2022

Freight Program Project Application

I-84, Franklin IC to Karcher IC, Canyon County



Projects selected for freight formula funds require a minimum of 7.73% match for interstate projects and 7.34% match for projects not on an interstate.

Submit applications via electronic means to scott.luekenga@itd.idaho.gov. When transmitting the application include all supporting maps, letters and other documents, as a pdf. If the file size exceeds email transmittal capabilities (15MB), submit using a thumb drive and send via FedEx/UPS delivery to the following address:

Idaho Transportation Department Attn: Scott Luekenga HQ – Highway Planning Service P.O. Box 7129 Boise, Id. 83707-1129

Applicant Information

Applicant: Idaho Transportation Department, Bonding Group

Mailing Address: P.O. Box 7129

City: Boise State: Idaho Zip Code: 83707

Contact person: Amy Schroeder

Title: Transportation Program Manager

Phone: 208-334-8206

Email: <u>Amy.Schroeder@itd.idaho.gov</u>

Co-Applicant (if different from Applicant): Idaho Transportation Department, District 3

Mailing Address: 8150 Chinden Blvd

City: Boise State: Idaho Zip Code: 83714

Contact Person: Caleb Lakey
Title: District Engineer
Phone: 208-334-8301

Email: Caleb.Lakey@itd.idaho.gov

Application Specifics

Project Cost Estimate:

I-84, Franklin IC (Exit 29) to Karcher IC (Exit 33) expansion project, sponsored by the Idaho Transportation Department Headquarters Bonding Group along with District 3, is located in Canyon County, on I-84 between MP 28.23 and MP 33.4. This portion of I-84 will be reconstructed to widen eastbound and westbound lane to consist of three travel lanes in each direction.

The construction of the I-84 Franklin IC to Karcher IC, Canyon County project has started. In order to best utilize the GARVEE funds in conjunction with the Freight funds, the Bonding Group is requesting \$8,633,000 of CN funds be de-obligated from the US-95, Granite North project and applied to the I-84, Franklin IC to Karcher IC project.

This project was separated into two construction projects, Franklin IC to Karcher IC – West and Franklin IC to Karcher IC – East. The contract was awarded for the Franklin IC to Karcher IC – West, May 24, 2021. The contract for Franklin IC to Karcher IC – East, was awarded May 12, 2021. The total cost of CN for both projects came to \$103,345,873 (see appendix A for cost details).



Project Details:

This project, sponsored by the Idaho Transportation Department, Bonding Group and District 3 will widen and reconstruct approximately 5 miles of I-84 between MP 28.23 and MP 33.4.

The proposed project includes the following improvements:

- The addition of one general purpose travel lane in each direction on I-84 between Franklin IC and Karcher IC. The proposed urban typical section will replace the existing rural typical section and reconstruction will add travel lanes in the existing 68-foot center drainage swale and reconstruct the existing lanes.
- Ramp modifications to the Franklin Road IC to accommodate new I-84 typical section.
- The modification of Linden Street to widen the shoulders. Also reconstruction of two I-84 mainline overpass bridges at Linden Street to accommodate the I-84 widening and to improve safety and design features.
- The replacement of two box culverts and four pipe culverts associated with irrigation or drainage conveyance within the project area.
- Storm water drainage improvements, including the construction of an urban storm drain system on I-84 with infiltration ponds.



Improvements to I-84 would be contained within the existing right-of-way, with the possible exception of ancillary features such as drainage ponds. The existing overpass structures at Middleton Road and Ustick Road will be modified from the existing five-span structures to two-span structures in order to remove the supporting piers that currently exist in the median. The bridge modifications will be addressed in the I-84; Ustick Road and Middleton Road Overpasses, Canyon County project and are not included in this project.

I-84 between Nampa and Caldwell serves as a major freight route for local and interstate traffic, making it an important factor in the regional economy. Increased congestion on I-84 in the project area would impair freight movements and the regional economy. In the design year, 2042 at the Franklin IC, delays for the p.m. peak hour would be up to 74.9 seconds, while at Karcher IC, delays would range from 87.1 seconds during the a.m. peak hour to greater than 124 seconds for the p.m. peak hour.

Safety, Economic and Mobility Improvement Details:

Analysis shows that nearly all of I-84 in the study area exceeds the Historical Average Injury Crash Rate. In the time period between 2016-2022 a total of 525 crashes in the study area resulted in 10 fatalities and 232 injuries. Rear—end crashes are the most prevalent crash type making up 46% of all crashes in the corridor. The majority of the rear-end crashes are between Karcher Road IC and the Ustick Road overcrossing in the eastbound lanes and attributed to the am peak hour congestion.

Interstate 84 between Nampa and Caldwell serves as a major freight route for local and interstate traffic, making it a significant factor in the regional economy. Congestion is expected to worsen dramatically on I-84 in the study area which would negatively impact freight movements, transit operations, and the regional economy. Peak hour congestion is significant in the westbound direction during the PM peak hours where I-84 mainline during the AM peak hours is congested eastbound west of the Karcher IC. Key Number 20315 I-84, Karcher Road to Franklin Boulevard project widened the I-84 mainline to three general purpose lanes with auxiliary lanes from east of the Franklin Boulevard IC to west of the Karcher Road IC. The widening of I-84 by way of the Key Number 20315 project only partially addresses the peak hour congestion issue. Acceptable level of service is not achieved until widening of the mainline is completed in both eastbound and westbound direction from Karcher Road IC (Exit 33) to Centennial Way IC (Exit 27).

I-84 carries 85% of all freight shipments into and through Idaho. Improvements to interstate conditions and enhancements to operational levels of service are integral to the efficient movement of people, goods and services at local, regional and national scales. I-84 connects the Pacific Coast Ports to the Intermountain West region and carries over \$80 billion worth of freight through the study area annually. The ITD and COMPASS have prioritized the improvements to the I-84 corridor where the greatest needs exists. This Nampa to Caldwell section completes the final phases on interstate corridor improvement to ensure the Treasure Valley is adequately served by I-84 into the design year of 2045.



Appendix A Cost Estimates

Contract ID: 23080210316 Project(s): A023(080) Letting Date: 05/11/2021

Bidder: W0073 - Western Construction, Inc.

Description: I-84, FRANKLIN RD IC TO KARCHER IC - WEST Date: 03/25/2021 Revised: 05/04/2021 12:00:00 AM

State of Idaho Idaho Transportation Department Schedule of Items

LINE NUMBER	ITEM NUMBER Q	UANTITY UNIT	UNIT PRICE	EXTENSION PRICE
SECTION 0001 ROADWAY WOR	BY CONTRACT			
0005	105-010A 99	000.000 CA	\$1.00000	\$99,000.00
	DISPUTE REVIEW BOARD	-3 MEMBER (CONT ITEM)		
0010	110-005A 8	400.000 HR	\$0.80000	\$6 , 720.00
	TRAINING			
0015	201-005A	24.000 ACRE	\$1,588.61000	\$38,126.64
	CLEARING & GRUBBING			
0020		16.000 EACH		\$13 , 907.04
	SELECTIVE REM OF TRE			
0025	203-005A	1.000 LS		\$3 , 259.52
	REM OF OBSTRUCTIONS			
0030	203-015A 151	356.000 SY	\$3.15000	\$476,771.40
	REM OF BITUMINOUS SU			
0035	203-020A	2.000 EACH		\$200,000.00
	REM OF BRIDGE (LINDE)			
0040		10.000 EACH		\$9,239.10
	REM OF CATCH BASIN			
0045		1.000 EACH		\$66,950.00
	REM OF CONC CULV (MO	NOLITHIC) (NOTUS #1	CROSSING)	
0050	203-050A	2.000 EACH	\$1,119.61000	\$2,239.22
	REM OF CONC HEADWALL			
0055	203-055A 8		\$4.75000	\$41,870.78
	REM OF CONC PAV			
0060	203-065A	838.000 FT	\$7.78000	\$6,519.64
	REM OF CURB			
0065		995.000 FT	\$1.29000	\$10,313.55
	REM OF FENCE			
0070		187.000 FT	\$1.03000	\$4,312.61
	REM OF GUARDRAIL/BAR			
0075	203-080B 8		\$1.03000	
	REM OF GUARDRAIL/BAR			
0080		1.000 EACH	\$1,119.61000	
	REM OF INLET		. ,	
0085		4.000 EACH	\$2,121.80000	\$8,487.20
	REM OF MANHOLE			
0090	203-105A	1.000 EACH	\$2,482.30000	
	REM OF MISC IRR STR		. ,	
0095	203-130A 93	573.000 FT	\$0.36000	\$33,686.28
	REMOVAL OF PAV MARKI		40.0000	, 20, 000.20
0100	203-135A	29.000 EACH	\$154.50000	\$4,480.50
	REMOVAL OF SIGN		7101.00000	Ţ 1, 100.00
0105		1.000 EACH	\$8,240.00000	\$8 240 00
0100	200 1100	1.000 EACH	70,240.00000	70,240.00

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REM OF SIGN (OVERHEAD) 0110 205-005A 169900.000 CY \$9.68000 \$1,644,632.00 EXCAVATION 205-005B 22570.000 CY \$81.62000 \$1,842,163.40 EXCAVATION (ROCK) 205-060A 7930.000 MG \$0.00000 \$0.00 WATER FOR DUST ABATEMENT 100000.000 CA \$1.00000 \$100,000.00 0125 205-095A SOFT SPOT REPAIR 0130 210-005A 2522.000 CY \$28.56000 \$72,028.32 STR EXCAVATION SCH NO. 1 210-010A 8773.000 CY \$28.56000 \$250,556.88 STR EXCAVATION SCH NO. 2 \$148.67000 \$190,594.94 210-010B 1282.000 CY 0140 STR EXCAVATION SCH NO. 2 (ROCK) 210-015A 2989.000 CY \$52.91000 \$158,147.99 0145 COMPACTING BACKFILL 212-011A 11701.000 FT \$2.21000 \$25,859.21 FIBER WATTLE 0155 212-060A 12.000 EACH \$870.91000 \$10,450.92 STABILIZED CONST ENTRANCE \$97.85000 \$17,906.55 0160 212-095A 183.000 EACH INLET PROTECTION (FILTER INSERT) 0165 212-095B 23.000 EACH \$103.00000 \$2,369.00 INLET PROTECTION (FIBER WATTLE) \$1.00000 \$50,000.00 50000.000 CA 212-105A WATER POLLUTION AND EROSION CONTROL 0175 212-110A 1.000 LS \$5,150.00000 \$5,150.00 WATER POLLUTION CONTROL MANAGER 213-005A 20878.000 CY \$12.07000 \$251,997.46 0180 TOPSOIL (6") 213-005B 1702.000 CY \$13.60000 \$23,147.20 TOPSOIL (12") \$1.00000 \$15,000.00 0190 251-005A 15000.000 CA MIGRATORY BIRD COMPLIANCE \$13.43000 \$2,612,094.71 0195 301-005A 194497.000 TON GRANULAR SUBBASE 303-022A 109454.000 TON \$15.78000 \$1,727,184.12 3/4" AGGR TY B FOR BASE 0205 307-012A 25960.000 TON \$16.78000 \$435,608.80 OPEN-GRADED BASE CLASS III 0210 1580.000 GAL 401-020A \$4.33000 \$6.841.40 CSS-1 DIL EMUL ASPH FOR TACK COAT 405-240A 109.000 SY \$28.84000 \$3,143.56 0215 MISC PAV 405-245A 3.000 EACH \$4,037.60000 \$12,112.80 APPROACH 405-410A 10090.000 TON \$ \$80.69000 \$814,162.10 0225

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SUPERPAVE HMA PAV CL SP-T (CL 3T INCL ASPH&ADD) 0230 405-415A 25450.000 TON \$65.09000 \$1,656,540.50 SUPERPAVE HMA PAV CL SP-NS (LEVELING COURSE INCL ASPH&ADD) 0235 405-435A 110.000 TON \$131.89000 \$14,507.90 SUPERPAVE HMA PAV INCL ASPH&ADD CL SP-3 409-015A 224320.000 SY \$56.56000 \$12,687,539.20 CONC PAV \$6.51000 \$26,756.10 0245 431-005A 4110.000 SY COLD MILLING 0250 502-015A 76.000 CY \$292.52000 \$22,231.52 CONC CL 30 \$829.15000 \$422,866.50 510.000 CY CONC CL 40-A \$603.58000 \$3,678,397.59 502-065A 6094.300 CY 0260 CONC CL 40 AF 502-140A 625.000 CY \$911.55000 \$569,718.75 0265 CONC CL 40-A SCH NO. 1 502-310A 453.000 CY \$1,344.15000 \$608,899.95 CONC CL 40 AF SCH NO. 2 0275 502-375A 936.000 FT \$484.10000 \$453,117.60 PRESTR BULB TEE GIRDER (42") \$222.52000 0280 304.300 FT \$67,712.84 502-430A CONC PARAPET (42" HIGH) 0285 502-435A 1058.000 SY \$169.17000 \$178,981.86 APPROACH SLAB 0290 503-005A 299118.000 LB \$1.02000 \$305,100.36 METAL REINF 0295 503-010A 165625.000 LB \$1.12000 \$185,500.00 METAL REINF SCH NO. 1 0300 503-015A 23339.000 LB \$0.98000 \$22,872.22 METAL REINF SCH NO. 2 503-020A 404447.000 LB \$1.42000 \$574,314.74 EPOXY COATED METAL REINF \$45.32000 0.310 507-005A 24.000 EA \$1,087.68 BRIDGE BEARINGS PLAIN (Size__) (1/2-IN X 11-IN X 24-IN) 326.000 SY \$64.89000 \$21,154.14 0315 511-005A CONC WATERPROOF SYS (TYPE D) \$83.43000 \$170,614.35 2045.000 SY 551-005A PREPARED & PLACED PPC OVERLAY 0325 551-010A 50.000 CY \$2,528.65000 \$126,432.50 PPC OVERLAY MATERIAL \$87,550.00000 \$87,550.00 0330 560-005A 1.000 LS DEWATERING FOUNDATION 566-005A 254.000 FT \$45.32000 \$11,511.28 0335 COMPRESSION EXPANSION JOINT (1" JEENE JOINT) 575-005A 1289.000 SY \$17.51000 \$22,570.39 TEXTURED CONCRETE SURFACE \$1.04000 1390.000 FT 0345 576-005A \$1,445.60

Call: 2

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	(GFRP) REINFORCEMENT		
	TEMPORARY SHORING (LINDEN ST BRIDGE)	\$109,700.92000	\$109,700.92
0355	584-005C 1.000 LS TEMPORARY SHORING (NOTUS #1 CROSSING)	\$192,100.92000	
0360	584-005E 1.000 LS TEMPORARY SHORING (FOR TEMPORARY TRAFFIC CONTRO	\$285,230.31000 DL)	\$285,230.31
0365	586-005A 1.000 LS UTILITY CONDUIT (COMPLETE INSTALLA TION)	\$46,350.00000	\$46,350.00
0370		\$174.07000	\$258,668.02
0375	605-015A 4.000 FT 8" STORM SEWER PIPE		\$2,212.44
0380	605-045A 14765.000 FT 24" STORM SEWER PIPE	\$84.25000	\$1,243,951.25
0385			\$379,303.68
0390	605-065A 132.000 FT 36" STORM SEWER PIPE		\$29,639.28
0395	605-450A 7.000 EACH MANHOLE (72" FLAT TOP)	\$8,652.00000	\$60,564.00
0400	605-467A 3.000 EACH		\$20,332.20
0405		\$7 , 735.30000	
0410	605-630A 15.000 EACH INLET TY 8		\$95,017.50
0415	606-115A 4815.000 FT URBAN EDGE DRAIN		\$89,270.10
0420	606-120A 957.000 FT RURAL EDGE DRAIN	\$18.54000	\$17,742.78
0425	609-025B 2.000 EACH MINOR STR 24" INLET HEADWALL		
0430	609-025G 1.000 EACH	\$6,643.50000	\$6,643.50
0435	610-030A 2369.000 FT FENCE TY 3 B		\$9,404.93
0440	610-035A 2805.000 FT	\$36.57000	\$102,578.85
0445	610-170A 6.000 EACH STL GATE (OBSOLETE 2019) TY 3 (24 FT DBL LEAF)		
0450	610-250A 52.000 EACH BRACES	\$309.00000	\$16,068.00
0455	612-005D 1212.000 FT W-BEAM GHARDRAIL	\$18.54000	
0460		\$1,545.00000	
0465	612-115B 10.000 EACH		\$25,750.00

Revised: 05/04/2021 12:00:00 AM

Project(s): A023(080) Letting Date: 05/11/2021

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	GUARDRAIL TERMINAL, FLARED		
0470		\$2 , 575.00000	
0475	612-150A 18800.000 FT CONCRETE BARRIER		\$1,452,300.00
0480	CONCRETE TERMINAL TY A	\$772.07000	\$7,720.70
0485	612-175A 184.700 FT CAST-IN-PLACE CONCRETE BARRIER (BRIDGE MEDIAN)	\$240.30000	\$44,383.41
0490	613-030A 3.000 EACH CRASH CUSHION, PARTIALLY REUSABLE	\$41,200.00000	
0495	616-010A 228.000 SF SIGNS TY B	\$18.91000	
0500	SIGNS TY C	\$32.23000	\$41,834.54
0505		\$87,550.00000	\$175,100.00
0510	616-031C 2.000 EACH OVERHEAD CANTILEVER SIGN STRUCTURE (45' SPAN)	\$92,700.00000	\$185,400.00
0515	616-035A 429.000 LB SIGN BRACKETS & BRACE ANGLES	\$4.64000	\$1,990.56
0520			\$10,973.60
0525	616-045A 1570.000 LB BRKAWY STL SIGN POST TY B		\$7,284.80
0530	616-060A 8.000 EACH BRKAWY STL SIGN POST INST TY A	\$1,802.50000	\$14,420.00
0535	616-065A 13.000 EACH BRKAWY STL SIGN POST INST TY B	\$1,802.50000	\$23,432.50
0540	617-005A 82.000 EACH DELINEATOR TY 1	\$26.78000	\$2,195.96
	617-010A 15.000 EACH	\$30.90000	\$463.50
0550	617-020A 2.000 EACH DELINEATOR TY 4	\$30.90000	\$61.80
0555			\$18,045.60
0560	617-050A 4.000 EACH	\$412.00000	\$1,648.00
0565	MILEPOST TY 1 618-020A 3.000 EACH WITNESS POST		\$463.50
0570		\$350,340.08000	\$350,340.08
0575	620_020A 5 000 FACU	\$798.25000	\$3,991.25
0580	PLANTING TREE (SEEDLING OR CONTAINER) (DECIDUOL 621-005A 29.450 ACRE SEED BED PREPARATION	\$206.00000	\$6,066.70
0585	621-010A 3.200 ACRE		\$1,638.11

Contract ID: 23080210316 Project(s): A023(080)

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Revised: 05/04/2021 12:00:00 AM

	SEEDING (TYP	E 1)			
0590	621-010B	25.800	ACRE		\$19,213.00
	SEEDING (TYP	E 2) 			
0595	621-010C SEEDING (TYP		ACRE	\$744.69000	\$335.11
0600	621-035A	26.250	ACRE	\$792.07000	\$20,791.84
	FERTILIZING				
0605	621-060A MULCH PLUS T.	29.450 ACKIFIER	ACRE	\$2,004.38000	\$59,028.99
0610	624-005B	203.000			\$22,504.58
	LOOSE RIPRAP	(D50=9")			
0615	626-010A TEMPORARY TR	3127.000 AFFIC CONTROL SI		\$6.70000	\$20,950.90
0620	626-040A	24.000		\$53.56000	¢1 205 //
0620	BARRICADE TY		LACH	\$33.36000	\$1,285.44
0625	626-050A	200.000	FACH		\$1,030.00
0025	DRUMS	200.000	EACII	Ų3.13000	Ψ1 , 030.00
0630	 626-076A			\$0.01000	\$24.00
0030	ARROW BOARD			VO.01000	V24.00
0635	 626-100B	20000.000			\$20,000.00
0033	MISC TEMPORA		EMS	·	\$20 , 000.00
0640	626-105A	3200.000	HR	\$41.20000	\$131,840.00
	TRAF CNTL MA	INTENANCE			
0645	626-112A	5000.000		\$16.36000	\$81,800.00
	FLOOD LIGHTS				, ,
0650	626-114A	24000.000	HR		\$61,920.00
	PORTABLE CHA	NGEABLE MESSAGE			
0655	626-116A	51357.000	FT	\$62.00000	\$3,184,134.00
	TEMP CONCRET	E BARRIER			
0660	626-117A	42062.000	FT	\$5.67000	\$238,491.54
	R&R TEMP CON	CRETE BARRIER			
0665	626-118A	6.000	EACH	\$3,090.00000	\$18,540.00
	TEMP CRASH C	USHION			
0670		200.000	HR	\$36.05000	\$7,210.00
	FLAGGER CONT				
0675	626-121A	10.000	EACH	\$360.50000	\$3,605.00
	R&R TEMP CRA				
0680	626-135A		EACH		\$6,180.00
	WEIGHTED BAS	E TUBULAR MARKER			
		346.000		\$12.07000	\$4,176.22
	PAV MKG ? PR	EFORMED THERMOPI			
0690	630-025A	434963.000	FT		\$47,845.93
	LONGITUDINAL	PAV MKG- WATER			
0695	640-005A	15445.000		\$3.20000	\$49,424.00
	DRAINAGE GEO				
0700	640-010A	499.000	SY	\$10.32000	\$5,149.68
	RIPRAP/EROSI	ON CONT GEOTEXT	ILE (TYPE II)		
0705	640-015A	274835.000	SY	\$1.79000	\$491,954.65

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SUBGRADE SEPARATION GEOTEXTILE (TYPE III) 0710 645-010A 1.000 LS \$119,616.00000 \$119,616.00 C3 FIELD LAB 651-010A 26360.000 SF \$1.55000 \$40,858.00 LAWN CONST (SODDED) 652-005A 1.000 LS \$36,050.00000 \$36,050.00 UNDERGROUND SPRINKLER SYS \$350,795.34000 \$350,795.34 0725 675-005A 1.000 LS SURVEY 50000.000 CA 0730 675-010A \$1.00000 \$50,000.00 DIRECTED SURVEYING OFFICE COMPUTATIONS \$1.00000 \$100,000.00 100000.000 CA DIRECTED SURVEYING CREW \$653.07000 S203-26A 0740 20.000 EACH \$13,061.40 REM OF (OBSOLETE 2018) LUMINAIRE ------S203-27A \$32.65000 \$96,480.75 0745 2955.000 FT REM OF (OBSOLETE 2018) PIPE S501-17A 12028.000 SF \$85.42000 \$1,027,431.76 MSE RETAINING WALL 0755 S501-18A 257.000 FT \$222.00000 \$57,054.00 COPING FOR MSE WALL ------\$1,120.64000 \$2,141,543.04 0760 S501-30A 1911.000 FT SP BRIDGE SOUNDWALL 1 \$1,093.86000 \$2,756,527.20 0765 S501-30B 2520.000 FT SP BRIDGE SOUNDWALL 2 \$11.33000 433.000 FT S501-30C \$4,905.89 SP BRIDGE PLASTIC WATERSTOP -----S501-51A 14034.000 SF \$1.80000 \$25,261.20 SP BRIDGE ANTI-GRAFFITI COATING \$155.53000 \$174,815.72 0780 S601-05A 1124.000 FT SLOTTED DRAIN (12") S605-10A 1.000 EACH \$1,133.00000 \$1,133.00 CONC COLLAR (ANTI-SEEPAGE) 527.000 DAY \$206.00000 \$108,562.00 0790 S626-30A TRAF CNTL MANAGER S900-50B 0795 \$1.00000 \$15,000.00 15000.000 CA CONTINGENCY AMOUNT WATERING S900-50C 10000.000 CA \$1.00000 \$10,000.00 CONTINGENCY AMOUNT WEED CONTROL 0805 S900-50D 15810.000 CA \$1.00000 \$15,810.00 CONTINGENCY AMOUNT FERTILIZER & SOIL ANALYSIS \$7,117.30000 \$811,372.20 0810 S901-05A 114.000 EACH SP CATCH BASIN, 36" VANE GRATE S901-05C \$5,785.51000 \$34,713.06 0815 6.000 EACH SP CAST-IN-PLACE CONC BARRIER TRANSITION S901-05D 1.000 EACH \$21,954.45000 \$21,954.45 SP CAST-IN-PLACE CONC BARRIER DUAL END ______ 4.000 EACH \$4,738.00000 \$18,952.00 0825 S901-05E

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	SP	PARAPET TO CONC BARRIER TRANSITION		
0830	S901-05F	2.000 EACH CCTV CAMERA POLE AND LOWER SYSTEM	\$25,850.94000	\$51,701.88
0835	S901-05G		\$8,350.21000	
0840	S901-05H		\$18,956.12000	
0845	S901-05I	4.000 EACH	\$127.72000	\$510.88
0850	S901-05J		\$4,370.29000	
0855	S901-05K			\$2,397.84
0860	S901-05L		\$35.02000	\$980.56
0865	SP S901-05M		\$43.26000	\$173.04
0870	SP S901-050		\$14,919.55000	
0875	SP S901-05P	TYPE 334 CABINET 2.000 EACH	\$2,418.44000	\$4,836.88
0880	SP S901-05Q	ETHERNET SWITCH 2.000 EACH		\$935.24
0885			\$4,367.20000	
0890		REMOVE AND RESET LUMINAIRE 3.000 EACH	\$1,151.54000	\$3,454.62
0895	SP S901-05U	JUNCTION BOX TYPE S45T WITH RISER 57.000 EACH	\$10,475.10000	\$597 080 70
	SP	CATCH BASIN, 72" VANE GRATE		
		SWALE BERM AND DRAIN ROCK CHANNEL	\$1,666.58000	
0905	S901-05Z SP	1.000 EACH REMOVE AND RESET EXISTING RADAR SYSTEM	\$3,790.40000	\$3,790.40
0910	S901-06A SP	6.000 EACH	\$5,716.50000	\$34,299.00
	S901-06E SP	18.000 EACH INFILTRATION WINDOW	\$1,586.20000	
0920	S901-06H SP	2.000 EACH TEMPORARY TY 8 INLET	\$6,025.50000	\$12,051.00
0925	S904-05B	1.000 LS PRESSURE IRR XING	\$139,050.00000	
0930	S904-05D SP	1.000 LS FAA AND AIRPORT COORDINATION	\$714.73000	\$714.73
0935		SIGNAL TIMING TEMP MODS	\$10,514.24000	
0940	S904-05F		\$10,300.00000	
0945	S911-05A		\$9.35000	\$20,710.25

Contract ID: 23080210316

Date: 03/25/2021

Letting Date: 05/11/2021

Bidder: W0073 - Western Construction, Inc.

Project(s): A023(080)

Description: I-84, FRANKLIN RD IC TO KARCHER IC - WEST

Revised: 05/04/2021 12:00:00 AM

SP CONDUIT (2" RPC)

	SP	CONDUIT (2" RPC)			
0950					\$2,460.00
		INSTALL 12 FIBER CABLE			
0955	S911-05C	221.000	FT		\$34,144.50
	SP	TEMPORARY SEEPAGE BED			
0960	S911-05D	218.000			\$176 , 712.98
	SP	JACKING OF 24" PIPE			
0965	S911-05E	165.000	FT	\$1,318.40000	\$217,536.00
	SP	JACKING OF 30" PIPE			
0970	S911-05F			\$1,246.30000	
		JACKING OF 36" PIPE			
0975	S911-05H			\$576 80000	\$162,657.60
0373		42" SLIP LINER PIPE	- 1	4370.0000	4102 , 007.00
0980				\$821.94000	\$197 117 5 <i>6</i>
0900		60" SLIP LINER PIPE		7021.94000	7104,114.50
0985		1006.000		£4.12000	\$4,144.72
0963		TEMPORARY FENCING	r I	34.12000	24,144.72
				006.70000	
0990		773.000 CONCRETE MOWSTRIP		\$26.78000	\$20,700.94
0995		14824.000		\$0.18000	\$2,668.32
	SP	CONTRAST BLACK PAVEMENT			
1000	S913-05A		CY	\$35.84000	\$192,066.56
	SP	FILTER SAND			
1005	Z629-05A			\$5,839,125.0000	\$5,839,125.00
				0	
	MO.	BILIZATION 			
Section 0001	1 Total				\$59,293,309.73
					\$59,293,309.73
ICEM IOCAL					700,600,000.70

Bidder: C0139 - Concrete Placing Company Inc

Description: I-84, FRANKLIN RD IC TO KARCHER IC - EAST Date: 03/11/2021 Revised: 04/13/2021 12:00:00 AM

> State of Idaho Idaho Transportation Department Schedule of Items

LINE NUMBER	ITEM NUMBER	QUANTITY UNIT	UNIT PRICE	EXTENSION PRICE
SECTION 0001 Roadway Worl	k by Contract			
0005		106000.000 CA IEW BOARD-3 MEMBER(CONT ITEM)	\$1.00000	\$106,000.00
0010	110-005A TRAINING	5900.000 HR	·	\$4,720.00
0015	201-005A CLEARING & (GRUBBING	\$5,201.00000	\$218,442.00
0020	202-005A SELECTIVE R	30.000 EACH EM OF TREES INCLUDING STUMPS INCI	\$412.50000	\$12,375.00
0025	203-005A REM OF OBST	1.000 LS RUCTIONS	\$25,971.00000	\$25,971.00
0030	203-015A REM OF BITU	153791.000 SY MINOUS SURF	\$3.50000	\$538,268.50
0035	203-035B	1.000 EACH CULV (MONOLITHIC) (NOTUS #2 CROS	\$60,845.00000 SSING)	\$60,845.00
0040	203-075A REM OF FENC	2549.000 FT E	\$6.00000	\$15,294.00
0045	REM OF GUAR	4211.000 FT DRAIL/BARRIER (METAL)	\$3.00000	\$12,633.00
0050	203-080B	9863.000 FT DRAIL/BARRIER (CONC)	\$9.90000	\$97,643.70
0055	203-090A REM OF INLE	6.000 EACH		\$3,018.00
0060	203-125A REM OF MISC	1.000 LS ELLANEOUS ITEMS (2-FT DIA & 5.1-F	\$37,770.00000	\$37,770.00
0065	203-125B REM OF MISC	ELLANEOUS ITEMS	\$1,267.00000	
0070		158722.000 FT	\$0.35000	\$55,552.70
0075	203-135A REMOVAL OF	10.000 EACH SIGN		\$2,515.00
0080	205-005A EXCAVATION	161308.000 CY	\$10.00000	\$1,613,080.00
0085	205-060A	24557.000 MG UST ABATEMENT	\$0.01000	\$245.57
0090	205-095A SOFT SPOT RI		\$1.00000	\$100,000.00
0095	209-005A SMALL DITCH	58.000 FT	\$1.00000	\$58.00
0100	STR EXCAVAT		\$34.50000	\$131,652.00
0105	210-015A	2461.000 CY		\$31,993.00

Bidder: C0139 - Concrete Placing Company Inc

Description: I-84, FRANKLIN RD IC TO KARCHER IC - EAST Date: 03/11/2021 Revised: 04/13/2021 12:00:00 AM

	COMPACTING BACKFILL			
0110	212-011A 7 FIBER WATTLE	789.000 FT		\$17,135.80
0115	212-060A STABILIZED CONST ENT		\$2,514.00000	\$5,028.00
0120	212-095A INLET PROTECTION (FI	154.000 EACH LTER INSERT)		\$14,168.00
0125	212-095B INLET PROTECTION (FI	9.000 EACH BER WATTLE)	\$92.00000	\$828.00
0130	212-105A 10 WATER POLLUTION AND	000.000 CA EROSION CONTROL	\$1.00000	\$10,000.00
0135	212-110A WATER POLLUTION CONT	1.000 LS ROL MANAGER	\$13,588.00000	\$13,588.00
0140	213-005A 18 TOPSOIL (6")	061.000 CY	\$20.00000	\$361,220.00
0145		 000.000 CA IANCE	\$1.00000	\$15,000.00
0150		071.000 TON		\$1,393,068.60
0155		037.000 TON ASE	\$19.00000	\$1,672,703.00
0160	401-020A 2 CSS-1 DIL EMUL ASPH	859.000 GAL FOR TACK COAT		\$10,006.50
0165	405-245A APPROACH	2.000 EACH	\$2,514.00000	
0170		631.000 TON SP-T (CL 3T INCL ASPH&ADD)	\$276.50000	\$450,971.50
0175	405-415A 22	006.000 TON SP-NS (LEVELING COURSE INC	\$85.50000	\$1,881,513.00
0180	405-435A 2 SUPERPAVE HMA PAV IN	 559.000 TON CL ASPH&ADD CL SP-3	\$85.50000	\$218,794.50
0185			\$62.50000	\$12,443,062.50
0190	502-025A CONC CL 40-A	791.400 CY	\$576.00000	\$455,846.40
0195		570.000 LB		\$159,570.00
0200		020.000 SY (TYPE D)		\$33,915.00
0205	560-005A DEWATERING FOUNDATIO	1.000 LS	\$139,877.00000	\$139,877.00
0210	578-005A	1.000 LS VERT (8-FT X 5.5-FT X 325-F	\$353,227.00000	\$353,227.00
0215	584-005A TEMPORARY SHORING (1.000 LS HIGHLINE CANAL)	\$74,790.00000	\$74,790.00
0220	584-005D	1.000 LS	\$72,891.00000	\$72,891.00
0225	TEMPORARY SHORING (N 584-005E		\$193,475.00000	\$193,475.00

Bidder: C0139 - Concrete Placing Company Inc

Description: I-84, FRANKLIN RD IC TO KARCHER IC - EAST Date: 03/11/2021 Revised: 04/13/2021 12:00:00 AM

	TEMPORARY SHORING (FOR TEMPORARY TRAFFIC CONTRO	DL)	
0230	24" IRR PIPE	\$166.00000	\$242,360.00
0235	12" STORM SEWER PIPE	\$45.25000	\$2,172.00
0240	605-030A 296.000 FT 15" STORM SEWER PIPE	\$40.25000	\$11,914.00
0245	605-035A 29.000 FT 18" STORM SEWER PIPE	\$63.25000	
0250	24" STORM SEWER PIPE	\$81.50000	\$956,728.50
0255		\$176.00000	\$343,904.00
0260		\$3,520.00000	\$80,960.00
0265		\$6,034.00000	\$12,068.00
0270	605-470A 4.000 EACH SEDIMENT & OIL TRAP MANHOLE	\$6,638.00000	
0275	605-630A 8.000 EACH INLET TY 8	\$4,416.00000	\$35,328.00
0280	608-035A 1.000 EACH 18" APRON FOR PIPE	\$653.50000	\$653.50
0285		\$1,659.00000	
0290	609-025C 1.000 EACH MINOR STR 12" INLET HEADWALL	\$3,520.00000	\$3,520.00
0295	610-035A 2281.000 FT		\$112,339.25
0300		\$3,822.00000	
0305	612-005D 617.000 FT W-BEAM GUARDRAIL	\$27.25000	\$16,813.25
0310	612-115B 9.000 EACH GUARDRAIL TERMINAL, FLARED	\$3,067.00000	\$27,603.00
0315	612-120B 9.000 EACH GUARDRAIL TRANSITION, HIGH SPEED	\$2,715.00000	
	612-150A 17356.000 FT	\$93.25000	\$1,618,447.00
0325	CONCRETE BARRIER 612-155A 11.000 EACH CONCRETE TERMINAL TY A	\$1,911.00000	
0330	613-030A 2.000 EACH CRASH CUSHION, PARTIALLY REUSABLE	\$32,151.00000	\$64,302.00
	616-010A 44.000 SF	\$22.25000	
0340	SIGNS TY B 616-015A 742.000 SF SIGNS TY C		\$27,454.00
0345		\$180,850.00000	\$180,850.00

Bidder: C0139 - Concrete Placing Company Inc Description: I-84, FRANKLIN RD IC TO KARCHER IC - EAST Date: 03/11/2021 Revised: 04/13/2021 12:00:00 AM

	OVERHEAD BRIDGE SIGN STRU	CTURE (80' SPAN DMS)		
0350	616-031A 1.0	00 EACH	\$81,913.00000	\$81,913.00
	OVERHEAD CANTILEVER SIGN	STRUCTURE (35' SPAN DI	4S)	
0355		00 EACH	\$74,661.00000	\$74,661.00
	OVERHEAD CANTILEVER SIGN			
0360		20 LB	\$7.90000	\$1,426.11
	SIGN BRACKETS & BRACE AND			
0365	616-040A 1160.0	* * ==	\$7.10000	\$8,236.00
0.000	BRKAWY STL SIGN POST TY A			
0370	616-045A 593.(BRKAWY STL SIGN POST TY F	00 LB	\$10.25000	\$6,078.25
0375	616-060A 6.0		\$2,766.00000	
0373	BRKAWY STL SIGN POST INST		\$2,700.00000	\$10,590.00
0380	616-065A 3.(00 EACH	\$2,605.00000	\$7,815.00
	BRKAWY STL SIGN POST INST		(=,	, , , , = = = = =
0385	616-080A 2.0	00 EACH	\$3,017.00000	\$6,034.00
	REINSTALL SIGNS			
0390	617-005A 108.(00 EACH	\$42.25000	\$4,563.00
	DELINEATOR TY 1			
0395		00 EACH	\$45.25000	
	DELINEATOR TY 2			
0400		00 EACH	\$12.00000	\$11,136.00
	DELINEATOR TY 9			
0405	617-050A 6.0 MILEPOST TY 1	00 EACH	\$352.00000	\$2,112.00
0410			\$70,458.00000	670 450 00
0410	ILLUMINATION TY 2 (ROADWA		\$70,458.00000	\$70,458.00
0415			\$1,127.00000	
0110	SEED BED PREPARATION	10 110101	Ψ1 / 12/.00000	720 , 033 . 07
0420	621-010A 1.4	20 ACRE	\$500.00000	\$710.00
	SEEDING (TYPE 1)			
0425	621-010B 22.3	90 ACRE	\$727.00000	\$16,277.53
	SEEDING (TYPE 2)			
0430		90 ACRE	\$773.50000	\$17,318.67
	FERTILIZING			
	621-060A 23.8	10 ACRE	\$1,957.00000	\$46,596.17
	MULCH PLUS TACKIFIER			
0440	624-005B 131.0	00 CY	\$115.50000	\$15,130.50
0.445			46.0000	
0445	626-010A 1816.0 TEMPORARY TRAFFIC CONTROI		\$6.00000	\$10,896.00
0450			\$50.25000	\$402.00
	BARRICADE TY 3	OU EACH	730.23000	7402.00
0455		 00 EACH	\$5.00000	\$1,125.00
	DRUMS			, _ ,
0460	626-076A 1200.0	00 HR		\$12.00
	ARROW BOARD TY C			
	626-100B 20000.0	00 CA	\$1.00000	\$20,000.00

Bidder: C0139 - Concrete Placing Company Inc

Description: I-84, FRANKLIN RD IC TO KARCHER IC - EAST Date: 03/11/2021 Revised: 04/13/2021 12:00:00 AM

	MISC TEMPORARY TRAF CONT ITEMS		
0470	626-105A 2500.000 HR	\$40.25000	\$100,625.00
0170	TRAF CNTL MAINTENANCE	410.2000	4100,020.00
0475	626-112A 2000.000 HR		\$36,000.00
0170	FLOOD LIGHTS	410.00000	400,000.00
0480	626-114A 24000.000 HR	\$2.00000	\$48,000.00
0 100	PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)	42.00000	4 10 / 000 100
0485	626-116A 41594.000 FT	\$32 00000	\$1,331,008.00
0 100	TEMP CONCRETE BARRIER	402.00000	41,001,000.00
0490	626-117A 47343.000 FT		\$312,463.80
	R&R TEMP CONCRETE BARRIER	, , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,
0495	626-118A 8.000 EACH	\$3,017,00000	\$24,136.00
	TEMP CRASH CUSHION	•	1-1,-00000
0500	626-120A 120.000 HR	\$35,25000	\$4,230.00
	FLAGGER CONTROL	400.2000	41/200.00
0505	626-121A 12.000 EACH	\$251.50000	\$3,018.00
	R&R TEMP CRASH CUSHION	4201.00000	40,010.00
0510	626-135A 500.000 EACH	\$10.00000	\$5,000.00
0010	WEIGHTED BASE TUBULAR MARKERS	710.0000	43,000.00
0515	630-025A 415195.000 FT		\$62,279.25
0010	LONGITUDINAL PAV MKG- WATERBORNE	Ÿ0.13000	Ψ02 , 213.23
0520	640-005A 2532.000 SY	\$4 00000	\$10,128.00
0020	DRAINAGE GEOTEXTILE (TYPE II)	¥ 1.00000	Ψ10 , 120.00
0525	640-010A 260.000 SY	\$4.50000	\$1,170.00
0020	RIPRAP/EROSION CONT GEOTEXTILE (TYPE II)	¥ 1.30000	Ψ1 , 170.00
0530	640-015A 206013.000 SY	\$1.80000	\$370,823.40
0000	SUBGRADE SEPARATION GEOTEXTILE (TYPE III)	71.00000	\$370 , 023.10
0535	645-004A 1.000 LS	\$37,654.00000	
0000	C1 AGG & SOILS FIELD LAB	Ψ37 , 031 . 00000	φ37 , 001 . 00
0540	645-010A 1.000 LS	\$101,014.00000	\$101 014 00
0340	C3 FIELD LAB	V101 , 014.00000	\$101 , 014.00
0545	675-005A 1.000 LS	\$266,332.00000	\$266 332 00
0343	SURVEY	Ψ200 , 332 . 00000	Q200 , 332.00
0550	675-010A 100000.000 CA	\$1.00000	\$100,000,00
0330	DIRECTED SURVEYING OFFICE COMPUTATIONS	71.00000	7100,000.00
0555		\$1,0000	\$100,000.00
	DIRECTED SURVEYING CREW	71.00000	\$100 , 000.00
0560	S203-26A 3.000 EACH	\$511.00000	\$1,533.00
	REM OF (OBSOLETE 2018) LUMINAIRE	Q011 . 00000	Ψ1 , 333.00
	S203-27A 740.000 FT	\$43 25000	\$32,005.00
0000	REM OF (OBSOLETE 2018) PIPE	Ÿ 13 . 23000	Ψ32 , 003 . 00
0570		\$1,093.00000	
	SD BDIDGE SOUND WALL 2	¥1 , 033.00000	Ψ1, 130, 202.00
0575	S501-30C 572.000 FT	\$13 00000	\$7,436.00
5575	SP BRIDGE PLASTIC WATERSTOP	713.00000	Ÿ/ , ±30.00
0580	S501-40A 1148.000 CY	\$108 00000	\$123,984.00
	SP BRIDGE FOUNDATION SUBGRADE PREPARATION	7100.0000	7 1 2 3 7 3 0 7 1 0 0
0585	S626-30A 501.000 DAY	\$21 25000	\$10,646.25
	5020 5011 501.000 DAI	721.23000	710,010.23

Bidder: C0139 - Concrete Placing Company Inc

Description: I-84, FRANKLIN RD IC TO KARCHER IC - EAST Date: 03/11/2021 Revised: 04/13/2021 12:00:00 AM

	TRA	AF CNTL MANAGER		
0590	S900-50B	15000.000 CA NTINGENCY AMOUNT WATERING		\$15,000.00
0595	S900-50C	10000.000 CA NTINGENCY AMOUNT WEED CONTROL		\$10,000.00
0600	S900-50D	13434.000 CA NTINGENCY AMOUNT FERTILIZER & SOIL ANALYSIS	\$1.00000	\$13,434.00
0605	S901-05A SP	154.000 EACH CATCH BASIN, 36" VANE GRATE	\$5,678.00000	\$874,412.00
0610	S901-05F SP	3.000 EACH CCTV CAMERA POLE AND LOWER SYSTEM	\$25,242.00000	•
0615	S901-05G SP	3.000 EACH CCTV VIDEO SYSTEM	\$4,886.00000	
0620	S901-05H SP	RADAR DETECTION SYSTEM	\$12,288.00000	\$12,288.00
0625	S901-05I SP	FUSION SPLICE	\$115.00000	\$690.00
0630	S901-05J SP	1.000 EACH SPLICE VAULT	\$4,113.00000	
0635	S901-05K	FIBER TERMINATION	\$99.75000	\$3,591.00
0640	S901-05L SP	42.000 EACH TEST FIBER OPTIC CABLE	\$31.75000	\$1,333.50
0645	S901-05M SP	6.000 EACH FIBER OPTIC WORKSHEET	\$41.00000	\$246.00
0650	S901-05N SP	2.000 EACH DMS CONTROLLER UNIT	\$15,017.00000	\$30,034.00
0655	S901-050 SP	3.000 EACH TYPE 334 CABINET	\$19,473.00000	\$58,419.00
0660	S901-05P SP	3.000 EACH ETHERNET SWITCH	\$2,249.00000	\$6,747.00
0665	SP	3.000 EACH HIGH POE POWER INJECTOR	\$434.00000	\$1,302.00
0670	S901-05R	DYNAMIC MESSAGE SIGN	\$99,129.00000	\$198,258.00
0675		4.000 EACH REMOVE AND RESET LUMINAIRE	\$914.00000	
0680	S901-05T	7.000 EACH JUNCTION BOX TYPE S45T WITH RISER	\$1,574.00000	\$11,018.00
0685	S901-05W	1.000 EACH HIGH FLOW BYPASS MANHOLE	\$8,649.00000	
0690	S901-05X SP	3.000 EACH CAST IN PLACE SPLIT BARRIER AT PIER	\$81,197.00000	\$243,591.00
0695		SWALE BERM AND DRAIN ROCK CHANNEL	\$1,861.00000	•
	S904-05D SP		\$11,896.00000	\$11,896.00
0705	S904-05E	1.000 LS	\$10,385.00000	\$10,385.00

Contract ID: 23081210307

Letting Date: 04/20/2021

Project(s): A023(081)

Call:

Bidder: C0139 - Concrete Placing Company Inc

Description: I-84, FRANKLIN RD IC TO KARCHER IC - EAST

Date: 03/11/2021 Revised: 04/13/2021 12:00:00 AM

	SP	SIGNAL TIMING TEMP MODS			
0710	S911-05A	5880.000	FT	\$6.70000	\$39,396.00
	SP	CONDUIT (2" RPC)			
0715	S911-05B	2425.000	FT	\$2.60000	\$6,305.00
	SP	INSTALL 12 FIBER CABLE			
0720	S911-05D	433.000	FT	\$696.00000	\$301 , 368.00
	SP	JACKING OF 24" PIPE			
0725	S911-05E	72.000	FT	\$776.00000	\$55,872.00
	SP	JACKING OF 30" PIPE			
0730	S911-05K	361.000	FT	\$85.50000	\$30,865.50
	SP	24" TEMPORARY DRAINAGE PI	[PE		
0735	S911-05P	14044.000	FT	\$0.50000	\$7,022.00
	SP	CONTRAST BLACK PAVEMENT N	MARKINGS		
0740	S912-05D		~ _	\$201.00000	\$8,844.00
	SP	LANDSCAPE AND IRRIGATION	REPAIR		
0745	S913-05A	1498.000	CY	\$46.25000	\$69,282.50
	SP	FILTER SAND			
0750	Z629-05A	1.000	LS	\$3,207,502.0000 0	\$3,207,502.00
	MOI	BILIZATION			
Section 0001 Total					\$37,354,826.07
Item Total			\$37,354,826.07		

Appendix B Safety Analysis

SAFETY ANALYSIS - I-84; MP 24.7 TO MP 34.0

This section addresses the crash history and characteristics on I-84 from MP 24.7 to MP 34.0. ITD provided crash data for the most recent five years for which data is available, 2012-2016. The analysis of this data includes the following:

- → A review of existing crash data trends for the corridor
- → An analysis of crash rates compared to historical crash averages published by ITD

The crash severity of a crash event is determined by the worst injury that occurred. The levels of crash severity are based on the following scale:

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

CRASH TYPE ANALYSIS

There were a total of 394 crashes on I-84 between 24.7 to MP 34.0 including 5 fatalities and 316 injuries. A summary of the crash types and severities are shown in Table 31. The crash severity and crash types for I-84 are displayed in Figures 38 and 39.

Table 31 - I-84 Crash Summary

Severity	Rear- End	Collision with Fixed Object	Side Swipe	Overturn	Other
Fatal	1	0	1	2	1
Injury A	13	5	4	11	2
Injury B	18	11	11	18	6
Injury C	50	22	13	14	4
PDO	38	58	41	11	39
TOTAL	120	96	70	56	52



Rear-End

Rear-end crashes were the most prevalent crash type on I-84, with approximately 30% of all crashes being reported as such. According to the crash data, 49% of rear-end crashes were caused by following too closely, while 25% were caused by driver inattention. The fatal rear-end crash was a DUI. In addition to the fatal crash there were 13 crashes that resulted in an incapacitating injury (injury A). Of the rear-end crashes, 53% are clustered towards the east end of the study area between MP 32 and MP 34 with a majority of the crashes occurring in eastbound lanes. According to the *Highway Safety Manual*, potential contributing factors to rear-end crashes include driver inattention, slippery pavement, unexpected lane change, narrow lanes, restricted sight distance, or excessive speed.

Collision with Fixed Object

Of the 394 crashes, 96 resulted in a collision with a fixed object including barrier, sign posts, trees, etc. 36% of the crashes occurred in dark conditions. 32% of the crashes occurred on adverse road conditions. None of the collisions with fixed objects resulted in a fatality, but five resulted in an Injury A severity.

According to the *Highway Safety Manual*, potential contributing factors to fixed object or run-off-the-road collisions include narrow lanes, narrow medians, narrow shoulders, poor delineation, inadequate lighting, pavement markings, or signs, slippery pavement, inadequate clear zone, roadway geometry, and excessive speed.

Side Swipe

Side Swipe crashes accounted for 18% of all crashes on I-84. There was one fatal side swipe crash near MP 30.9 on snowy roads. Further investigation of side swipe crashes on adverse road conditions did not reveal a trend. There were four additional side swipe crashes that resulted in an incapacitating injury (injury A). A majority of side swipe crashes were caused by an improper lane change or driver inattention.

According to the *Highway Safety Manual*, potential contributing factors to side swipe crashes are roadway geometry, narrow shoulders, excessive speed, inadequate pavement markings or signing.

Overturn

14% of crashes on I-84 resulted in an overturn. Two of the overturn crashes between MP 30 and MP 30.5 resulted in fatality. In both cases vehicles were traveling westbound. There is a slight horizontal curve through this section of I-84 which may have contributed to the crashes. In addition to the fatal crashes, there were 11 overturn crashes in the study area that were classified as an injury A severity. There is a small cluster of overturn crashes near MP 29.

According to the *Highway Safety Manual*, potential contributing factors to overturn crashes are narrow shoulders, excessive speed, pavement condition, or roadside designs including side slopes, pavement edge drop off, etc.



Other Crashes

The only other fatal crash on I-84 was a collision with a pedestrian in the lanes. It was the only pedestrian crash on the route and was not indicative of a trend. Other crashes that did not appear to be a trend on the route include animal collisions, collisions with non-fixed objects, equipment failure, jackknife, and head-on collisions.

CRASH RATE ANALYSIS

The following section examines where on the corridor crashes are occurring. The corridor was divided into six segments aligning with the segment breaks of the AADT volumes provided on IPLAN. Two measures were examined to review the safety performance of the I-84 corridor:

Observed Crash Rate

This is the number of reported annual crashes per 100 million vehicle miles traveled on each segment. The formula used to calculate is as follows:

Crash Rate,
$$(100 \text{ MVMT}) = \frac{\text{Crashes}}{\text{AADT } x \text{ 365 } x \text{ Length } x \text{ # Years}} x 10^8$$

Historical Average Crash Rate

These are historical average crash rates for interstate highways in 2016 as published in the ITD Idaho Traffic Crashes 2016. Table 32 shows a comparison of the observed crash rate versus the historical average crash rates for each segment.

Table 32 - I-84 Crash Rate Analysis

Segment	Observed Injury Crash Rate	Observed Fatality Crash Rate	Historical Average Injury Crash Rate	Historical Average Fatal Crash Rate	
MP 24.86-26.01	13.2	0.0		1.1	
MP 26.01-26.75	21.5	0.0			
MP 26.75-27.61	14.2	0.0	23.9		
MP 27.61-28.68	27.8	1.0	23.9	1.1	
MP 28.68-33.60	26.0	0.8			
MP 33.60-34.99	26.3	0.0			

As shown in Table 32, the observed crash rates on segments from MP 27.61 to MP 34.00 exceed the historical average injury crash rate. All five severe crashes occurred on these three segments, however the observed fatality rates are less than the historical average fatal crash rate on similar facilities. Based on the general crash trends discussed in the previous section, the I-84 segments with high rash rates align with the observed clusters of rear-end crashes.



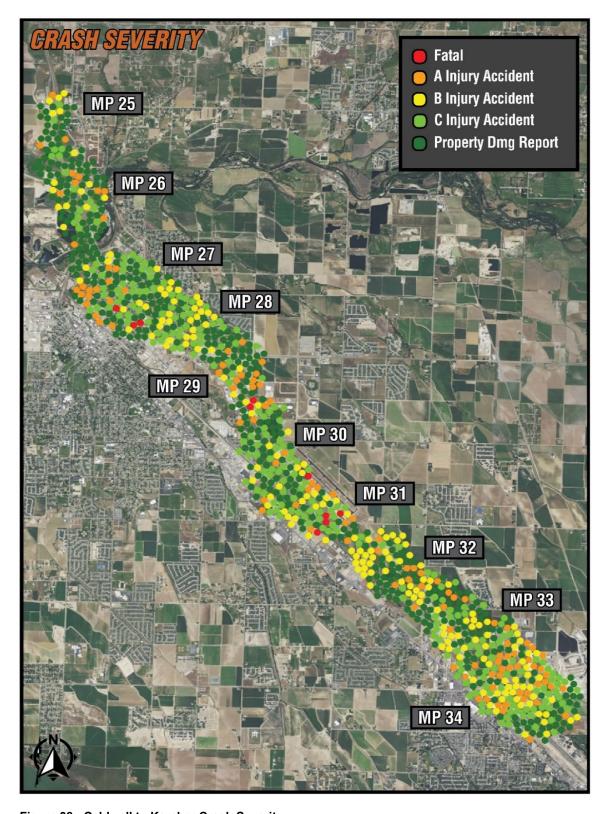


Figure 38 - Caldwell to Karcher Crash Severity



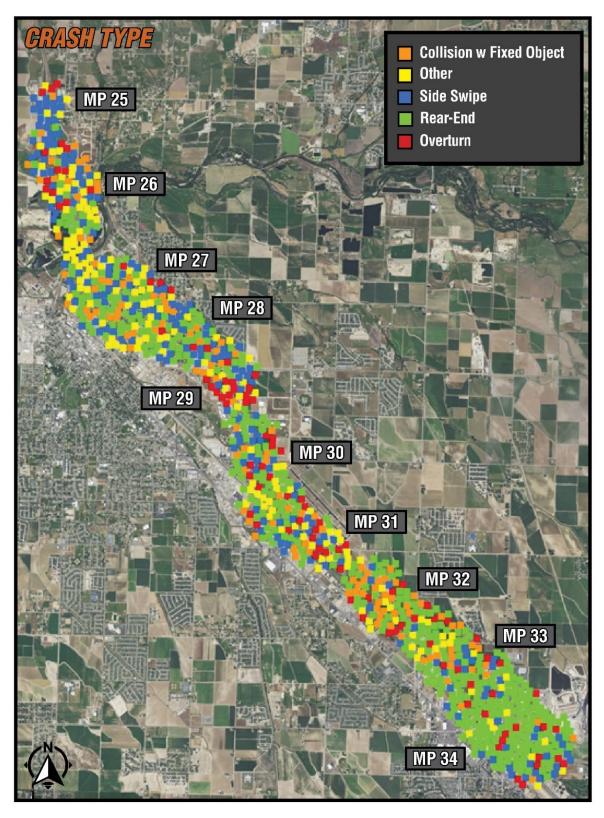


Figure 39 - Caldwell to Karcher Crash Severity



SAFETY ANALYSIS – INTERSECTIONS AND RAMPS

This section addresses the crash history at various intersections and ramps at I-84 interchanges. ITD provided crash data for the most recent five years for which data is available, 2012-2016. The analysis of this data includes a review of existing crash data trends specifically identifying trends involving fatal or injury A crashes.

INTERSECTIONS

10th Avenue and Elgin St

There were a total of 14 crashes at the intersection of 10th Avenue and Elgin Street. None of the crashes were fatal. Of the 14 crashes, nine were angle or head-on collisions.

Centennial and Freeport

Six crashes occurred at the intersection of Centennial and Freeport. None of the crashes resulted in a fatality. Crash types at this intersection include angle, head-on, rear-end, and collision with a fixed object.

Centennial and Kearney

There was only one crash at the intersection of Centennial and Kearney. The collision was a rear-end crash that occurred when one vehicle slowed to make a U-turn.

Franklin and Commercial

There were four crashes reported at the intersection of Franklin Road and Commercial Way, none of which were fatal. Crash types include angle and rear-end.

Freeport and 10th Avenue

There were 18 crashes at the intersection of Freeport Street and 10th Avenue. Half of the crashes were angle or head-on collisions. None of the collisions resulted in a fatality.

Marble Front Road and Illinois Avenue

There were a total of 22 crashes at the intersection of Marble Front Road and Illinois Avenue. 17 of the crashes were a turning angle or head-on collision. None of the crashes resulted in a fatality or Injury A severity.

US-20 and Old US-30

There were three crashes at the intersection of US-20 and Old US-30. One crash was classified as Injury A when an alcohol impaired driver ran off the road into a ditch.

US-20 and Aviation

There were three crashes at the intersection of US-20 and Aviation Way. All three of the crashes were angle crashes, but none resulted in a fatality or incapacitating injury.



Highway 44 and Old US-30

There were 16 crashes at the intersection of Highway 44 and Old US-30. There was one head-on crash that resulted in an incapacitating injury when a vehicle turned left in front of a thru vehicle. Two other head-on collisions occurred at the intersection. No fatalities were reported at the intersection. Reported crash types at the intersection are angle, head-on, rear-end, and side swipe.

Midland Blvd and Marketplace Blvd

There were 84 total crashes at Midland Blvd and Marketplace Blvd as shown in Figure 40. There was one side swipe crash classified as an injury A severity at the parking lot entrance just east of the Midland Blvd. It was the only side swipe crash at parking lot entrance; the majority of crashes at the parking lot entrance were angle crashes. The second injury A severity crash was a rear-end crash at the traffic signal at Midland Blvd & Marketplace Blvd. There were a total of 14 rear-end crashes at the traffic signal. The other prevalent crash types at the traffic signal were angle and head-on crashes.

According to the *Highway Safety Manual*, possible contributing factors for rear-end crashes at signalized intersections include approach speed, sight distance, unexpected lane changes or stops, narrow lanes, or slippery pavement.



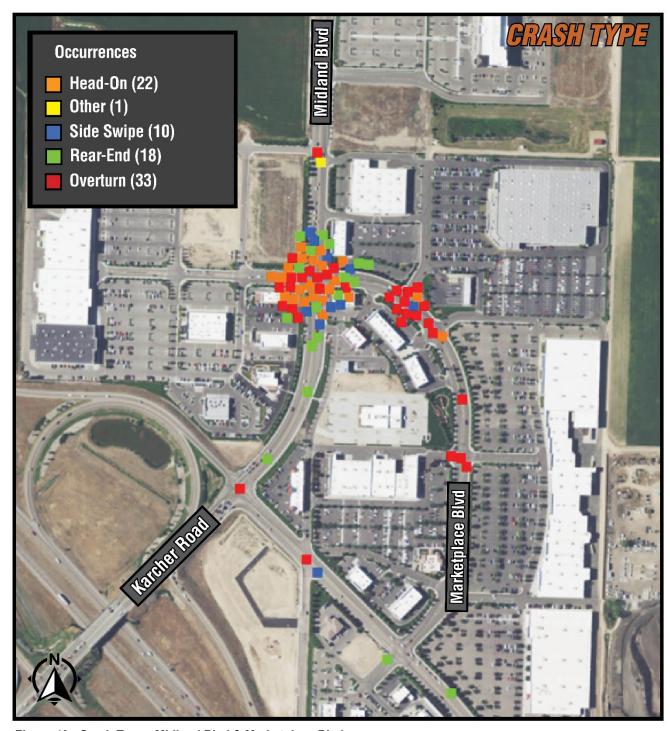


Figure 40 - Crash Type - Midland Blvd & Marketplace Blvd

Karcher Rd and Caldwell Blvd

There were a total of 236 crashes at the intersection of Karcher Rd and Caldwell Blvd. As shown in Figure 41, rear-end crashes are the most prevalent crash type at the intersection including four that were classified as an injury A severity. The other injury A crashes include angle, head-on, and an overturn crash. None of the crashes at the intersection resulted in a fatality. The intersection has an existing traffic signal.

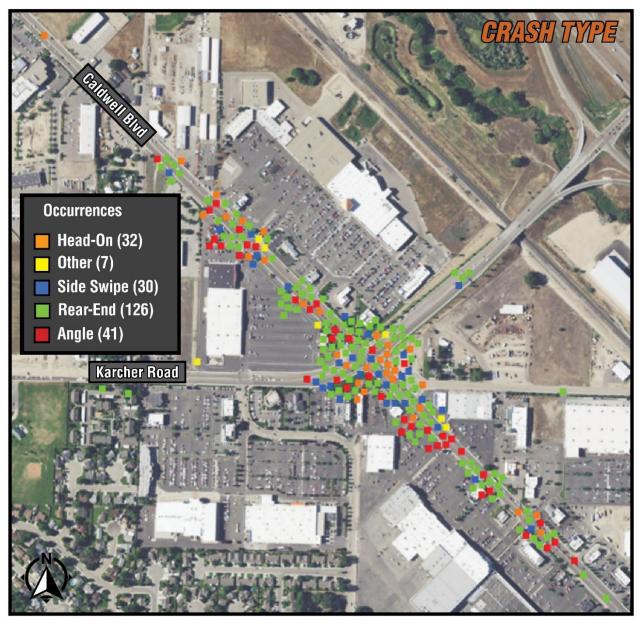


Figure 41 - Crash Type - Karcher Rd & Caldwell Blvd

RAMPS

The observed crash trends at each interchange (IC) are discussed below. Maps displaying the crash type and severity of crashes on the ramps at interchanges 25, 26, 27, 28, 29, and 33 are shown in figures 42 and 43. As seen in the figures, interchange crashes tend to follow a similar trend as the mainline I-84 and intersection crashes where crash frequency increases on the east end of the project at IC 29 and IC 33.

IC 25

There were 13 total crashes at IC 25 at Highway 44. There were eight crashes on the westbound off-ramp and five crashes on the eastbound on-ramp. One of the crashes on the westbound off-ramp was classified as an injury A severity. The severe crash was an angle crash that occurred during foggy conditions when a northbound vehicle ran a stop sign and collided with a westbound vehicle. There were two other less severe angle crashes at the westbound off-ramp that involved vehicles turning onto the ramp from Highway 44. Since there were only three angle crashes total in a five-year period, ramp crashes were not investigated further at IC 25.

IC 26

There were five crashes at IC 26 at US-20. There was one crash on each ramp except the westbound on-ramp which had two crashes. None of the crashes were classified as fatal or injury A severity.

IC 27

At IC 27, there were a total of 42 crashes on the ramps. There were five crashes on each ramp except the westbound off-ramp which had 27 crashes. A majority of the crashes on the westbound off-ramp were angle crashes at the ramp terminal intersection. None of the crashes on the westbound ramps resulted in a fatality or incapacitating injury (Injury A).

Although there were only five crashes on the eastbound on-ramp, one resulted in a fatality and one resulted in an Injury A severity. Both of these crashes involved motorcycles negotiating the curve. There was one additional less severe overturn crash on a vehicle negotiating the curve. There were no fatal or injury A crashes on the eastbound off-ramp.

IC 28

There were 26 total crashes at IC 28 at 10th Avenue. Seven of the 26 crashes occurred on the westbound ramps. Since there were so few westbound crashes and none were severe or injury A, eastbound ramps were not further investigated.

Eight crashes occurred on the eastbound off-ramp. None of the crashes were fatal or serious injury. Five of the eight crashes were rear-end rashes, two were angle crashes, and one was a bicycle crash.



A total of 11 crashes occurred on the eastbound on-ramp. Seven of these crashes were head-on collisions involving a left-turning vehicles at the ramp terminal intersection. None of the crashes resulted in fatality or injury A severity.

IC 29

At IC 29, near Franklin Rd, there were a total of 55 crashes at the interchange. Crashes occurred on all four ramps with a majority occurring on the off-ramps. None of the 55 crashes resulted in a fatality or incapacitating injury (injury A).

The eastbound off-ramp had 17 crashes, 10 of which were rear-end crashes. Other crash types on the ramp include side swipe and angle collisions.

The eastbound on-ramp had eight total crashes all of which were property-damage only. Crash types on this ramp include rear-end, head-on, and side swipe collisions.

The westbound off-ramp had 19 crashes, 12 of which were rear-end collisions. Other crash types on the ramp include angle and side swipe collisions.

There were 11 crashes on the westbound on-ramp. Five of the 11 crashes were collisions with a fixed object. Other crash types on the ramp include rear-end and head-on collisions.

IC 33

As seen in figures 42 and 43, IC 33 at Midland Blvd had the most crashes of the interchanges with 151 crashes. There were no fatal crashes on the ramps, but there were five crashes classified as injury A severity.

The eastbound off-ramp had a total of 19 crashes including two injury A crashes. Both of the crashes were angle crashes involving a left-turning vehicle. There were five angle crashes on this ramp. The most prevalent crash type on the ramp was rear-end crashes (10 collisions). The other crash types on this ramp include barrier and side swipe collisions.

The eastbound on-ramp had a total of 27 crashes including one injury A crash. The incapacitating injury crash occurred when a vehicle hit the attenuator while merging onto I-84. There was one other barrier collision on the ramp. Rear-end collisions accounted for 22 of the total crashes on the ramp. The other crash types on the ramp include head-on and sideswipe.

The westbound on-ramp had 16 crashes, including eight rear-end collisions. Other crash types on the ramp include fixed object, head-on, and side swipe collisions.

The westbound off-ramp is split into two ramps – ramp A accesses northbound Midland Blvd, while ramp B accesses southbound Midland Blvd. Ramp A had 22 crashes. Ramp B had 67 crashes including two rear-end crashes that resulted in incapacitating injury.



All but 16 of the crashes on the both off-ramps were rear-end collisions. Other crash types on the westbound off-ramp include angle, side swipe, bicycle, and fixed object collisions.



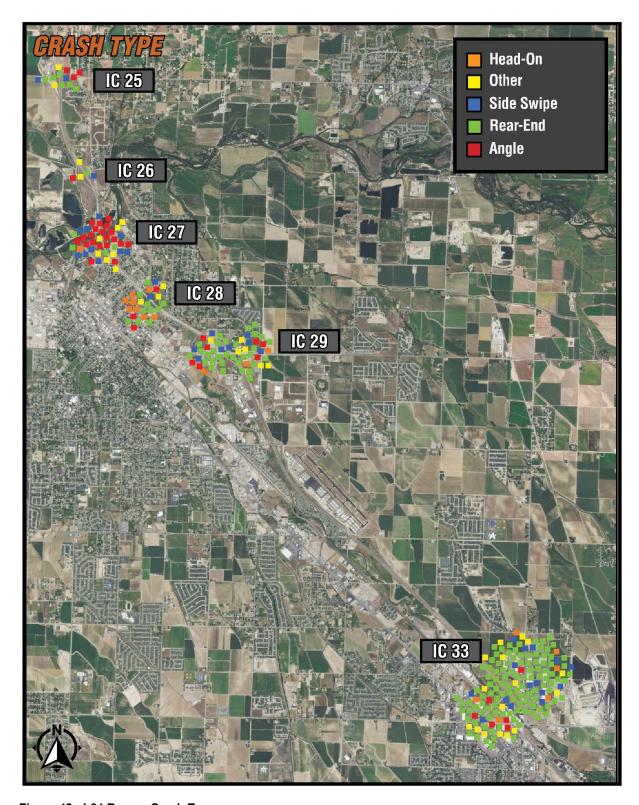


Figure 42 - I-84 Ramps Crash Type



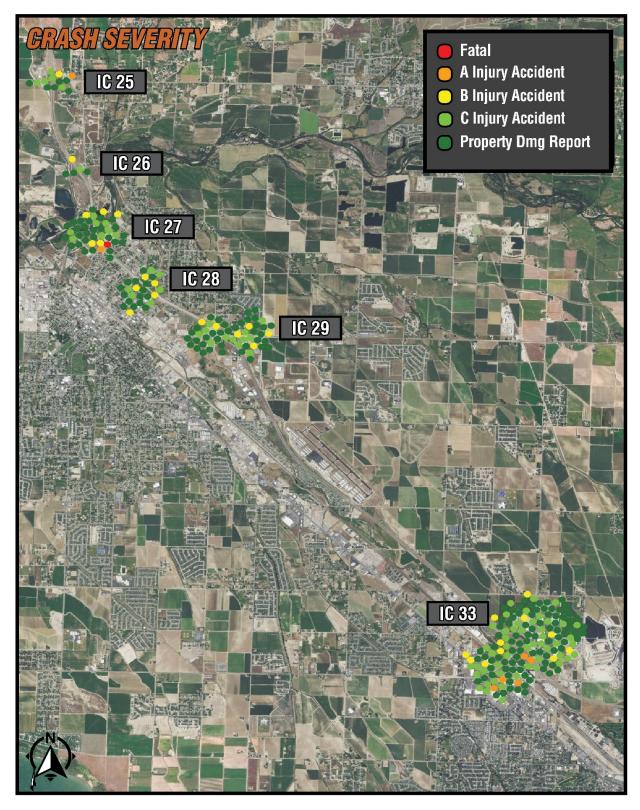


Figure 43 - I-84 Ramps Crash Severity



CRASH REDUCTION ANALYSIS

Based on the Crash Modifications Factors Clearinghouse, the Crash Modification factors (CMF) for the proposed roadway improvements are as follows:

- addition of a travel lane CMF = 0.76,
- install a traffic signal CMF = 0.56,

The safety evaluation quantifies the safety benefit expected with the addition of a travel lane on both eastbound and westbound I-84 and the addition of traffic signals at the westbound ramp terminal intersections at Centennial Way interchange (Exit 27) and the US 20 interchange (Exit 26). The CMF of 0.76 equates to a 24 percent reduction in crashes with the proposed roadway improvements. The proposed I-84 improvements will mitigate rear-end crashes which represent a majority of crashes on in the study area. The CMF of 0.56 equates to a 44 percent reduction in crashes with the proposed intersection improvements. The proposed intersection improvements will primarily mitigate angle, head-on, and sideswipe crashes.

SUMMARY AND CONCLUSIONS

Under current conditions, the I-84 corridor operates with acceptable delays between the SH-44 and Franklin Road interchanges. Delays increase for eastbound traffic during the AM peak period, east of the Franklin Road interchange, with the worst congestion occurring near the Karcher Road interchange. Likewise, PM peak period traffic experiences heavy congestion between the Karcher and Franklin Road interchanges.

For the design year (2045), we expect that congestion at these locations will continue to occur during the AM and PM peak hours, with additional bottlenecking at the Franklin Road, Centennial Way, and US-20/26 interchanges. The design year operational analysis indicates that the following mainline and interchange improvements will provide an acceptable LOS D or better for the projected traffic volumes:

MAINLINE

Widen mainline I-84 to three general purpose lanes in each direction between the Centennial Way interchange (Exit 27) and the Karcher Road interchange (Exit 33). Operations for the 2045 design year function at an appropriate LOS for the I-84 mainline west of Centennial Way (Exit 27). Two general purpose lanes and an auxiliary lane already exist between the Centennial Way interchange (Exit 27) and the US 20/26 interchange (Exit 26) this existing geometry will operate at an acceptable LOS with the projected 2045 volumes. The existing two general purpose lanes from the US 20/26 interchange (Exit 26) to the SH-44 interchange (Exit 25) will also operate at an acceptable LOS with the projected 2045 volumes.

KARCHER ROAD INTERCHANGE (EXIT 33)

Redirect loop ramp into a dedicated 3rd lane and remove free right-turn at eastbound off ramp.



FRANKLIN ROAD INTERCHANGE (EXIT 29)

Extend the existing seven-lane cross section of Franklin Road from east of Aviation Way to the westbound ramp terminal intersection with free running right turn at the ramp terminal.

10TH AVENUE INTERCHANGE (EXIT 28)

Reconfigure the interchange to a modified trumpet style interchange. Remove the secondary westbound on-ramp, while maintaining the loop ramp connection for westbound traffic in order to increase separation between gore points for westbound traffic between 10th Avenue and Centennial Way.

CENTENNIAL WAY INTERCHANGE (EXIT 27)

Install new traffic signal at the westbound ramp terminal intersection.

US-20/26 INTERCHANGE (EXIT 26)

Install new traffic signal at the westbound ramp terminal intersection.

SH-44 INTERCHANGE (EXIT 25)

Construct right turn lane at the westbound ramp terminal intersection.

