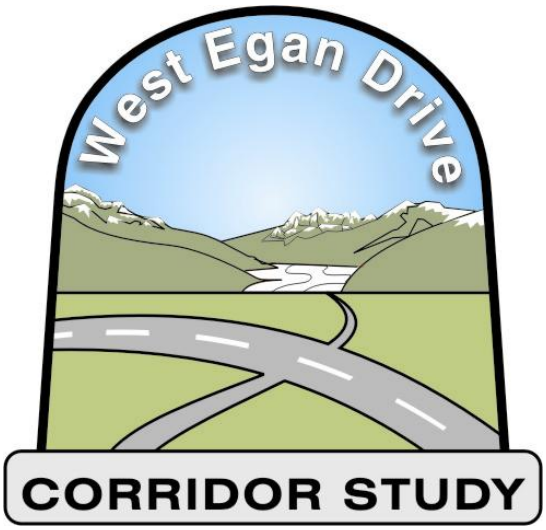
Section 6 Final Report Chapter 3 Appendix

Appendix A: Transit Level of Service Descriptions



Appendix A

Most of the material in this appendix is adapted from the Transit Capacity and Quality of Service Manual, First Edition, *published by the Transportation Research Board.*

Level-of-Service Concept

Level-of-service (LOS) is a concept originally developed to quantify the degree of comfort experienced by motorists while traveling through different elements of a roadway system. Given the widespread acceptance of this system for roadways, a similar concept was developed for transit in the *Transit Capacity and Quality of Service Manual.*

Transit quality of service reflects the overall measured or perceived performance of transit service, from the passenger's point-of-view. Levels-of-service are used to quantify the passenger point-of-view. There are two main aspects to transit quality of service: the availability of transit service, and the comfort and convenience of transit service.

Transit availability assesses an aspect of quality of service that is not considered for highway analysis, for if one has a car available, the road infrastructure exists universally. Transit users, on the other hand, can only travel to the locations that are served by transit, and only at the times that transit service is offered. As a result, if transit service is not available where and when one wants to travel, transit is not a mode choice option for that trip. Availability is measured by three factors: service frequency (how often service is offered), hours of service (how long service is offered), and service coverage (where service is offered).

Assuming that transit service is an option for a particular trip, other factors relating to passenger comfort and convenience are also considered. These include on-vehicle passenger loads, service reliability, and travel time relative to the automobile.

The quality of service framework shown in Table A1 summarizes these factors.

Transit Quality of Service Framework

Category	Service & Performance Measures		
	Transit Stop	**Route Segment**	**System**
Availability	FREQUENCY accessibility passenger loads	HOURS OF SERVICE accessibility	SERVICE COVERAGE % person-minutes served indexes
Quality	PASSENGER LOADS amenities reliability	RELIABILITY travel speed transit/auto travel time	TRANSIT/AUTO TRAVEL TIME travel time safety

Service Frequency

For urban scheduled transit service, service frequency LOS is measured by the headway between vehicles going to a particular destination, as given in Table A2.

Service Frequency LOS

LOS	Headway (min)	Veh/h	Comments
A	<10	>6	Passengers don't need schedules
B	10-14	5-6	Frequent service, passengers consult schedules
C	15-20	3-4	Maximum desirable time to wait if bus/train missed
D	21-30	2	Service unattractive to choice riders
E	31-60	1	Service available during hour
F	>60	<1	Service unattractive to all riders

At the service frequencies of LOS "A", passengers are assured that a transit vehicle will arrive soon after they arrive at a stop. The delay experienced if one misses a vehicle is low. At LOS "B", service is still relatively frequent, but passengers will consult schedules to minimize their wait time at the transit stop. Service frequencies at LOS "C" still provide a reasonable choice of travel times, but the wait involved if a bus or train is missed becomes long. At LOS "D", service is only available about twice an hour and requires passengers to adjust their routines to fit the transit service provided. The threshold between LOS "E" and "F" is service once an hour; this corresponds to the typical analysis period and to the minimum service frequency applied when determining hours of service LOS. Service at frequencies greater than one hour entails highly creative planning or considerable wasted time on the part of passengers.

Hours of Service

Table A3 provides levels-of-service for the number of hours during the day when service is offered at least once an hour.

Hours of Service LOS

LOS	Hours per Day	Comments
A	19-24	Night or owl service provided
B	17-18	Late evening service provided
C	14-16	Early evening service provided
D	12-13	Daytime service provided
E	4-11	Peak hour service/limited midday service
F	0-3	Very limited or no service

At LOS “A”, service is available for most or all of the day. Workers who do not work traditional 8-5 jobs receive service and all riders are assured that they will not be stranded until the next morning if a late-evening transit vehicle is missed. At LOS “B”, service is available late into the evening, which allows a range of trip purposes other than commute trips to be served. Transit runs only into the early evening at LOS “C” levels, but still provides some flexibility in one’s choice of time for the return trip home. Service at LOS “D” levels meets the needs of commuters who do not need to stay late, and still provides service during the middle of the day for others. At LOS “E”, midday service is limited or non-existent and commuters have a limited choice of travel times. Finally, at LOS “F”, transit service is offered only a few hours a day or not at all.

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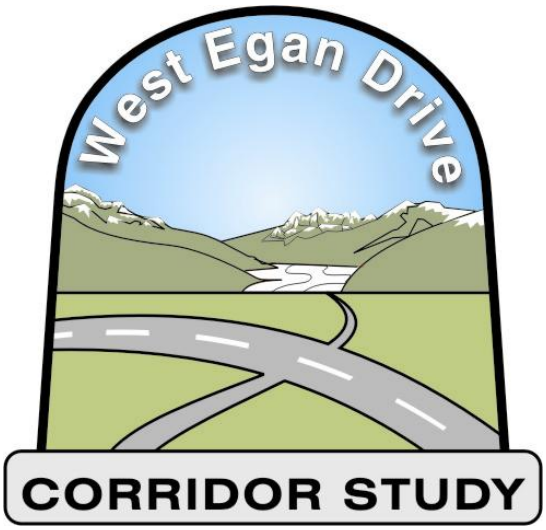
Appendix B: Traffic Volume Tables



Weekday AM Peak Hour Volumes

Intersection		Day	Month	Year	Time	EBRT	EBTH	EBLT	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	TOTAL
Egan Drive	**Mendenhall Loop Road**	Wednesday	July	2000	7:00-8:00	55	620	69	42	185	852	157	224	2	27	69	57	2359
			June	2000	7:00-8:00	59	661	74	45	197	909	167	239	2	29	74	61	2516
			June	**2001**	**7:00-8:00**	**61**	**690**	**76**	**46**	**202**	**940**	**173**	**249**	**2**	**30**	**75**	**63**	**2608**
Egan Drive	**Riverside Dr**	Thursday	July	2000	7:00-8:00	0	322	98	112	0	416	61	219	0	0	0	0	1228
			June	2000	7:00-8:00	0	343	105	119	0	444	65	234	0	0	0	0	1310
			June	**2001**	**7:00-8:00**	**0**	**359**	**108**	**123**	**0**	**458**	**67**	**244**	**0**	**0**	**0**	**0**	**1359**
Egan	**Yandukin**	Wednesday	September	2000	7:00	11	137	2	6	0	0	4	48	5	9	0	0	72
					7:15	4	353	37	4	0	0	5	107	11	18	0	0	145
					7:30	2	522	48	18	0	0	4	119	12	23	0	0	176
					7:45	4	478	50	25	0	0	5	189	27	19	0	0	265
					7:00-8:00	21	1490	137	53	0	0	18	463	55	69	0	0	2306
			June	2000	7:00-8:00	24	1690	155	60	0	0	20	525	62	78	0	0	2616
			June	**2001**	**7:00-8:00**	**25**	**1732**	**161**	**62**	**0**	**0**	**21**	**538**	**65**	**81**	**0**	**0**	**2685**
Egan Drive	**Glacier Hwy (McNugget)**	Friday	June	2000	7:00-8:00	261	1284	0	0	0	0	0	343	187	305	0	67	2447
			June	**2001**	**7:00-8:00**	**270**	**1328**	**0**	**0**	**0**	**0**	**0**	**355**	**192**	**313**	**0**	**69**	**2526**
Egan Drive	**Industrial**	Tuesday	August	2000	7:00	5	122	0	0	0	1	0	59	18	9	0	2	216
					7:15	5	122	1	0	0	2	1	59	19	10	0	2	221
					7:30	5	135	1	0	0	2	1	103	44	18	0	2	311
					7:45	5	135	1	1	1	1	2	104	44	18	0	3	315
					7:00-8:00	20	514	3	1	1	6	4	325	125	55	0	9	1063
			June	2000	7:00-8:00	21	549	3	1	1	6	4	347	133	59	0	10	1135
			June	**2001**	**7:00-8:00**	**22**	**563**	**3**	**1**	**1**	**7**	**4**	**356**	**140**	**62**	**0**	**10**	**1169**

Intersection		Day	Month	Year	Time	EBRT	EBTH	EBLT	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	TOTAL
Egan Drive	**Vintage**	Thursday	August	2000	7:00	19	87	0	10	0	0	16	84	12	0	0	4	232
					7:15	38	88	0	15	0	0	12	85	24	7	0	8	277
					7:30	38	110	0	15	0	0	15	76	10	6	0	7	277
					7:45	29	103	0	18	0	0	10	113	12	4	0	23	312
					7:00-8:00	124	388	0	58	0	0	53	358	58	17	0	42	1098
			June	2000	7:00-8:00	132	414	0	62	0	0	57	382	62	18	0	45	1173
			June	**2001**	**7:00-8:00**	**135**	**430**	**0**	**64**	**0**	**0**	**59**	**397**	**64**	**19**	**0**	**46**	**1212**
Mendenhall Loop	**James**	Tuesday	September	2000	7:00	17		0	5	231						45	5	303
					7:15	16		0	3	220						43	2	284
					7:30	24		1	0	353						70	1	449
					7:45	20		1	10	275						88	7	401
					7:00-8:00	77	0	2	18	1079	0	0	0	0	0	246	15	1437
			June	2000	7:00-8:00	87	0	2	20	1224	0	0	0	0	0	279	17	1630
			June	**2001**	**7:00-8:00**	**89**	**0**	**2**	**21**	**1277**	**0**	**0**	**0**	**0**	**0**	**291**	**17**	**1697**
Mendenhall Loop	**Mendenhall Mall**	Tuesday	June	2000	7:00-8:00	138	1	50	144	1184	4	1	1	20	5	178	44	1543
			June	**2001**	**7:00-8:00**	**140**	**1**	**51**	**147**	**1224**	**4**	**1**	**1**	**20**	**5**	**184**	**45**	**1822**
Riverside Drive	**Vintage & Mall**	Thursday	June	2000	7:00	21	10	24	19	161	34	15	17	17	23	24	20	385
					7:30	30	12	11	34	231	34	11	35	46	18	29	23	514
					7:00-8:00	51	22	35	53	392	68	26	52	63	41	53	43	899
			June	**2001**	**7:00-8:00**	**52**	**22**	**35**	**54**	**396**	**68**	**26**	**53**	**64**	**41**	**53**	**44**	**908**

Intersection		Day	Month	Year	Time	EBRT	EBTH	EBLT	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	TOTAL
Old Glacier	**Glacier (Loop Extension)**	Friday	October	2000	7:00	20	0	0	2	48	1	3	0	1	2	20	5	102
					7:15	44	0	1	0	50	1	1	0	0	2	26	5	130
					7:30	63	0	0	0	65	0	0	0	2	0	25	10	165
					7:45	59	1	1	0	82	1	1	1	0	1	28	15	190
			October	2000	7:00-8:00	186	1	2	2	245	3	5	1	3	5	99	35	587
			June	2000	7:00-8:00	224	1	2	2	295	4	6	1	4	6	119	42	707
			June	**2001**	**7:00-8:00**	**228**	**1**	**2**	**2**	**301**	**4**	**6**	**1**	**4**	**6**	**122**	**43**	**720**
Glacier	**Jordan**	Tuesday	December	1998	7:00	25	98	6	1	0	1	4	39	4	6	0	1	185
					7:30	32	153	12	1	1	3	4	71	8	5	1	6	297
			December	1998	7:00-8:00	57	251	18	2	1	4	8	110	12	11	1	7	482
			June	1999	7:00-8:00	72	319	23	3	1	5	10	140	15	14	1	9	613
			June	**2001**	**7:00-8:00**	**76**	**335**	**24**	**3**	**1**	**5**	**11**	**147**	**16**	**15**	**1**	**9**	**644**
Glacier	**Shell Simmons**	Tuesday	July	1998	7:00	59	132	4	2	4	16	9	37	3	6	3	26	301
					7:30	55	218	5	5	4	27	14	69	10	18	2	27	454
			July	1998	7:00-8:00	114	350	9	7	8	43	23	106	13	24	5	53	755
			June	1998	7:00-8:00	122	373	10	7	9	46	25	113	14	26	5	57	805
			June	**2001**	**7:00-8:00**	**130**	**398**	**10**	**8**	**9**	**49**	**26**	**121**	**15**	**27**	**6**	**60**	**859**
Yandukin	**Old Dairy**	Friday	December	2001	7:15	2	7	0	2	2	3	0	7	3	2	0	3	31
					7:30	2	32	1	1	1	15	0	27	3	1	0	2	85
					7:45	2	19	1	1	2	25	1	39	2	2	1	1	96
					8:00	1	24	0	0	1	17	0	28	1	1	2	2	77
			December	2001	**7:15-8:15**	7	82	2	4	6	60	1	101	9	6	3	8	289
			December	2001	7:00-8:00	6	69	2	3	5	50	1	85	8	5	3	7	243
			June	**2001**	**7:00-8:00**	**7**	**88**	**2**	**4**	**6**	**64**	**1**	**108**	**10**	**6**	**3**	**9**	**309**

Intersection		Day	Month	Year	Time	EBRT	EBTH	EBLT	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	TOTAL
Glacier	**Old Dairy**	Wednesday	December	2001	7:00	49	5	38	49	42	46	23	3	3	12	87	18	375
					7:30	21	9	52	20	107	20	17	4	2	72	73	43	440
			December	2001	7:00-8:00	70	14	90	69	149	66	40	7	5	84	160	61	815
			June	**2001**	**7:00-8:00**	**89**	**18**	**114**	**88**	**189**	**84**	**51**	**9**	**6**	**107**	**203**	**78**	**1036**
Yandukin	**Crest**	Thursday	December	2001	7:00	2	14	3	4	5	6	4	10	0	0	0	0	48
					7:30	3	29	6	8	3	5	12	16	1	1	1	2	87
			December	2001	7:00-8:00	5	43	9	12	8	11	16	26	1	1	1	2	135
			June	**2001**	**7:00-8:00**	**6**	**55**	**11**	**15**	**10**	**14**	**20**	**33**	**1**	**1**	**1**	**3**	**172**
Glacier	**Lemon Spur**	Tuesday	December	2001	7:00	2	2	0	0	0	0	0	1	23	78	0	1	107
					7:30	3	3	0	0	0	0	0	4	30	86	0	2	128
			December	2001	7:00-8:00	5	5	0	0	0	0	0	5	53	164	0	3	235
			June	**2001**	**7:00-8:00**	**6**	**6**	**0**	**0**	**0**	**0**	**0**	**6**	**67**	**208**	**0**	**4**	**299**

Weekday PM Peak Hour Volumes

Intersection		Day	Month	Year		EBRT	EBTH	EBLT	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	TOTAL
Egan Drive	**Mendenhall Loop Road**	**Wednesday**	**July**	**2000**	4:30-5:00	37	226	60	29	65	189	298	183	11	21	108	79	1306
					5:00-5:30	40	233	70	22	106	222	518	351	27	20	190	101	1900
					4:30-5:30	77	459	130	51	171	411	816	534	38	41	298	180	3206
			June	**2000**	4:30-5:30	82	490	139	54	182	438	870	570	41	44	318	192	3420
			June	**2001**	**4:30-5:30**	85	511	144	56	187	454	900	594	42	45	325	198	3541
Egan Drive	**Riverside Drive**	**Friday**	**July**	**2000**	**4:30-5:30**	**0**	**366**	**298**	**167**	**0**	**272**	**457**	**627**	**0**	**0**	**0**	**0**	**2187**
			June	**2000**	**4:30-5:30**	0	390	318	178	0	290	487	669	0	0	0	0	2333
			June	**2001**	**4:30-5:30**	0	408	328	184	0	299	503	699	0	0	0	0	2420
Egan Drive	**Yandukin**	**Wednesday**	**September**	**2000**	**4:30-5:30**	**8**	**755**	**221**	**337**	**0**	**0**	**110**	**1645**	**190**	**160**	**0**	**0**	**3426**
			June	**2000**	**4:30-5:30**	9	856	251	382	0	0	125	1866	216	182	0	0	3886
			June	**2001**	**4:30-5:30**	9	877	260	397	0	0	129	1912	223	188	0	0	3995
Egan Drive	**Glacier Hwy (McNugget)**	**Monday**	**June**	**2000**	**4:30-5:30**	**206**	**856**	**0**	**0**	**0**	**0**	**0**	**1500**	**506**	**339**	**0**	**381**	**3788**
			June	**2001**	**4:30-5:30**	213	885	0	0	0	0	0	1551	519	348	0	394	3909
Egan Drive	**Industrial**	**Wednesday**	**August**	**2000**	4:30	7	122	0	1	0	2	2	128	41	41	0	3	347
					4:45	6	121	1	0	0	2	2	127	40	41	0	4	344
					5:00	8	87	3	0	0	0	3	124	25	35	0	4	289
					5:15	8	87	3	0	1	0	2	124	26	35	0	4	290
					4:30-5:30	**29**	**417**	**7**	**1**	**1**	**4**	**9**	**503**	**132**	**152**	**0**	**15**	**1270**
			June	**2000**	**4:30-5:30**	31	445	7	1	1	4	10	537	141	162	0	16	1356
			June	**2001**	**4:30-5:30**	32	457	8	1	1	4	10	551	148	170	0	17	1398

Intersection		Day	Month	Year		EBRT	EBTH	EBLT	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	TOTAL
Egan Drive	**Vintage**	**Monday**	**August**	**2000**	4:30	32	152	0	31	0	0	25	135	20	9	0	11	415
					4:45	42	152	0	42	0	0	42	132	17	18	0	30	475
					5:00	34	145	0	20	0	0	27	118	21	12	0	16	393
					5:15	36	92	0	32	0	0	35	132	18	16	0	20	381
					4:30-5:30	**144**	**541**	**0**	**125**	**0**	**0**	**129**	**517**	**76**	**55**	**0**	**77**	**1664**
			June	2000	**4:30-5:30**	154	578	0	133	0	0	138	552	81	59	0	82	1777
			June	**2001**	**4:30-5:30**	157	600	0	137	0	0	143	573	83	60	0	84	1837
Mendenhall Loop	James	Monday	September	2000	4:30	10		2	6	126						204	15	**363**
					4:45	17		2	7	141						255	21	**443**
					5:00	9		1	8	103						228	10	**359**
					5:15	9		0	3	110						201	11	**334**
					4:30-5:30	45		5	24	480						888	57	**1499**
			June	2000	**4:30-5:30**	51	0	6	27	545	0	0	0	0	0	1007	65	1700
			June	**2001**	**4:30-5:30**	52	0	6	28	568	0	0	0	0	0	1051	66	
Mendenhall Loop	Mendenhall Mall	Tuesday	June	2000	**4:30-5:30**	185	2	215	141	498	5	2	4	11	18	1188	271	**1063**
			June	2001	**4:30-5:30**	187	2	219	144	515	5	2	4	11	18	1228	275	**1090**
Riverside Drive	Vintage & Mall	Friday	June	2000	4:30	42	54	71	17	79	28	59	40	58	59	170	78	755
					5:00	39	83	81	30	116	39	72	47	64	78	219	83	951
					4:30-5:30	81	137	152	47	195	67	131	87	122	137	389	161	1706
			June	**2001**	**4:30-5:30**	83	139	154	48	197	67	131	88	123	138	393	165	1724

Intersection		Day	Month	Year		EBRT	EBTH	EBLT	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	TOTAL
Old Glacier	Glacier (Loop Extension)	Friday	October	2000	**4:30-5:30**	188	6	3	9	308	22	13	2	8	15	447	112	1133
			June	2000	**4:30-5:30**	226	7	4	11	371	26	16	2	10	18	538	135	1364
			June	2001	**4:30-5:30**	230	7	4	11	378	27	16	2	10	18	549	137	1390
Glacier	Jordan	Wednesday	December	1998	4:30-5:00	69	165	8	60	4	45	10	235	30	38	4	8	676
					5:00-5:30	70	193	6	69	0	54	7	256	29	49	5	14	752
			December	1998	4:30-5:30	139	358	14	129	4	99	17	491	59	87	9	22	1428
			June	1999	4:30-5:30	177	455	18	164	5	126	22	624	75	111	11	28	1815
			June	2001	**4:30-5:30**	186	478	19	172	5	132	23	656	79	116	12	29	1908
Glacier	Shell Simmons	Monday	July	1998	4:30-5:30	123	424	17	50	5	61	69	570	52	115	5	109	1600
			June	1998	4:30-5:30	131	452	18	53	5	65	74	608	55	123	5	116	1707
			June	2001	**4:30-5:30**	140	482	19	57	6	69	78	648	59	131	6	124	1819
Yandukin	Old Dairy	Friday	December	2001	4:30	1	35	1	3	2	32	1	44	1	2	2	0	124
					5:00	1	45	1	4	0	39	0	37	2	1	2	2	134
			December	2001	**4:30-5:30**	2	80	2	7	2	71	1	81	3	3	4	2	258
			June	2001	**4:30-5:30**	3	102	3	9	3	90	1	103	4	4	5	3	328
Glacier	Old Dairy	Wednesday	December	2001	4:30	65	1	25	53	208	72	89	4	9	21	222	39	808
					5:00	50	4	17	40	155	56	100	6	5	12	249	31	725
			December	2001	**4:30-5:30**	115	5	42	93	363	128	189	10	14	33	471	70	1533
			June	2001	**4:30-5:30**	146	6	53	118	461	163	240	13	18	42	599	89	1949

Intersection		Day	Month	Year		EBRT	EBTH	EBLT	SBRT	SBTH	SBLT	WBRT	WBTH	WBLT	NBRT	NBTH	NBLT	TOTAL
Yandukin	Crest	Thursday	December	2001	4:30	1	10	8	12	3	17	22	24	3	1	3	2	106
					5:00	1	10	10	13	7	19	18	21	3	0	3	3	108
			December	2001	**4:30-5:30**	2	20	18	25	10	36	40	45	6	1	6	5	214
			June	2001	**4:30-5:30**	3	25	23	32	13	46	51	57	8	1	8	6	272
Glacier	Lemon Spur	Tuesday	December	2001	4:30	19	35	0	0	0	0	0	26	106	75	0	10	271
					5:00	35	30	0	0	0	0	0	33	89	57	0	13	257
			December	2001	**4:30-5:30**	54	65	0	0	0	0	0	59	195	132	0	23	528
			June	2001	**4:30-5:30**	69	83	0	0	0	0	0	75	248	168	0	29	671

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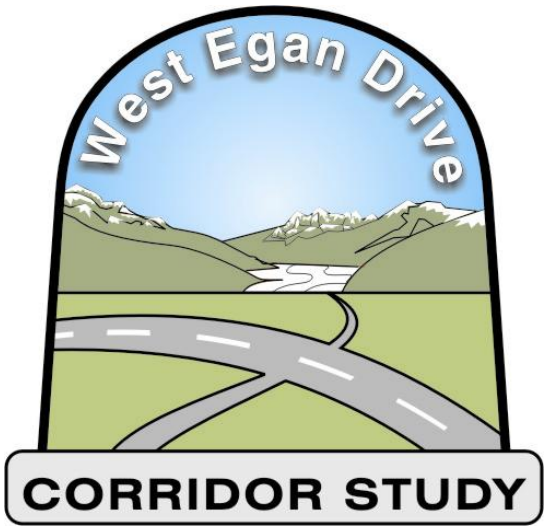
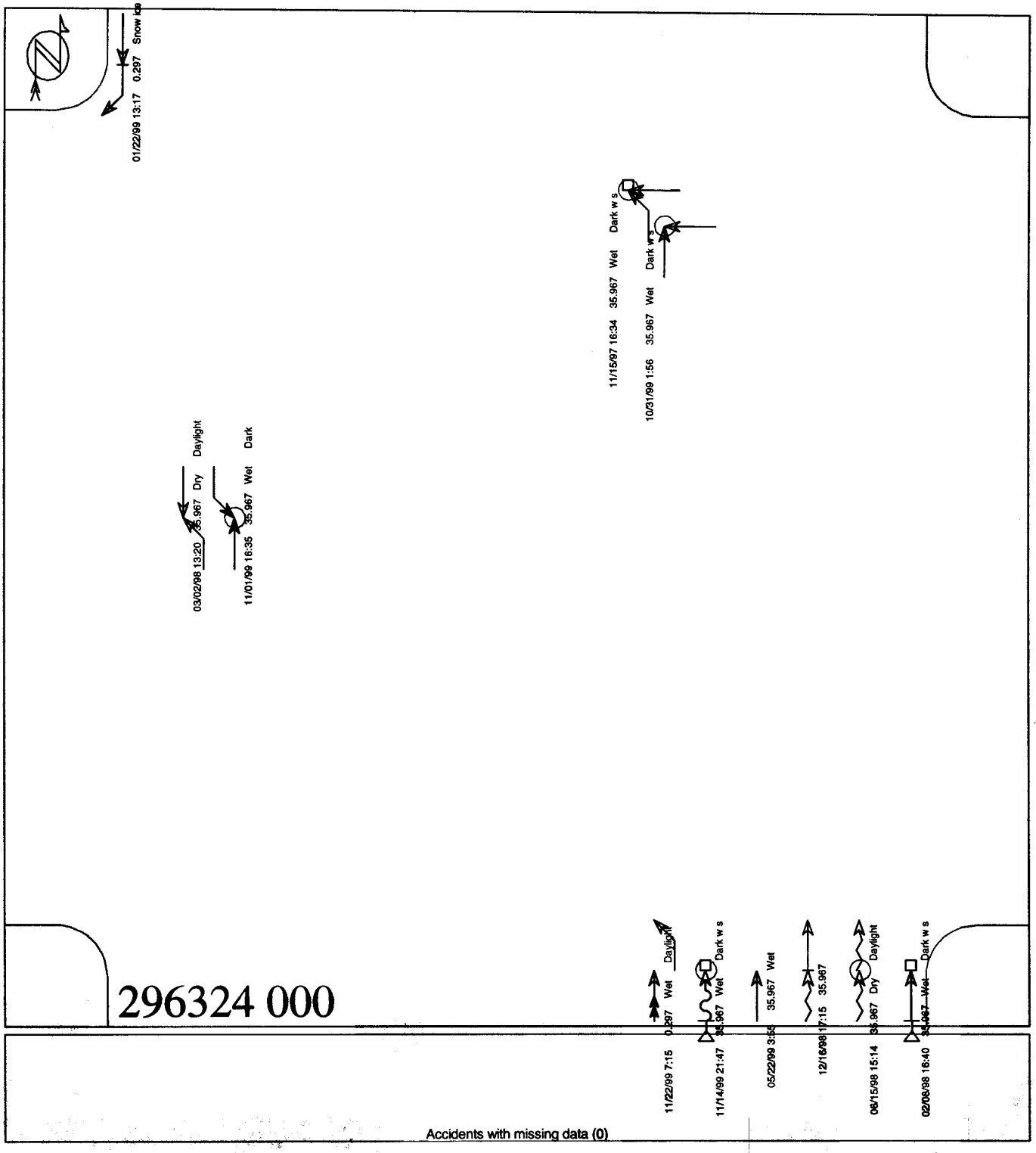
Appendix C: Accident Diagrams



	VEH 1 SEC EVENT=w Aircraft
	VEH 3 DIR=North, Northeast, East, Southeast, Southwest, West, Northwest
	TYPE=w Pedestrian
	COLL DIAG=SIDESWIPE
	COLL DIAG=REAR END
	VEH 1 CONTRIB 1=Alcohol w test, Alcohol no test, VEH 1 CONTRIB 2=Alcohol w test, Alcohol no test
	VEH 1 SEC EVENT=w Bridge overpass, w Building, w Culvert, w Curb wall, w Ditch, w Divider, w Parking meter, w Embankment, w Fence, w Machinery
	VEH 1 PRE ACT=Unattended, Stolen, Other action, VEH 2 PRE ACT=Unattended, Stolen, Other action
	VEH 1 PRE ACT=Stopped in traffic, VEH 2 PRE ACT=Stopped in traffic
	SEVERITY=Fatality
	SEVERITY=Minor injury, Major injury
	VEH 1 PRE ACT=Right turn, VEH 2 PRE ACT=Right turn
	VEH 1 PRE ACT=Left turn, VEH 2 PRE ACT=Left turn
	VEH 1 PRE ACT=Backing, VEH 2 PRE ACT=Backing
	VEH 1 PRE ACT=Straight, Starting from parked, Starting in traffic, Slowing or stopping, Parking, Merging, VEH 2 PRE ACT=Straight, Starting from parked, Starting in traffic, Slowing or stopping, Parking, Merging
	VEH 1 SEC EVENT=w Tree or shrub
	VEH 1 SEC EVENT=w Guardrail
	VEH 1 SEC EVENT=w Traffic light, w Light support
	VEH 1 SEC EVENT=w Sign post, w Utility post, w Other support
	VEH 1 SEC EVENT=w Animal, w Moose
	TYPE=w Pedacycle
	VEH 1 PRE ACT=Overtaking, VEH 2 PRE ACT=Overtaking
	VEH 1 PRE ACT=U turn, VEH 2 PRE ACT=U turn
	VEH 1 PRE ACT=Out of control, VEH 2 PRE ACT=Out of control
	VEH 1 PRE ACT=Avoiding object, Changing lanes, Skidding, Avoiding vehicle, VEH 2 PRE ACT=Avoiding object, Changing lanes, Skidding, Avoiding vehicle
	VEH 1 PRE ACT=Parked, VEH 2 PRE ACT=Parked

Yandukin\Egan
11 Accidents

Case Id List
01/01/97 - 12/31/99



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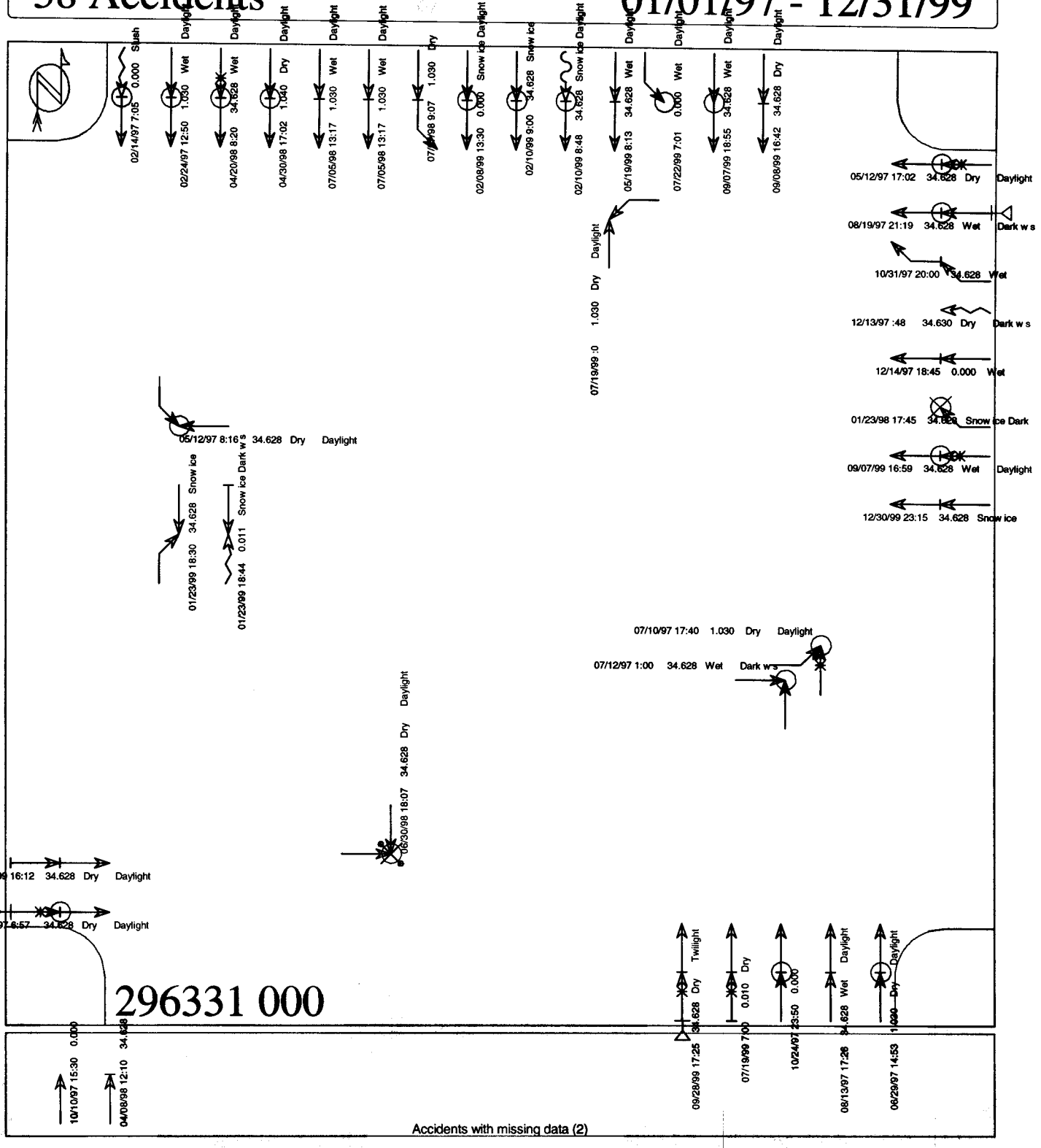
Loop and Egan
38 Accidents

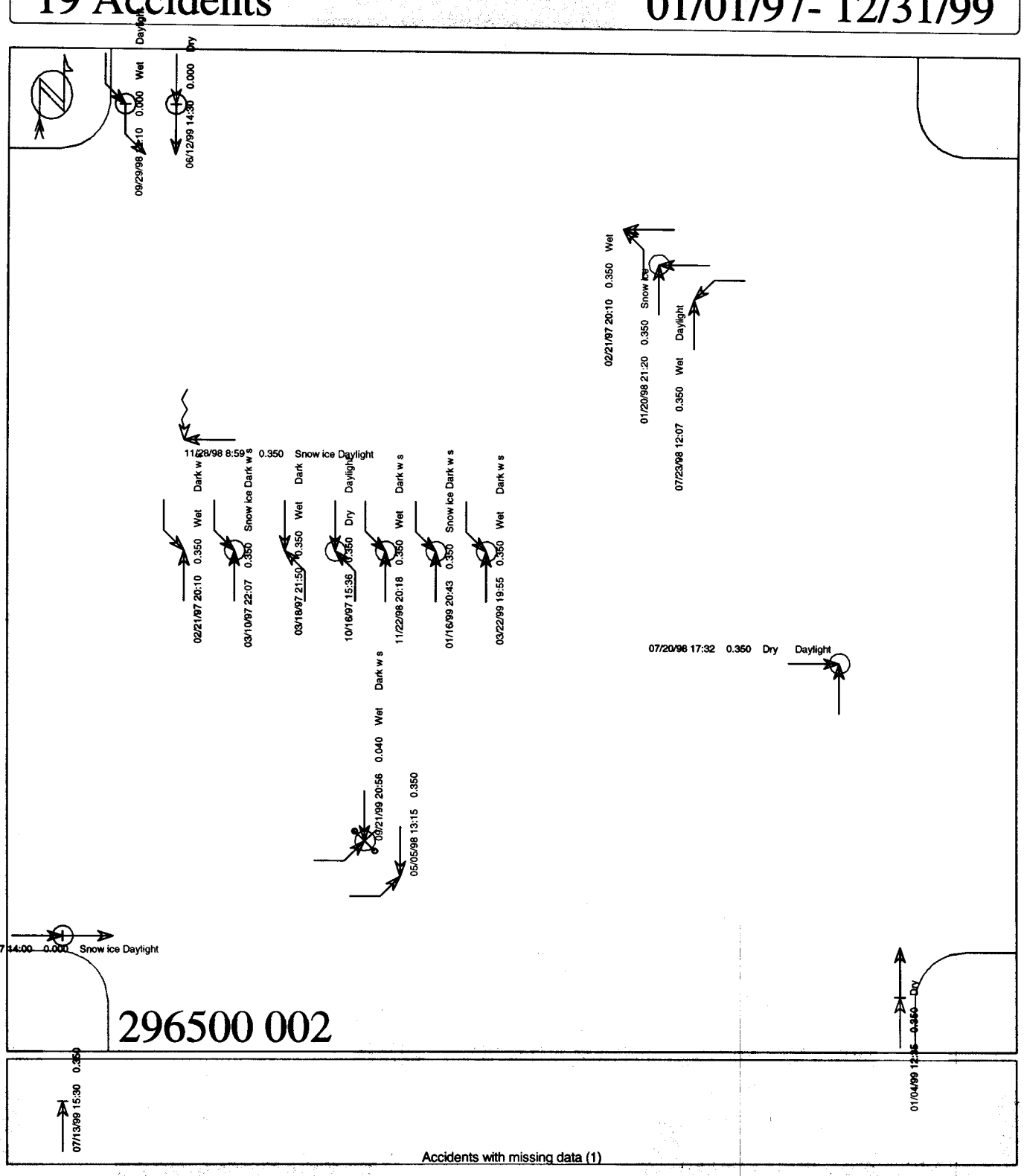
Case Id List
01/01/97 - 12/31/99



(clear filter)

Riverside/Vintage
19 Accidents

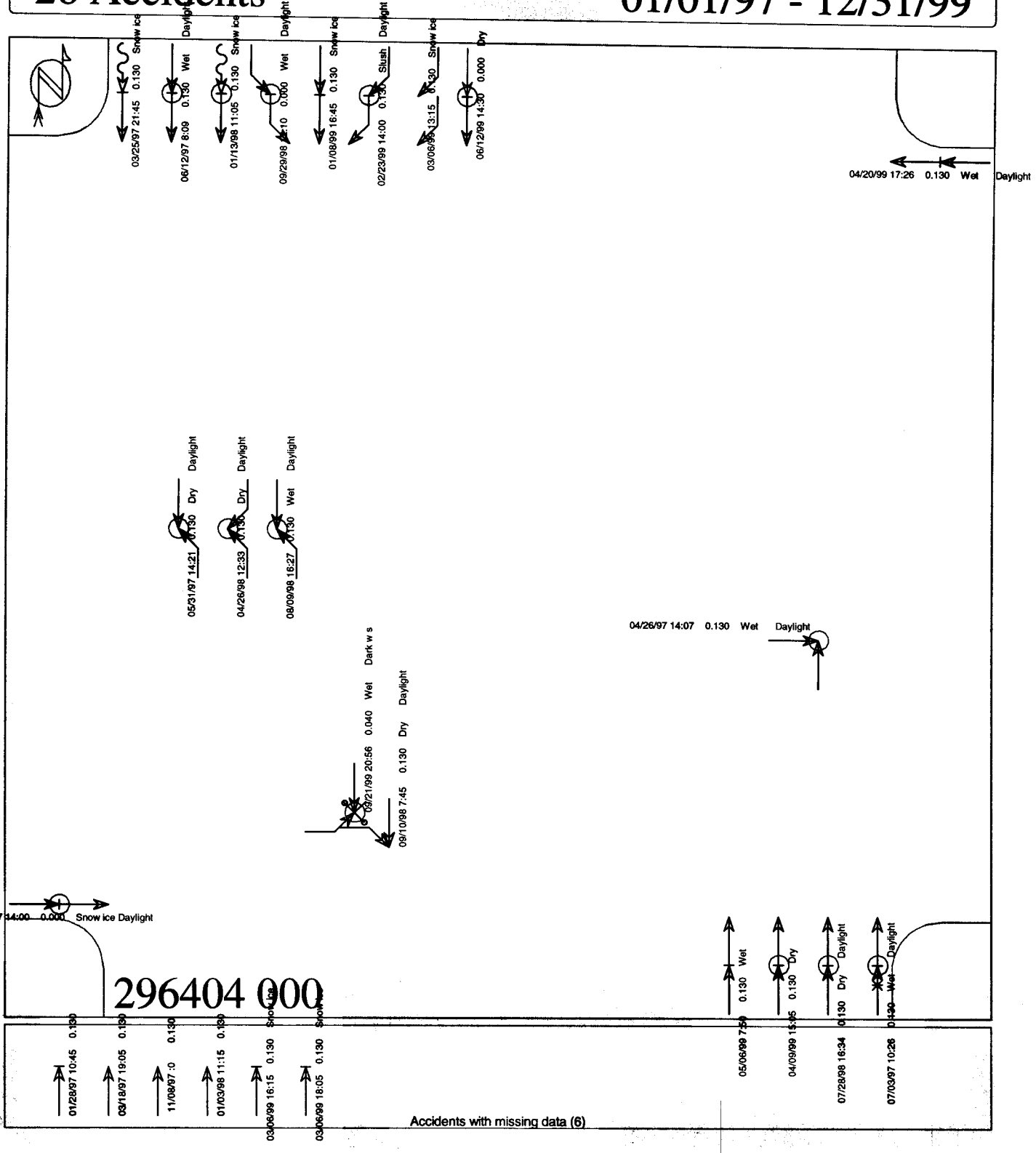
Case Id List
01/01/97- 12/31/99



(clear filter)

Loop/Atlin/Mall
26 Accidents

Case Id List
01/01/97 - 12/31/99



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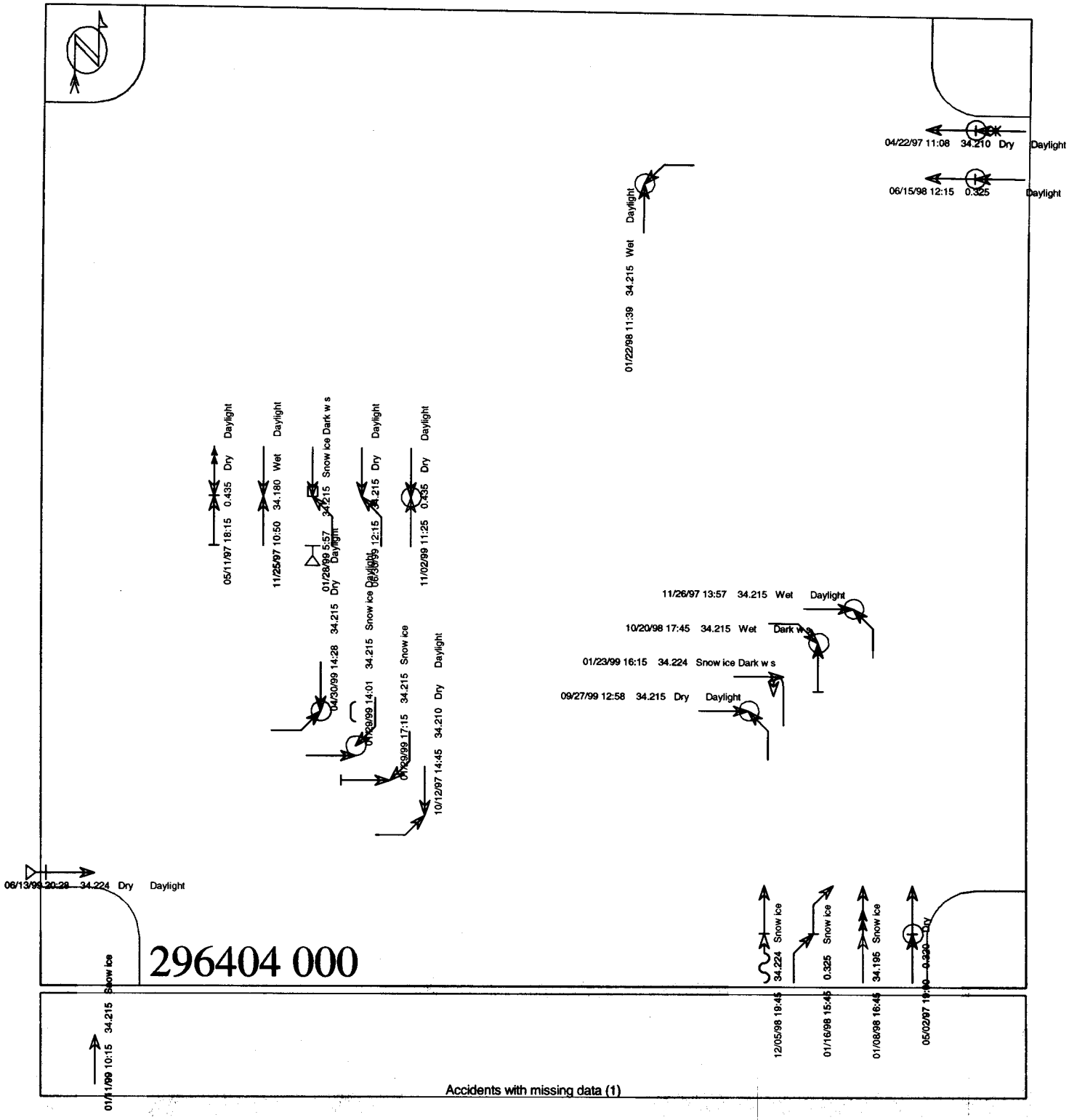
Vintage/Glacier/Egan
22 Accidents

Case Id List
01/01/97- 12/31/99



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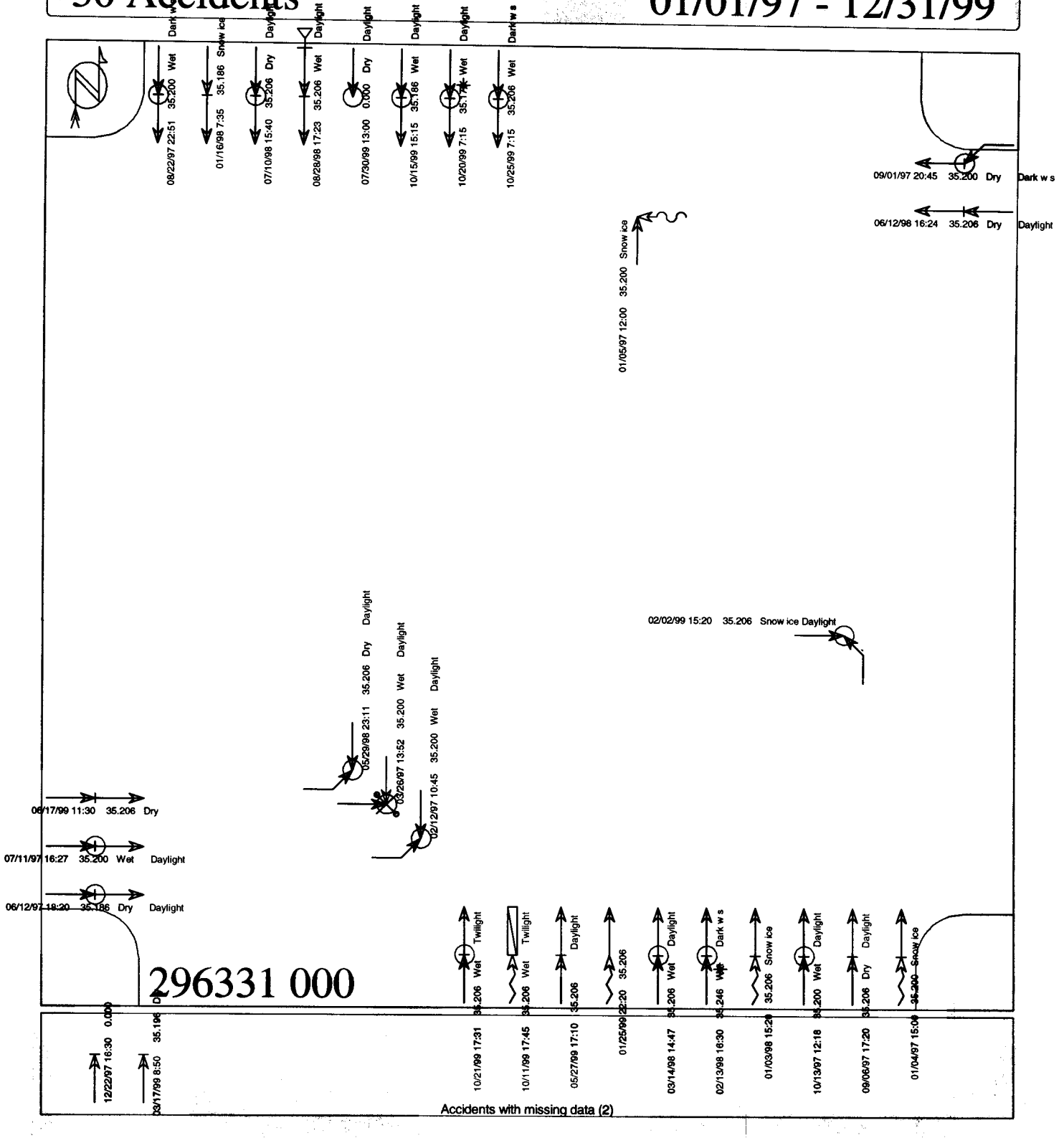
Glacier/Egan(McNugget)
30 Accidents

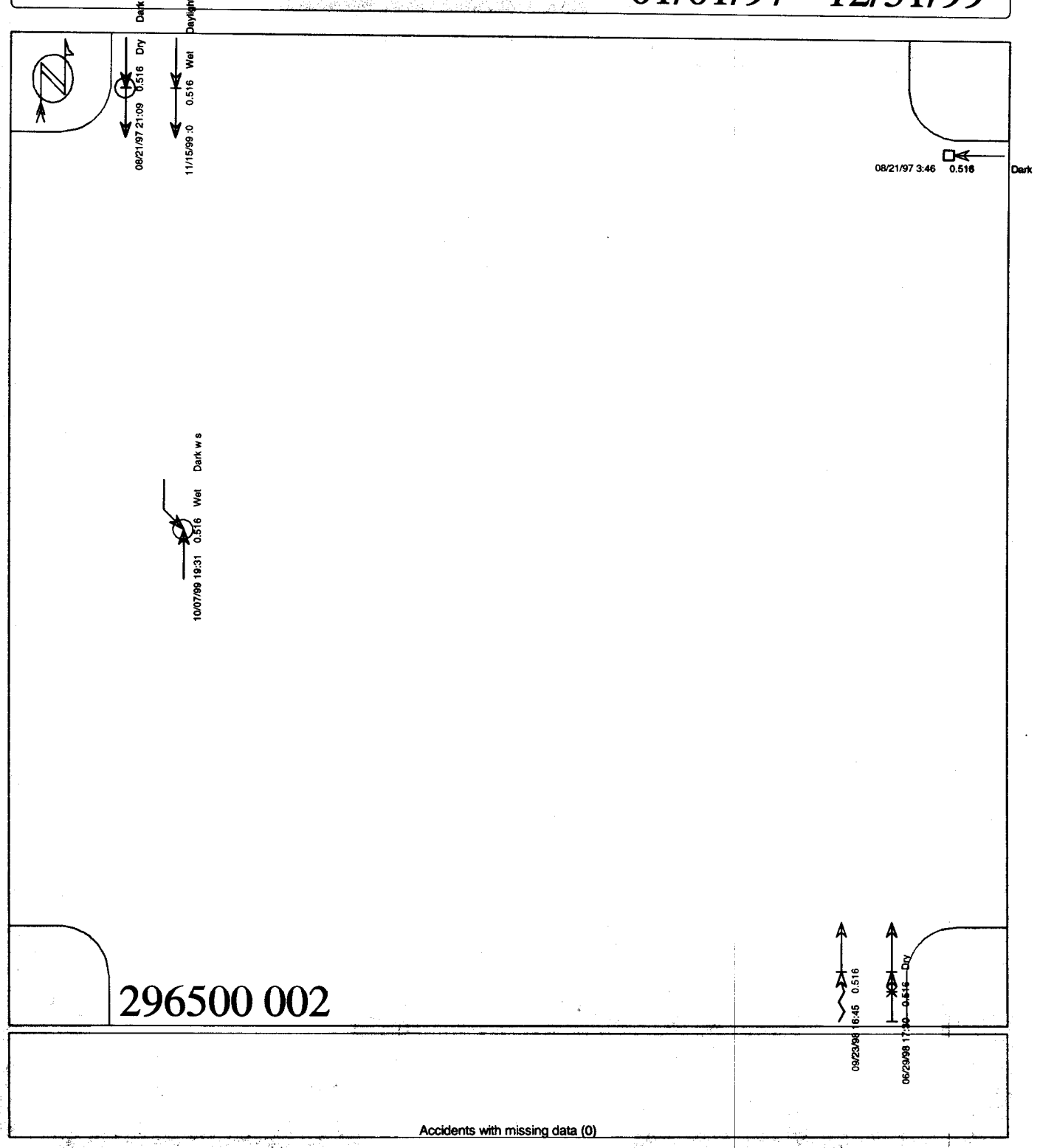
Case Id List
01/01/97 - 12/31/99



(clear filter)

Riverside at James
6 Accidents

296500 002 0.511 To 0.521
01/01/97 - 12/31/99



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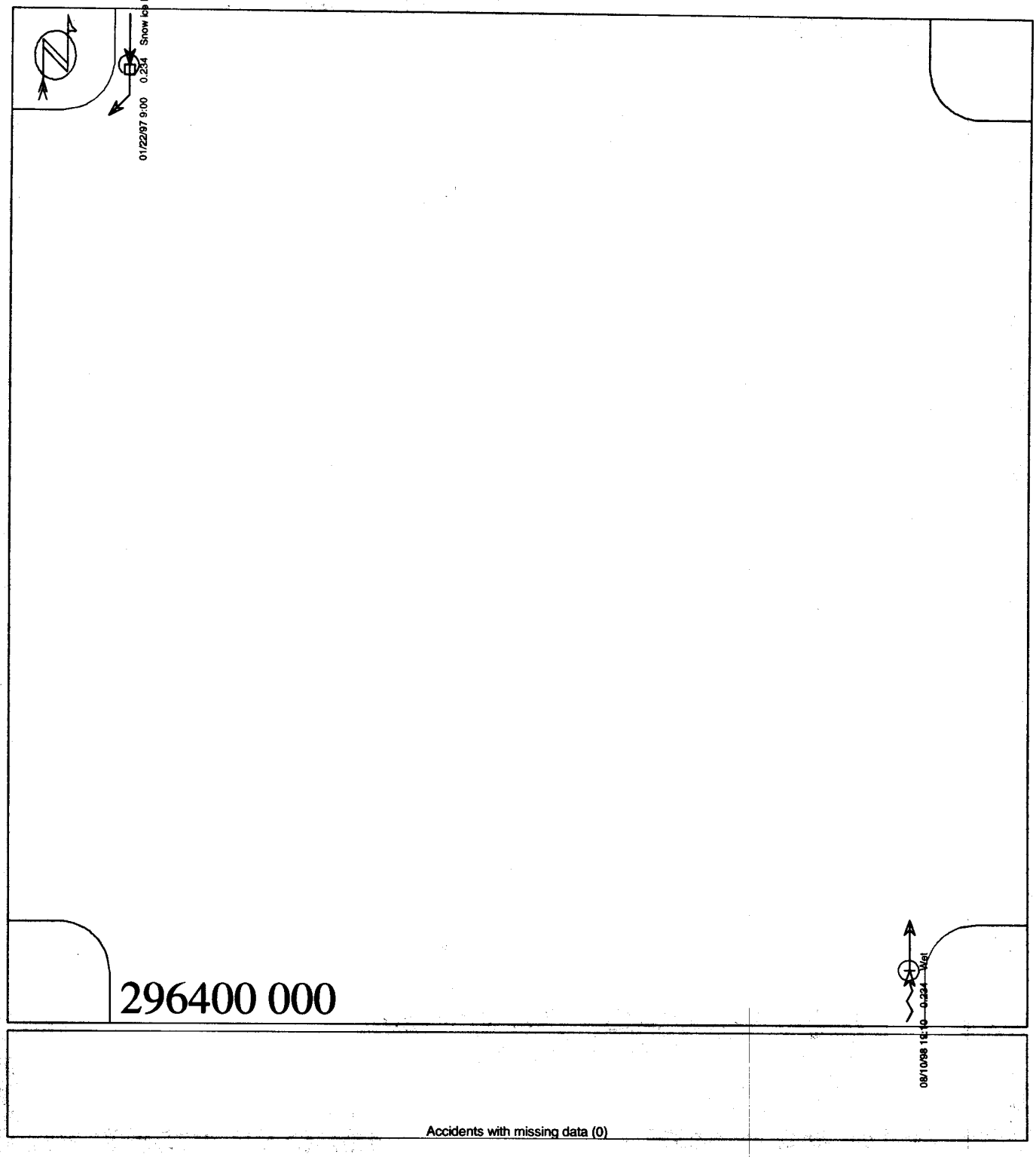
Loop/James
2 Accidents

296400 000 0.230 To 0.240
01/01/97 - 12/31/99



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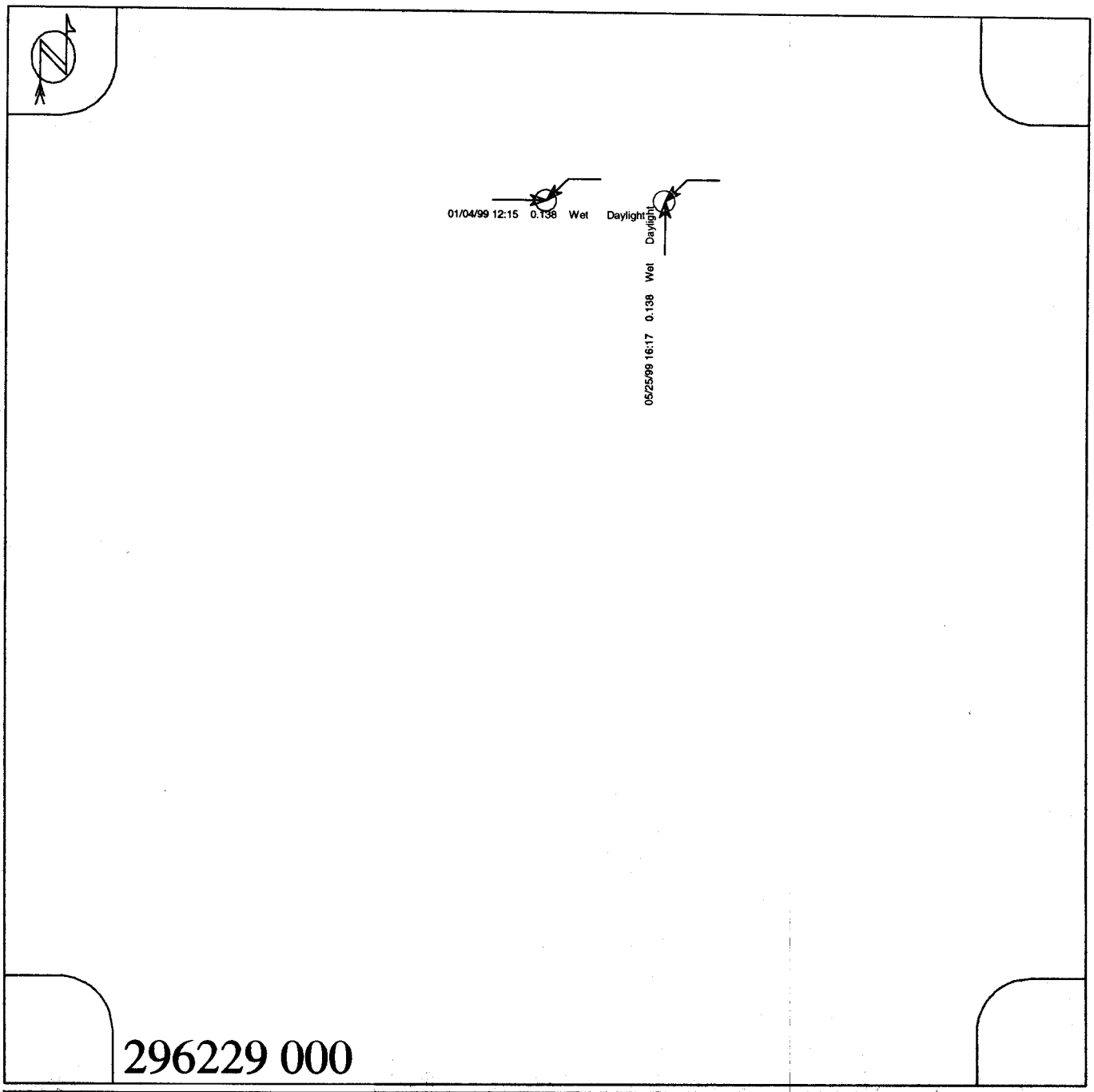
Glacier Highway/Lemon Spur 296229 000 0.135 To 0.145

2 Accidents 01/01/97 - 12/31/99

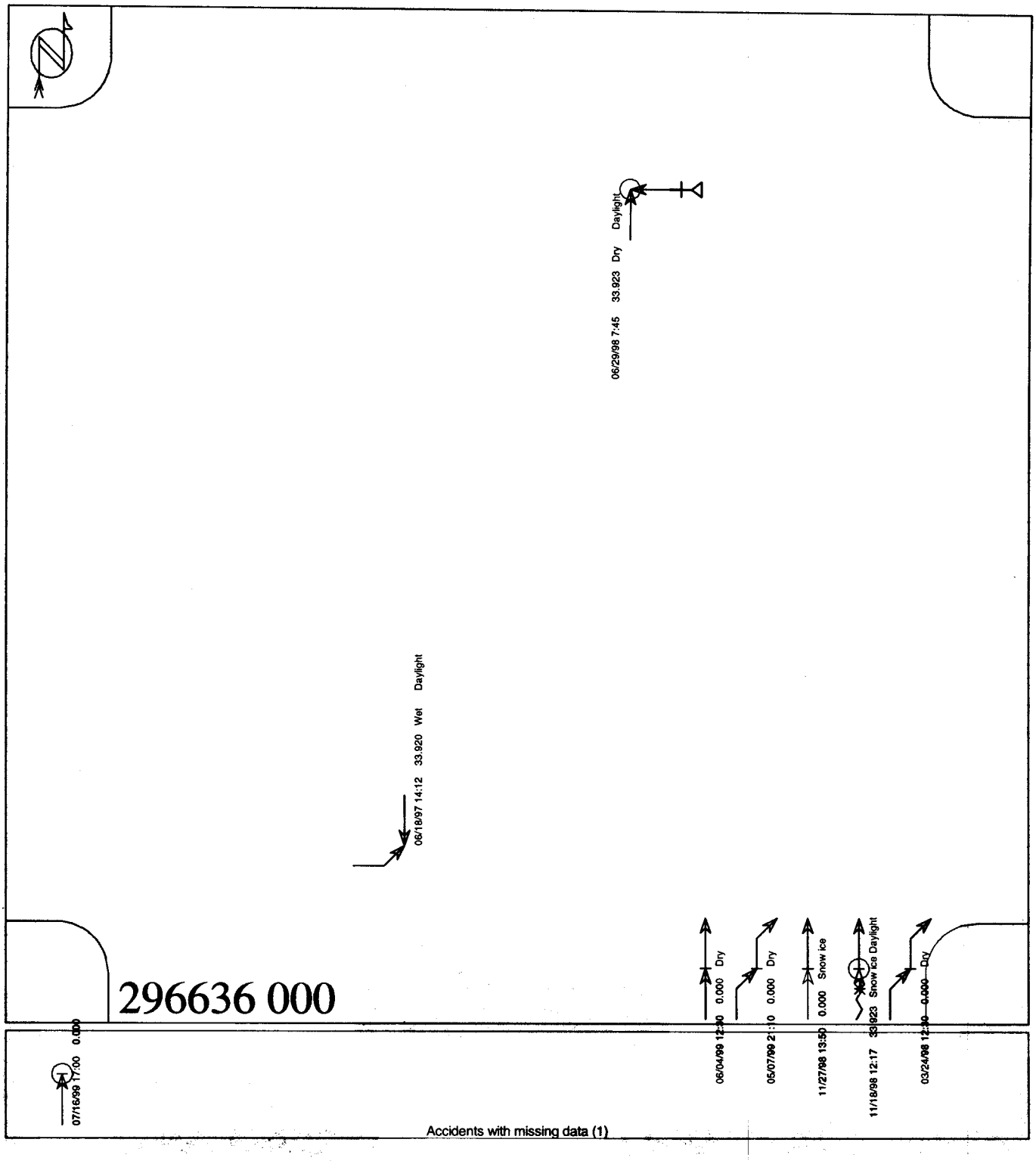


Accidents with missing data (0)

(clear filter)

Industrial at Egan
8 Accidents

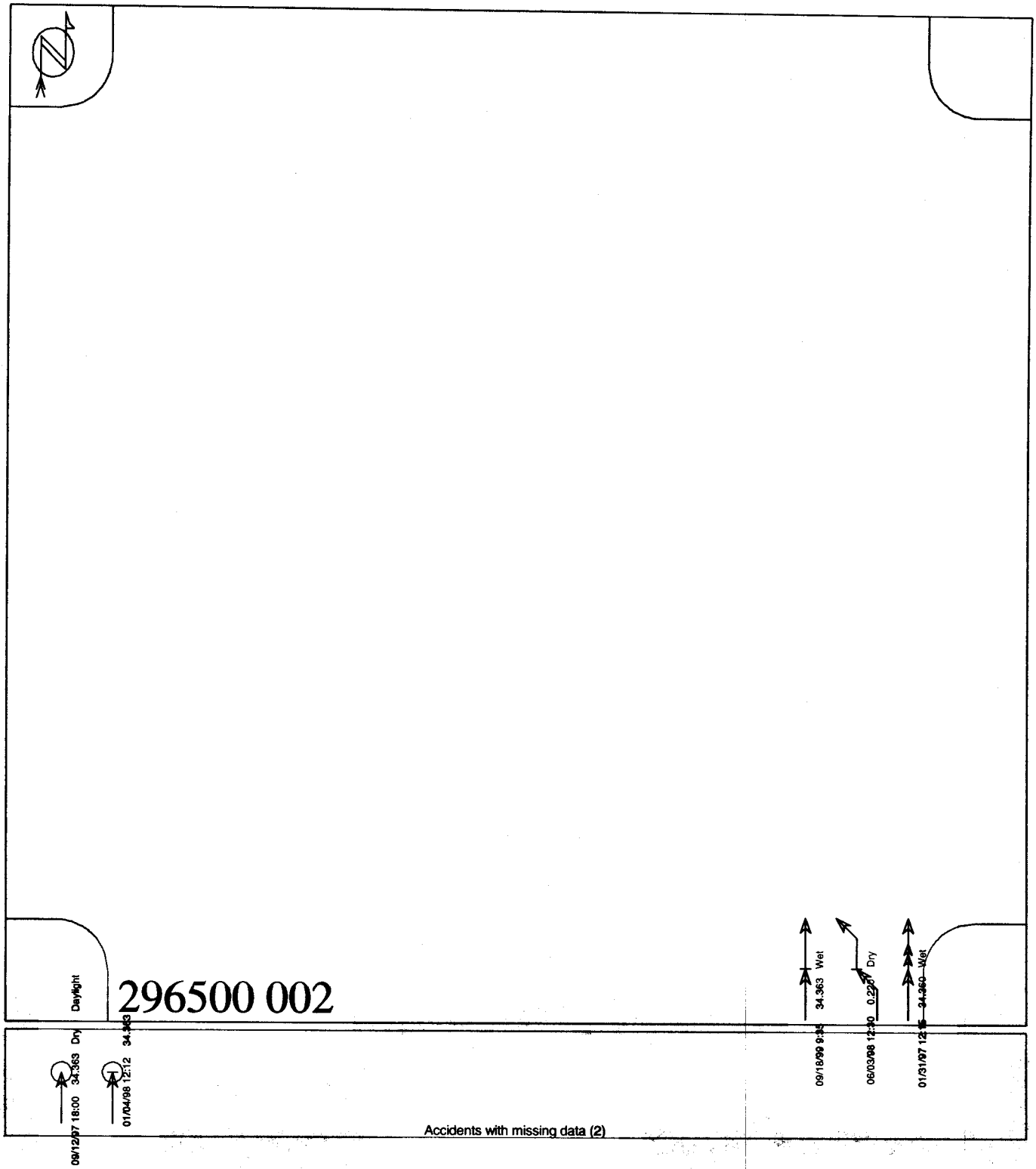
Case Id List
01/01/95 - 12/31/99



(clear filter)

Egan at Riverside
5 Accidents

Case Id List
01/01/95 - 12/31/99



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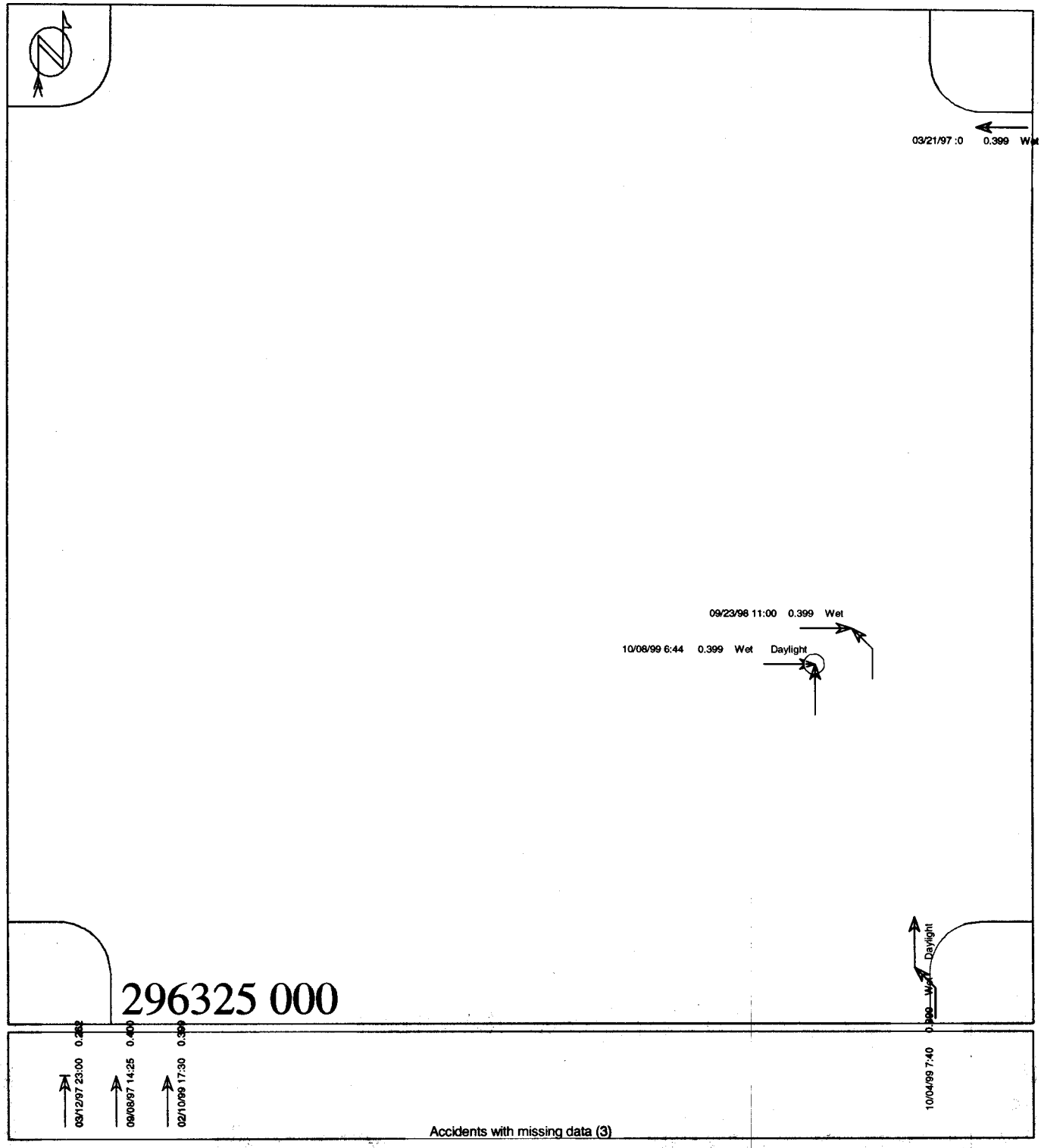
Glacier/ Shell Simmons
7 Accidents

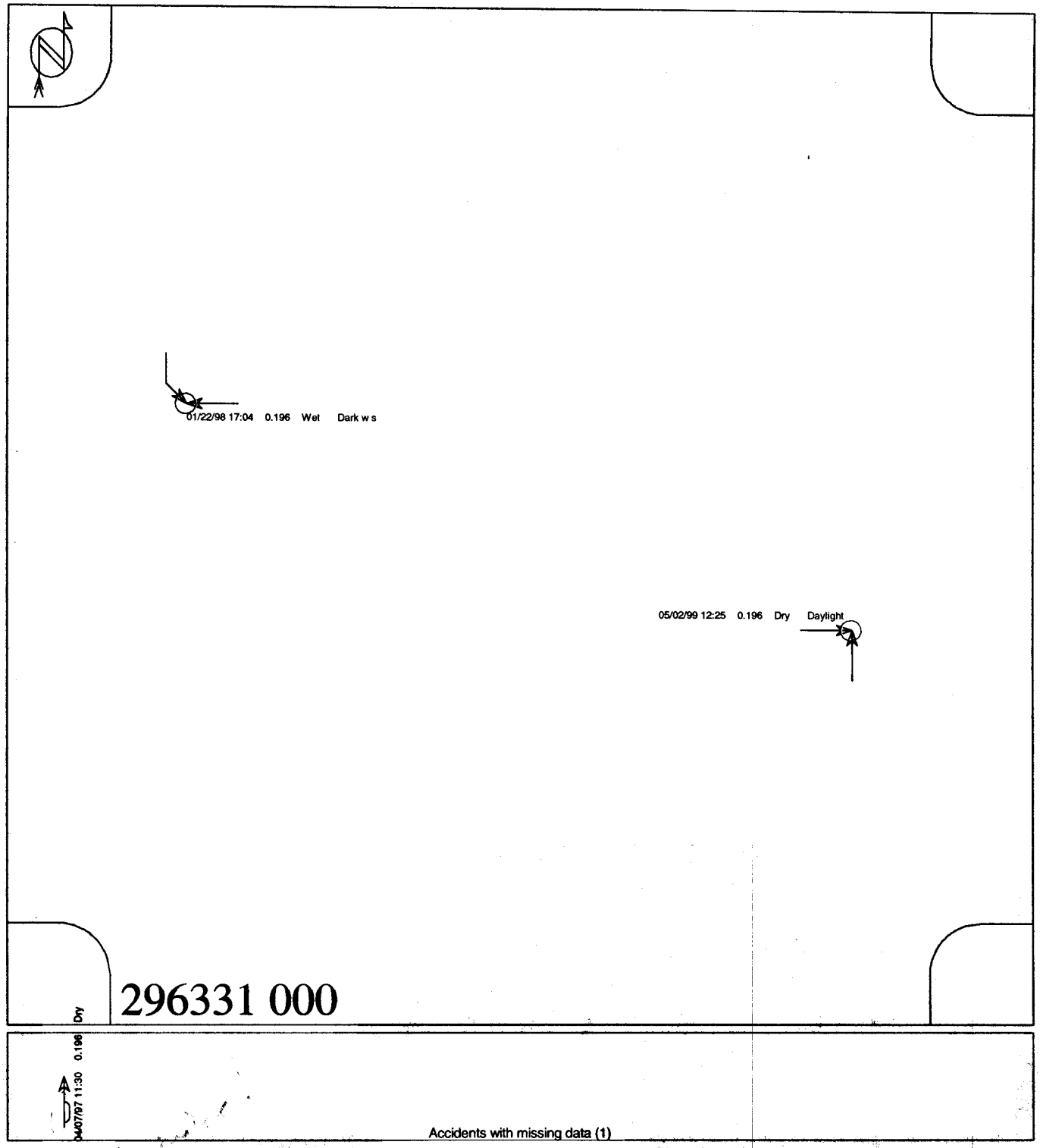
Case Id List
01/01/95 - 12/31/99



(clear filter)

Glacier/Jordan
3 Accidents

296331 000 0.191 To 0.201
01/01/97 - 12/31/99



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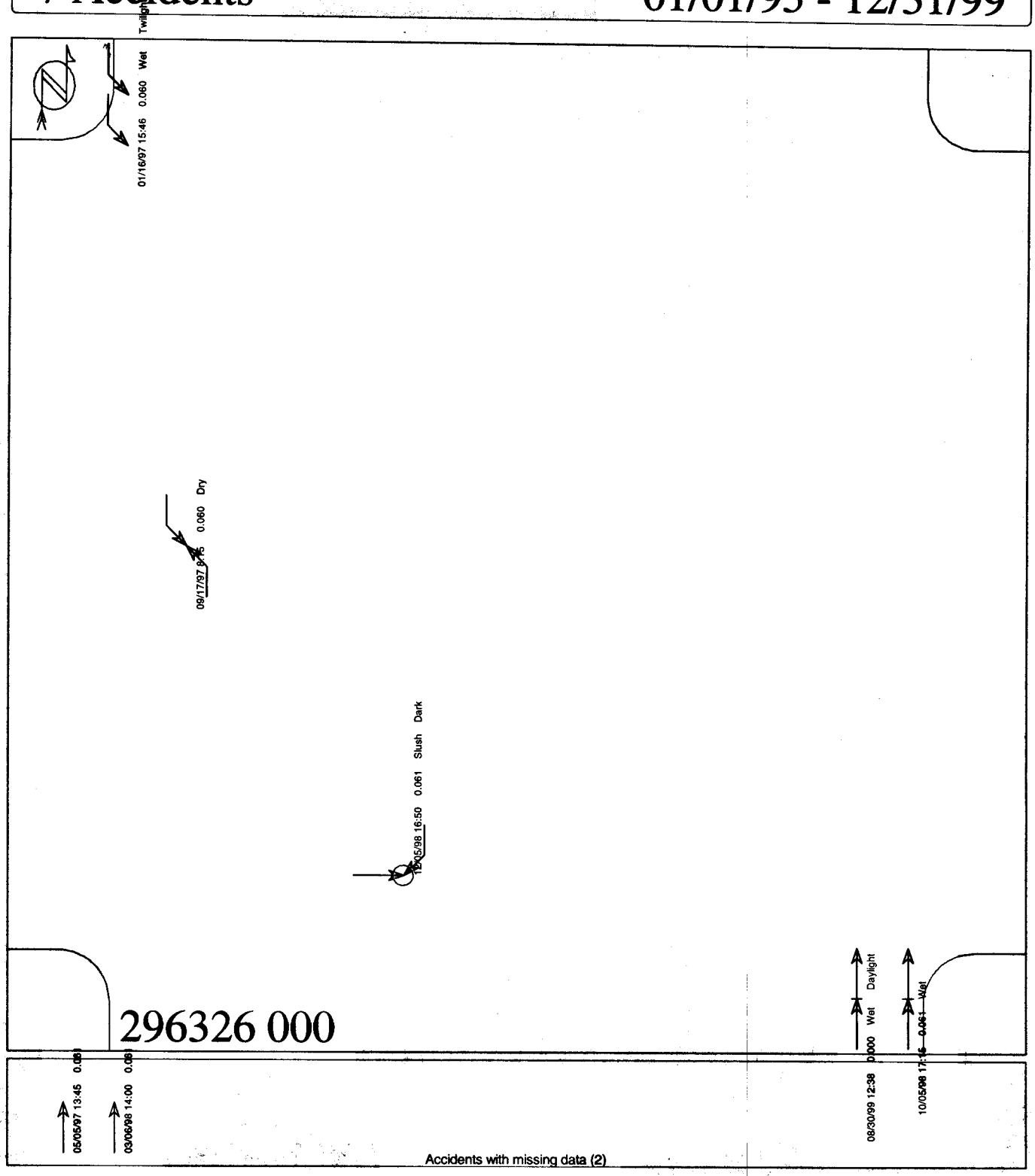
Glacier/ Trout/ Old dairy
7 Accidents

Case Id List
01/01/95 - 12/31/99



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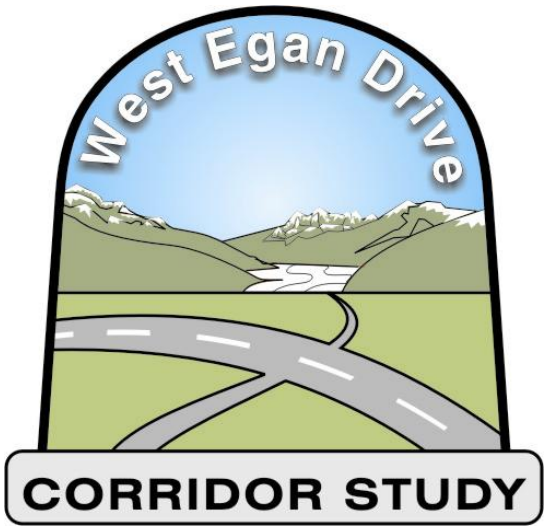
Appendix D: Intersection Level of Service Criteria



Appendix D

LEVEL OF SERVICE CONCEPT

Level of Service (LOS) is a concept developed by traffic engineers to gauge the overall quality of the travel experience through an intersection or roadway segment as it is perceived by the traveler. Six categories are used to denote the various levels of service, which range from A to F.[1]

SIGNALIZED INTERSECTIONS

At signalized intersections, level of service is defined by a single performance measure: average control delay per vehicle. Control delay is defined to include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Table D1 provides a qualitative description of each LOS category as it applies to signalized intersections, and Table D2 identifies the average control delay threshold point used as the boundary for each LOS category. LOS thresholds for the specific reviewing jurisdiction(s) are described in the body of the report.

Table D1
Level of Service Definitions (Signalized Intersections)

Level of Service	Average Delay per Vehicle
A	Very low average control delay, less than 10 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Average control delay is greater than 10 seconds per vehicle and less than or equal to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for a level of service A, causing higher levels of average delay.
C	Average control delay is greater than 20 seconds per vehicle and less than or equal to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Average control delay is greater than 35 seconds per vehicle and less than or equal to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle length, or high volume/capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Average control delay is greater than 55 seconds per vehicle and less than or equal to 80 seconds per vehicle. This is usually considered to be the limit of acceptable delay. These high delay values generally (but not always) indicate poor progression, long cycle lengths, and high volume/capacity ratios. Individual cycle failures are frequent occurrences.
F	Average control delay is in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation. It may also occur at high volume/capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such high delay values, even when the volume/capacity ratio is significantly below 1.0.

1 Most of the material in this appendix is adapted from the Transportation Research Board, *Highway Capacity Manual*, (2000).

Table D2
Level of Service Criteria for Signalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

UNSIGNALIZED INTERSECTIONS

Unsignalized intersections include two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections. The 2000 Highway Capacity Manual provides models for estimating average control delay at both TWSC and AWSC intersections. Table D3 provides a qualitative description of each LOS category as it applies to unsignalized intersections, and Table D4 identifies the average control delay threshold point used as the boundary for each LOS category. LOS thresholds for the specific reviewing jurisdiction(s) are described in the body of the report.

Table D3
Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Delay per Vehicle to Minor Street
A	• Nearly all drivers find freedom of operation with very little time spent waiting for an acceptable gap. • Very seldom is there more than one vehicle in queue.
B	• Some drivers begin to consider the average control delay an inconvenience, but acceptable gaps are still very easy to find. • Occasionally there is more than one vehicle in queue.
C	• Average control delay becomes noticeable to most drivers, even though acceptable gaps are found on a regular basis. • It is not uncommon for an arriving driver to find a standing queue of at least one additional vehicle.
D	• Average control delay is long enough to be an irritation to most drivers. Average control delay is long because acceptable gaps are hard to find, because there is a standing queue of vehicles already waiting when the driver arrives, or both.
E	• Drivers find the length of the average control delay approaching intolerable levels. • Average control delay is long because acceptable gaps are hard to find, because there is a standing queue of vehicles already waiting when the driver arrives, or both. • There may or may not be substantial excess capacity remaining at the intersection when this condition is encountered.
F	• Most drivers encountering this condition consider the length of the average control delay to be too long. • Average control delay is long because acceptable gaps are hard to find, because there is a standing queue of vehicles already waiting when the driver arrives, or both. • There may or may not be substantial excess capacity remaining at the intersection when this condition is encountered.

Table D4
Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

It should be noted that the level of service criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, there are a number of driver behavior considerations that combine to make delays at signalized intersections less onerous than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, while drivers on the minor street approaches to TWSC intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections than signalized intersections. For these reasons, the control delay threshold for any given level of service has been set to be less for an unsignalized intersection than for a signalized intersection. **While overall intersection level of service is calculated for AWSC intersections, level of service is only calculated for the minor approaches and the major street left turn movements at TWSC intersections.** No delay is assumed to the major street through movements. For TWSC intersections, the overall intersection level of service remains undefined: level-of-service is only calculated for each minor street lane.

In the performance evaluation of unsignalized intersections, it is important to consider other measures of effectiveness (MOE's) in addition to delay, such as v/c ratios for individual movements, average queue lengths, and 95th-percentile queue lengths. By focusing on a single MOE for the worst movement only, such as delay for the minor-street left turn, users may make inappropriate traffic control decisions.

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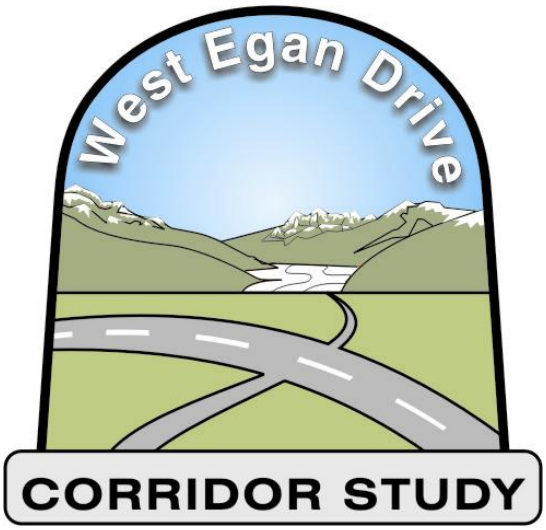
Appendix E: Operational Analysis Worksheets



These have been provided in electronic form on s separate CD.

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Appendix F: 95th Percentile Queues

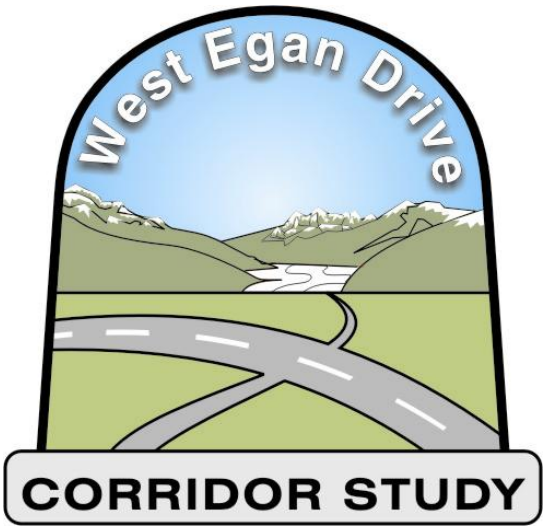

TABLE 1 EXISTING AM AND PM PEAK HOUR 95TH PERCENTILE QUEUES

		SB LT	SB TH	SB RT	WB LT	WB TH	WB RT	NB LT	NB TH	NB RT	EB LT	EB TH	EB RT
Glacier Highway/ Industrial Boulevard	**AM**	25			25	-		25	25		25	-	
	PM	50			25	-		50	100		25	-	
Egan Drive / Vintage Road / Old Glacier Hwy (North)	**AM**	-	-	25	25	-	-	50			-	-	-
	PM	-	-	25	25	-	-	375			-	-	-
Egan Drive / Riverside Drive	**AM**	250	-	25	-	50	25	-	-	-	150	100	-
	PM	175	-	50	-	75	50	-	-	-	>425	75	-
Egan Drive / Mendenhall Loop Road	**AM**	>825	>850	25	25	150	25	100	125	25	>125	>550	50
	PM	>425	>450	25	75	>500	25	200	>400	25	225	250	50
Egan Drive / Glacier Hwy (McNugget)	**AM**	-	-	-	250	75	-	50	-	25	-	525	25
	PM	-	-	-	>575	450	-	175	-	25	-	>475	75
Egan Drive / Yandukin Drive	**AM**	-	-	25	25	-	-	-	-	-	25	-	-
	PM	-	-	25	50	-	-	-	-	-	275	-	-
Mendenhall Mall Road / Vintage Blvd / Riverside Drive	**AM**	50	300	50	125	100	25	75	100	50	75	50	25
	PM	50	175	25	175	125	100	75	300	50	125	150	75
Mendenhall Mall Road / Mendenhall Loop Road	**AM**	25	300	25	50		25	125	100		100		75
	PM	25	225	50	25		25	250	475		>325		75
Glacier Hwy (North)/ Mendenhall Loop Road Extension	**AM**	25	-	-	25			25	-	-	25	50	
	PM	25	-	-	50			25	-	-	25	75	
Old Glacier Hwy (Airport)/ Shell Simmons Drive (unsignalized)	**AM**	25	25		25	-		25	25		25	-	-
	PM	375	150		25	-		300	50		25	-	-
Old Glacier Hwy (Airport)/ Shell Simmons Drive (signalized)	**AM**	50	25		50	100		50	25		25	225	25
	PM	100	50		75	275		150	75		50	275	25
Old Glacier Hwy (Airport)/ Jordan Avenue (unsignalized)	**AM**	25	25		25	-	-	25		25	25	-	-
	PM	275	50		25	-	-	75		25	25	-	-
Old Glacier Hwy (Airport)/ Jordan Avenue (signalized)	**AM**	25	25		50	125	25	25		25	50	225	25
	PM	25	25		50	125	25	25		25	50	325	50
Glacier Hwy (Airport)/ Old Dairy Road/Trout Street	**AM**	25	-	-	25	25		25	-	-	150	50	
	PM	25	-	-	50	125		25	-	-	150	250	

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound LT = Left-turn lane, TH/RT = Through/right-turn lane

> Denotes a 95th percentile v/c ratio greater than one for the movement, queue's may be longer than reported.

TABLE 2 YEAR 2025 AM AND PM PEAK HOUR 95TH PERCENTILE QUEUES

		SB LT	SB TH	SB RT	WB LT	WB TH	WB RT	NB LT	NB TH	NB RT	EB LT	EB TH	EB RT
Glacier Highway / Industrial Boulevard	**AM**	25			50	-		150	50		25	-	
	PM	100			125	-		200	1450		25	-	
Egan Drive / Vintage Blvd / Glacier Hwy (North)	**AM**	-	-	25	25	-	-	150			-	-	-
	PM	-	-	50	50	-	-	800			-	-	-
Egan Drive / Riverside Drive	**AM**	200	-	25	-	75	25	-	-	-	175	150	-
	PM	125	-	50	-	100	300	-	-	-	>625	100	-
Egan Drive / Mendenhall Loop Road	**AM**	>1225	>1300	25	50	200	25	125	150	50	>175	>725	50
	PM	>625	>650	25	100	>625	25	>325	>600	50	>275	>425	50
Egan Drive / Glacier Hwy (McNugget)	**AM**	-	-	-	>450	75	-	100	-	25	-	425	25
	PM	-	-	-	>950	>900	-	>325	-	25	-	>450	75
Egan Drive / Yandukin Drive	**AM**	-	-	25	50	-	-	-	-	-	50	-	-
	PM	-	-	25	175	-	-	-	-	-	775	-	-
Mendenhall Mall Road / Vintage Blvd / Riverside Drive	**AM**	50	475	50	125	125	50	125	125	75	100	50	75
	PM	50	300	50	>200	125	100	150	525	50	>200	150	125
Mendenhall Mall Road / Mendenhall Loop Road	**AM**	25	550	25	50		25	>100	100		125		75
	PM	25	325	50	25		25	250	>600		>350		75
Glacier Hwy (North)/ Mendenhall Loop Road Extension	**AM**	25	-	-	25			25	-	-	25	100	
	PM	25	-	-	175			25	-	-	50	250	
Glacier Hwy (Airport) /Shell Simmons Drive (signalized)	**AM**	75	50		75	150		100	50		50	375	25
	PM	>150	75		100	>1050		>300	75		75	500	25
Glacier Hwy (Airport) / Jordan Avenue (signalized)	**AM**	25	25		75	175	25	50		25	75	375	25
	PM	>225	75		100	>750	25	>175		50	50	>600	50
Glacier Hwy (Airport) / Old Dairy Road	**AM**	25	-	-	25	50		25	-	-	450	100	
	PM	50	-	-	-	800		25	-	-	-	275	

NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound LT = Left-turn lane, TH/RT = Through/right-turn

> Denotes a 95th percentile v/c ratio greater than one for the movement, queue's may be longer than reported.

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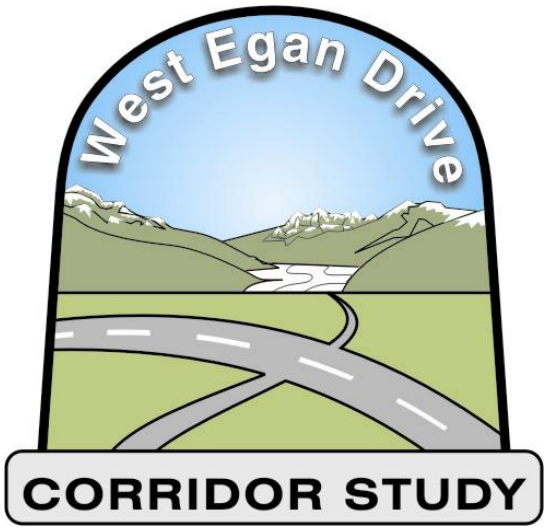
Appendix G: Population and Employment Data



Employment Data
Provided by CBJ 12/2000

TAZ	Area	Employment 1998	2020	Annual Growth Rate
Area A				
9	Upper Valley	14	17	0.89%
10	Middle Valley	128	158	0.96%
1/2 of 20	Mendenhall Mall	150	185	0.96%
22	Mid-Central Valley	30	37	0.96%
23	Upper Central Valley	16	20	1.02%
24	Upper Tongass	56	69	0.95%
25	Lower Tongass	7	9	1.15%
27	Atlin Drive	3	4	1.32%
	Total	**404**	**499**	
Average Annual Growth Rate				**1.03%**
		Delta	**95**	
Area B				
11	Upper River	69	85	0.95%
12	West Valley	25	31	0.98%
1/2 of 18	Vintage Park	137.5	169.5	0.96%
1/2 of 20	Mendenhall Mall	150	185	0.96%
21	Mid Riverside	11	14	1.10%
26	Lower Tongass	385	474	0.95%
	Total	**777.5**	**958.5**	
Average Annual Growth Rate				**0.98%**
		Delta	**181**	
Area C				
1/2 of 18	Vintage Park	137.5	169.5	0.96%
Average Annual Growth Rate				**0.96%**
		Delta	**32**	
Area D				
28	Hurlock Avenue	43	53	0.96%
29	Upper Radcliff	23	28	0.90%
1/2 of 30	Lower Radcliff	22	27	0.94%
1/2 of 31	Travel Lodge	155	191	0.95%
	Total	**243**	**299**	
Average Annual Growth Rate				**0.94%**
		Delta	**56**	

Population Data
Provided by CBJ 12/2000

TAZ	Area	Population 1998	2020	Annual Growth Rate
Area A				
9	Upper Valley	1029	1088	0.25%
10	Middle Valley	1186	1462	0.96%
1/2 of 20	Mendenhall Mall	0	0	0.00%
22	Mid-Central Valley	884	1018	0.64%
23	Upper Central Valley	2109	2193	0.18%
24	Upper Tongass	768	852	0.47%
25	Lower Tongass	706	870	0.95%
27	Atlin Drive	43	112	4.45%
	Total	**6725**	**7595**	
Average Annual Growth Rate				**0.99%**
		Delta	**870**	
Area B				
11	Upper River	2202	2311	0.22%
12	West Valley	898	1107	0.96%
1/2 of 18	Vintage Park	0	0	0.00%
1/2 of 20	Mendenhall Mall	0	0	0.00%
21	Mid Riverside	1026	1065	0.17%
26	James Blvd.	569	628	0.45%
	Total	**4695**	**5111**	
Average Annual Growth Rate				**0.30%**
		Delta	**416**	
Area C				
1/2 of 18	Vintage Park	0	0	0.00%
Average Annual Growth Rate				**0.00%**
		Delta	**0**	
Area D				
28	Hurlock Avenue	97	120	0.97%
29	Upper Radcliff	390	419	0.33%
1/2 of 30	Lower Radcliff	241	271	0.54%
1/2 of 31	Travel Lodge	120.5	132.5	0.43%
	Total	**848.5**	**942.5**	
Average Annual Growth Rate				**0.57%**
		Delta	**94**	

Area E				
1/2 of 30	Lower Radcliff	22	27	0.94%
1/2 of 31	Travel Lodge	155	191	0.95%
32	Airport Mall	317	391	0.96%
33	Nugget Jordan Mall	592	730	0.96%
34	Ka-See-An	101	124	0.94%
1/2 of 35	Crest Street	77.5	95.5	0.95%
1/2 of 36	Old Dairy	138.5	170.5	0.95%
	Total	**1403**	**1729**	
Average Annual Growth Rate				**0.95%**
		Delta	**326**	

Area E: Glacier Highway East to Egan Drive				
1/2 of 30	Lower Radcliff	241	270	0.52%
1/2 of 31	Travel Lodge	120.5	132.5	0.43%
32	Airport Mall	60	77	1.14%
33	Nugget Jordan Mall	3	42	12.76%
34	Ka-See-An	225	249	0.46%
1/2 of 35	Crest Street	1	12	11.97%
1/2 of 36	Old Dairy	0	0	0.00%
	Total	**650.5**	**782.5**	
Average Annual Growth Rate				**3.90%**
		Delta	**132**	

Area F				
7	Airport	352	434	0.96%
19	Glacier Fire Station	48	59	0.94%
1/2 of 35	Crest Street	77.5	95.5	0.95%
1/2 of 36	Old Dairy	138.5	170.5	0.95%
	Total	**616**	**759**	
Average Annual Growth Rate				**0.95%**
		Delta	**143**	

Area F				
7	Airport	0	0	0.00%
19	Glacier Fire Station	0	0	0.00%
1/2 of 35	Crest Street	1	12	11.97%
1/2 of 36	Old Dairy	0	0	0.00%
	Total	**1**	**12**	
Average Annual Growth Rate				**2.99%**
		Delta	**11**	

Area G				
1/2 of 6	Fred Meyer	143	176	0.95%
Average Annual Growth Rate				**0.95%**
		Delta	**33**	

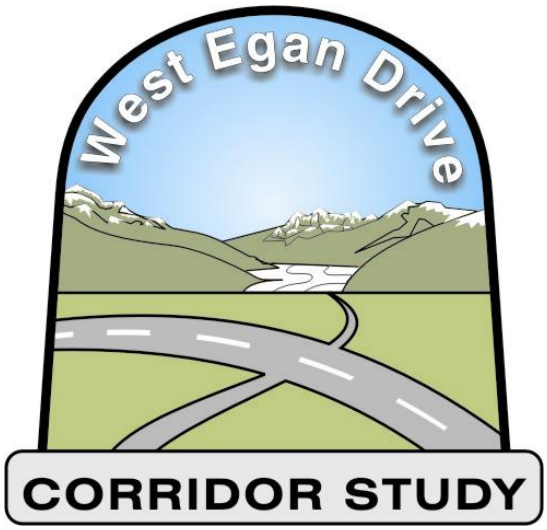
Area G				
1/2 of 6	Fred Meyer	7.5	112	13.09%
Average Annual Growth Rate				**13.09%**
		Delta	**104.5**	

Area H				
8	Engineers Cutoff	1	1	0.00%
13	Peterson Hill	395	487	0.96%
14	Fritz Cove	8	10	1.02%
15	University of Alaska	105	129	0.94%
16	Tee Harbor	465	573	0.95%
17	Industrial Boulevard	1096	1351	0.96%
	Total	**2070**	**2551**	
Average Annual Growth Rate				**0.80%**
		Delta	**481**	

Area H				
8	Engineers Cutoff	243	407	2.37%
13	Peterson Hill	677	1036	1.95%
14	Fritz Cove	646	705	0.40%
15	University of Alaska	449	961	3.52%
16	Tee Harbor	1942	2393	0.95%
17	Industrial Boulevard	87	696	9.92%
	Total	**4044**	**6198**	
Average Annual Growth Rate				**3.19%**
		Delta	**2154**	

Section 6 Final Report Chapter 3 Appendix

Appendix H: Origin-Destination Analysis



Alaska Department of Transportation & Public Facilities

West Egan Drive Corridor Study

Working Paper #2

Origin-Destination (O-D) Analysis

October 2002

Kittelson & Associates, Inc.
in association with CH2M Hill,
Cogan Owens Cogan, and Southeast Strategies

Introduction

The upcoming phase of the West Egan Drive Corridor (WEDCOR) Study includes a detailed traffic operations analysis of the alternatives that are under consideration. All of these alternatives include new roads connecting different parts of the current roadway system. In order to conduct the traffic operations analysis, it is necessary to estimate the routes motorists might choose with these new connections in place. To make this estimate, an origin-destination (O-D) survey and analysis was conducted to identify existing travel patterns within the West Egan Drive Corridor.

In an origin-destination survey key travel routes within the study area are identified (e.g., southbound Mendenhall Loop Road to Glacier Highway (Lemon Spur)). For a two-hour period, the license plate digits and letters of all vehicles traveling past the designated route origin are recorded (e.g., making a southbound left turn on Mendenhall Loop Road). During the same period, the license plate digits and letters of all vehicles traveling past the route destination are recorded (e.g., making a left hand turn from Egan Drive into Glacier Highway (Lemon Spur)). The two sets of data are then compared to identify license plate matches between the two locations. The number of matches reveals the desire for travel between the two locations (e.g. Mendenhall Valley and Fred Meyer). With the most popular travel routes within the study area identified, it is possible to re-assign traffic to the new transportation networks based on quantifiable information.

Methodology

For the purposes of this survey, 23 survey locations, and 22 route pairs were identified. These represent all of the key routes in the study area along Egan Drive. Minor movements and routes off Egan Drive were not recorded. The survey locations are shown in Figure 1. The survey was conducted on August 27, 2002. Two people were assigned to each survey location. For two two-hour periods during the a.m. and p.m. peak periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.), surveyors recorded the last four digits or numbers of vehicles traveling past them. For example, two people were assigned to monitor the right-hand turn from Glacier Highway (North) to eastbound Egan Drive. For every vehicle that traveled past one of the locations shown in

Figure 1, one person called out the last four digits or letters of the license plate, and the second person wrote down the digits or letters. The license plates were recorded in five-minute increments. In those cases where the surveyor was unable to record the license plate number, the vehicle was counted anyway. The surveyors included members of the Juneau-Douglas High School swim team, Beta Sigma Phi, Citizens Patrol, and interns with the Alaska Department of Transportation & Public Facilities.

The license plate data was then compiled and analyzed within a spreadsheet to determine the total number vehicles passing through each survey point and the number of vehicles that traveled between a given pair of survey points. The matching of license plates was constrained to a 10-minute interval from the time when the subject plate was first observed to the time it was observed at the second survey point. This reduces the likelihood of double counting vehicles that pass through the study area more than once during the analysis period.

Results

The results of the O-D analysis are presented graphically in Figures 2A through 2F for the weekday a.m. peak period and in Figures 3A through 3F for the weekday p.m. peak period. In each figure, the path between a given pair of survey points is indicated by a solid red or dashed blue line. The total number of vehicles entering a particular path is indicated at the path origin. Conversely, at the end of each path, the number of matching license plates and the corresponding percentage of the total number of entering vehicles are listed. Table 1 summarizes the 23 survey locations that were analyzed and the figure on which they are shown.

What Does It Mean?

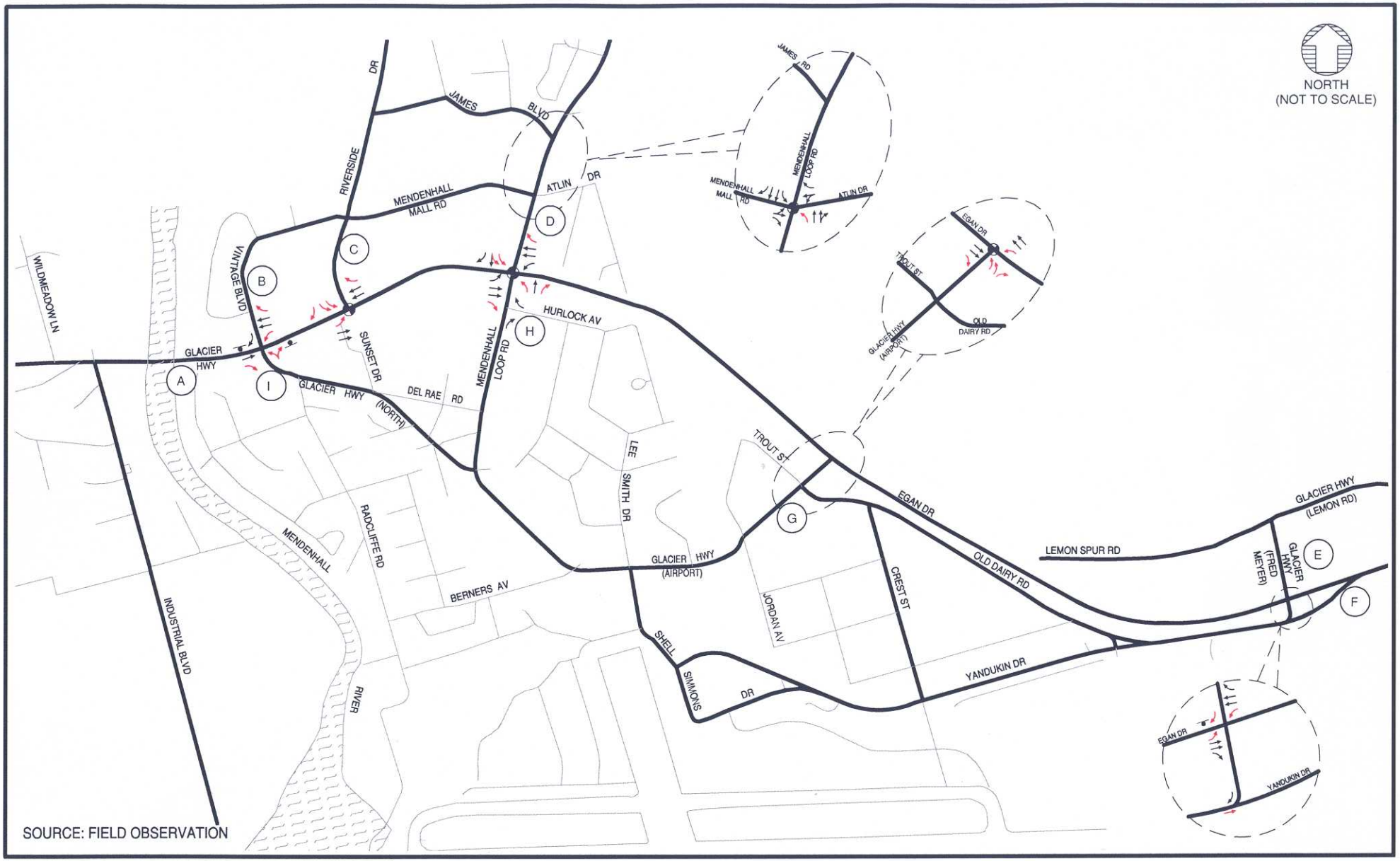
Each of the observed matches will be used to assist in re-assigning the forecast no-build traffic volumes to each of the four most viable alternative transportation systems. For example, Figure 3E shows that during the p.m. peak hour three percent of the northbound left turns at the intersection of Glacier Highway (Airport)/Egan Drive subsequently turn right from Egan Drive onto Vintage Boulevard. However, under Alternative 1, this routing changes due to the elimination of a connection between Glacier Highway (Airport) and Egan Drive. Therefore, as the forecast volumes are developed for Alternative 1 three percent of the forecast no-build p.m. peak hour northbound left turns from the intersection of Glacier Highway (Airport)/Egan Drive will be re-routed from westbound Egan Drive to westbound Glacier Highway and then northbound through the Egan Drive/Vintage Boulevard interchange. This process will be applied to each of the routes for the a.m. and p.m. peak hour for all four of the most viable alternatives.

There are a few notable routes that are popular among travelers within the study area. These routes represent demand patterns that indicate a potential need for more direct routes to improve local circulation and/or the traffic performance of the system as a whole. These routes are as follows:

- Riverside Drive north of Egan Drive to Egan Drive to Mendenhall Loop south of Egan Drive, and the reverse;
- Mendenhall Loop north of Egan Drive to Egan Drive to Glacier Highway (Airport), and the reverse;
- Mendenhall Loop north of Egan Drive to Egan Drive to Glacier Highway (Fred Meyer); and the reverse; and
- Glacier Highway (Airport) to Egan Drive to Glacier Highway (Fred Meyer) and the reverse.
- Glacier Highway (North) to Egan Drive to Riverside Drive and the reverse.
- Mendenhall Loop south of Egan Drive to Egan Drive to Riverside Drive and Vintage Boulevard.
- Egan Drive westbound to northbound Mendenhall Loop Road to westbound Mendenhall Mall Road.

Next Steps

The next phase of the West Egan Drive Corridor Study will provide a traffic operations analysis of the corridor alignment alternatives. To analyze the operations of potential alignment alternatives, it is necessary to forecast the amount of traffic that will be rerouted as a function of the new street connections in each alternative. The match percentages indicated in Figures 2A through 3F provide the information necessary to complete this re-assignment. The re-assignment and the results of the traffic operations analysis for each alternative will be documented in Working Paper #3.



LEGEND

- STOP SIGN
- TRAFFIC SIGNAL
- SURVEYED TURNING MOVEMENT

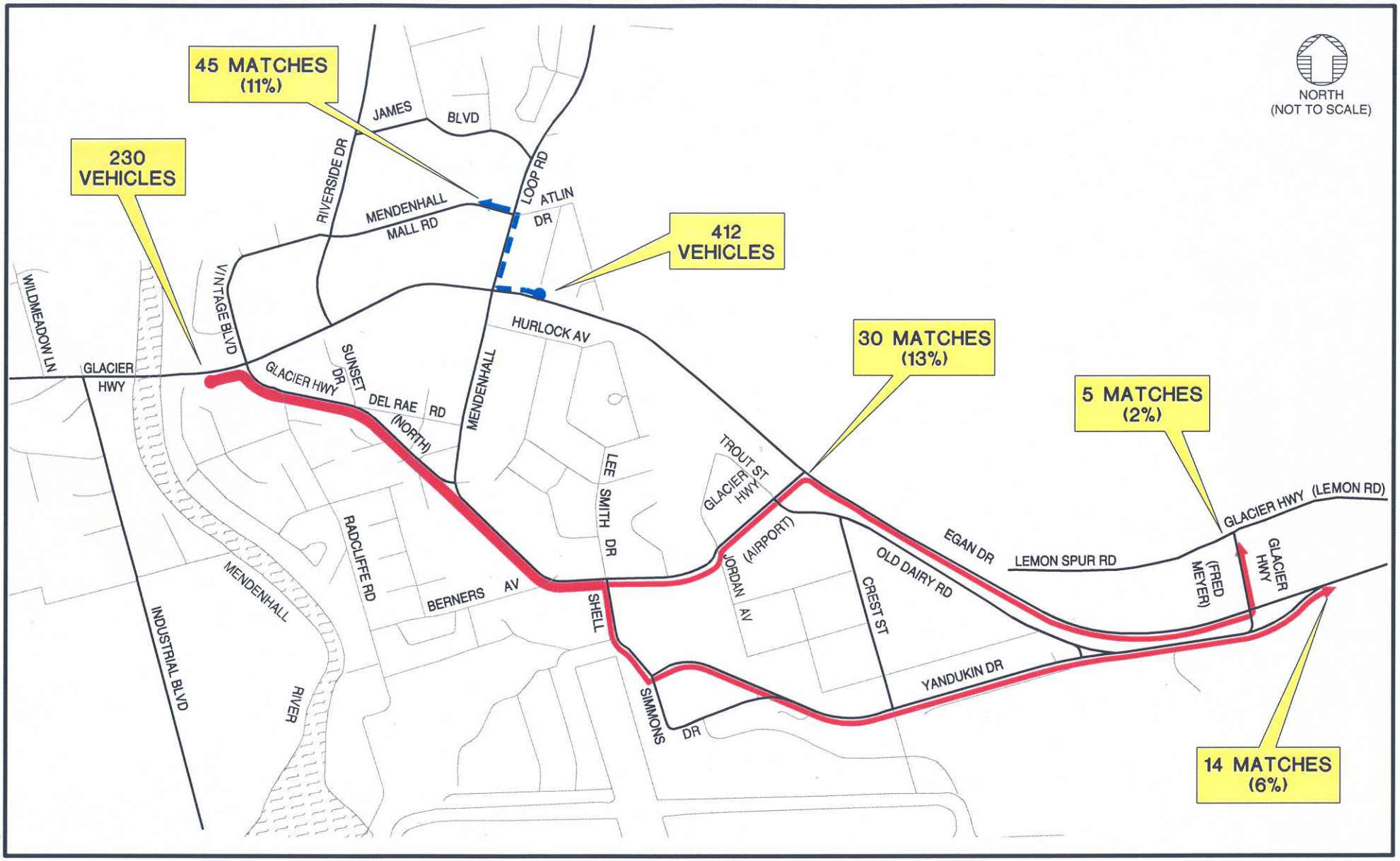
SURVEY LOCATIONS

WEST EGAN DRIVE CORRIDOR JUNEAU, ALASKA OCTOBER 2002	FIGURE *1*

4978\DWGS\TASK-10\4978T001

TABLE 1 PATH FIGURE LIST

Path Origin		Path Destination		Figure Number	
Intersection	Turning Movement	Intersection	Turning Movement	AM Peak	PM Peak
Egan Dr / Vintage Blvd	EB RT	Egan Dr / Glacier Hwy (Fred Meyer)	EB LT	2A	3A
	EB RT	Egan Dr / Yandukin Dr	EB TH	2A	3A
	NB RT	Egan Dr / Riverside Dr	EB LT	2C	3C
Egan Dr / Riverside Dr	SB LT	Egan Dr / Glacier Hwy (Fred Meyer)	EB LT	2B	3B
	SB LT	Egan Dr / Glacier Hwy (Airport)	EB RT	2B	3B
	SB LT	Egan Dr / Mendenhall Loop	EB RT	2B	3B
	SB RT	Egan Dr / Vintage Blvd	WB LT	2B	3B
Egan Dr / Mendenhall Loop	SB LT	Egan Dr / Glacier Hwy (Fred Meyer)	EB LT	2C	3C
	SB LT	Egan Dr / Glacier Hwy (Airport)	EB RT	2C	3C
	NB LT	Egan Dr / Vintage Blvd	WB RT	2F	3F
	NB LT	Egan Dr / Riverside Dr	WB RT	2F	3F
	NB RT	Egan Dr / Glacier Hwy (Fred Meyer)	EB LT	2F	3F
	WB RT	Mendenhall Mall / Mendenhall Loop	NB LT	2A	3A
Egan Dr / Glacier Hwy (Fred Meyer)	SB RT	Egan Dr / Vintage Blvd	WB RT	2D	3D
	SB RT	Egan Dr / Riverside Dr	WB RT	2D	3D
	SB RT	Egan Dr / Mendenhall Loop	WB RT	2D	3D
	SB RT	Egan Dr / Glacier Hwy (Airport)	WB LT	2D	3D
	SB RT	Egan Dr / Vintage Blvd	WB LT	2D	3D
	WB LT	Egan Dr / Vintage Blvd	NB LT	2D	3D
Egan Dr / Glacier Hwy (Airport)	NB LT	Egan Dr / Vintage Blvd	WB RT	2E	3E
	NB LT	Egan Dr / Riverside Dr	WB RT	2E	3E
	NB LT	Egan Dr / Mendenhall Loop	WB RT	2E	3E
	NB RT	Egan Dr / Glacier Hwy (Fred Meyer)	EB LT	2E	3E



LEGEND

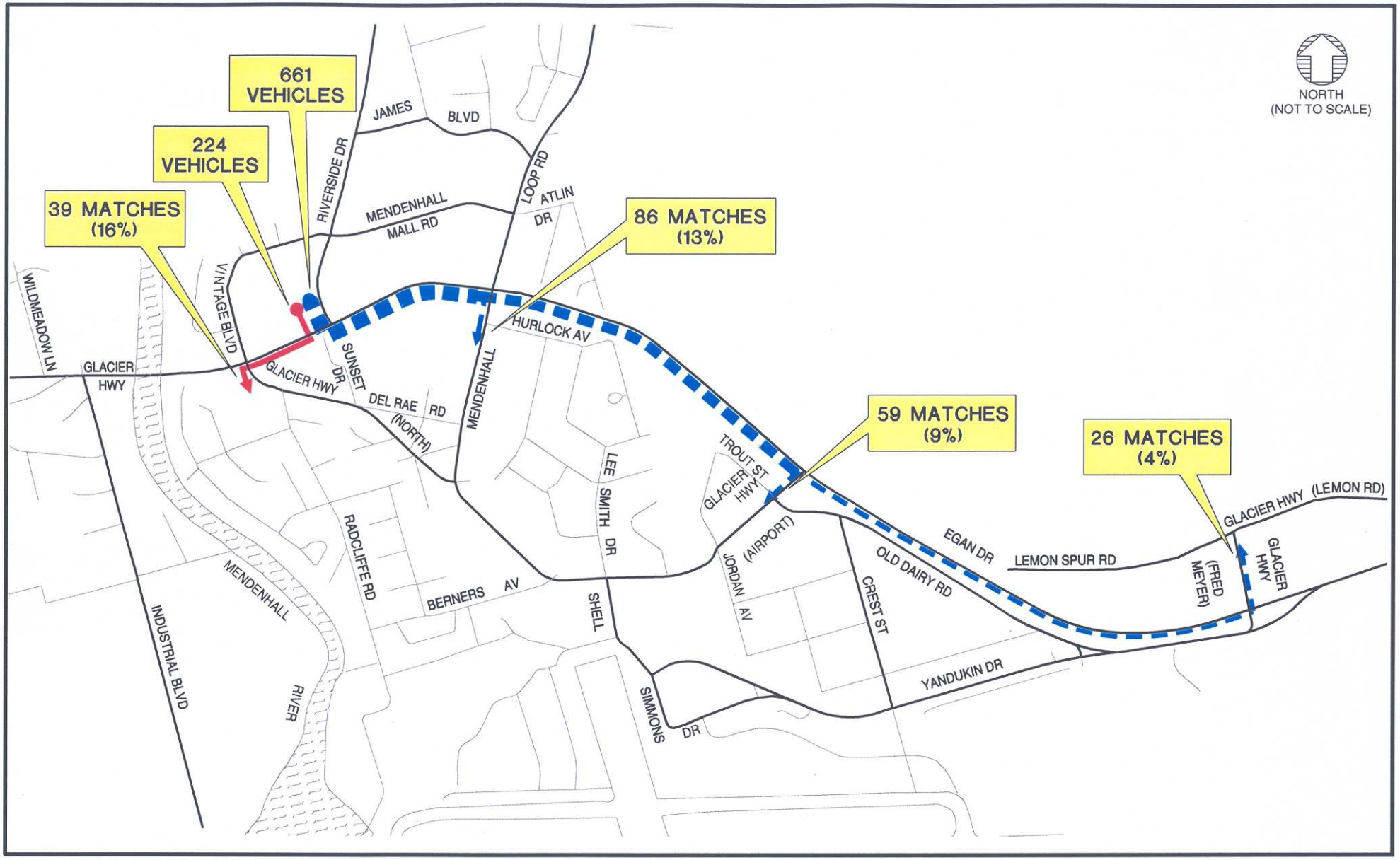
- ● - ORIGIN
- ◀ - DESTINATION
- ━ - ROUTE 1
- ▬ - ROUTE 2

NOTE: ROUTES OFF EGAN DRIVE ARE ESTIMATED BASED ON THE LIKELY PATH BETWEEN SURVEY POINTS.

O-D SURVEY FLOW DIAGRAM WEEKDAY AM PEAK PERIOD

WEST EGAN DRIVE CORRIDOR JUNEAU, ALASKA OCTOBER 2002	FIGURE 2A

4978\DWGS\TASK-10\4978T101



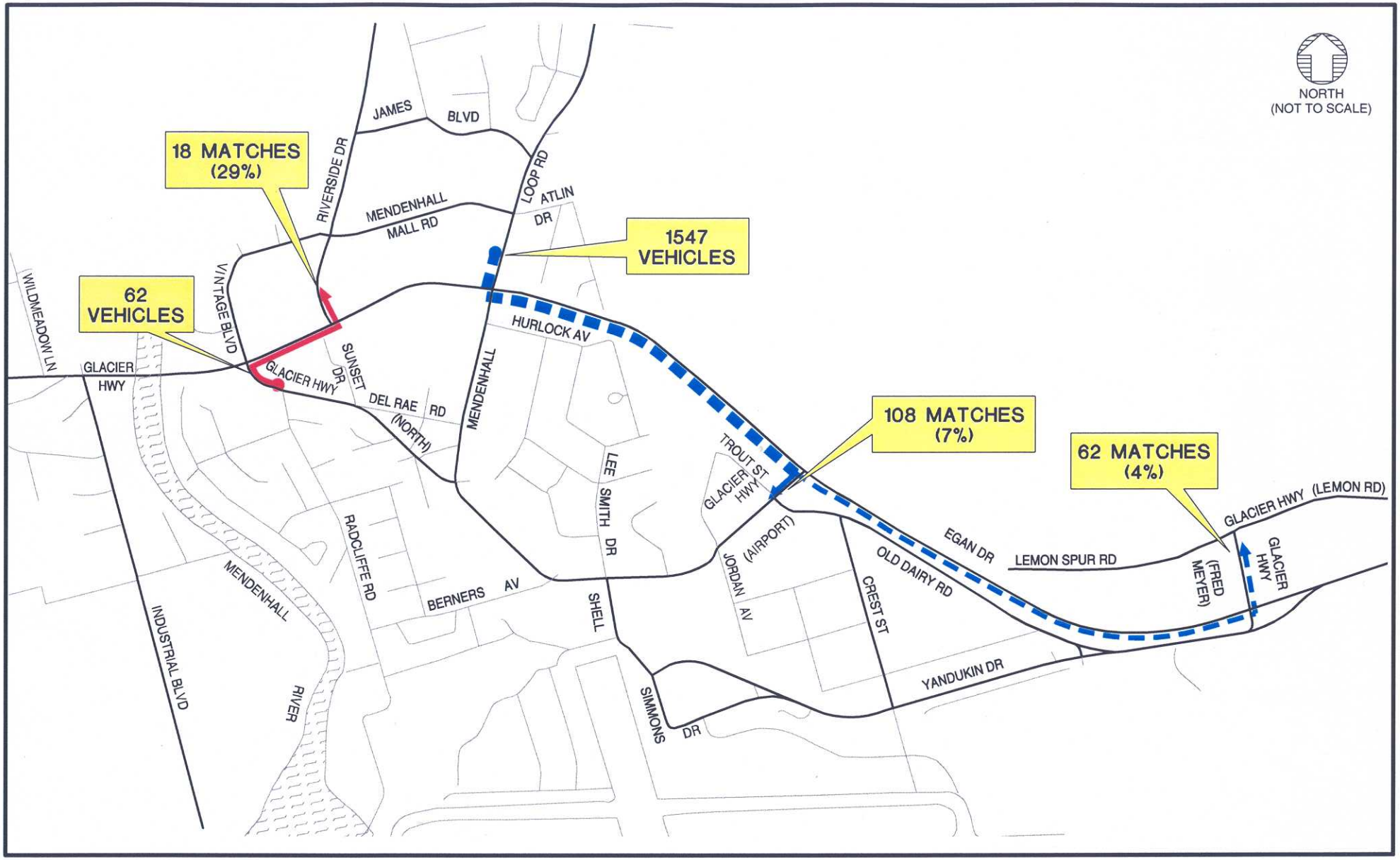
LEGEND

- ORIGIN
- DESTINATION
- ROUTE 1
- ROUTE 2

O-D SURVEY FLOW DIAGRAM
WEEKDAY AM PEAK PERIOD

WEST EGAN DRIVE CORRIDOR JUNEAU, ALASKA OCTOBER 2002	FIGURE 2B

4978\DWGS\TASK-10\4978T101



LEGEND

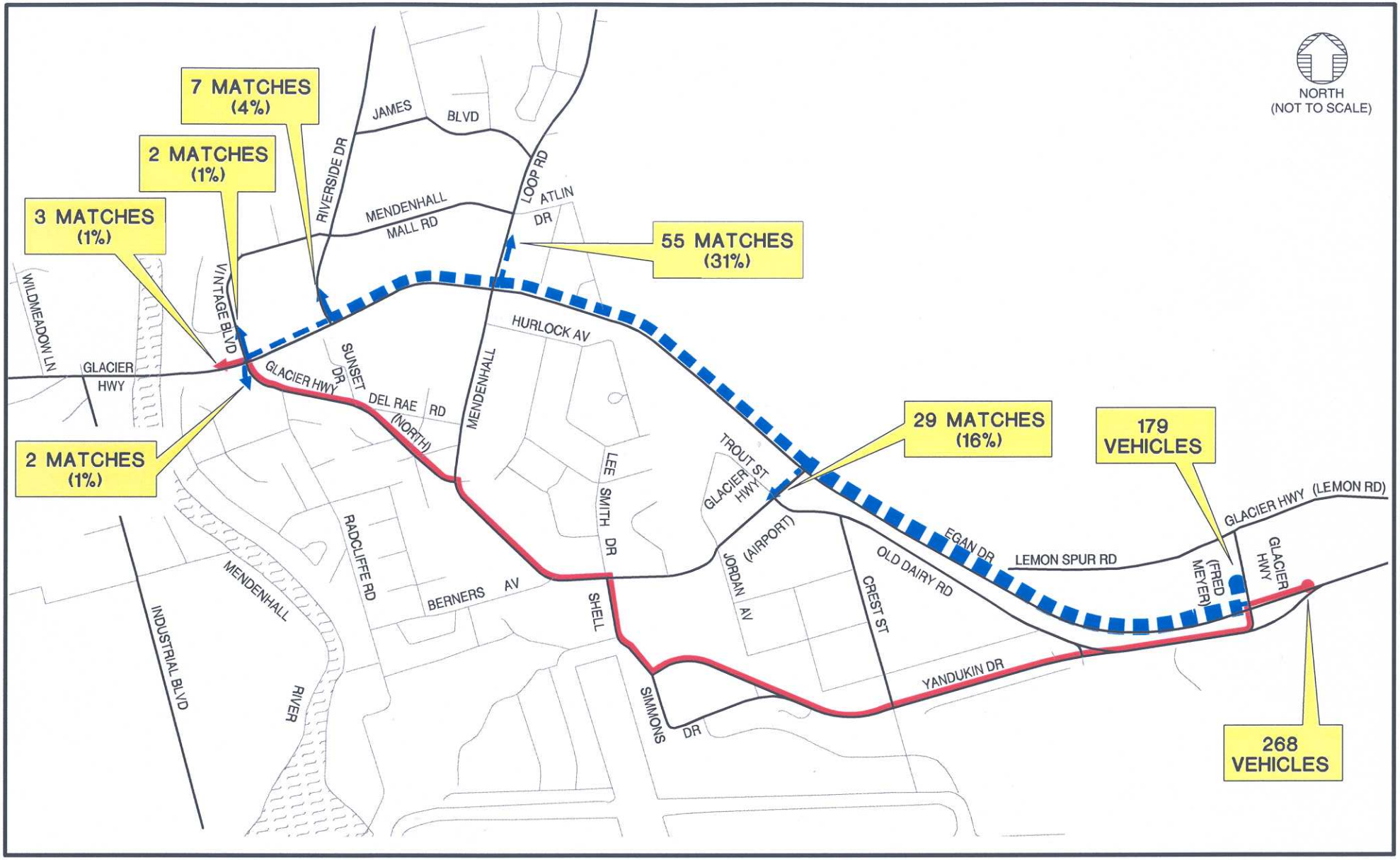
- ORIGIN
- DESTINATION
- ROUTE 1
- ROUTE 2

O-D SURVEY FLOW DIAGRAM
WEEKDAY AM PEAK PERIOD

WEST EGAN DRIVE CORRIDOR
JUNEAU, ALASKA
OCTOBER 2002

FIGURE
2C

4978\DWGS\TASK-10\4978T101



LEGEND

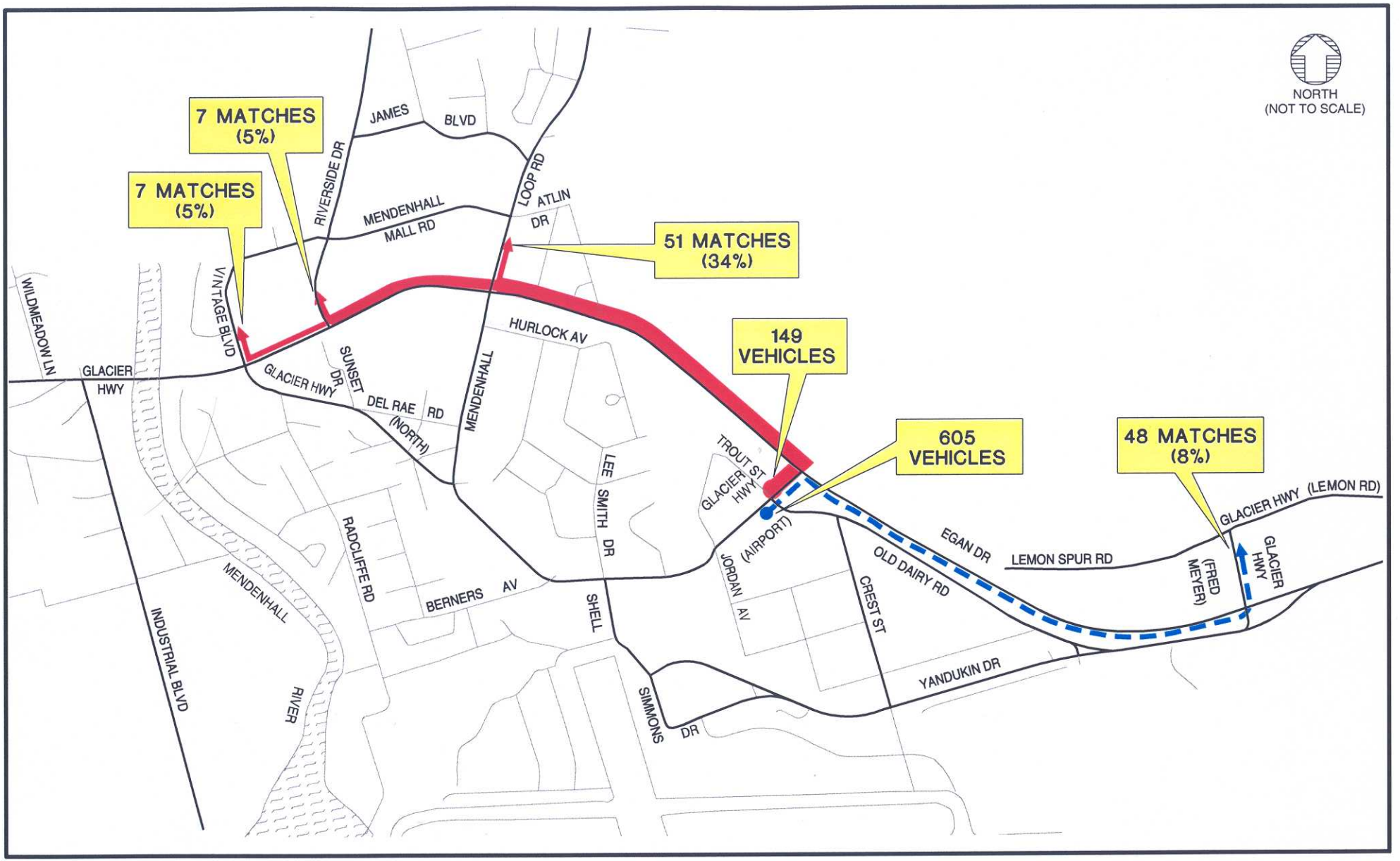
- ORIGIN
- DESTINATION
- ROUTE 1
- ROUTE 2

NOTE: ROUTES OFF EGAN DRIVE ARE ESTIMATED BASED ON THE LIKELY PATH BETWEEN SURVEY POINTS.

O-D SURVEY FLOW DIAGRAM
WEEKDAY AM PEAK PERIOD

WEST EGAN DRIVE CORRIDOR JUNEAU, ALASKA OCTOBER 2002	FIGURE 2D

4978\DWGS\TASK-10\4978T101



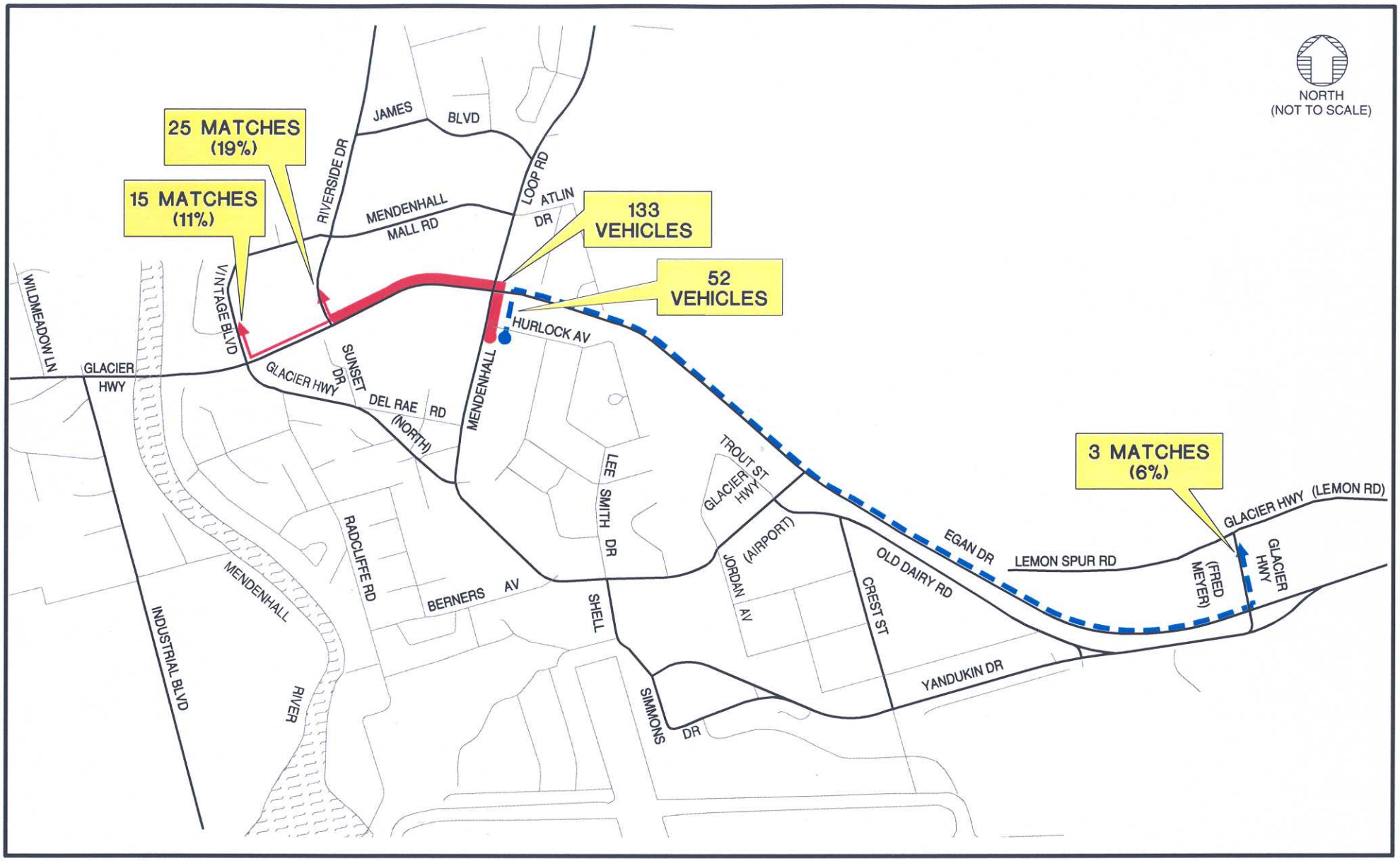
LEGEND

- ● - ORIGIN
- ◀ - DESTINATION
- ━ - ROUTE 1
- ▬ - ROUTE 2

O-D SURVEY FLOW DIAGRAM
WEEKDAY AM PEAK PERIOD

WEST EGAN DRIVE CORRIDOR JUNEAU, ALASKA OCTOBER 2002	FIGURE *2E*

4978\DWGS\TASK-10\4978T101



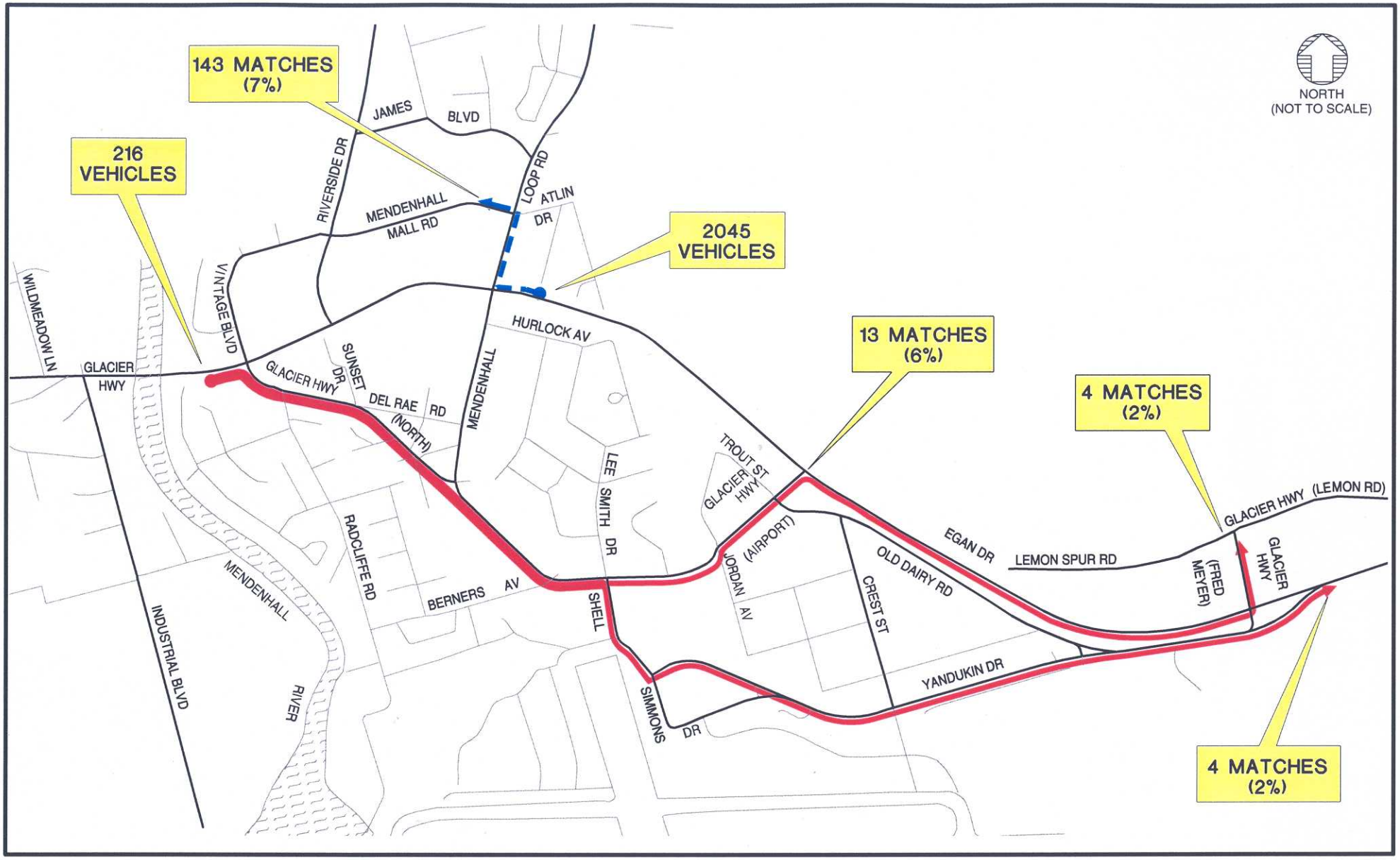
LEGEND

- ● - ORIGIN
- ◀ - DESTINATION
- ━ - ROUTE 1
- ▬ - ROUTE 2

O-D SURVEY FLOW DIAGRAM
WEEKDAY AM PEAK PERIOD

WEST EGAN DRIVE CORRIDOR JUNEAU, ALASKA OCTOBER 2002	FIGURE *2F*

4978\DWGS\TASK-10\4978T101



LEGEND

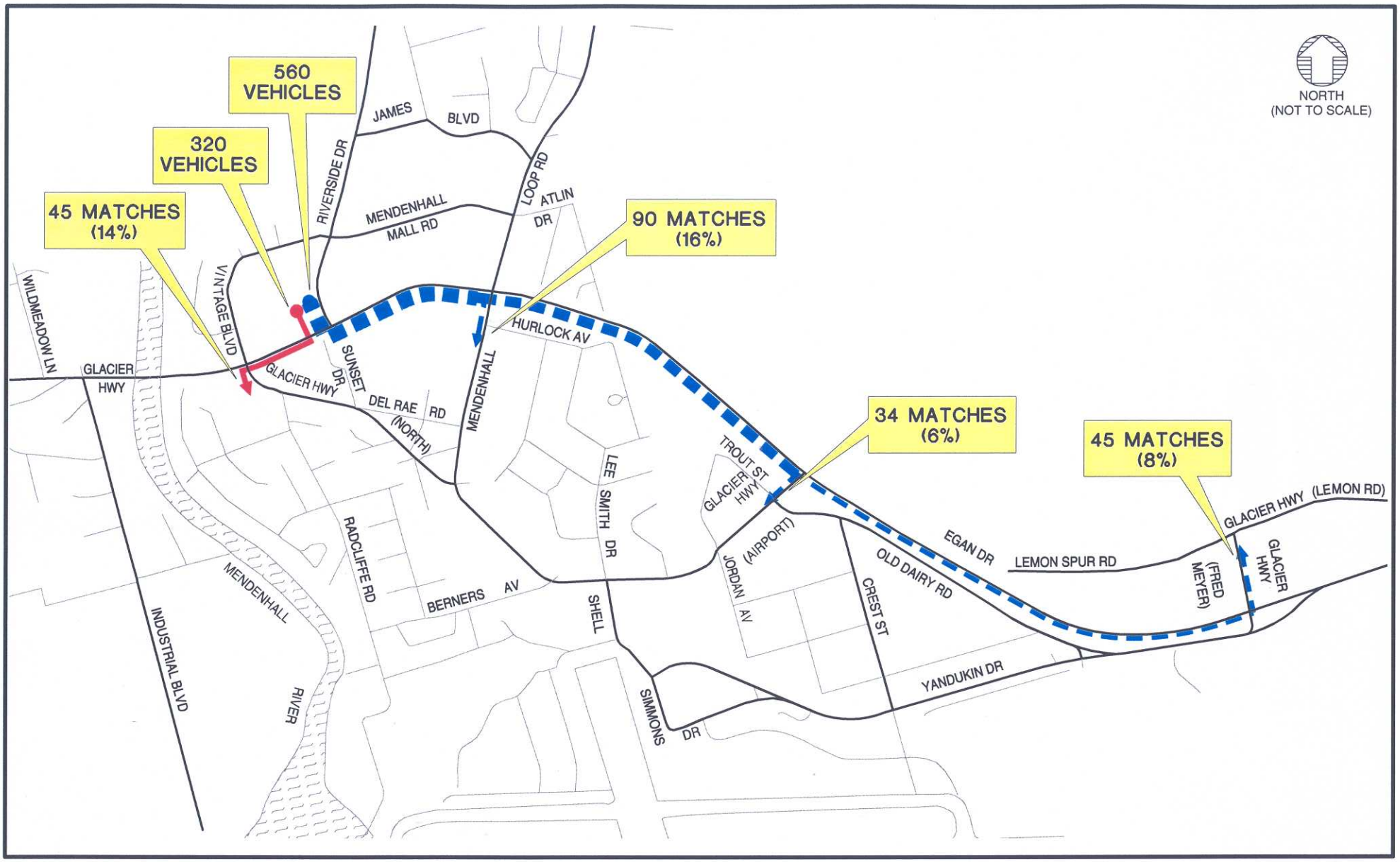
- ● - ORIGIN
- ◀ - DESTINATION
- ━ - ROUTE 1
- ▬ ▬ - ROUTE 2

NOTE: ROUTES OFF EGAN DRIVE ARE ESTIMATED BASED ON THE LIKELY PATH BETWEEN SURVEY POINTS.

O-D SURVEY FLOW DIAGRAM WEEKDAY PM PEAK PERIOD

WEST EGAN DRIVE CORRIDOR JUNEAU, ALASKA OCTOBER 2002	FIGURE 3A

4978\DWGS\TASK-10\4978T101



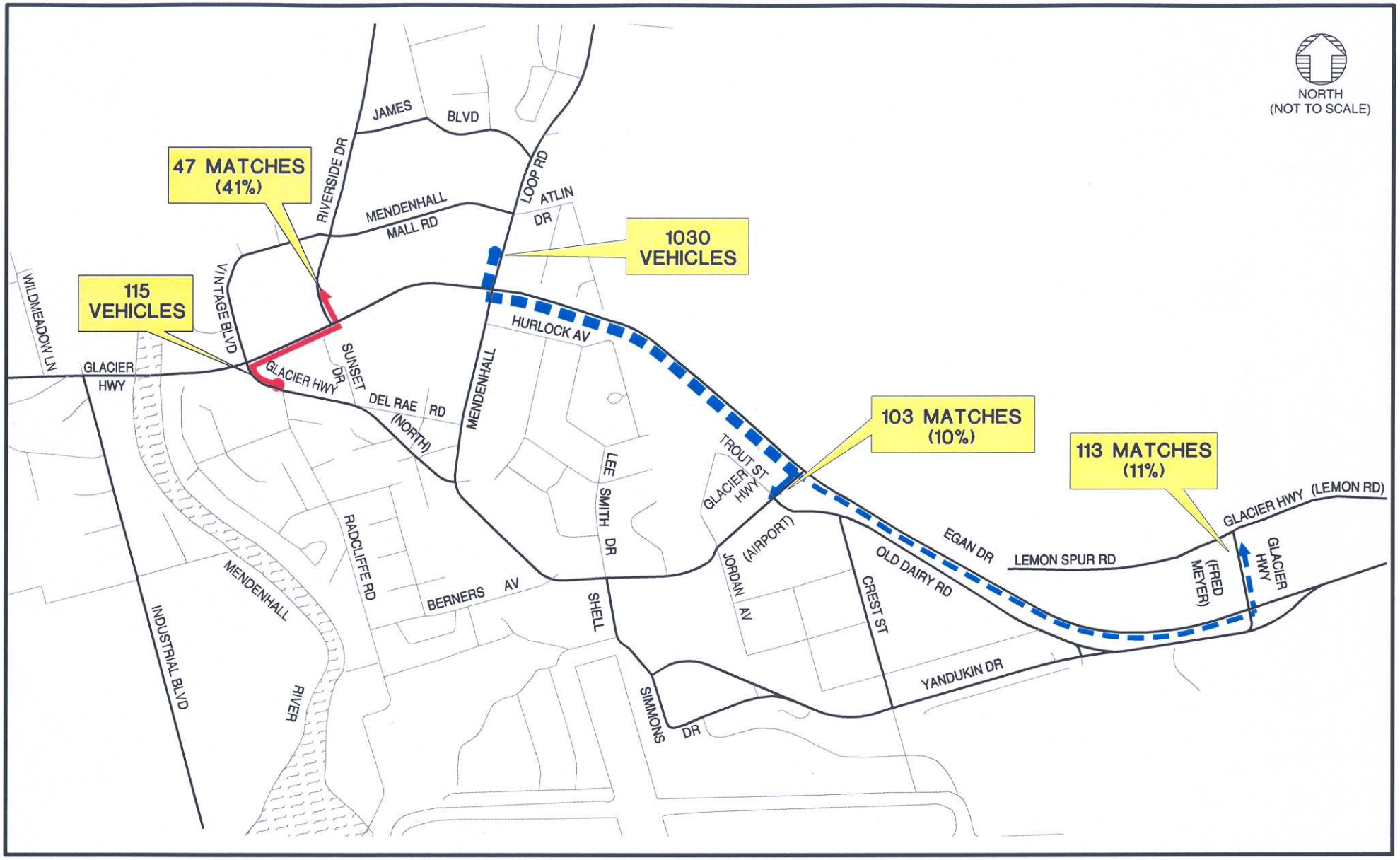
LEGEND

- ● - ORIGIN
- ◀ - DESTINATION
- ━ - ROUTE 1
- ▬ - ROUTE 2

O-D SURVEY FLOW DIAGRAM
WEEKDAY PM PEAK PERIOD

WEST EGAN DRIVE CORRIDOR JUNEAU, ALASKA OCTOBER 2002	FIGURE 3B

4978\DWGS\TASK-10\4978T101



LEGEND

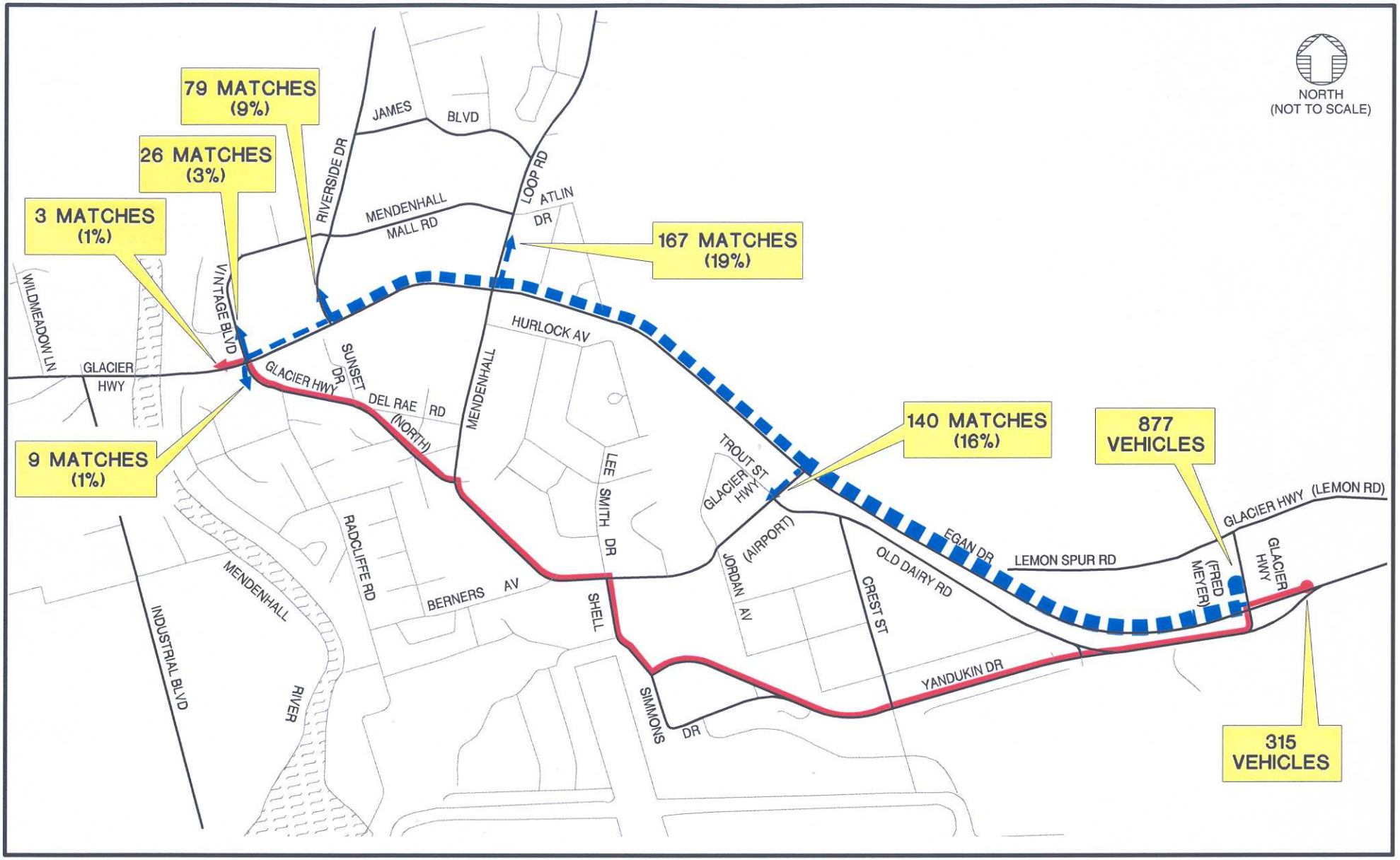
- ORIGIN
- DESTINATION
- ROUTE 1
- ROUTE 2

O-D SURVEY FLOW DIAGRAM
WEEKDAY PM PEAK PERIOD

WEST EGAN DRIVE CORRIDOR
JUNEAU, ALASKA
OCTOBER 2002

FIGURE 3C

4978\DWGS\TASK-10\4978T101



LEGEND

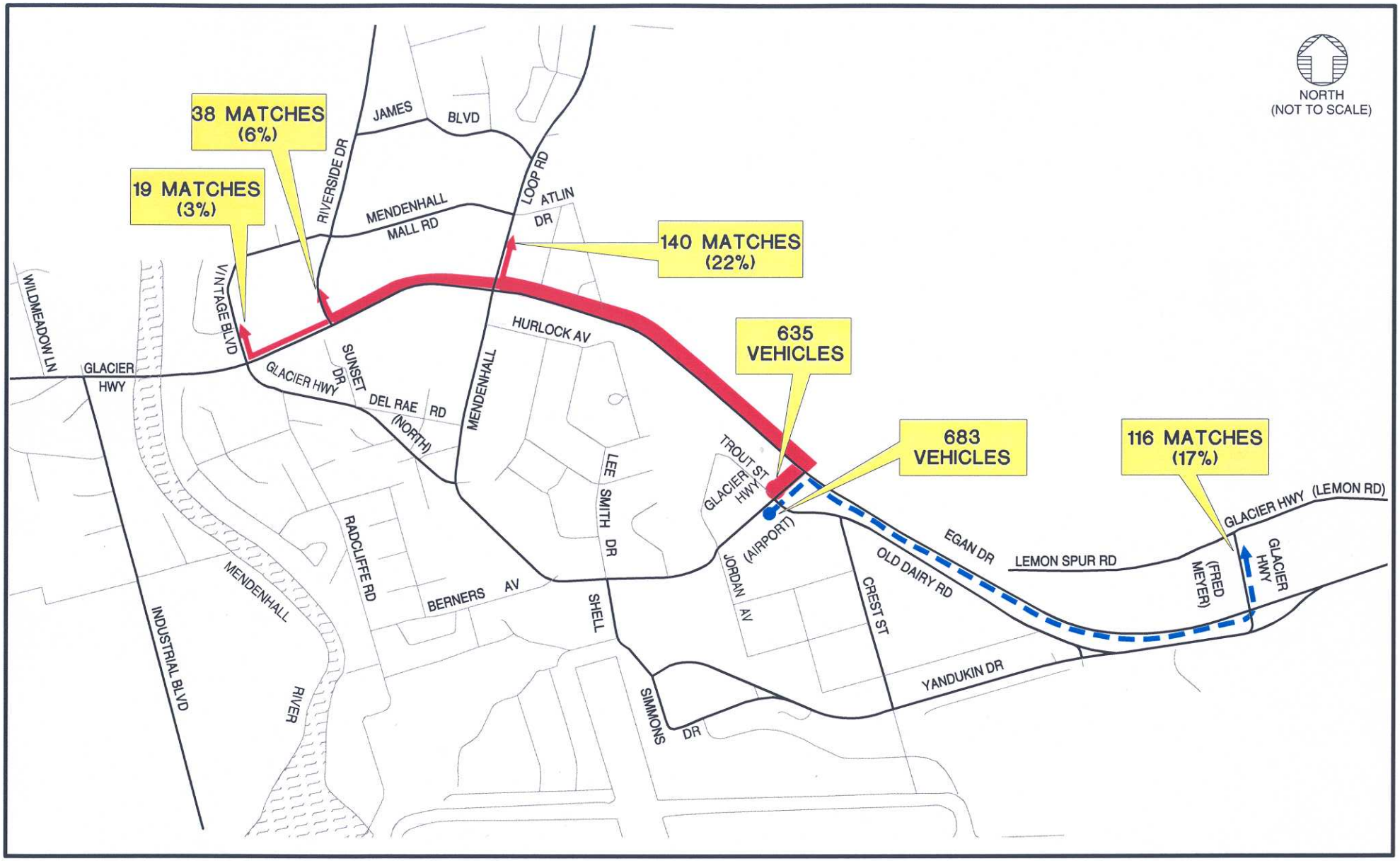
- ● - ORIGIN
- ◀ - DESTINATION
- ——— - ROUTE 1
- - - - - ROUTE 2

NOTE: ROUTES OFF EGAN DRIVE ARE ESTIMATED BASED ON THE LIKELY PATH BETWEEN SURVEY POINTS.

O-D SURVEY FLOW DIAGRAM
WEEKDAY PM PEAK PERIOD

WEST EGAN DRIVE CORRIDOR JUNEAU, ALASKA OCTOBER 2002	FIGURE *3D*

4978\DWGS\TASK-10\4978T101



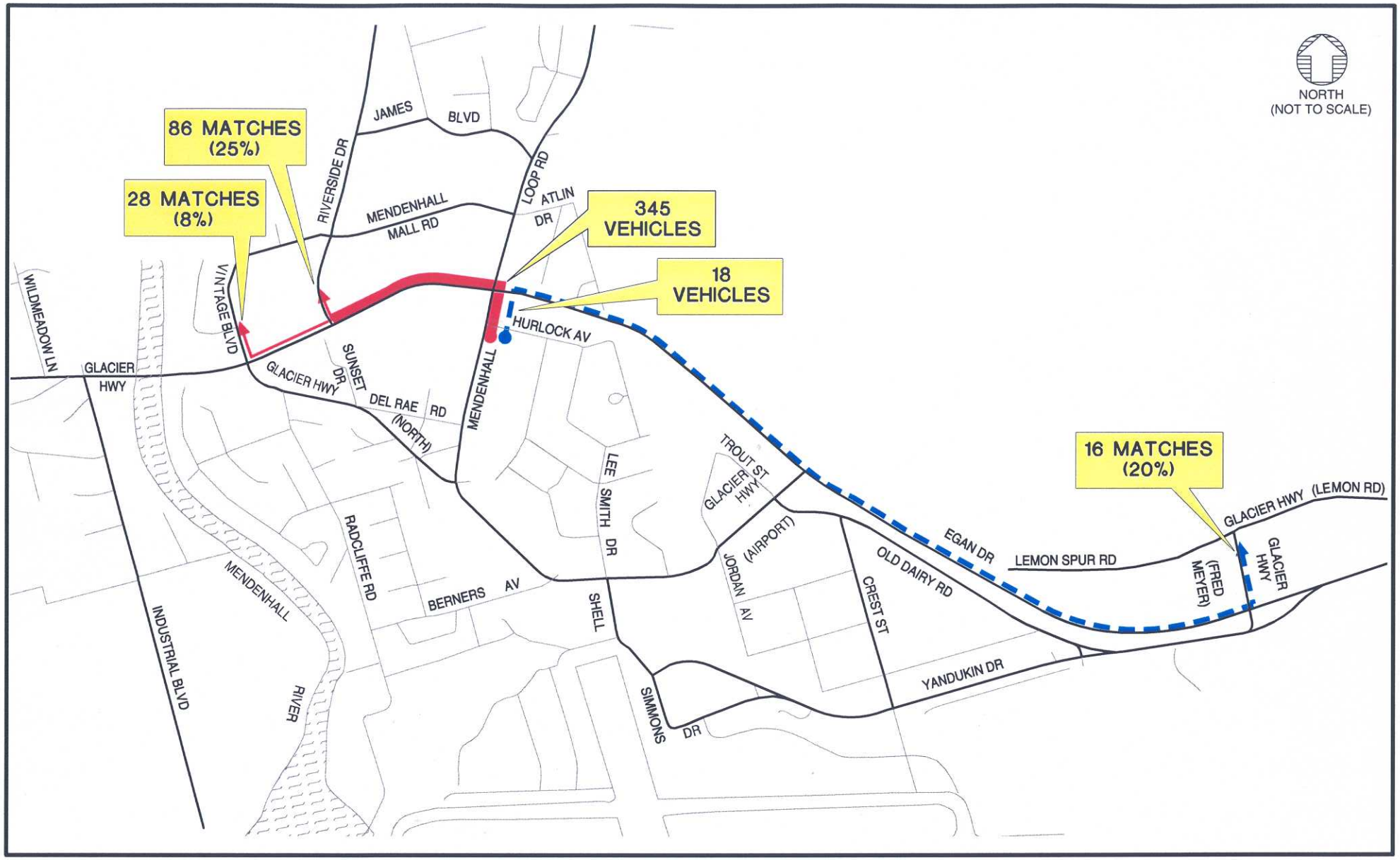
LEGEND

- ● - ORIGIN
- ◀ - DESTINATION
- ━ - ROUTE 1
- ▬ - ROUTE 2

O-D SURVEY FLOW DIAGRAM
WEEKDAY PM PEAK PERIOD

WEST EGAN DRIVE CORRIDOR JUNEAU, ALASKA OCTOBER 2002	FIGURE *3E*

4978\DWGS\TASK-10\4978T101



LEGEND

- ORIGIN
- DESTINATION
- ROUTE 1
- ROUTE 2

O-D SURVEY FLOW DIAGRAM
WEEKDAY PM PEAK PERIOD

WEST EGAN DRIVE CORRIDOR JUNEAU, ALASKA OCTOBER 2002	FIGURE 3F

4978\DWGS\TASK-10\4978T101