 to 3-lanes in each direction between the Meridian and the Ten Mile

Interchanges by 2010, traffic operations along I-84 will improve. If no additional changes are made to I-84 in the project area by 2030, traffic operations along I-84 would be better with the Ten Mile Interchange and widening I-84 to 3-lanes in each direction between the Meridian and the Ten Mile Interchanges than not adding the new interchange.

Ramp Intersection Analysis

The analyses of ramp intersections at various cross street locations were analyzed using Synchro software. This software package analyzes the intersection LOS and vehicle queuing conditions.

Summaries of the 2010 and 2030 No-Build and Build conditions at the I-84 ramp terminal intersection analyses for the Meridian and Garrity Interchanges as well as the various optional interchange configurations at Ten Mile Road are presented in Tables 6 and 7, respectively.

A review of these summaries shows the following:

- The addition of the Ten Mile Interchange will improve the ramp intersection operations with Meridian Road and Garrity Road and significantly reduce average delay times at these intersections.
- The standard diamond interchange and off-set diamond interchange configuration have better intersection levels of service and low average delay times than the other interchange configurations analyzed.
- The off-set single point urban interchange configuration has the lowest level of service and longer average delay times because all traffic movements are at a single intersection.

Travel Time Comparison

An alternate way to evaluate the effect of adding the Ten Mile Interchange on the operation of I-84 is to analyze the travel time impacts along I-84. For this analysis, congested travel times were derived from COMPASS's Travel Forecasting Model directly associated with the traffic forecasts for 2010 and 2030. The travel times, rounded to the nearest tenth of a minute, are estimated for a segment along I-84 from the Franklin Boulevard Interchange to the Wye in Boise which includes the project area. These travel times by direction are summarized below:

Operating Scenario	Eastbound (minutes)	Westbound (minutes)
2010		
No-Build	16.7	17.2
Build A	17.0	17.6
Build B	16.7	17.4
2030		
No-Build A	21.4	22.4
Build A	19.8	20.9
No-Build B	19.6	20.7
Build B	19.6	20.6

This analysis shows that the addition of the Ten Mile Interchange will have less than a half minute of travel time impact on traffic along I-84 in 2010. By 2030, the addition of the Ten Mile Interchange with a widened I-84 (as configured in 2030 Build A) will improve average travel time along I-84 in 2030 by about 1.5 minutes.

TABLE 6: SUMMARY OF RAMP TERMINAL INTERSECTION 2010 LOS ANALYSIS BY ALTERNATIVE

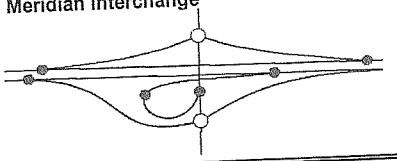
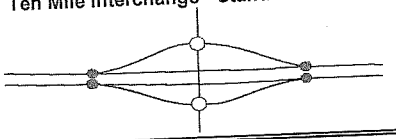
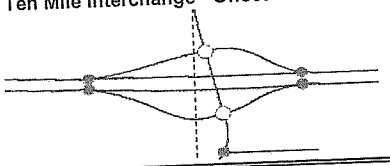
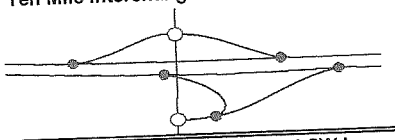
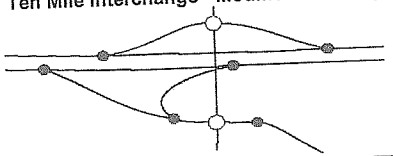
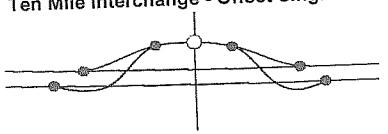
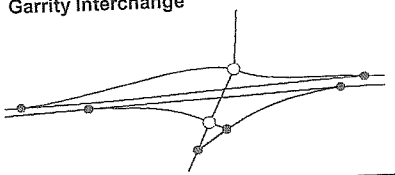
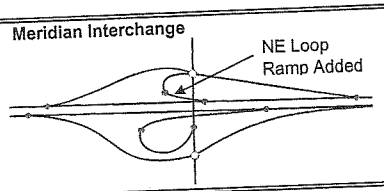
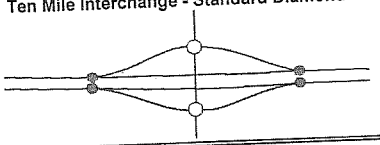
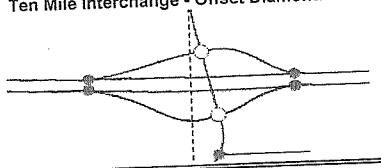
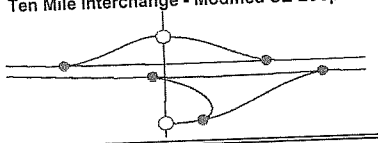
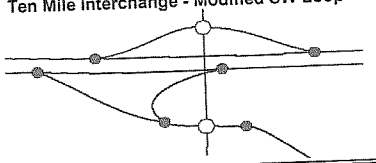
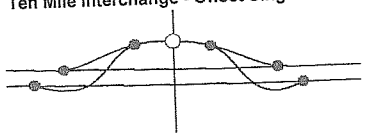
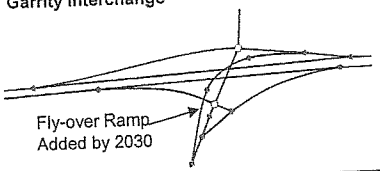
INTERCHANGE	INTERSECTION LOCATION	TIME PERIOD	2010 LOS Analysis			2010 Delay Analysis			2010 V/ C Analysis		
			No-Build	Build A	Build B	No-Build	Build A	Build B	No-Build	Build A	Build B
Meridian Interchange 	Northside WB	AM Peak Hour	D	C	C	38.3	27.8	34.5	0.96	0.96	0.94
		PM Peak Hour	F	F	F	146.0	111.6	92.3	1.35	1.26	1.22
	Southside EB	AM Peak Hour	D	B	B	40.6	12.8	15.9	1.20	0.94	0.97
		PM Peak Hour	A	A	A	7.8	3.9	6.7	0.84	0.66	0.72
Ten Mile Interchange - Standard Diamond 	Northside WB	AM Peak Hour	NA	B	B	NA	10.8	13.6	NA	0.50	0.68
		PM Peak Hour	NA	B	C	NA	15.7	27.9	NA	0.75	0.83
	Southside EB	AM Peak Hour	NA	B	C	NA	18.9	22.0	NA	0.95	1.06
		PM Peak Hour	NA	B	A	NA	12.6	12.1	NA	0.56	0.54
Ten Mile Interchange - Offset Diamond 	Northside WB	AM Peak Hour	NA	B	B	NA	10.8	13.6	NA	0.50	0.68
		PM Peak Hour	NA	B	C	NA	15.7	27.9	NA	0.75	0.83
	Southside EB	AM Peak Hour	NA	B	C	NA	18.9	22.0	NA	0.95	1.06
		PM Peak Hour	NA	B	A	NA	12.6	12.1	NA	0.56	0.54
Ten Mile Interchange - Modified SE Loop 	Northside WB	AM Peak Hour	NA	B	B	NA	13.9	16.3	NA	0.49	0.62
		PM Peak Hour	NA	B	B	NA	15.4	19.7	NA	0.75	0.68
	Southside EB	AM Peak Hour	NA	B	C	NA	13.6	21.8	NA	0.92	0.94
		PM Peak Hour	NA	B	B	NA	12.4	19.9	NA	0.54	0.54
Ten Mile Interchange - Modified SW Loop 	Northside WB	AM Peak Hour	NA	B	B	NA	16.6	14.6	NA	0.50	0.65
		PM Peak Hour	NA	C	C	NA	23.0	25.1	NA	0.67	0.84
	Southside EB	AM Peak Hour	NA	D	D	NA	43.4	44.7	NA	1.01	1.13
		PM Peak Hour	NA	D	C	NA	36.3	28.2	NA	0.84	0.92
Ten Mile Interchange - Offset Single Point Urban 	Northside WB & EB	AM Peak Hour	NA	D	D	NA	40.4	32.1	NA	1.09	1.22
		PM Peak Hour	NA	C	D	NA	26.5	50.2	NA	0.65	1.28
Garrity Interchange 	Northside WB	AM Peak Hour	B	C	C	15.8	20.1	20.1	0.74	0.81	0.80
		PM Peak Hour	F	E	F	96.3	68.9	82.1	1.19	1.14	1.17
	Southside EB	AM Peak Hour	B	B	B	17.5	16.7	16.9	0.82	0.84	0.84
		PM Peak Hour	B	B	B	16.1	14.0	12.5	0.73	0.64	0.65

TABLE 7: SUMMARY OF RAMP TERMINAL INTERSECTION 2030 LOS ANALYSIS BY ALTERNATIVE

INTERCHANGE	INTERSECTION LOCATION	TIME PERIOD	2030 LOS Analysis No-Build A	2030 LOS Analysis Build A	2030 LOS Analysis No-Build B	2030 LOS Analysis Build B	2030 Delay Analysis (average seconds/vehicle) No-Build A	2030 Delay Analysis Build A	2030 Delay Analysis No-Build B	2030 Delay Analysis Build B	2030 V/C Analysis (Volume/Capacity) No-Build A	2030 V/C Analysis Build A	2030 V/C Analysis No-Build B	2030 V/C Analysis Build B
Meridian Interchange 	Northside WB	AM Peak Hour	E	C	D	C	60.5	23.4	49.3	20.2	1.08	0.88	1.03	0.86
		PM Peak Hour					260.0	112.0	129.2	81.9	1.53	1.23	1.51	1.22
	Southside EB	AM Peak Hour					160.2	104.7	151.2	105.0	1.51	1.33	1.49	1.34
		PM Peak Hour		D	E	D	88.0	46.8	67.5	28.9	1.21	1.07	1.15	1.06
Ten Mile Interchange - Standard Diamond 	Northside WB	AM Peak Hour	NA	B	NA	C	NA	19.2	NA	21.4	NA	0.77	NA	0.75
		PM Peak Hour	NA	D	NA	D	NA	36.6	NA	50.9	NA	0.93	NA	1.05
		LOS E config.												
	Southside EB	AM Peak Hour	NA	C	NA	B	NA	28.6	NA	16.6	NA	1.11	NA	0.98
		PM Peak Hour	NA	B	NA	A	NA	10.8	NA	6.4	NA	0.97	NA	0.80
Ten Mile Interchange - Offset Diamond 	Northside WB	AM Peak Hour	NA	B	NA	C	NA	19.2	NA	21.4	NA	0.77	NA	0.75
		PM Peak Hour	NA	D	NA	D	NA	36.6	NA	50.9	NA	0.93	NA	1.05
	Southside EB	AM Peak Hour	NA	C	NA	B	NA	28.6	NA	16.6	NA	1.11	NA	0.98
		PM Peak Hour	NA	B	NA	A	NA	10.8	NA	6.4	NA	0.97	NA	0.80
Ten Mile Interchange - Modified SE Loop 	Northside WB	AM Peak Hour	NA	B	NA	C	NA	19.2	NA	22.9	NA	0.71	NA	0.78
		PM Peak Hour	NA	D	NA	D	NA	53.2	NA	49.7	NA	1.08	NA	1.06
	Southside EB	AM Peak Hour	NA	D	NA	D	NA	42.8	NA	51.3	NA	1.38	NA	1.28
		PM Peak Hour	NA	B	NA	B	NA	19.1	NA	17.0	NA	0.80	NA	0.81
Ten Mile Interchange - Modified SW Loop 	Northside WB	AM Peak Hour	NA	B	NA	C	NA	18.4	NA	21.9	NA	0.81	NA	0.70
		PM Peak Hour	NA	E	NA	D	NA	55.7	NA	51.5	NA	1.06	NA	1.03
	Southside EB	AM Peak Hour	NA	[illegible]	NA	[illegible]	NA	135.7	NA	157.0	NA	1.45	NA	1.37
		PM Peak Hour	NA	[illegible]	NA	[illegible]	NA	196.7	NA	161.0	NA	1.55	NA	1.40
Ten Mile Interchange - Offset Single Point Urban 	Northside WB & EB	AM Peak Hour	NA	[illegible]	NA	[illegible]	NA	87.9	NA	93.8	NA	1.61	NA	1.69
		PM Peak Hour	NA	E	NA	E	NA	60.1	NA	57.4	NA	1.36	NA	1.42
Garrity Interchange 	Northside WB	AM Peak Hour	B	A	A	A	10.7	9.2	6.4	6.6	0.72	0.67	0.53	0.53
		PM Peak Hour	C	B	A	A	29.1	16.6	9.9	9.8	1.19	0.91	0.65	0.65
	Southside EB	AM Peak Hour	B	A	A	A	11.3	9.8	5.5	5.9	0.71	0.61	0.44	0.45
		PM Peak Hour	C	B	B	A	29.5	16.7	10.0	9.6	0.98	0.83	0.69	0.69

POLICY 4: A FULL INTERCHANGE AT A PUBLIC ROAD IS PROVIDED

"The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" for special purpose access for transit vehicles, for HOV's, or into park and ride lots may be considered on a case-by-case basis. The proposed access will be designed to meet or exceed current standards for Federal-aid projects on the Interstate System." (Federal Register 2/11/1998 Vol. 63, No. 28, Page 7046)

The new interchange will connect to Ten Mile Road, north and south of I-84, which meets the criteria of connecting with a public road. Currently, Ten Mile Road is a 2-lane minor arterial with one lane in each direction. Ten Mile Road connects US 20/26 in the north and to the town of Kuna about six miles south of I-84. The existing Ten Mile Road/I-84 overpass has one lane in each direction. North of West Franklin Road, Ten Mile Road is designated North Ten Mile Road and south of West Franklin Road, Ten Mile Road is designated as South Ten Mile Road. The speed limit on Ten Mile Road varies from 35 to 50 miles per hour. The Long Range Plan for Ada County has Ten Mile Road being widened to a 5-lane facility as development and traffic warrants.

Based on the estimated growth in the area, the traffic model for the area with the proposed interchange at Ten Mile Road indicates that daily traffic on Ten Mile Road north of I-84 would range from about 20,000 to 22,500 vehicles and from about 16,000 to 17,000 vehicles per day south of I-84 by 2010. These volumes exceed the estimated threshold capacity (15,600 to 16,900 vehicles per day) for a two-lane arterial roadway. As a result, a four/five-lane facility would be required to accommodate this expected traffic volume in 2010.

Ada County Highway Department (ACHD) has scheduled improvements to widen Ten Mile Road to 5-lanes from Franklin Road to Ustick Road in their TIP. In the Long Range Transportation Plan Ten Mile Road is to be widened from Franklin Road to Overland Road as development occurs and has acknowledged an I-84/Ten Mile Road Interchange in their planning process.

The proposed interchange is designed as a "full interchange" that accommodates all movements. Five interchange design options are presently being considered for detailed engineering, environmental and operational analyses. These options include a Standard Diamond Interchange, an Offset Diamond Interchange, a modified SE-Loop Interchange, a modified SW-Loop Interchange, and an Offset Single Point Urban Interchange.

The selected interchange will be constructed in conjunction with the widening of I-84 between Ten Mile Road and Meridian Road and with the re-alignment of the southwest loop on-ramp at the Meridian Interchange.

The new interchange can be constructed in two ways depending on the final configuration selected through the environmental process. The first method would be to close the existing Ten Mile Road overpass to traffic and construct the full interchange along the existing alignment. Traffic would be diverted to the Black Cat Road overpass and/or across the Meridian Interchange.

The second method would be to offset the new bridge structure to allow construction of the bridge and eastside ramps without closing the existing overpass. Once the new structure is erected, traffic would be diverted to the new offset alignment. The existing structure would then be demolished and the west side ramps constructed.

While the new interchange is being constructed, the existing southwest loop on-ramp at the Meridian Interchange is being re-aligned so a third through lane can be added under the existing Meridian Road structure. A temporary revision to the traffic signal at Meridian Road/Eastbound On-ramp will be used to allow southbound traffic on Meridian Road to turn left onto the eastbound on-ramp.

A third lane in each direction will also be added to I-84 between Ten Mile Road and Meridian Road while the new interchange is being constructed. In the westbound direction, the new lane will transition into an exit-only lane at the new Ten Mile Interchange. In the eastbound direction, the eastbound on-ramp at the Ten Mile Interchange will form the new lane.

POLICY 5: THE PROPOSAL IS CONSISTENT WITH LOCAL AND REGIONAL PLANS

"The proposal considers and is consistent with local and regional land use and transportation plans. Prior to final approval, all requests for a new or revised access must be consistent with the metropolitan and/or statewide transportation plans, as appropriate, the applicable provisions of 23 CFR part 450 and the transportation conformity requirements of 40 CFR parts 51 and 93" (Federal Register 2/11/1998 Vol. 63, No. 28, Page 7046)

The new interchange at Ten Mile Road and I-84 is consistent with regional, county and local plans. Community Planning Association (COMPASS) of Southwest Idaho is the Metropolitan Planning Organization for the project area has included it in their current Destination 2025 Long Range Transportation plan, as well as in their Destination 2030 Plan Update.

In the November 15-16, 2001 meeting of the Idaho Transportation Board, they accepted the I-84 Corridor Study as a guide for making decisions on future improvements to the corridor. This Study recommended the Ten Mile Interchange as the first interchange to be constructed.

The City of Meridian has included the Ten Mile Interchange in their Comprehensive Plan since 1978. The City of Meridian has seen development occurring across the City, most recently to the west. To support this new growth, the City is making a $7,200,000 investment to bring water and sewer services and establishing new well sites in the Ten Mile/I-84 area.

The land area around the site is currently agricultural with a residential development in the southwest quadrant of Ten Mile Road and I-84. The area north of I-84 is designated as Mixed Use-Regional by the City of Meridian. This designation provided for development under a master or conceptual plan with innovative and flexible design encourages. Multi-family residential uses are encouraged at a density of 3 to 40 units per acre. There is no upper limit for non-residential use and may include entertainment, major employment centers and clean industry. South of I-84, the area is designated as commercial, which includes retail, wholesale, service office and limited manufacturing uses.

Ada County Highway Department (ACHD) has scheduled improvements to widen Ten Mile Road to 5-lanes from Franklin Road to Ustick Road in their TIP and has acknowledged an I-84/Ten Mile Road Interchange in their planning process.

Overall, it is supported by local and regional agencies and reportedly has broad citizen and business support.

POLICY 6: CONSISTENCY WITH MASTER PLANS

"In areas where the potential exists for future multiple interchange additions, all requests for new or revised access are supported by a comprehensive Interstate network study with recommendations that address all proposed and desired access within the context of a long-term plan." (Federal Register 2/11/1998 Vol. 63, No. 28, Page 7046)

The new interchange at Ten Mile Road and I-84 is consistent with the master planning for the area. A comprehensive I-84 Corridor Study was conducted by COMPASS in October 2001 and was adopted by the COMPASS Board. This study identified and analyzed a number of deficiencies and alternative solutions along the I-84 corridor. These solutions included improvements to existing interchanges, the addition of new interchanges and adding additional lanes to the interstate. A new interchange at Ten Mile Road was selected as the top priority for implementation of a new interchange along the I-84 corridor.

In the November 15-16, 2001 meeting of the Idaho Transportation Board, they accepted the I-84 Corridor Study as a guide for making decisions on future improvements to the corridor.

A subsequent analysis was conducted to determine the best location for this new interchange that would relieve the existing and expected congestion at the MeridianRoad/I-84 Interchange. This 2010 and 2030 traffic volume comparison showed that a new interchange at Ten Mile Road would provide better overall operation of the interstate system than one at Black Cat Road. Summaries of these comparisons are shown on Figures 18 and 19.

This comparison showed a greater reduction of traffic (about 11.5% in 2030) on the Meridian Interchange ramps for the Ten Mile Interchange Alternative than the Black Cat Interchange Alternative. It also showed that an interchange at Ten Mile Road would result in a greater reduction of traffic (about 7.6% in 2030) on the Eagle Interchange ramps than the Black Cat Interchange Alternative.

It was also noted that a Ten Mile Interchange would be about two miles from the existing Meridian Interchange and about four miles from the existing Garrity Interchange. This would allow the flexibility of adding a second interchange between Ten Mile Road and Garrity Road, if conditions warrant, while maintaining a two-mile interchange spacing through this developing area.

Overall, this analysis indicated that a new interchange at Ten Mile Road would be more beneficial in relieving traffic congestion at the existing interchange at Meridian Road than a new interchange at Black Cat Road.

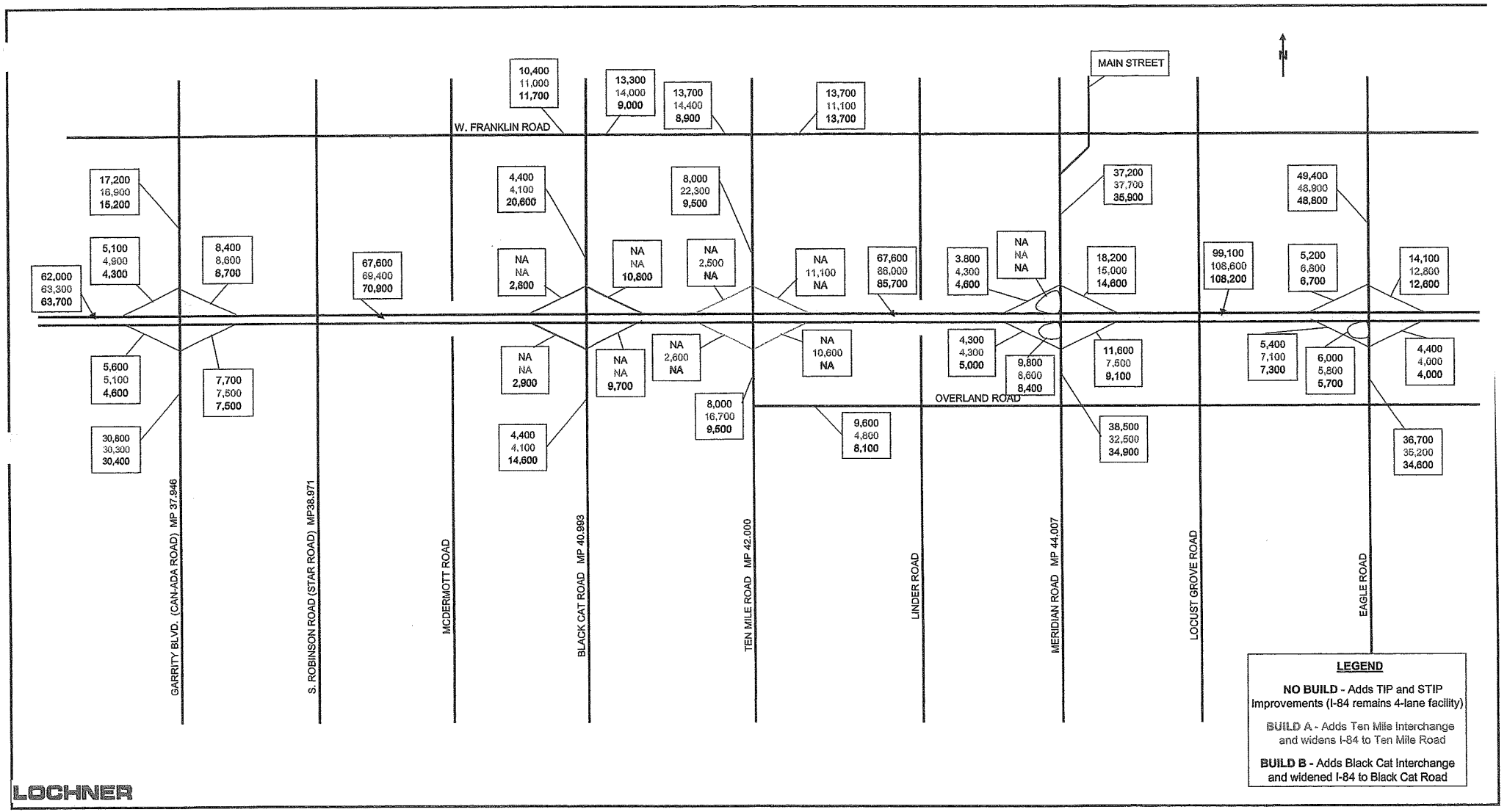


FIGURE 18

COMPARISON OF 2010 AVERAGE DAILY TRAFFIC VOLUMES FOR ALTERNATIVE INTERCHANGE LOCATION
NO-BUILD, TEN MILE INTERCHANGE AND BLACK CAT INTERCHANGE ALTERNATIVES

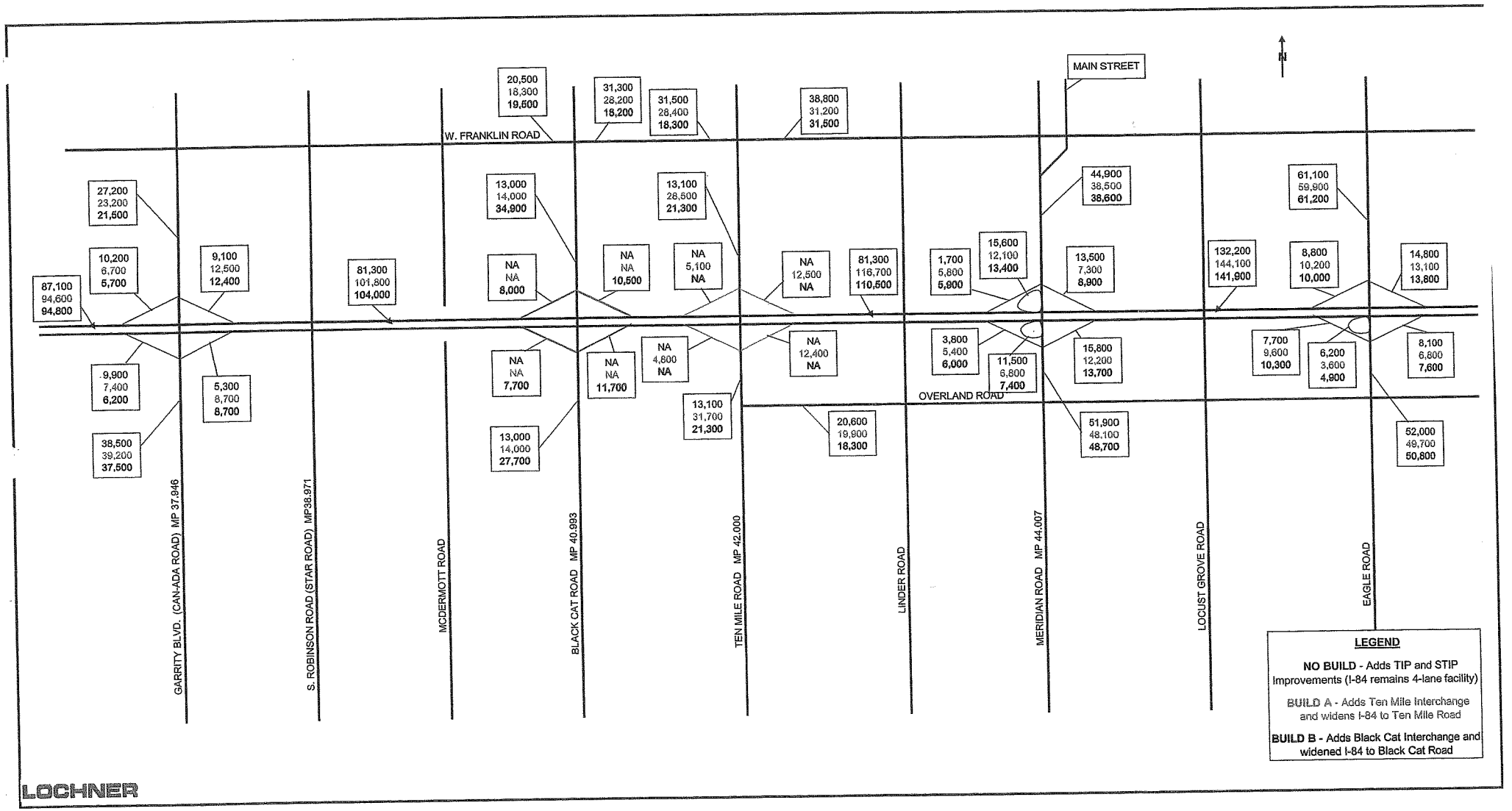


FIGURE 19

COMPARISON OF 2030 AVERAGE DAILY TRAFFIC VOLUMES FOR ALTERNATE INTERCHANGE LOCATION NO-BUILD, TEN MILE INTERCHANGE AND BLACK CAT INTERCHANGE ALTERNATIVES

POLICY 7: COORDINATED WITH THE AREA'S DEVELOPMENT

"The request for new or revised access generated by new or expanded development demonstrates appropriate coordination between the development and related or otherwise required transportation system improvements." (Federal Register 2/11/1998 Vol. 63, No. 28, Page 7046)

The new Interchange at Ten Mile Road is consistent with this policy and would support the land use and development plans for the area.

Area Development

The growth of the area in and around the City of Meridian has been steadily increasing over the last 15 years. The City's population has grown from about 9,600 persons in 1990 to nearly 47, 700 in 2004, nearly 400 percent. This development has been occurring across the City but most recently to the west. The population in the City of Meridian is also expected to grow to about 100,000 by 2030. To support this new growth, the City is making a $7,200,000 investment to bring water and sewer services and establishing new well sites in the Ten Mile/I-84 area.

Improved access to the area from I-84 will help support the existing and current development. It will also add economic benefit to the area in the form of new jobs and help focus growth in accordance with the land use plan. Based on recent development estimates, the City expects 9,500 new jobs in the Ten Mile Road / I-84 area over the next 20 years.

The City has developed its land use plan to support this growth in an organized manner. Their future land use plan centers commercial and regional mixed use growth along the Ten Mile Road corridor which is surrounded by increased residential development as shown in Figure 20.

Ada County has adopted a similar land use plan as part of their overall comprehensive planning effort. In addition, they have identified various roadway improvements needed to support the existing and future developments in the area. These highway improvements are included in their TIP and in COMPASS's Destination 2030 Plan Update.

Even with these improvements, traffic congestion along I-84 and at the existing Meridian Interchange is expected to grow worse. The overall growth in traffic along I-84 is generated from both regional and local development and not associated with any specific development. By adding a new interchange and adding new capacity to the interstate, the operations of the interstate and interchanges would be better in 2030 than by doing nothing.

The overall growth in traffic along I-84 is generated from both regional and local development and not associated with any specific development. However, the City of Meridian is working with local landowners and developers to develop a Local Improvement District (LID) in the vicinity of the Ten Mile Road and I-84 to help finance the Ten Mile Interchange and associated improvements.

Coordination of Area Development Potential with Traffic Forecasts

To ensure consistency between the area development and traffic forecasts, the area Travel Forecasting Model uses area demographics developed as part of their 2030 Trend Demographics analysis recently completed by COMPASS' Demographic Advisory Committee (DAC). The DAC is composed of demographers, developers, and representatives from local industries and governments. DAC develops the population and employment projections used by the travel demand model to

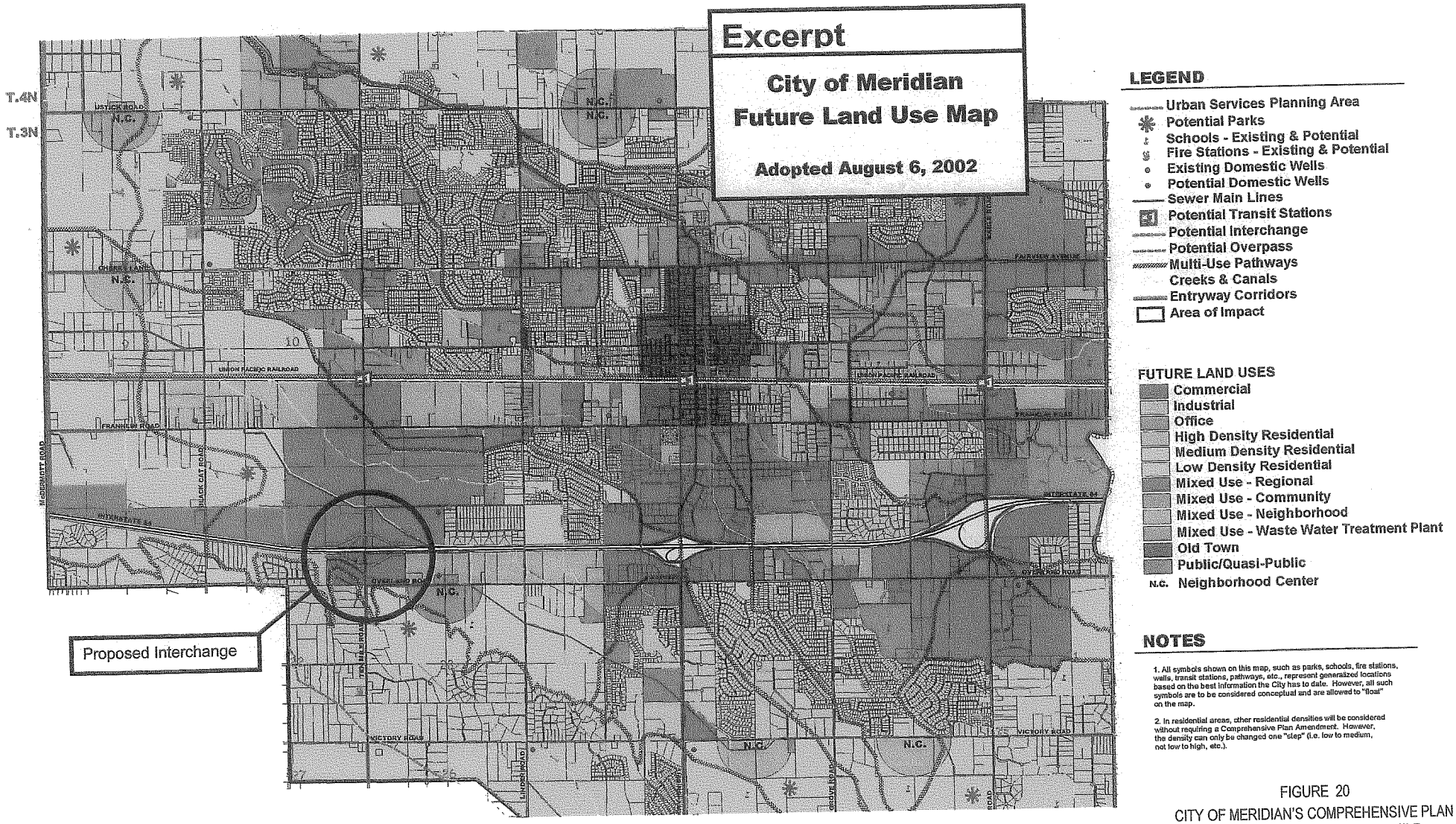


FIGURE 20

CITY OF MERIDIAN'S COMPREHENSIVE PLAN IN THE VICINITY OF THE TEN MILE INTERCHANGE

generate ADT and VMT forecasts. Demographic projections made by the DAC are also endorsed and adopted by the COMPASS Board as the official population and employment projections for the Treasure Valley.

In March of 2004, the COMPASS Board approved countywide forecasted demographic control totals for 2005, 2010, 2015, 2025, and 2030. These control totals were then distributed in the model's traffic analysis zones according to a "trend" scenario, approved by the Demographic Advisory Committee. The "trend" scenario is based on the amount of vacant land, community redevelopment assumptions, current comprehensive plans, and existing densities. Overall, the "trend" scenario represents a continuation of the current land use, employment, and population growth trends.

These demographics are currently being used for the Destination 2030 Limited Plan Update. Upon adoption of the Destination 2030 Limited Plan Update, the "trend" demographic will be the official demographic forecast for COMPASS.

For the I-84 Ten Mile Access Study, the Trend Demographics were used for the No-Build scenarios. For the Build scenarios, additional employment was added to two traffic analysis zones (TAZs) in the vicinity of Ten Mile Road to represent the added employment that may be generated in the immediate vicinity of the interchange as access is improved. A summary of the demographics used for the No-Build and Build scenarios by year in the vicinity of Ten Mile Road is shown below. A map of the TAZs in the study area is shown on Figure 21.

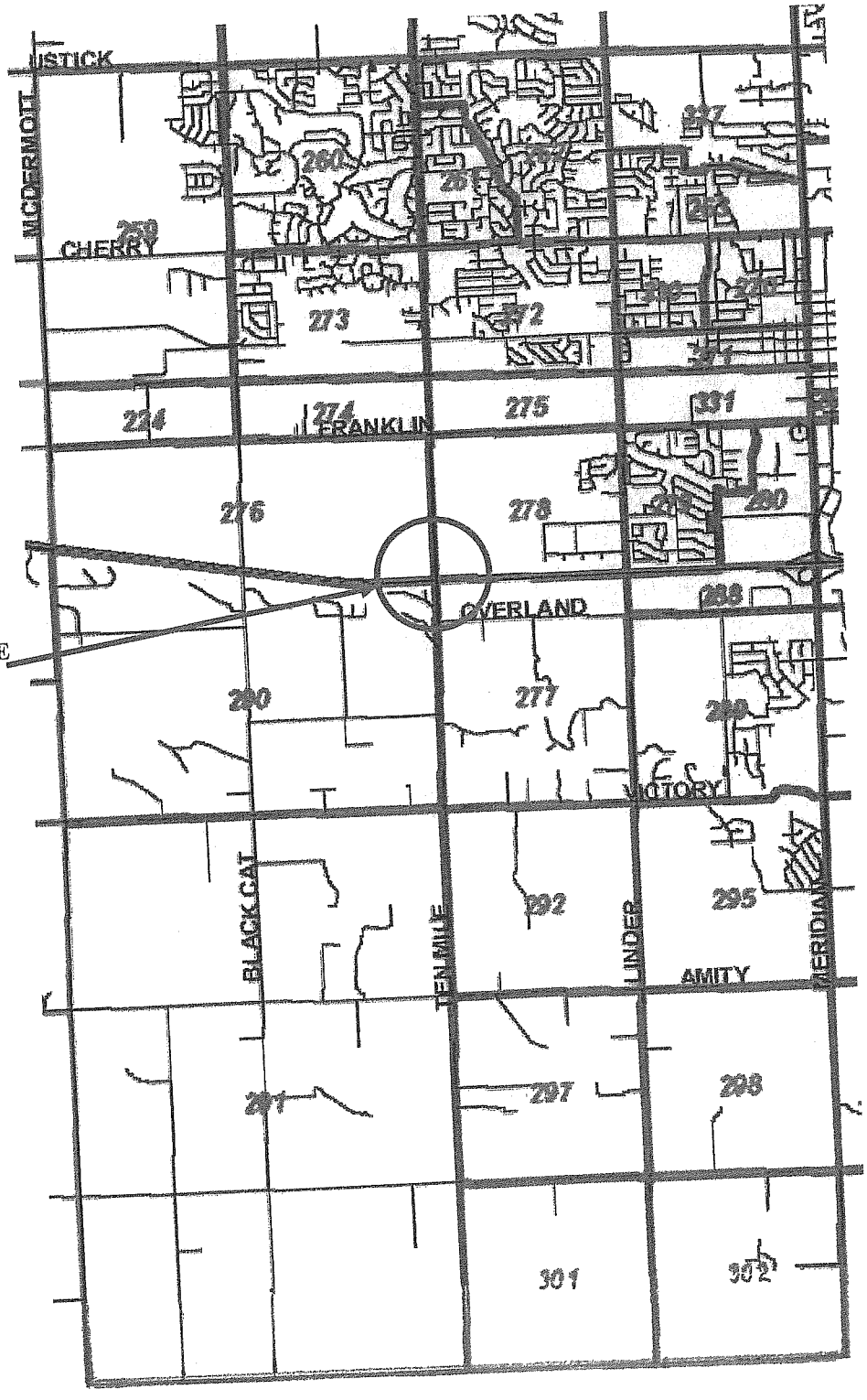
Demographic Category	No-Build Alternatives (without Ten Mile Interchange)	Build Alternatives (without Ten Mile Interchange)
2010		
Population	33,361	33,361
Households	11,684	11,684
Employment	6,800	10,270
2030		
Population	65,261	65,261
Households	23,208	23,208
Employment	14,854	20,949

Source: COMPASS

This addition represented a 51 percent increase in employment for 2010 and a 41 percent increase in 2030 for the selected TAZs in the vicinity of Ten Mile Road and I-84.

A comparison of 2010 and 2030 demographics with the Ten Mile Interchange shows that there is an expected population increase of 31,900 persons over the 20 year period or 96 percent. There is also an increase in area households by 11,524 or 99 percent, and 10,679 jobs or 115 percent from 2010 to 2030 in these TAZs.

FIGURE 21 2002 TRAFFIC ANALYSIS ZONES (TAZs) IN THE VICINITY OF THE TEN MILE INTERCHANGE LOCATION



Source: COMPASS

POLICY 8: REQUEST NEEDS TO CONSIDER PLANNING AND ENVIRONMENTAL CONSTRAINTS

"The request for a new or revised access contains information relative to the planning requirements and the status of the environmental processing of the proposal." (Federal Register 2/11/1998 Vol. 63, No. 28, Page 7046)

In accordance with this policy, the following section provides the information relative to the planning requirements and the status of the environmental processing for the Ten Mile Interchange.

The Ten Mile access revisions are being developed in accordance with the National Environmental Policy Act (NEPA) guidelines. As an initial step to determine if there are any significant environmental constraints to the project, a Project-level Environmental Scan was conducted.

This Environmental Scan was prepared for the Idaho Transportation Department (ITD) to provide a preliminary assessment of critical environmental issues for five proposed interchange alternatives at Ten Mile Road and Interstate 84 (I-84), southwest of the City of Meridian. The results of this environmental scan indicate that:

- The proposed interchange is consistent with local and regional land use plans and has been designated as needed infrastructure to accommodate local land use and economic development policies.
- There are no substantial minority populations in the vicinity, and there is a low probability of low-income persons that are likely to be subject to disproportionate impacts.
- Loss of prime farmland from the proposal and secondary impacts is consistent with local and regional land use plans and is likely to occur from urbanization, whether the interchange is constructed or not.
- There are no known archaeological or historic resources that will be displaced or adversely impacted by the interchange alternatives.
- Air quality impacts of the interchange are consistent with the CO and PM10 maintenance plans for the region.
- Noise and other proximity impacts are not likely to adversely impact planned land uses in the vicinity, or can be mitigated by noise barriers.
- There are no impacts to wetlands or to endangered or threatened species of plants or animals.

The complete analyses of existing conditions by environmental categories and associated impacts caused by the various interchange configurations are documented in the *Environmental Scan: I-84, Ten Mile Interchange Report.*

Based on this Environment Scan, a National Environmental Protection Act (NEPA) Environmental Assessment (EA) would appear to provide the appropriate documentation for this project.

Of the alternatives under consideration, the standard diamond configuration appears to have the least overall environmental impacts. It does displace three existing single-family residences; however those residences are targeted for eventual commercial development as shown in local land use plans.

The modified loop in the southeast quadrant option avoids the existing single family area, but displaces additional farmland and future commercial development.

The greatest environmental impacts are associated with the modified loop in the southwest quadrant. This alternative displaces about nine residences and also would displace the current access road for the remaining residences. Redevelopment to the commercial use envisioned in the Comprehensive Plan would be difficult under this alternative because of poor access and the size and configuration of the remaining parcel.

ITD is currently starting a corridor level environmental analysis for all of I-84 from Eagle Road to Franklin Road. This document is intended to include an operational and environmental analysis and to prepare the corresponding documentation in accordance with the NEPA guidelines for all of the proposed improvements to I-84 through this area including the new Ten Mile Road Interchange.

ITD is also considering the development of a stand-alone Concept Report and Environmental Assessment for the Ten Mile Road Interchange between the existing Garrity Interchange and Meridian Interchange/Eagle Interchange to accelerate the design process for the Ten Mile Road Interchange.

WIDEN I-84 TO 8-LANES, MERIDIAN TO TEN MILE
WIDEN I-84 TO 8-LANES, TEN MILE INTERCHANGE, MERIDIAN INTERCAHNGE
PRELIMINARY CONCEPTUAL COST ESTIMATE

Concrete Four Lanes - Ten Mile to Meridian	$ 38,000,000
Ten Mile Interchange	$ 19,000,000
Meridian Interchange	$ 22,000,000
Ten Mile Road	$ 9,000,000
TOTAL	**$ 88,000,000**

Source: H. W. Lochner, Inc.
April 18, 2005

PRELIMINARY CONCEPTUAL COST ESTIMATE SUMMARY
TEN-MILE RD INTERCHANGE STUDY
PHASE CONSTRUCTION OF TEN MILE INTERCHANGE, I-84 WIDENING AND MERIDIAN INTERCHANGE

IMPLEMENTATION ELEMENT	STANDARD DIAMOND Alt. 1	OFFSET DIAMOND Alt. 2	MODIFIED SE-LOOP Alt. 3	MODIFIED SW-LOOP Alt.4	OFFSET SINGLE POINT Alt.5
1 Ten Mile Interchange	$ 18,420,000	$ 29,860,000	$ 18,920,000	$ 20,020,000	$ 28,660,000
2 Ten Mle Road Improvement (Franklin Rd. to Overland Rd. less interchange area)	$ 8,650,000	$ 21,480,000	$ 8,200,000	$ 8,200,000	$ 11,480,000
3 I-84 Widen to 3-Lanes (Ten Mile Rd. to Meridian Rd.)	$ 12,410,000	$ 12,410,000	$ 12,410,000	$ 12,410,000	$ 12,410,000
4 Interim EB Loop On-Ramp (Meridian Interchange Modification)	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000	$ 3,100,000
SUBTOTAL CONCEPTUAL ESTIMATE (Rounded)	**$ 42,600,000**	**$ 66,900,000**	**$ 42,600,000**	**$ 43,700,000**	**$ 55,700,000**
5 New Meridian Interchange	$ 21,776,000	$ 21,776,000	$ 21,776,000	$ 21,776,000	$ 21,776,000
TOTAL CONCEPTUAL ESTIMATE (Rounded 2005 Dollars)	**$ 64,400,000**	**$ 88,700,000**	**$ 64,400,000**	**$ 65,500,000**	**$ 77,500,000**

Source: H. W. Lochner, Inc.
April 15, 2005

January 18, 2005

Memorandum:

Subject: Comparison of a New Interchange Site at Ten Mile Road and at Black Cat Road

Summary: A comparison of the annual daily traffic (ADT) forecasts was conducted to determine if a new interchange at Ten Mile Road would be more beneficial in relieving traffic congestion at the existing interchange at Meridian Road than a new interchange at Black Cat Road.

This comparison shows a greater reduction of traffic (about 11.5% in 2030) on the Meridian ramps for the Ten Mile Alternative than the Black Cat Alternative. It also shows that an interchange at Ten Mile Road will result in a greater reduction of traffic (about 7.6% in 2030) on the Eagle ramps than the Black Cat Alternative. Whereas, the Black Cat Alternative shows a greater reduction of traffic (about 6.5% in 2030) on the Garrity ramps than the Ten Mile Alternative.

Based on this comparison, a new interchange at Ten Mile Road would provide better overall operation of the interstate system than one at Black Cat Road. In addition, the Ten Mile Interchange would be about 2-miles from the existing Meridian Interchange and about 4-miles from the existing Garrity Interchange. This would allow the option of a second interchange between Ten Mile Road and Garrity Road while maintaining a 2-mile interchange spacing, when warranted.

By allowing an additional interchange between Ten Mile Road and Garrity Road with the Ten Mile Interchange, 2030 traffic with just the Ten Mile Road Interchange could be further reduced by about 23 percent at the Garrity Road Interchange and by about 6 percent at the Meridian Road Interchange over the No-Build conditions.

Assumptions: The comparison included 2010 and 2030 Black Cat Road Interchange alternatives. The description of these new Black Cat Alternatives with the 2010 and 2030 No-Build and corresponding Ten Mile Road Interchange Alternatives are illustrated in Table 1.

In general, the socio-economic data was adjusted by relocating the increase in employment from the traffic analysis zones (TAZs) around Ten Mile Road to those around Black Cat Road. In addition within the model, SH 16 extension was connected to US20/26 near Black Cat Road and Black Cat Road was widened to 5-lanes between Franklin Road and Victory Road.

COMPASS recoded their traffic model with these adjustments and developed 2010 and 2030 traffic forecasts for an interchange at Black Cat Road. A comparison of the average daily traffic forecasts for 2010 and 2030 for the No-Build Alternative, Ten Mile Road Alternative and the Black Cat Road Alternative is presented in Table 2. A graphical display of the 2010 forecasts is shown on Figure 1 and the 2030 forecasts are shown on Figure 2.

COMPASS also conducted a model run with another interchange (Star/Robinson Interchange) between the Ten Mile Road Interchange and the Garrity Road Interchange in accordance with their 2030 Destination Update. The results of this analysis is summarized in Table 3.

Findings: The findings of these comparisons are summarized below.

- I-84: There is little change on I-84 between the Ten Mile and Black Cat Alternatives.
- Meridian Interchange: The Ten Mile Alternative reduces the No-Build traffic on the Meridian Interchange by nearly 16% in 2010 whereas the Black Cat Alternative reduces the traffic on the Meridian Interchange by about 13%. Overall, the Ten Mile Road Alternative shows about 5% less traffic on the Meridian Ramps in 2010 than the Black Cat Alternative.
- Meridian Interchange: The Ten Mile Alternative reduces the No-Build traffic on the Meridian Interchange nearly 20% in 2030; whereas the Black Cat Alternative reduces the traffic on the Meridian Interchange by about 11%. Overall, the Ten Mile Road Alternative shows about 11.5% less traffic on the Meridian Ramps in 2030 than the Black Cat Alternative.
- Eagle Interchange: 2010 Traffic at the Eagle Interchange increase for both the Ten Mile Alternative and the Black Cat Alternative. This increase can be attributed to traffic shifting from the congested arterials to I-84 as better access to local areas is provided. Overall, the Ten Mile Road Alternative shows about the same amount of traffic in 2010 as the Black Cat Alternative.
- Eagle Interchange: In 2030, traffic is reduced on the Eagle Interchange by nearly 5% with the Ten Mile Alternative, while increasing by about 2% for the Black Cat Alternative. Overall, the Ten Mile Road Alternative shows about 7.6% less traffic on the Eagle Ramps than the Black Cat Alternative.
- Garrity Interchange: The Ten Mile Alternative reduces the No-Build traffic on the Garrity Interchange by nearly 3% in 2010 whereas the Black Cat Alternative reduces the traffic on the Garrity Interchange by about 6%. Overall, the Ten Mile Road Alternative shows about 3.8% more traffic on the Garrity Ramps in 2010 than the Black Cat Alternative.
- Garrity Interchange: The Ten Mile Alternative increases the No-Build traffic on the Garrity Interchange by about 2% in 2030 whereas the Black Cat Alternative reduces the traffic on the Garrity Interchange by about 4%. Overall, Ten Mile Road Alternative has about 6.5% more traffic on the Garrity Ramps in 2030 as compared to the Black Cat Alternative.
- Garrity Interchange: Since another interchange can be added between the existing Garrity Interchange and the proposed Ten Mile Interchange (as shown in COMPASS' Destination 2030 Transportation Plan Update with a proposed Robinson/Star Interchange), 2030 traffic on the Garrity Interchange ramps would be reduced to 27,300 or about a 21% decrease with the Ten Mile and Robinson/Star Interchanges.

In addition, the Ten Mile Interchange would be about 2-miles from the existing Meridian Interchange and about 4-miles from the existing Garrity Interchange. This would allow the option of a second interchange between Ten Mile Road and Garrity Road while maintaining a 2-mile interchange spacing, when warranted. Based on COMPASS' 2030 forecast with their

Destination 2030 Update that included a Ten Mile Road Interchange and a Star/Robinson Road Interchange, the following observations can be made:

- To No-Build: ADT traffic on I-84 is expected to increase by about 10 to 57 percent while decreasing on parallel arterials. Garrity ramp traffic will decrease by about 21 percent. Meridian ramp traffic will decrease by about 25 percent. Eagle ramp traffic will decrease by about 5 percent.
- To Ten Mile Only: ADT traffic on I-84 is expected to increase by about 1 to 10 percent while decreasing on parallel arterials. Garrity ramp traffic will decrease by about 23 percent. Meridian ramp traffic will decrease by about 6 percent. Eagle ramp traffic will remain about the same.
- To Black Cat Only: ADT traffic on I-84 is expected to increase by about 1 to 16 percent while decreasing on parallel arterials. Garrity ramp traffic will decrease by about 17 percent. Meridian ramp traffic will decrease by about 16 percent. Eagle ramp traffic will decrease by about 7 percent.

TABLE 1: COMPARISON OF VARIOUS TRAVEL FORECASTING ALTERNATIVE ASSUMPTIONS FOR BLACK CAT INTERCHANGE

	2010 No-Build	2010 Build B - Ten Mile	2010 Build B - Black Cat	2030 No-Build A	2030 Build A - Ten Mile	2030 Build A - Black Cat
Demographics	2010 Trend Demographics	2010 Trend Demographics; Additional Employment in 2 TAZs for Ten Mile Interchage	2010 Trend Demographics; Increase employment at Black Cat, Reduce employment at Ten Mile	2030 Trend Demographics	2030 Trend Demographics; Additional Employment in 2 TAZs for Ten Mile Interchage	2030 Trend Demographics; Increase employment at Black Cat, Reduce employment at Ten Mile
Study Area Base Highway Network	2009 Base Network	2009 Base Network	2009 Base Network	2030 Base Network	2030 Base Network	2030 Base Network
I-84	2-lanes per direction from Meridian to Garrity	3-lanes per direction from Ten Mile to Meridian and 2-lanes per direction from Ten Mile to Garrity	3-lanes per direction from Black Cat to Meridian and 2-lanes per direction from Ten Mile to Garrity	2-lanes per direction from Meridian to Garrity	3-lanes per direction from Meridian to Garrity	3-lanes per direction from Meridian to Garrity
Meridian Road	5- lanes to Fairview Avenue Interchange with I-84	5- lanes to Fairview Avenue Interchange with I-84	5- lanes to Fairview Avenue Interchange with I-84	5- lanes, Interchange with I-84; Add WB off loop ramp to SB on Meridian	5- lanes, Interchange with I-84; Add WB off loop ramp to SB on Meridian	5- lanes, Interchange with I-84; Add WB off loop ramp to SB on Meridian
Linder Road	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes with I-84 New Overpass No interchange	2-lanes with I-84 New Overpass No interchange	2-lanes with I-84 New Overpass No interchange
Ten Mile Road	2-lanes with I-84 Overpass No interchange	5- lanes, Interchange with I-84	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange	5- lanes, Interchange with I-84	5- lanes north of Overland Overpass of I-84, no interchange
Black Cat Road	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange	5-lanes from Franklin to Victory; Interchange with I-84	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange	5-lanes from Franklin to Victory; Interchange with I-84
McDermott Road	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass	2-lanes - No I-84 Overpass
Robinson/Star Road	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange	2-lanes with I-84 Overpass No interchange	4/5-lanes with I-84 Overpass No interchange	4/5-lanes with I-84 Overpass No interchange	4/5-lanes with I-84 Overpass No interchange
Garrity/Can-Ada Road	5-lanes to Franklin Rd, Interchange with I-84	5-lanes to Franklin Rd, Interchange with I-84	5-lanes to Franklin Rd, Interchange with I-84	4/5-lanes to US 20/26, Interchange with I-84	4/5-lanes to US 20/26, Interchange with I-84	4/5-lanes to US 20/26, Interchange with I-84
Franklin Road	5-lanes from Linder into Boise	5-lanes from Linder into Boise	5-lanes from Linder into Boise	5-lanes from Black Cat into Boise	5-lanes from Black Cat into Boise	5-lanes from Black Cat into Boise
Overland Road	5-lanes from Linder into Boise	5-lanes from Linder into Boise	5-lanes from Linder into Boise	2-lanes from Linder to Ten Mile 5-lanes from Linder to Meridian	2-lanes from Linder to Ten Mile 5-lanes from Linder to Meridian	2-lanes from Linder to Ten Mile 5-lanes from Linder to Meridian
Other Highway Network Changes						
I-84	4-lanes per direction from Meridian to Five Mile Road	4-lanes per direction from Meridian to Five Mile Road	4-lanes per direction from Meridian to Five Mile Road	4-lanes per direction from Meridian to Five Mile Road	4-lanes per direction from Meridian to Five Mile Road	4-lanes per direction from Meridian to Five Mile Road
SH 16	Does not cross Boise River	Does not cross Boise River	Does not cross Boise River	Cross Boise River and connects to US 20/26 at Ten Mile Rd.	Cross Boise River and connects to US 20/26 at Ten Mile Rd.	Cross Boise River and connects to US 20/26 between Black Cat and McDermott Roads
Meridian Rd/ E 1st Avenue				Becomes a one-way pair with 3-lanes NB and 3 lanes SB from the Fairview/Meridian int.	Becomes a one-way pair with 3-lanes NB and 3 lanes SB from the Fairview/Meridian int.	Becomes a one-way pair with 3-lanes NB and 3 lanes SB from the Fairview/Meridian int.
Linder Road	5 lanes from Franklin Rd to Ustick Rd (ACHD's 5 Yr Program, const. 2009)	5 lanes from Franklin Rd to Ustick Rd (ACHD's 5 Yr Program, const. year 2009)	5 lanes from Franklin Rd to Ustick Rd (ACHD's 5 Yr Program, const. year 2009)	5-lanes from Franklin Road to Ustick Road	5-lanes from Franklin Road to Ustick Road	5-lanes from Franklin Road to Ustick Road
Ten Mile Road	5 lanes from Franklin Rd to Ustick Rd (ACHD's 5 Yr Program, const. year 2007/8)	5 lanes from Overland Rd to Ustick Rd (ACHD's 5 Yr Program, const. year 2007/8)	5 lanes from Overland Rd to Ustick Rd (ACHD's 5 Yr Program, const. year 2007/8)	5-lanes from Overland to SH 20/26	5-lanes from Overland to SH 20/26	5-lanes from Overland to SH 20/26

TABLE 2: COMPARISON OF AVERAGE DAILY TRAFFIC FORECASTS OF TEN MILE ROAD AND BLACK CAT ROAD INTERCHANGES ALTERNATIVE

		2010 No-Build	2010 Build Ten Mile	col 3 = (2-1)/1	2010 Build Black Cat	col 5 = (4-1)/1	2030 No-Build A	2030 Build Ten Mile	col 8 = (7-6)/6	2030 Build Black Cat	col 10 = (9-6)/6	col 11 = (9-7)/7
		col 1	**col 2**	**col 3**	**col 4**	**col 5**	**col 6**	**col 7**	**col 8**	**col 9**	**col 10**	**col 11**
I-84	West of Garrity	62,000	63,300	2.10%	63,700	2.74%	87,100	94,600	8.6%	94,800	8.8%	0.2%
I-84	Garrity to Robinson/Star	67,600	69,400	2.66%	70,900	4.88%	81,300	101,800	25.2%	104,000	27.9%	2.2%
I-84	Robinson/Star to Ten Mile/Black Cat	67,600	69,400	2.66%	70,900	4.88%	81,300	101,800	25.2%	104,000	27.9%	2.2%
I-84	Ten Mile/Black Cat to Mederian	67,600	86,000	27.22%	85,700	26.78%	81,300	116,700	43.5%	110,500	35.9%	-5.3%
I-84	East of Meridian	99,100	108,600	9.59%	108,200	9.18%	132,200	144,100	9.0%	141,900	7.3%	-1.5%
Garrity Rd.	North of I-84	17,200	16,900	-1.74%	15,200	-11.63%	27,200	23,200	-14.7%	21,500	-21.0%	-7.3%
Garrity Rd.	South of I-84	30,800	30,300	-1.62%	30,400	-1.30%	38,500	39,200	1.8%	37,500	-2.6%	-4.3%
Ten Mile Rd	North of I-84	8,000	22,300	178.75%	9,500	18.75%	13,100	28,500	117.6%	21,300	62.6%	-25.3%
Ten Mile Rd	South of I-84	8,000	16,700	108.75%	9,500	18.75%	13,100	31,700	142.0%	21,300	62.6%	-32.8%
Meridian Road	North of I-84	37,200	37,700	1.34%	35,900	-3.49%	44,900	38,500	-14.3%	38,600	-14.0%	0.3%
Meridian Road	South of I-84	38,500	32,500	-15.58%	34,900	-9.35%	51,900	48,100	-7.3%	48,700	-6.2%	1.2%
Franklin Road	West of Ten Mile	13,700	14,400	5.11%	8,900	-35.04%	31,500	28,400	-9.8%	18,300	-41.9%	-35.6%
Franklin Road	East of Ten Mile	13,700	11,100	-18.98%	13,700	0.00%	38,800	31,200	-19.6%	31,500	-18.8%	1.0%
Overland Road	East of Ten Mile	9,600	4,800	-50.00%	8,100	-15.63%	20,600	19,900	-3.4%	18,300	-11.2%	-8.0%
Ramps Garrity	Westbound On	5,100	4,900	-3.92%	4,300	-15.69%	10,200	6,700	-34.3%	5,700	-44.1%	-14.9%
	Westbound Off	8,400	8,600	2.38%	8,700	3.57%	9,100	12,500	37.4%	12,400	36.3%	-0.8%
	Eastbound On	7,700	7,500	-2.60%	7,500	-2.60%	5,300	8,700	64.2%	8,700	64.2%	0.0%
	Eastbound Off	5,600	5,100	-8.93%	4,600	-17.86%	9,900	7,400	-25.3%	6,200	-37.4%	-16.2%
	All Ramps at Garrity	26,800	26,100	-2.61%	25,100	-6.34%	34,500	35,300	2.3%	33,000	-4.3%	-6.5%
Ten Mile / Black Cat	Westbound On	NA	2,500	NA	2,800	NA	NA	5,100	NA	8,000	NA	56.9%
	Westbound Off	NA	11,100	NA	10,800	NA	NA	12,500	NA	10,500	NA	-16.0%
	Eastbound On	NA	10,600	NA	9,700	NA	NA	12,400	NA	11,700	NA	-5.6%
	Eastbound Off	NA	2,600	NA	2,900	NA	NA	4,800	NA	7,700	NA	60.4%
	All Ramps at Ten Mile/Black Cat	NA	26,800	NA	26,200	NA	NA	34,800	NA	37,900	NA	8.9%
Meridian	Westbound On	3,800	4,300	13.16%	4,600	21.05%	1,700	5,800	241.2%	5,900	247.1%	1.7%
	Westbound Off	18,200	15,000	-17.58%	14,600	-19.78%	13,500	7,300	-45.9%	8,900	-34.1%	21.9%
	Eastbound On	11,600	7,500	-35.34%	9,100	-21.55%	15,800	12,200	-22.8%	13,700	-13.3%	12.3%
	Eastbound Off	4,300	4,300	0.00%	5,000	16.28%	3,800	5,400	42.1%	6,000	57.9%	11.1%
	Eastbound Loop On	9,800	8,600	-12.24%	8,400	-14.29%	11,500	6,800	-40.9%	7,400	-35.7%	8.8%
	Westbound Loop Off	NA	NA	NA	NA	NA	15,600	12,100	-22.4%	13,400	-14.1%	10.7%
	All Ramps at Meridian	47,700	39,700	-16.8%	41,700	-12.58%	61,900	49,600	-19.9%	55,300	-10.7%	11.5%
Eagle	Westbound On	5,200	6,800	30.77%	6,700	28.85%	8,800	10,200	15.9%	10,000	13.6%	-2.0%
	Westbound Off	14,100	12,800	-9.22%	12,600	-10.64%	14,800	13,100	-11.5%	13,800	-6.8%	5.3%
	Eastbound On	4,400	4,000	-9.09%	4,000	-9.09%	8,100	6,800	-16.0%	7,600	-6.2%	11.8%
	Eastbound Off	5,400	7,100	31.48%	7,300	35.19%	7,700	9,600	24.7%	10,300	33.8%	7.3%
	Eastbound Loop On	6,000	5,800	-3.33%	5,700	-5.00%	6,200	3,600	-41.9%	4,900	-21.0%	36.1%
	All Ramps at Eagle	35,100	36,500	3.99%	36,300	3.42%	45,600	43,300	-5.0%	46,600	2.2%	7.6%

TABLE 3: COMPARISON OF 2030 ADT WITH TEN MILE ROAD, BLACK CAT ROAD STAR ROAD INTERCHANGES

		2030 No-Build A	2030 Build Ten Mile	col 3 = (2-1)/1 Ten Mile to No-Build	2030 Build Ten Mile & Star	col 5 = (4-1)/1 Ten Mile & Star to No-build	col 6 = (4-2)/2 Ten Mile & Star to Ten Mile	2030 Build Black Cat	col 8 = (7-1)/1 Black Cat to No-Build	col 9 = (7-2)/2 Black Cat to Ten Mile	col 10 (4-7)/7 Ten Mile & Star to Black Cat
		col 1	**col 2**	**col 3**	**col 4**	**col 5**	**col 6**	**col 7**	**col 8**	**col 9**	**col 10**
I-84	West of Garrity	87,100	94,600	8.6%	95,700	9.9%	1.2%	94,800	8.8%	0.2%	0.9%
I-84	Garrity to Robinson/Star	81,300	101,800	25.2%	105,000	29.2%	3.1%	104,000	27.9%	2.2%	1.0%
I-84	Robinson/Star to Ten Mile/Black Cat	81,300	101,800	25.2%	107,700	32.5%	5.8%	104,000	27.9%	2.2%	3.6%
I-84	Ten Mile/Black Cat to Mederian	81,300	116,700	43.5%	127,600	56.9%	9.3%	110,500	35.9%	-5.3%	15.5%
I-84	East of Meridian	132,200	144,100	9.0%	147,500	11.6%	2.4%	141,900	7.3%	-1.5%	3.9%
Garrity Rd.	North of I-84	27,200	23,200	-14.7%	18,300	-32.7%	-21.1%	21,500	-21.0%	-7.3%	-14.9%
Garrity Rd.	South of I-84	38,500	39,200	1.8%	37,100	-3.6%	-5.4%	37,500	-2.6%	-4.3%	-1.1%
Ten Mile Rd	North of I-84	13,100	28,500	117.6%	27,400	109.2%	-3.9%	21,300	62.6%	-25.3%	28.6%
Ten Mile Rd	South of I-84	13,100	31,700	142.0%	29,600	126.0%	-6.6%	21,300	62.6%	-32.8%	39.0%
Meridian Road	North of I-84	44,900	38,500	-14.3%	36,900	-17.8%	-4.2%	38,600	-14.0%	0.3%	-4.4%
Meridian Road	South of I-84	51,900	48,100	-7.3%	47,700	-8.1%	-0.8%	48,700	-6.2%	1.2%	-2.1%
Franklin Road	West of Ten Mile	31,500	28,400	-9.8%	26,700	-15.2%	-6.0%	18,300	-41.9%	-35.6%	45.9%
Franklin Road	East of Ten Mile	38,800	31,200	-19.6%	29,500	-24.0%	-5.4%	31,500	-18.8%	1.0%	-6.3%
Overland Road	East of Ten Mile	20,600	19,900	-3.4%	18,000	-12.6%	-9.5%	18,300	-11.2%	-8.0%	-1.6%
Ramps Garrity	Westbound On	10,200	6,700	-34.3%	3,800	-62.7%	-43.3%	5,700	-44.1%	-14.9%	-33.3%
	Westbound Off	9,100	12,500	37.4%	9,800	7.7%	-21.6%	12,400	36.3%	-0.8%	-21.0%
	Eastbound On	5,300	8,700	64.2%	8,000	50.9%	-8.0%	8,700	64.2%	0.0%	-8.0%
	Eastbound Off	9,900	7,400	-25.3%	5,700	-42.4%	-23.0%	6,200	-37.4%	-16.2%	-8.1%
	All Ramps at Garrity	34,500	35,300	2.3%	27,300	-20.9%	-22.7%	33,000	-4.3%	-6.5%	-17.3%
Ten Mile / Black Cat	Westbound On	NA	5,100	NA	3,100	NA	-39.2%	8,000	NA	56.9%	-61.3%
	Westbound Off	NA	12,500	NA	13,300	NA	6.4%	10,500	NA	-16.0%	26.7%
	Eastbound On	NA	12,400	NA	13,200	NA	6.5%	11,700	NA	-5.6%	12.8%
	Eastbound Off	NA	4,800	NA	3,500	NA	-27.1%	7,700	NA	60.4%	-54.5%
	All Ramps at Ten Mile/Black Cat	NA	34,800	NA	33,100	NA	-4.9%	37,900	NA	8.9%	-12.7%
Meridian	Westbound On	1,700	5,800	241.2%	7,000	311.8%	20.7%	5,900	247.1%	1.7%	18.6%
	Westbound Off	13,500	7,300	-45.9%	6,000	-55.6%	-17.8%	8,900	-34.1%	21.9%	-32.6%
	Eastbound On	15,800	12,200	-22.8%	11,200	-29.1%	-8.2%	13,700	-13.3%	12.3%	-18.2%
	Eastbound Off	3,800	5,400	42.1%	6,300	65.8%	16.7%	6,000	57.9%	11.1%	5.0%
	Eastbound Loop On	11,500	6,800	-40.9%	5,100	-55.7%	-25.0%	7,400	-35.7%	8.8%	-31.1%
	Westbound Loop Off	15,600	12,100	-22.4%	10,800	-30.8%	-10.7%	13,400	-14.1%	10.7%	-19.4%
	All Ramps at Meridian	61,900	49,600	-19.9%	46,400	-25.0%	-6.5%	55,300	-10.7%	11.5%	-16.1%
Eagle	Westbound On	8,800	10,200	15.9%	11,100	26.1%	8.8%	10,000	13.6%	-2.0%	11.0%
	Westbound Off	14,800	13,100	-11.5%	12,700	-14.2%	-3.1%	13,800	-6.8%	5.3%	-8.0%
	Eastbound On	8,100	6,800	-16.0%	6,500	-19.8%	-4.4%	7,600	-6.2%	11.8%	-14.5%
	Eastbound Off	7,700	9,600	24.7%	10,200	32.5%	6.3%	10,300	33.8%	7.3%	-1.0%
	Eastbound Loop On	6,200	3,600	-41.9%	3,000	-51.6%	-16.7%	4,900	-21.0%	36.1%	-38.8%
	All Ramps at Eagle	45,600	43,300	-5.0%	43,500	-4.6%	0.5%	46,600	2.2%	7.6%	-6.7%

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MEMORANDUM

To: Bruce Harral

From: Bob Munchinski

Date: November 19, 2004

Subject: FHWA / ITD Project Review Meeting – November 15, 2004
I-84, Ten Mile Access Study, Key # 9349, Project # ST-84-1(542) 42, Agreement # 5851

Attendees:

Eric Shannon	ITD	(208) 334-8301	eric.shannon@itd.idaho.gov
Daris Bruce	ITD	(208) 334-8322	daris.bruce@itd.idaho.gov
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Dwight Bower	H. W. Lochner	(208) 841-1239	dbower@hwlochner.com
Bob Munchinski	H. W. Lochner	(425) 454-3160	bmunchinski@hwlochner.com

Bob Munchinski began the meeting with a review of the study area. He pointed out the study limits on the large aerial laid out on the table. He continued with a summary of the scope of work for the project. He passed out the latest project schedule and summarized each task, including:

- A review of the Preliminary Concept Report;
- Revised work elements including demographics, traffic analysis, and the geometric concepts of the selected concepts;
- Preparation of the 8-Point Access Report;
- Environmental Scan;
- Agency reviews;
- Project Financing; and
- Construction Staging.

Bob reported that the trend demographics developed by COMPASS were developed to include growth in Meridian as reported in the past Sunday's newspaper showing Meridian growing from about 47,000 to over 100,000 persons by 2030. The trend demographics were modified for the Build alternatives by adding additional employment (about 3,500 in 2010 and 6,000 in 2030) in the zones around the Ten Mile Road interchange to account for additional growth.

Bob also displayed the five alternative concepts being developed for the project, recommended from the Preliminary Concept Report. He reported that each of the alternatives can be geometrically designed to meet current standards. He also reported that for the Off-set Diamond Alternative, Ten Mile was extended past Overland Road on a new alignment to avoid 90 degree turns with Overland Road.

Dwight pointed out that there remains some additional environmental analysis that needs to be done as part of an Environmental Assessment (EA) for the project (including some older farm buildings that are considered "contributing" but not "eligible" to be classified as historic, according to the Ada County Historical Preservation Council). The alternatives, as designed, do not take these properties but are near them. He also pointed out that the Ridenbaugh Canal that roughly parallels I-84 to the south is also potentially eligible for the National Register because of its association with settlement and agricultural development in the area. Bob stated that only the Offset Diamond alternatives that re-aligns Ten Mile Road has direct impacts to the canal. However, any of the alternatives indirectly affects the canal if Ten Mile Road is widened south on Overland Road.

After reviewing the aerial photograph of the project site for other potential locations of a new interchange with I-84, it seemed that any location would have the same effects to the Ridenbaugh Canal.

Dwight expanded on the construction staging task and reported that we will be looking at how to stage the entire project (including the Ten Mile Interchange, improvements to I-84 between Ten Mile Road and Meridian Road, improvements to the Meridian Interchange and other area improvements). Dwight also explained that we will be working with state and local agencies to determine possible funding scenarios that could be used to finance the system.

Bob then passed out tables comparing the highway features assumed in each alternative and the forecasted traffic developed by the COMPASS model and continued with an explanation of the forecasting work currently being done for the project. He pointed out that a total of 13 alternative scenarios were developed for the 2010, 2020 and 2030 time horizons. He passed out a set of tables showing how each of the alternatives differed and preliminary results of model forecasts. Bob reported that the base 2009 highway network, developed by COMPASS with input from the local jurisdictions' improvement programs, was used for the 2010 alternative forecasts. For the 2010 No-Build, the Ten Mile Interchange and the widening to Ten Mile Road between Franklin Road and Overland Road were excluded and that I-84 remained a 4-lane facility. He stated that the difference between the 2010 No-Build and the 2010 Build A Alternative was that the Ten Mile Interchange and the widening of Ten Mile Road between Franklin Road and Overland Road to 5-lanes were added. The 2010 Build B Alternative is the same as the 2010 Build A Alternative with I-84 being widened to 6-lanes from Ten Mile Road to Meridian Road.

From a comparison of the data distributed, Bob pointed out that traffic on I-84 will increase between Ten Mile Road and Meridian Road by about six percent when the new interchange is added. But the westbound off ramp volume at Meridian Interchange will decrease by nearly 13 percent as traffic is redistributed to the new exit ramp at Ten Mile Road. The analysis also shows that when I-84 is widened to 3-lanes in each direction with the Ten Mile Road Interchange, traffic on I-84 will increase by about 27 percent between Ten Mile Road and Meridian Road. This shows that there is additional demand for travel on I-84 that is diverted to local arterials because of congestion on I-84.

Bob reported that similar findings can be shown by reviewing the 2030 data as well as by looking at the peak hour data.

Bob also reported that two different locations for SH 16 were considered in this analysis. The "A" or "B" alternatives for 2020 and 2030 assumed that SH 16 would cross the Boise River and connect to US 20/26 at Ten Mile Road; whereas, the "A-1" and "B-1" alternatives assumed that SH 16 would cross the Boise River and connect to US 20/26 between Black Cat Road and McDermott Road. From a review of the forecast, traffic on I-84 changes by less than one percent comparing No-Build alternative with either Build alternatives for the same year. Again if total traffic is added for the selected links, the same conclusion will result.

However, at some locations, such as on Franklin Road near Ten Mile Road, there can be significant changes in traffic patterns.

Overall, it appears that the location of the SH 16 extension across the Boise River and its connection to US 20/26 will not have a significant effect on this analysis. A question was asked if this means that traffic from SH 16 would not use the new interchange. It was explained that this analysis only shows that the location of the SH 16 crossing and its tie to US 20/26 will not have a significant impact on this analysis. From a selected link analysis of traffic from SH 16 for one alternative, 10 to 12 percent of the traffic on the Ten Mile ramps to and from the east will be from SH 16.

Bob continued the discussion with a discussion of Ten Mile Interchange as a local access interchange. He reported that the Idaho Transportation Board accepted the I-84 Corridor Study as a guide for making decisions on future improvements to the corridor. The I-84 Study recommended the Ten Mile Interchange as the first interchange to be constructed. COMPASS adopted and has incorporated the I-84 Corridor Study results, including the Ten Mile Interchange, in their Destination 2025 Plan and in their draft Destination 2030 Plan Update.

Since 1978, the City of Meridian has included the Ten Mile Interchange in their Comprehensive Plan. ACHD has also scheduled improvements to widen Ten Mile Road to 5-lanes from Franklin Road to Ustick Road.

Based on the 2001 AASHTO's A Policy on Geometric Design of Highways and Streets, a general rule of thumb for interchange spacing is 1-mile in urban areas and 2-miles in rural areas. The next viable area for a local service interchange is at Ten Mile Road, where the area is mostly undeveloped. This site will provide relief to traffic congestion at the Meridian and Eagle Interchanges. In addition, the Ten Mile Road site does not exclude the possibility of adding another interchange further west (the Garrity Interchange is about 4-miles west). A regional interchange to connect SH 16 with I-84 could be placed between Black Cat Road and McDermott Road to obtain better access control than by placing SH 16 along an existing roadway. This would be about 1.5-miles west of the proposed Ten Mile Road site.

FHWA questioned if this is the best place for the interchange. They also asked about the overall long range plan for I-84 and would this be the only interchange needed.

It was pointed out that one alternative (2030 Build B) was developed to reflect the current 2030 build out conditions of COMPASS' Long Range Plan that included the Ten Mile Interchange, a Star Road Interchange and I-84 widening to 6-lanes from the Garrity Interchange to the Ten Mile Interchange and as an 8-lane facility east of Ten Mile Road Interchange.

Eric wanted everyone to be clear that the intent of this study is to address the impacts of adding a Ten Mile Road interchange to I-84. There is another study being started to continue the work of the I-84 Corridor Study and to address the bigger picture of the future development of I-84. This work will be completed over the next two to three years. Eric also reported that it was his intention to keep interchange spacing on I-84 to about two miles.

FHWA asked about other roadway improvements that could reduce congestion on I-84. Eric reported that it is ACHD goal to widen all section line roads to four or five lane facilities as development occurs and budget allows. Bob also stated that the travel model includes, in the baseline network, several capacity improvements to Ten Mile Road, Linder Road, Franklin Road and other area roadways as shown on the handout that describes the various alternatives. Other roadways outside the study area are also being improved. A list of these proposed improvements will be appended to the Access Report.

Bob also pointed out that without a new interchange at Ten Mile, the projected 2030 traffic existing at the Meridian Interchange would be more than the local arterial system can handle at one location. With the Ten Mile Interchange, traffic demand is expected to be reduced on the Meridian Interchange ramps to and from the east. Overall, there is a better balance of traffic exiting at the Ten Mile, Meridian and Eagle Interchanges. There is an even better distribution of traffic when the Star Road Interchange is analyzed as proposed in the COMPASS' draft Destination 2030 Plan Update.

It was asked if FHWA would require all this information if the interchange was proposed at Black Cat Road and they responded that the same information would be requested.

Based on this discussion, FHWA suggested that a new alternative be tested with an interchange at Black Cat Road, including appropriate changes in the socio-economic data assumptions. The purpose of this analysis would be to determine if an interchange at Black Cat Road would provide better traffic relief to the Meridian Interchange than a new interchange at Ten Mile Road. ITD will discuss this internally and decide on the direction the project will take. ITD will notify Lochner if they will proceed with the Ten Mile Access Study as scoped or if they want to include the Black Cat interchange analysis, as requested by FHWA.

End of Summary

Attachments:

- Copy of the agenda.
- Copy of the project schedule.
- Copy of the traffic forecast summary tables.
- Copy of sign-in sheet.

LOCHNER

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MEMORANDUM

To: Bruce Harral

From: Bob Munchinski

Date: January 24, 2005

Subject: FHWA / ITD Project Review Meeting – January 21, 2005
I-84, Ten Mile Access Study, Key # 9349, Project # ST-84-1(542) 42,
Agreement Nos. 5851 & 5951

Attendees:

Damon L. Allen	ITD	(208) 334-8303	damon.allen@itd.idaho.gov
John Collins	ITD	(208) 334-8248	john.collins@itd.idaho.gov
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Daris Bruce	ITD	(208) 334-8322	daris.bruce@itd.idaho.gov
Ed Johnson	FHWA	(208) 334-9180 ext 116	edwin.johnson@fhwa.dot.gov
Renee Sigel	FHWA	(208) 334-9180 ext 119	Renee.Sigel@fhwa.dot.gov
Paul Ziman	FHWA	(208) 334-9180 ext 127	Paul.Ziman@fhwa.dot.gov
Dwight Bower	H. W. Lochner	(208) 841-1239	dbower@hwlochner.com
Bob Munchinski	H. W. Lochner	(425) 454-3160	bmunchinski@hwlochner.com

Bob Munchinski passed out a memo discussing the comparison of the Ten Mile Interchange location option and the Black Cat Interchange location option with a No-Build option. The memo included a summary of the comparison, assumptions, and findings, with summary tables and figures.

Dwight began the meeting with a review of the purpose of this meeting, which was to present a traffic comparison of a Ten Mile Interchange location option and a Black Cat Interchange location option to determine which location would be more beneficial in relieving traffic congestion at the existing interchange at Meridian Road, as requested by FHWA at the November 15, 2004 meeting.

Dwight pointed out that there is little traffic change (about 5%) on I-84 between the Ten Mile and Black Cat Alternatives. Bob point out that the slightly higher volume on I-84 for the Ten Mile Interchange option was because more traffic would be diverted from the existing Meridian Interchange to the proposed Ten Mile Interchange than a proposed Black Cat Interchange and that this would increase traffic on I-84.

Dwight also pointed out that in 2030 there would be a greater reduction in traffic (about 11.5%) on the Meridian ramps for the Ten Mile Alternative than the Black Cat Alternative. He also stated that Ten Mile Road Interchange option will also provide about a 7.6% reduction of traffic at the Eagle ramps than the Black Cat Alternative. However, the proposed Black Cat Alternative would have a greater reduction of traffic on the existing Garrity ramps than the Ten Mile Alternative.

Dwight also suggested that the Ten Mile Interchange would be about 2-miles from the existing Meridian Interchange and about 4-miles from the existing Garrity Interchange. This would allow the option of a second interchange between Ten Mile Road and Garrity Road while maintaining a 2-mile

interchange spacing. By allowing an additional interchange between Ten Mile Road and Garrity Road with the Ten Mile Interchange, 2030 traffic could be further reduced by about 23 percent at the Garrity Road Interchange and by about 6 percent at the Meridian Road Interchange over the option with only a Ten Mile Interchange

Dwight concluded that this comparison shows that a new interchange at Ten Mile Road would be more beneficial in relieving traffic congestion at the existing interchange at Meridian Road than a new interchange at Black Cat Road.

Ed asked about the purpose of the interchange. Bruce pointed out that this is a local area access interchange to provide relief to the existing Meridian Interchange and the growing area west of the interchange.

Ed also asked about the relationship of SH 16 to this project. It was discussed that an additional interchange would probable be needed for the SH 16 connection to I-84. Some areas around Ten Mile Road and to some extent along Black Cat Road are already developed and that it would be difficult to get a regional facility through these areas. An interchange in the vicinity of McDermott Road would meet the 2-mile spacing between Ten Mile Road and Garrity Road and has less currently developed areas.

Paul stated that there are more operational analyses that will be needed to justify a Ten Mile Interchange. Bob pointed out that this comparison was to resolve the question if a Ten Mile Road Interchange or a Black Cat Road Interchange would be more beneficial in relieving traffic congestion at the existing interchange at Meridian Road. Bob also stated that his staff was working on additional operational analyses at the present time and is planning to present a completed draft of the Access Report to ITD in Mid March for their review and that a completed drafted would be also sent to FHWA for comment. Renee requested that some preliminary information be sent to FHWA for review before an official copy was sent for comment. ITD agreed to provide the information.

Ed also asked about the environmental process for the project and that the Access Report and the environmental process usually occur concurrently. Renee pointed out that FHWA and ITD has an agreement that ITD would first proceed to a draft Access Report to document the viability of the project viable and then have ITD complete the environmental process and finalize the Access report.

ITD reported that they are currently in the process of selecting a consultant to perform the I-84 Corridor Study that would include an environmental document for the entire corridor including the Ten Mile Interchange. The proper procedures and logical project limits were discussed. FHWA concluded that they needed to discuss some of the issues internally and that they would get back with ITD the environmental process.

Closing statements by FHWA concluded that they agreed with the traffic comparison analysis and concurred with the findings that Ten Mile Road is the proper location for a new interchange since it would be more beneficial in relieving traffic congestion at the existing Meridian Road Interchange than a new interchange at Black Cat Road.

End of Summary

Attachments:

- Copy of the revised Ten Mile Blacked Traffic Forecast Memorandum.
- Copy of sign-in sheet.