

**METRO**

Date: December 11, 1995  
To: JPACT  
From: Mike Burton, Executive Officer  
Re: Use of 2015 Forecast for South/North Travel Demand Forecasts

As you are aware, Metro is ready to begin the South/North Light Rail Project Draft Environmental Impact Statement (DEIS) and is also in the process of developing household and employment forecasts that are based on the 2040 Growth Concept. Metro staff have been working with local jurisdiction staff to develop a 2015 allocation of household and employment growth both at a 20-district level and at a 1260 transportation analysis zone (TAZ) level. We have attached a list of participants from local jurisdictions that have worked within this process.

An initial 2015 growth allocation, with a base assumption of a 4,000-5,000-acre Urban Growth Boundary (UGB) expansion, has recently been completed to the TAZ level. This allocation is the product of substantial discussion and compromise among the region's jurisdictions, Metro and other regional agencies. Inherent in this allocation is an assumption of significant redevelopment of both residential and employment sites throughout the region and continued increases in the density of new residential and employment developments. Efforts were made throughout this process to maximize the amount of growth that could be accommodated in regional and town centers which are well served by transit and especially in light rail station areas.

Household and employment forecasts are a key early input to the South/North Draft Environmental Impact Statement (DEIS) analysis which needs to commence immediately. The DEIS is on an extremely tight timeline which is structured to position the region to meet federal funding opportunities. Your approval to use the newly developed 2015 household and employment forecast as the basis for travel demand forecasting for the South/North DEIS is necessary to allow the DEIS work to proceed in order to keep the study on track. I have attached summary tables at the 20-zone and 1260 TAZ level for your information.

We recognize that additional analysis of 2015 forecasts will continue to explore issues such as a No UGB Expansion scenario. Use of these forecasts for the South/North DEIS would not impact that process or preclude adoption by Metro of any results it may produce.

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However, analytical work needs to commence on regional priority projects such as South/North light rail. We are proposing to use this forecast for South/North purposes only. Following the completion of the DEIS analysis, South/North ridership forecasts will be updated utilizing the regionally adopted 2015 household and employment forecast, if it is different from the forecast used in the DEIS. The South/North Project Management Group (PMG), which consists of all the participating jurisdictions in the project, unanimously recommends this approach.

MB:lmk

Attachments

CC: TPAC  
South/North Steering Group  
Metro Council

PARTICIPANTS IN GROWTH ALLOCATION PROCESS

Ed Abrahamson, Multnomah County  
Ben J. Altman, City of Cornelius  
Gerald Anderson, Wood Village Public Works  
G.b. Arrington, Tri-met  
Azam Babar, City of Vancouver  
Andy Back, Washington County  
Rajiv Batra, City of Hillsboro  
Jonathan Block, City of Gladstone  
Wink Brooks, city of Hillsboro  
Michael V. Butts, City of West Linn  
Brian Campbell, Port of Portland  
Rich Carson, City of Oregon City  
Tom Coffee, City of Lake Oswego  
Margaret Collins, City of Milwaukie  
Carole W. Connell, City of Sherwood  
Larry Conrad, City of Beaverton  
Lynda David, Sw Washington Rtc  
Tamara Deridder, City of Sandy  
Steve Dotterrer, Portland Bureau of Transportation  
Sandra Doubleday, City of Gresham  
Elana Emlen, Portland Planning Bureau  
Richard Faith, City of Troutdale  
Craig Greenleaf, Clark Co Planning Director  
Bob Haas, Washington County Planning  
Bob Hoffman, City of Canby  
Gordon Howard, Multnomah County Planning  
Leo Huff, Odot  
Jim Jacks, City of Tualatin  
Susie Lahsene, Port of Portland  
Stephan Lashbrook, City of Wilsonville  
Karl Mawson, City of Forest Grove  
Nels Michaelson, City of Tigard  
John Pettis, City of Fairview  
Robert Price, City of Happy Valley  
John A. Rankin, City of North Plains  
Richard Ross, City of Gresham  
Rod Sandoz, Clackamas County  
Norm Scott, Clackamas County Planning  
Brian Shetterly, City of Gresham  
Elaine Wilkerson, City of Beaverton

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**Exhibit One: Household and Employment Allocation Summary**  
**By 20 District and County 1994 and 2015 - 12/11/95**  
**Approximate Aggregation from TAZ Level**

County	District	hh94	adj94emp	tfhh15	tfemp15	dhh15-94	demp15-94
Multnomah	1	10242	148884	19437	214856	9195	65972
	2	123894	172225	142326	219685	18432	47460
	3	43798	81562	57633	98336	13835	16774
	4	35447	27916	49590	37387	14142	9471
	5	37783	42691	59228	77402	21445	34711
	20	2376	1499	4536	1362	2161	-137
County Total		253540	474777	332750	649027	79210	174250
Clackamas	6	28931	31533	35497	47517	6567	15984
	7	12661	31099	25350	60521	12689	29422
	8	20484	24445	26908	37626	6424	13181
	9	9918	13584	17855	22498	7937	8914
	10	12252	19327	24406	38444	12153	19117
	19	30035	22910	48915	39321	18879	16411
County Total		114282	142898	178932	245927	64650	103029
Washington	11	8703	23854	18366	43988	9663	20134
	12	20389	48210	29892	64872	9504	16662
	13	36569	59537	53118	94704	16549	35167
	14	35504	32575	72692	76565	37188	43990
	15	15180	26094	29411	62273	14231	36179
	16	8209	10215	13480	19876	5271	9661
	18	9322	9147	13806	19434	4484	10287
County Total		133874	209632	230764	381713	96890	172081
Clark County	17	102664	123754	171842	206211	69178	82457
3 County		501697	827307	742446	1276667	240749	449360
Region Total		604361	951061	914288	1482878	309927	531817

**Note - District and County Data are not precise due to aggregation.**  
**Source: Metro, DRC, 12/11/95**

**Clark County forecast data represent a "worst case" scenario for purposes of public facilities planning and do not represent an official Clark County forecast.**



## 1260 TAZ Level

## Final Metro/Jur 2015 Allocation 12/8/95

rtz	hh94	adj94emp	tfhh15	tfemp15	dhh15-94	demp15-94
1	545	28521	1121	37839	576	9318
2	12	8537	281	11419	269	2882
3	14	1201	111	2669	97	1468
4	302	1483	800	4846	498	3363
5	5	457	149	1340	144	883
6	195	8	376	295	181	287
7	0	756	422	3606	422	2850
8	141	3703	826	5221	685	1518
9	18	3866	954	4058	936	192
10	1021	11734	1841	16095	820	4361
11	1576	2432	2069	3053	493	621
12	410	23248	957	29847	547	6599
13	126	3900	266	6471	140	2571
14	188	97	262	1155	74	1058
15	1310	10090	2732	14120	1422	4030
16	950	2800	1110	3861	160	1061
17	677	8612	1127	11253	450	2641
18	1644	6124	1713	6324	69	200
19	103	9301	157	10252	54	951
20	33	24	46	26	13	2
21	170	28	899	165	729	137
22	72	25	252	68	180	43
23	412	42	1667	278	1255	236
24	159	22	1072	193	913	171
25	32	2039	50	2601	18	562
26	256	599	573	1249	317	650
27	301	109	1150	267	849	158
28	351	79	375	85	24	6
29	4997	9457	5269	10163	272	706
30	855	166	944	210	89	44
31	367	1128	621	1206	254	78
32	123	811	243	838	120	27
33	44	495	99	507	55	12
34	1977	954	2068	972	91	18
35	298	59	441	90	143	31
36	101	11	235	39	134	28
37	446	89	500	101	54	12
38	436	61	711	119	275	58
39	383	485	687	842	304	357
40	1366	1700	1643	1865	277	165
41	597	97	659	117	62	20
42	1168	247	1354	286	186	39
43	828	9538	849	10038	21	500
44	316	4853	359	4991	43	138
45	0	325	300	4320	300	3995
46	34	1565	918	4691	884	3126
47	661	1446	750	1499	89	53
48	241	424	261	437	20	13
49	427	1503	490	1591	63	88
50	281	3	324	20	43	17
51	523	371	617	481	95	110
52	1015	371	1046	383	31	12
53	778	69	894	93	116	24
54	1308	488	1676	594	368	106
55	1874	1178	2031	1315	157	137
56	730	783	786	870	56	87
57	39	23	47	26	8	3

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rtz	hh94	adj94emp	tfhh15	tfemp15	dhh15-94	demp15-94
58	180	26	200	36	20	10
59	174	13	196	21	22	8
60	206	19	219	22	13	3
61	28	35	30	39	2	4
62	1100	342	1324	409	224	67
63	676	134	817	164	141	30
64	268	533	317	587	49	54
65	536	2490	641	2736	105	246
66	476	41	573	201	97	160
67	888	64	957	79	69	15
68	698	464	932	636	234	172
69	586	2055	752	2503	166	448
70	634	13	694	62	60	49
71	257	18	390	46	133	28
72	266	155	507	206	241	51
73	297	1184	621	1253	324	69
74	869	293	2116	732	1247	439
75	1110	62	1467	140	357	78
76	1922	2033	2137	2280	215	247
77	705	81	725	123	20	42
78	317	50	367	247	50	197
79	1015	122	1385	233	371	111
80	626	4209	956	5474	330	1265
81	888	652	1065	862	177	210
82	784	147	896	220	112	73
83	624	286	781	519	157	233
84	315	1971	555	2800	239	829
85	594	659	647	920	53	261
86	800	964	943	1310	143	346
87	1028	137	1330	324	302	187
88	1210	373	1593	712	383	339
89	555	56	735	115	180	59
90	1130	1125	1709	1635	579	510
91	783	126	974	235	191	109
92	218	10739	400	15630	182	4891
93	421	318	602	718	181	400
94	935	1129	1093	1513	158	384
95	144	3030	374	4074	230	1044
96	579	5823	879	6729	300	906
97	384	1978	453	2224	69	246
98	510	1349	756	1904	246	555
99	937	467	1012	595	75	128
100	43	239	1068	3145	1025	2906
101	933	154	1541	1101	608	947
102	230	76	661	141	431	65
103	722	49	1762	206	1040	157
104	630	268	975	497	344	229
105	182	15	469	123	288	108
106	36	479	1490	1945	1454	1466
107	207	984	327	2181	120	1197
108	564	258	800	608	236	350
109	232	5	241	45	9	40
110	260	563	844	1423	584	860
111	715	2996	1155	5060	440	2064
112	365	1653	446	2684	81	1031
113	884	3805	3097	4701	2213	896
114	924	1251	1005	1659	81	408

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rtz	hh94	adj94emp	tfhh15	tfemp15	dhh15-94	demp15-94
115	480	2304	482	2503	2	199
116	6	5358	6	6381	0	1023
117	1555	900	1592	1087	37	187
118	1037	90	1223	188	186	98
119	437	70	490	139	53	69
120	1175	119	1287	222	112	103
121	867	170	956	246	89	76
122	2352	937	2503	1258	151	321
123	291	64	303	88	12	24
124	108	164	258	514	150	350
125	132	1614	199	3414	67	1800
126	219	2506	219	2878	0	372
127	1531	342	1569	480	38	138
128	1082	616	1681	1141	599	525
129	101	41	1200	165	1099	124
130	339	18	595	78	256	60
131	864	1135	1726	1819	862	684
132	168	2178	328	2293	160	115
133	1733	870	1910	1180	177	310
134	738	33	738	3053	0	3020
135	79	784	79	3655	0	2871
136	41	2574	41	3616	0	1042
137	25	4395	1267	5150	1242	755
138	0	42	231	774	231	732
139	5	641	5	1312	0	671
140	31	834	805	1126	774	292
141	406	392	899	546	493	154
142	150	611	284	701	134	90
143	285	404	658	705	373	301
144	429	74	499	138	70	64
145	681	415	783	490	102	75
146	1391	1184	1451	1581	60	397
147	573	27	650	79	77	52
148	980	164	1748	518	768	354
149	489	62	591	121	102	59
150	685	960	1629	1402	944	442
151	922	144	1822	290	900	146
152	775	171	914	268	140	97
153	784	79	1000	183	216	104
154	1017	58	1270	184	253	126
155	289	8	581	85	292	77
156	342	5	553	101	211	96
157	125	0	125	671	0	671
158	0	0	37	622	37	622
159	117	2294	117	2870	0	576
160	29	1149	235	2887	206	1738
161	289	2649	441	2891	152	242
162	345	2086	897	3544	552	1458
163	495	111	805	395	310	284
164	614	87	619	149	5	62
165	85	36	430	82	345	46
166	237	31	1979	1214	1742	1183
167	151	721	1544	1566	1393	845
168	226	24	1127	337	901	313
169	446	70	933	222	486	152
170	470	52	1059	234	589	182
171	445	24	503	76	58	52

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rtz	hh94	adj94emp	tfhh15	tfemp15	dhh15-94	demp15-94
172	285	1608	665	2535	381	927
173	181	3	541	46	360	43
174	168	16	724	149	556	133
175	426	244	1828	1178	1402	934
176	218	10	711	132	493	122
177	427	427	596	1360	169	933
178	349	313	483	443	133	130
179	443	40	698	209	255	169
180	791	340	988	485	198	145
181	1261	178	2665	421	1404	243
182	1733	461	2457	1063	724	602
183	681	148	929	742	248	594
184	382	30	523	191	140	161
185	325	199	376	237	52	38
186	149	146	204	236	55	90
187	90	604	106	823	16	219
188	229	116	429	196	200	80
189	129	200	375	315	246	115
190	694	133	1511	478	817	345
191	255	111	615	1815	360	1704
192	380	50	880	165	500	115
193	193	50	304	74	111	24
194	252	20	256	40	4	20
195	1	203	1	531	0	328
196	357	65	398	145	41	80
197	1	63	1	1224	0	1161
198	209	573	661	2101	452	1528
199	86	0	222	39	136	39
200	142	47	434	84	292	37
201	398	53	424	118	26	65
202	359	17	359	58	0	41
203	2	744	2	1999	0	1255
204	1724	230	1984	417	260	187
205	655	112	982	314	327	202
206	287	280	465	414	178	134
207	377	45	663	530	286	485
208	870	100	1065	208	195	108
209	27	1453	27	4204	0	2751
210	148	352	148	2275	0	1923
211	165	1164	1744	3223	1579	2059
212	22	420	937	3826	915	3406
213	25	1957	435	5385	410	3428
214	1	0	313	1525	312	1525
215	334	34	4442	1058	4108	1024
216	897	82	1578	320	681	238
217	1018	550	1230	816	212	266
218	1025	530	1207	753	182	223
219	670	2634	842	2881	172	247
220	1657	210	3065	622	1408	412
221	377	150	839	517	462	367
222	36	1	54	14	18	13
223	8	0	8	4664	0	4664
224	0	1214	0	3504	0	2290
225	4	22	4	4954	0	4932
226	150	168	2061	282	1911	114
227	132	387	2250	3165	2118	2778
228	167	120	1259	370	1092	250

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rtz	hh94	adj94emp	tfhh15	tfemp15	dhh15-94	demp15-94
229	788	633	1908	1401	1120	768
230	1067	327	1466	471	399	144
231	121	50	1434	980	1313	930
232	23	5602	23	6998	0	1396
233	359	117	359	898	0	781
234	11	50	11	1003	0	953
235	8	333	375	4425	366	4092
236	191	72	355	411	164	339
237	20	1000	20	2106	0	1106
238	1	180	1	606	0	426
239	426	31	635	112	209	81
240	959	100	1468	278	509	178
241	595	46	846	66	251	20
242	989	1643	1338	2187	349	544
243	1027	387	1254	765	227	378
244	333	677	926	1436	593	759
245	12	0	185	182	173	182
246	12	26	199	222	187	196
247	10	0	12	2	2	2
248	38	3	98	67	60	64
249	562	760	1262	2153	700	1393
250	31	655	31	1207	0	552
251	184	1709	188	2034	4	325
252	358	2921	578	3383	220	462
253	608	1342	1018	1906	410	564
254	673	40	804	142	131	102
255	121	28	154	32	33	4
256	608	268	714	406	106	138
257	1251	526	1415	756	163	230
258	675	94	1375	4410	700	4316
259	866	57	1201	68	335	11
260	206	87	257	121	51	34
261	212	699	312	750	100	51
262	575	69	908	146	333	77
263	48	96	112	183	64	87
264	392	2832	866	3006	474	174
265	327	1365	565	1641	238	276
266	436	64	576	279	140	215
267	8	212	8	5300	0	5088
268	323	199	383	285	60	86
269	158	182	234	1179	76	997
270	957	620	1526	732	569	112
271	791	153	851	203	60	50
272	890	1416	1110	1503	220	87
273	1341	1281	1371	1417	30	136
274	159	808	164	815	5	7
275	25	9	28	13	3	4
276	138	73	145	106	7	33
277	44	81	47	88	3	7
278	90	12	98	17	8	5
279	31	17	34	18	3	1
280	773	937	1780	2775	1007	1838
281	1836	3537	3099	6498	1263	2961
282	1680	1245	3056	1720	1376	475
283	1655	2734	2155	4869	500	2135
284	293	225	409	872	116	647
285	1096	375	1336	797	240	422

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rtz	hh94	adj94emp	tfhh15	tfemp15	dhh15-94	demp15-94
286	877	1162	1646	2345	769	1183
287	165	254	237	351	72	97
288	88	60	108	66	20	6
289	208	97	228	105	20	8
290	18	31	41	58	23	27
291	63	35	83	38	20	3
292	259	401	454	512	195	111
293	244	93	284	106	40	13
294	490	175	610	193	120	18
295	357	370	404	383	47	13
296	99	302	124	308	25	6
297	171	194	176	201	5	7
298	53	18	55	22	2	4
299	114	237	119	240	5	3
300	144	22	148	29	4	7
301	149	450	159	466	10	16
302	65	9	68	14	3	5
303	29	30	34	31	5	1
304	213	239	213	239	0	0
305	323	143	393	200	70	57
306	415	72	455	95	40	23
307	116	15	146	22	30	7
308	584	1671	796	2264	212	593
309	428	47	475	96	47	49
310	166	92	249	390	83	298
311	141	964	256	1656	115	692
312	221	4351	344	5190	123	839
313	35	2516	108	2730	73	214
314	924	2747	1146	3760	222	1013
315	885	940	1159	1638	274	698
316	105	746	105	1329	0	583
317	1512	2118	1629	2338	117	220
318	1357	118	1877	268	520	150
319	220	290	250	353	30	63
320	705	2554	757	2674	52	120
321	152	432	264	518	112	86
322	836	578	1382	1061	545	483
323	829	4386	1579	5901	750	1515
324	469	169	574	362	105	193
325	1150	744	1250	1056	100	312
326	631	927	706	1192	75	265
327	2060	3111	2560	4544	500	1433
328	423	252	473	341	50	89
329	1021	4552	1146	6677	125	2125
330	381	1078	481	2405	100	1327
331	547	1537	597	1774	50	237
332	11	5354	73	6167	62	813
333	634	193	973	473	339	280
334	1921	276	2336	698	415	422
335	671	64	979	142	308	78
336	767	721	955	941	189	220
337	271	103	517	144	246	41
338	208	10	730	68	522	58
339	971	106	1466	223	495	117
340	620	43	1697	1082	1077	1039
341	741	107	1674	241	933	134
342	304	64	750	124	445	60

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rtz	hh94	adj94emp	tfhh15	tfemp15	dhh15-94	demp15-94
343	181	18	491	213	310	195
344	2353	598	2805	1238	452	640
345	745	533	1008	690	262	157
346	506	58	970	522	464	464
347	334	1199	365	1200	31	1
348	258	994	464	1335	206	341
349	88	1346	210	1500	122	154
350	9	1203	26	1388	16	185
351	323	1862	398	2403	75	541
352	960	262	1010	417	50	155
353	2012	510	2087	712	75	202
354	484	248	534	446	50	198
355	692	109	1682	1335	990	1226
356	586	353	804	353	218	0
357	668	114	952	114	284	0
358	80	78	80	78	0	0
359	533	96	613	226	80	130
360	612	167	500	273	-112	106
361	938	472	1536	793	598	321
362	1391	1151	1850	1539	459	388
363	854	5112	2220	7254	1366	2142
364	181	3022	181	4200	0	1178
365	19	1518	19	4695	0	3177
366	154	205	496	775	342	570
367	30	38	108	137	79	99
368	150	93	1739	2034	1589	1941
369	513	1115	2513	4850	2000	3735
370	15	616	15	3383	0	2767
371	9	375	17	1175	8	800
372	180	885	785	1475	605	590
373	2582	580	2982	850	400	270
374	142	115	152	127	10	12
375	205	55	205	55	0	0
376	93	13	350	194	258	181
377	1170	472	1466	548	296	76
378	787	290	1724	548	937	258
379	779	969	371	1606	-408	637
380	901	248	1143	552	242	304
381	628	186	1687	1157	1059	971
382	1134	404	1544	723	410	319
383	1127	2310	1989	2313	862	3
384	53	2682	419	4014	366	1332
385	10	1445	424	3284	415	1839
386	1128	2028	2479	3522	1350	1494
387	591	1966	1573	6937	982	4971
388	1265	3198	2166	5142	901	1944
389	77	2184	496	3904	420	1720
390	1	550	206	1260	205	710
391	47	1976	47	2566	0	590
392	47	6	47	10	0	4
393	44	351	845	1019	801	668
394	108	59	112	68	4	9
395	50	191	233	237	183	46
396	963	310	2463	984	1500	674
397	18	2	818	212	800	210
398	153	14	316	17	163	3
399	256	45	256	65	0	20

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400	151	33	1801	981	1650	948
401	210	89	466	296	256	207
402	18	21	158	103	139	82
403	249	51	1069	244	821	193
404	352	29	392	93	40	64
405	673	69	710	218	36	149
406	489	918	615	2131	125	1213
407	237	540	655	1269	418	729
408	584	882	1343	2587	759	1705
409	605	57	669	164	65	107
410	665	110	739	685	74	575
411	21	3947	48	4156	27	209
412	369	316	398	560	29	244
413	764	392	1618	1004	854	612
414	628	425	651	456	23	31
415	713	279	723	287	10	8
416	342	644	371	791	29	147
417	118	18	120	19	1	1
418	481	411	564	611	83	200
419	243	77	268	135	26	58
420	200	1	214	19	14	18
421	344	190	401	440	57	250
422	681	154	861	404	180	250
423	557	24	707	64	150	40
424	40	425	104	798	64	373
425	414	1566	548	1690	133	124
426	817	108	902	158	85	50
427	683	670	733	1070	50	400
428	1410	1184	1560	1234	150	50
429	973	214	1008	314	35	100
430	657	1535	759	1844	102	309
431	217	166	232	192	15	26
432	293	51	320	151	27	100
433	77	1159	125	1494	48	335
434	6	1008	6	1349	0	341
435	130	113	630	2113	500	2000
436	645	470	820	670	175	200
437	555	25	845	115	290	90
438	410	450	535	800	125	350
439	259	873	409	1209	150	336
440	199	714	240	905	41	191
441	362	396	581	1396	219	1000
442	625	435	954	1350	329	915
443	491	6723	744	11223	253	4500
444	7	961	217	3961	210	3000
445	7	161	106	961	99	800
446	130	163	137	166	7	3
447	937	1198	1237	1698	300	500
448	998	187	1153	303	155	116
449	279	26	298	40	19	14
450	621	387	658	416	37	29
451	746	995	821	1487	75	492
452	735	106	785	121	50	15
453	503	292	581	322	78	30
454	475	1029	528	1281	53	252
455	768	158	789	190	21	32
456	363	262	387	338	24	76



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457	1339	236	1390	275	51	39
458	298	54	457	147	159	93
459	1257	316	1457	616	200	300
460	1249	410	1450	491	201	81
461	162	1729	290	2141	128	412
462	128	1101	235	1419	107	318
463	355	1086	468	1386	113	300
464	34	5601	34	6601	0	1000
465	424	7	810	2077	386	2070
466	550	52	899	302	349	250
467	181	56	450	256	269	200
468	237	45	585	247	348	202
469	189	410	548	692	360	282
470	320	186	1435	845	1115	659
471	379	94	729	694	350	600
472	618	480	968	630	350	150
473	450	90	686	207	236	117
474	129	45	1061	508	932	463
475	518	350	1002	675	484	325
476	281	183	1935	918	1654	735
477	105	58	925	452	820	394
478	353	83	1053	483	700	400
479	180	55	1200	1255	1020	1200
480	31	35	954	1035	923	1000
481	290	1506	1011	2906	721	1400
482	224	439	974	789	750	350
483	172	61	422	461	250	400
484	138	70	188	712	50	642
485	592	39	742	389	150	350
486	132	0	218	43	86	43
487	94	889	97	1339	3	450
488	120	1284	122	1582	2	298
489	382	1061	429	1311	47	250
490	44	686	44	2886	0	2200
491	17	1182	17	1364	0	182
492	1090	1072	1133	1246	43	174
493	894	433	913	528	19	95
494	383	683	570	1672	187	989
495	51	266	73	338	22	72
496	262	24	292	274	30	250
497	161	1922	161	2677	0	755
498	156	354	161	2354	5	2000
499	4	342	55	686	51	344
500	12	238	99	825	87	587
501	398	497	674	1065	276	568
502	250	154	581	284	331	130
503	256	124	256	124	0	0
504	247	35	384	35	137	0
505	549	122	1384	495	835	373
506	320	34	451	93	131	59
507	387	2	1282	341	895	339
508	141	46	241	91	100	45
509	899	2075	1045	2258	147	183
510	4	2879	58	3241	54	362
511	1453	556	1527	628	75	72
512	675	117	1343	412	668	295
513	508	78	1387	478	879	400

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514	968	759	1134	1111	166	352
515	531	526	722	738	191	212
516	112	1560	396	2329	284	769
517	1290	2266	1634	2890	343	624
518	271	30	1415	551	1145	521
519	184	19	239	44	55	25
520	1535	387	1615	423	79	36
521	4863	4586	8887	9506	4024	4920
522	449	128	565	128	117	0
523	433	217	1523	2045	1091	1828
524	245	27	494	169	248	142
525	444	128	551	128	107	0
526	471	2234	1418	3903	947	1669
527	207	51	557	328	351	277
528	696	349	1421	561	725	212
529	373	114	594	114	220	0
530	408	151	645	151	237	0
531	270	91	444	91	174	0
532	545	54	575	190	30	136
533	356	61	600	61	244	0
534	371	60	480	60	108	0
535	8168	5018	9275	5080	1107	62
536	790	132	1050	280	260	148
537	1797	1379	2540	1664	743	285
538	2200	550	2827	631	627	81
539	294	87	2189	1893	1895	1806
540	275	372	527	568	252	196
541	298	339	374	343	76	4
542	634	279	2062	744	1429	465
543	690	571	1474	3923	784	3352
544	166	45	211	45	46	0
545	281	63	357	63	76	0
546	279	37	427	93	148	56
547	200	51	530	444	329	393
548	541	944	700	945	159	1
549	131	248	171	249	40	1
550	396	388	919	493	523	105
551	915	1151	1298	1163	383	12
552	371	575	550	575	179	0
553	2147	2372	6206	6480	4059	4108
554	301	305	429	305	128	0
555	475	106	571	176	95	70
556	31	931	58	1123	27	192
557	28	1477	41	1565	13	88
558	277	85	470	196	193	111
559	299	266	533	338	234	72
560	419	70	2644	395	2225	325
561	207	28	682	95	475	67
562	280	108	458	130	178	22
563	1202	94	1525	148	323	54
564	122	44	759	179	637	135
565	158	77	294	77	136	0
566	746	83	945	114	199	31
567	74	546	119	573	45	27
568	148	15	214	59	67	44
569	375	173	488	224	113	51
570	450	232	528	280	78	48

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571	938	170	1078	179	140	9
572	699	236	892	374	193	138
573	989	244	1343	560	353	316
574	586	285	690	391	104	106
575	297	109	335	151	37	42
576	861	231	1101	318	240	87
577	250	78	264	91	13	13
578	69	146	82	168	13	22
579	209	246	339	380	130	134
580	44	3	621	99	577	96
581	348	68	899	213	550	145
582	59	25	1523	347	1464	322
583	851	62	1074	128	223	66
584	1195	203	1481	278	285	75
585	1349	158	1508	487	159	329
586	729	455	820	579	91	124
587	240	68	262	99	23	31
588	229	64	302	103	73	39
589	501	1380	517	1399	16	19
590	428	247	509	384	80	137
591	189	4	193	5	4	1
592	206	56	222	61	15	5
593	364	138	425	260	61	122
594	391	363	427	488	37	125
595	93	15	115	70	22	55
596	437	461	550	855	113	394
597	355	494	391	572	36	78
598	213	19	229	25	17	6
599	406	10	413	12	7	2
600	608	136	676	353	69	217
601	8	547	66	771	58	224
602	400	499	500	628	100	129
603	188	799	392	1265	204	466
604	154	8	196	78	42	70
605	117	71	335	276	218	205
606	602	648	688	664	86	16
607	696	600	1059	805	363	205
608	306	77	389	126	83	49
609	560	104	570	106	10	2
610	638	999	693	1063	55	64
611	851	1959	964	2104	113	145
612	274	319	331	395	57	76
613	283	125	321	132	38	7
614	393	85	406	87	13	2
615	320	285	323	286	3	1
616	583	59	602	63	19	4
617	615	235	680	260	65	25
618	518	28	1050	140	532	112
619	698	62	923	107	225	45
620	1196	131	1323	163	127	32
621	1299	231	1491	377	192	146
622	461	115	774	415	313	300
623	1	572	2	1013	1	441
624	4	46	318	1312	314	1266
625	28	2516	391	3773	362	1257
626	54	574	152	888	98	314
627	322	1418	399	1490	77	72

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628	490	760	558	844	68	84
629	288	287	338	401	50	114
630	38	1047	40	1113	2	66
631	541	523	888	1104	348	581
632	80	32	343	1163	262	1131
633	146	129	930	1176	784	1047
634	215	1003	822	1922	606	919
635	341	1484	494	1705	152	221
636	127	22	389	397	262	375
637	847	483	1136	1104	289	621
638	219	16	253	52	34	36
639	599	835	772	1060	173	225
640	522	310	646	491	124	181
641	217	52	234	68	16	16
642	382	62	825	1672	443	1610
643	102	1209	469	2593	367	1384
644	427	27	439	31	12	4
645	368	670	492	756	124	86
646	44	0	264	558	220	558
647	8	0	562	2287	554	2287
648	18	709	23	730	6	21
649	7	114	44	187	37	73
650	14	29	209	517	196	488
651	751	519	1092	1223	341	704
652	618	975	774	1464	156	489
653	10	41	50	196	40	155
654	118	439	143	537	25	98
655	27	333	104	632	77	299
656	369	738	472	1130	103	392
657	143	1178	243	1566	100	388
658	83	344	125	508	42	164
659	47	421	89	580	41	159
660	282	518	352	756	70	238
661	365	41	425	57	60	16
662	545	161	1782	512	1237	351
663	388	101	1046	639	658	538
664	391	505	461	569	70	64
665	233	18	318	65	85	47
666	452	632	570	956	118	324
667	171	239	283	676	113	437
668	87	233	197	659	110	426
669	157	1237	322	1842	165	605
670	297	93	309	124	12	31
671	275	73	290	97	15	24
672	160	105	184	131	24	26
673	163	70	384	614	221	544
674	5	0	220	545	215	545
675	846	242	993	420	147	178
676	40	104	86	216	46	112
677	0	18	68	768	68	750
678	1	218	91	1214	91	996
679	7	499	23	1336	15	837
680	0	0	0	0	0	0
681	88	332	550	1143	462	811
682	277	38	643	655	366	617
683	188	51	355	265	167	214
684	406	1018	539	1063	133	45

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685	441	285	481	365	41	80
686	71	166	167	429	96	263
687	108	920	162	1042	54	122
688	52	3	78	17	26	14
689	550	89	780	205	230	116
690	194	57	1081	304	888	247
691	361	79	830	227	470	148
692	97	194	326	268	229	74
693	174	35	286	65	113	30
694	2182	462	2492	622	310	160
695	331	131	375	186	43	55
696	47	1435	52	1436	5	1
697	221	77	309	177	88	100
698	187	15	413	75	225	60
699	370	223	374	224	4	1
700	191	213	384	370	192	157
701	377	12	539	128	161	116
702	52	508	302	979	251	471
703	138	232	198	395	60	163
704	967	237	1248	397	281	160
705	144	135	367	193	223	58
706	111	64	363	153	252	89
707	487	606	487	606	0	0
708	123	43	123	43	0	0
709	699	591	801	646	101	55
710	309	72	671	157	362	85
711	341	221	616	347	275	126
712	229	58	623	118	394	60
713	110	7	143	89	32	82
714	1680	1678	2137	2991	457	1313
715	2032	2767	2230	3039	198	272
716	741	192	744	192	3	0
717	324	1405	631	1577	307	172
718	1608	2146	1743	2351	135	205
719	364	1986	388	2005	24	19
720	1841	784	1900	845	59	61
721	439	267	531	351	92	84
722	704	388	880	637	176	249
723	733	366	753	374	20	8
724	877	170	904	175	27	5
725	320	2284	443	2582	123	298
726	492	712	721	1312	229	600
727	323	1657	731	2308	408	651
728	186	2968	1310	4784	1124	1816
729	249	4831	277	4876	28	45
730	403	693	558	899	155	206
731	241	336	375	422	134	86
732	739	164	775	167	36	3
733	568	118	577	118	9	0
734	465	260	532	329	67	69
735	506	204	593	232	87	28
736	808	203	988	319	180	116
737	857	419	1004	484	147	65
738	582	199	712	315	130	116
739	924	847	1151	1101	227	254
740	652	770	803	919	151	149
741	533	1145	562	1178	29	33

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742	259	535	440	774	181	239
743	577	571	687	666	110	95
744	246	257	416	449	170	192
745	543	387	642	496	99	109
746	296	528	388	700	92	172
747	749	780	766	804	17	24
748	196	205	208	207	12	2
749	500	36	571	61	71	25
750	447	431	630	571	183	140
751	145	97	149	98	4	1
752	212	13	215	14	3	1
753	224	183	238	185	14	2
754	202	19	202	19	-0	0
755	487	68	669	185	182	117
756	594	172	719	291	125	119
757	260	2	264	3	4	1
758	236	4	297	14	61	10
759	481	364	553	460	72	96
760	309	115	560	340	251	225
761	319	44	361	51	42	7
762	707	271	752	292	45	21
763	268	4809	425	5489	157	680
764	311	2538	341	3684	30	1146
765	1358	4624	1499	6171	141	1547
766	2259	2601	2470	2905	211	304
767	919	555	954	582	35	27
768	704	332	735	337	31	5
769	1070	5191	1102	5203	32	12
770	1510	1331	1641	1426	131	95
771	835	991	930	1068	95	77
772	1467	1280	1635	1419	168	139
773	1249	981	1466	1261	217	280
774	2814	1301	2938	1332	124	31
775	912	618	1231	950	319	332
776	1620	706	1762	754	142	48
777	651	640	715	691	64	51
778	868	360	932	445	64	85
779	1114	647	1250	789	136	142
780	1206	1573	1329	1727	123	154
781	305	2978	351	3888	46	910
782	0	1710	0	2031	0	321
783	1132	2806	1120	3624	-12	818
784	789	1093	842	1170	53	77
785	1133	736	1181	804	48	68
786	1216	961	1280	1047	64	86
787	1043	1062	1130	1190	87	128
788	0	610	0	936	0	326
789	168	2097	567	2544	399	447
790	406	1843	446	2330	40	487
791	1006	451	1056	514	50	63
792	236	4479	336	4620	100	141
793	372	1329	409	1592	37	263
794	678	907	790	1108	112	201
795	325	3540	635	4403	310	863
796	925	1573	1025	1696	100	123
797	720	660	782	728	62	68
798	1129	595	1219	705	90	110

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799	1426	758	1555	912	129	154
800	1134	281	1251	436	117	155
801	752	990	846	1087	94	97
802	1398	1304	1581	1439	183	135
803	1660	197	1793	247	133	50
804	895	146	963	164	68	18
805	770	700	847	748	77	48
806	744	208	787	226	43	18
807	553	36	575	43	22	7
808	707	315	736	324	29	9
809	794	626	858	637	64	11
810	650	115	661	124	11	9
811	595	381	716	547	121	166
812	382	944	553	1168	171	224
813	398	625	755	1107	357	482
814	513	715	647	825	134	110
815	302	956	419	1073	117	117
816	97	40	166	69	69	29
817	157	559	310	656	153	97
818	236	40	240	40	4	0
819	617	275	728	439	111	164
820	701	146	864	271	163	125
821	1334	96	1416	178	82	82
822	562	254	598	294	36	40
823	578	57	587	58	9	1
824	859	37	943	89	84	52
825	945	575	1084	699	139	124
826	462	145	483	147	21	2
827	624	180	676	187	52	7
828	812	728	915	825	103	97
829	445	614	447	614	2	0
830	632	1262	702	1353	70	91
831	637	328	787	451	150	123
832	1219	550	1309	642	90	92
833	550	477	643	533	93	56
834	500	604	596	733	96	129
835	1240	1062	1360	1167	120	105
836	901	390	998	597	97	207
837	47	391	81	417	34	26
838	635	116	650	118	15	2
839	767	111	779	111	12	0
840	61	79	71	79	10	0
841	716	2573	903	2614	187	41
842	852	103	917	111	65	8
843	870	113	993	140	123	27
844	713	367	1063	611	350	244
845	694	181	726	198	32	17
846	0	687	0	2045	0	1358
847	205	10106	845	17053	640	6947
848	326	1504	557	3003	231	1499
849	13	6349	237	9032	224	2683
850	506	906	784	1134	278	228
851	234	1546	357	1868	123	322
852	40	9821	40	11014	-0	1193
853	623	204	772	302	149	98
854	575	142	577	142	2	0
855	721	204	725	205	4	1

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856	780	522	831	598	50	76
857	1451	614	1512	664	61	50
858	653	70	682	75	29	5
859	744	414	760	419	16	5
860	650	139	666	142	16	3
861	472	189	606	300	134	111
862	357	290	372	294	15	4
863	188	102	235	143	47	41
864	225	2848	242	2021	17	-827
865	241	219	316	299	75	80
866	281	32	305	37	24	5
867	521	288	597	319	76	31
868	487	498	596	604	109	106
869	769	176	817	230	48	54
870	1643	155	1699	229	56	74
871	1095	375	1218	443	123	68
872	990	461	1167	492	177	31
873	1455	238	1593	381	138	143
874	847	130	969	266	122	136
875	459	706	582	837	123	131
876	657	265	703	313	46	48
877	290	816	295	821	5	5
878	260	49	298	90	38	41
879	679	211	690	215	11	4
880	914	113	930	118	16	5
881	198	86	288	173	90	87
882	154	125	157	125	3	0
883	569	73	576	74	7	1
884	530	309	649	496	119	187
885	1025	137	1092	146	67	9
886	1116	297	1136	299	20	2
887	464	11	507	21	43	10
888	660	317	1119	718	459	401
889	1397	688	1697	845	300	157
890	1165	382	1231	440	66	58
891	1692	580	1773	686	81	106
892	2434	2737	2955	3238	521	501
893	331	753	572	1144	241	391
894	79	1165	95	1647	16	482
895	6	2323	75	2445	69	122
896	8	1321	8	1499	0	178
897	1	264	1	449	0	185
898	11	452	11	681	0	229
899	9	679	9	891	0	212
900	5	1884	5	2055	-0	171
901	7	703	48	1222	41	519
902	2	3182	0	7996	-2	4814
903	0	587	30	824	30	237
904	16	4213	-0	6000	-16	1787
905	13	3390	13	3694	0	304
906	968	1510	1153	1854	185	344
907	18	927	128	1243	110	316
908	340	3316	823	4706	483	1390
909	574	956	841	1295	267	339
910	261	1911	309	3448	48	1537
911	362	443	756	943	394	500
912	1	820	1	877	0	57



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913	514	238	669	363	155	125
914	200	593	458	856	258	263
915	317	1132	638	1494	321	362
916	1190	433	1304	560	114	127
917	724	576	775	663	51	87
918	780	378	795	490	15	112
919	879	92	945	121	66	29
920	2054	1898	2522	2298	468	400
921	1526	397	1644	444	118	47
922	2154	3244	2550	3668	396	424
923	1758	344	1964	544	206	200
924	1142	913	1351	1513	209	600
925	11	4569	0	9596	-11	5027
926	26	1904	25	4449	-1	2545
927	9	0	0	800	-9	800
928	124	1747	124	2703	-0	956
929	349	5504	891	5861	542	357
930	1108	595	2283	567	1176	-28
931	204	65	452	65	248	0
932	22	1863	98	2130	76	267
933	30	627	51	939	21	312
934	56	222	77	332	21	110
935	207	513	227	598	20	85
936	3	167	27	326	24	159
937	8	41	78	512	70	471
938	457	658	531	805	74	147
939	174	171	194	247	20	76
940	54	613	95	1066	41	453
941	428	245	460	273	32	28
942	91	1850	136	2057	45	207
943	667	161	756	208	89	47
944	237	589	256	619	19	30
945	2280	955	2585	1441	305	486
946	362	1603	409	1717	47	114
947	256	2019	340	2293	84	274
948	51	1156	174	2535	123	1379
949	21	2967	55	3569	34	602
950	0	219	0	263	0	44
951	118	193	283	342	165	149
952	164	207	318	298	154	91
953	368	383	380	388	12	5
954	306	285	610	493	304	208
955	424	133	436	150	12	17
956	275	11	284	20	9	9
957	472	155	514	171	42	16
958	351	533	379	553	28	20
959	1	120	1	186	0	66
960	4	57	4	61	0	4
961	193	1819	245	1885	52	66
962	3012	5144	3697	6144	685	1000
963	26	503	-0	6135	-26	5632
964	70	1763	147	2010	77	247
965	3	2626	3	2862	0	236
966	168	191	175	214	7	23
967	483	91	557	112	74	21
968	58	1264	58	1504	0	240
969	20	1380	20	1510	0	130

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970	99	1373	129	2041	29	668
971	9	2055	9	2372	-0	317
972	319	5271	308	5067	-11	-204
973	36	1479	35	1413	-1	-66
974	103	1940	100	1840	-4	-100
975	181	3844	175	3647	-6	-197
976	81	6322	78	5998	-3	-324
977	255	175	250	246	-5	71
978	421	313	407	297	-14	-16
979	412	310	398	294	-14	-16
980	231	2853	223	2707	-8	-146
981	354	507	348	548	-7	41
982	762	3000	904	3985	142	985
983	237	1171	285	1221	48	50
984	251	175	243	166	-9	-9
985	308	14	298	13	-10	-1
986	239	437	231	415	-8	-22
987	204	469	197	445	-7	-24
988	342	512	398	509	56	-3
989	267	6995	338	6674	72	-321
990	200	34	222	42	22	8
991	412	25	510	188	98	163
992	504	193	628	245	124	52
993	127	59	202	163	76	104
994	274	59	343	108	69	49
995	158	29	206	61	48	32
996	339	213	523	261	183	48
997	292	8	386	48	94	40
998	108	0	129	10	21	10
999	27	572	62	4543	35	3971
1000	3	769	101	2114	98	1345
1001	107	32	163	51	57	19
1002	372	180	649	283	277	103
1003	173	2549	172	3201	-1	652
1004	261	256	493	297	232	41
1005	62	2013	60	2051	-2	38
1006	635	967	871	1030	236	63
1007	283	303	350	331	67	28
1008	517	101	724	175	206	74
1009	384	27	522	86	138	59
1010	283	29	381	68	97	39
1011	448	61	940	188	492	127
1012	341	272	458	336	117	64
1013	150	994	240	1112	90	118
1014	803	589	985	647	182	58
1015	693	208	806	277	113	69
1016	678	175	902	410	224	235
1017	1	592	9	740	8	148
1018	6	3373	16	3377	9	4
1019	379	223	592	279	214	56
1020	264	251	365	266	101	15
1021	677	37	839	73	162	36
1022	709	560	860	625	150	65
1023	252	888	349	986	97	98
1024	833	527	1122	647	289	120
1025	577	475	768	599	191	124
1026	809	260	1213	567	404	307

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1027	394	56	594	107	201	51
1028	550	644	670	691	120	47
1029	741	405	865	479	124	74
1030	27	1703	33	1959	6	256
1031	25	2779	63	3069	37	290
1032	357	29	531	80	175	51
1033	259	14	313	46	53	32
1034	465	200	579	289	114	89
1035	572	498	763	594	191	96
1036	186	180	365	411	179	231
1037	696	81	843	137	147	56
1038	273	427	314	425	42	-2
1039	467	303	537	323	70	20
1040	695	1334	853	1341	158	7
1041	477	451	543	461	66	10
1042	458	52	653	125	195	73
1043	474	1020	778	1203	304	183
1044	633	128	909	254	276	126
1045	185	398	338	505	153	107
1046	206	653	211	899	6	246
1047	237	175	314	234	77	59
1048	355	669	739	1002	385	333
1049	262	578	446	1027	184	449
1050	276	70	309	83	33	13
1051	306	61	352	80	47	19
1052	224	114	292	137	67	23
1053	104	0	156	21	51	21
1054	390	436	529	529	138	93
1055	225	174	456	233	231	59
1056	179	8	405	58	226	50
1057	449	73	664	243	215	170
1058	47	130	107	696	60	566
1059	548	284	692	422	144	138
1060	543	312	739	374	197	62
1061	562	124	786	220	224	96
1062	342	120	894	276	552	156
1063	568	1836	1150	1905	582	69
1064	266	27	406	73	140	46
1065	219	145	354	237	135	92
1066	307	1515	423	2117	117	602
1067	354	82	486	157	132	75
1068	523	358	731	501	208	143
1069	405	429	643	643	239	214
1070	81	645	182	1425	101	780
1071	361	1077	529	1270	168	193
1072	225	558	378	697	153	139
1073	555	1455	797	1790	242	335
1074	132	191	305	442	172	251
1075	144	1143	153	1434	9	291
1076	265	1510	580	1636	315	126
1077	369	706	662	915	293	209
1078	671	166	1010	289	339	123
1079	369	76	720	239	350	163
1080	43	166	142	227	99	61
1081	517	298	714	433	197	135
1082	879	125	1282	345	403	220
1083	166	175	282	284	115	109

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1084	171	185	333	537	162	352
1085	395	5	525	64	130	59
1086	314	3	388	36	73	33
1087	371	284	509	368	137	84
1088	129	880	229	953	100	73
1089	325	143	429	201	104	58
1090	469	82	548	114	78	32
1091	11	758	11	832	0	74
1092	366	87	521	159	155	72
1093	562	135	662	174	100	39
1094	375	143	508	201	133	58
1095	386	214	682	376	296	162
1096	913	165	1402	364	488	199
1097	666	83	924	243	258	160
1098	556	26	709	91	153	65
1099	275	317	356	366	81	49
1100	679	69	834	113	154	44
1101	126	6	191	54	64	48
1102	416	135	926	373	510	238
1103	421	56	743	227	323	171
1104	172	57	279	98	107	41
1105	691	329	1084	520	392	191
1106	845	349	1098	582	253	233
1107	466	500	852	1379	386	879
1108	316	99	584	165	269	66
1109	113	128	164	812	51	684
1110	136	22	170	22	35	-0
1111	120	20	158	19	38	-1
1112	136	25	168	227	32	202
1113	98	67	147	64	49	-3
1114	75	3	112	28	37	25
1115	109	244	226	281	117	37
1116	139	94	3417	5808	3277	5714
1117	436	149	949	682	514	533
1118	121	8	2822	2022	2701	2014
1119	240	68	371	246	131	178
1120	325	160	631	275	306	115
1121	708	174	935	270	226	96
1122	998	161	1187	212	189	51
1123	636	56	762	110	126	54
1124	1147	242	1412	480	265	238
1125	275	1487	365	1658	90	171
1126	678	296	960	544	282	248
1127	961	160	1402	375	441	215
1128	948	143	1125	394	177	251
1129	455	2821	710	2935	255	114
1130	469	1052	889	1406	421	354
1131	468	101	663	273	195	172
1132	947	162	1111	273	163	111
1133	283	274	448	353	165	79
1134	147	3	271	178	125	175
1135	687	40	868	191	181	151
1136	199	112	711	241	512	129
1137	515	95	866	177	351	82
1138	564	386	749	624	186	238
1139	509	608	735	989	226	381
1140	278	396	399	600	122	204

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1141	589	88	710	142	120	54
1142	1008	247	1245	357	237	110
1143	607	216	712	459	105	243
1144	625	152	853	246	228	94
1145	1174	258	1463	606	288	348
1146	82	1099	176	1240	94	141
1147	139	929	303	1301	163	372
1148	213	62	292	964	79	902
1149	189	1709	254	2033	66	324
1150	36	808	35	1044	-1	236
1151	173	97	235	176	62	79
1152	476	106	639	236	163	130
1153	314	19	457	86	143	67
1154	317	266	424	549	107	283
1155	273	632	357	817	84	185
1156	451	186	698	297	247	111
1157	452	323	767	519	314	196
1158	163	200	320	468	157	268
1159	916	326	1289	1045	373	719
1160	652	1032	777	1683	124	651
1161	1571	238	2409	702	837	464
1162	467	761	731	3165	263	2404
1163	513	1817	1520	2447	1007	630
1164	244	571	1041	1037	797	466
1165	109	0	396	108	287	108
1166	497	70	788	257	291	187
1167	432	86	802	326	369	240
1168	277	145	343	138	66	-7
1169	228	17	263	26	35	9
1170	206	0	217	1	11	1
1171	122	194	176	242	54	48
1172	211	238	327	515	116	277
1173	318	67	438	387	120	320
1174	246	118	838	325	592	207
1175	463	208	625	199	162	-9
1176	412	202	603	323	192	121
1177	795	227	1095	229	301	2
1178	292	168	687	583	395	415
1179	61	5	530	188	470	183
1180	299	29	384	29	85	0
1181	495	47	742	54	247	7
1182	356	26	646	29	290	3
1183	234	111	1904	967	1671	856
1184	456	420	824	1899	368	1479
1185	157	3	553	319	396	316
1186	59	123	206	1142	147	1019
1187	116	0	717	1298	601	1298
1188	107	10	277	79	170	69
1189	351	283	484	288	133	5
1190	187	65	425	220	238	155
1191	437	28	595	38	158	10
1192	720	116	2032	574	1312	458
1193	415	17	1571	535	1156	518
1194	288	79	803	387	515	308
1195	583	89	664	211	81	122
1196	367	23	1063	351	696	328
1197	40	23	349	307	309	284

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1198	32	471	173	1662	142	1191
1199	623	16	1258	847	634	831
1200	297	56	792	459	495	403
1201	130	0	313	433	183	433
1202	70	23	189	163	120	140
1203	166	0	503	133	337	133
1204	121	33	182	2187	60	2154
1205	420	116	657	677	237	561
1206	333	3638	470	3828	137	190
1207	432	386	623	1040	191	654
1208	885	72	1049	275	164	203
1209	559	723	765	1403	206	680
1210	346	61	511	118	164	57
1211	454	15	531	743	77	728
1212	812	342	1586	899	774	557
1213	107	46	446	241	339	195
1214	110	7	353	92	243	85
1215	421	54	775	753	354	699
1216	50	35	148	485	98	450
1217	163	105	516	876	353	771
1218	111	43	144	41	33	-2
1219	221	163	279	178	59	15
1220	120	14	537	156	418	142
1221	142	34	1229	2707	1087	2673
1222	160	90	192	198	32	108
1223	94	44	135	158	41	114
1224	315	306	429	451	113	145
1225	274	116	2123	2022	1849	1906
1226	727	264	2306	1616	1580	1352
1227	94	27	167	3111	72	3084
1228	190	87	305	215	115	128
1229	225	130	354	170	130	40
1230	371	175	661	542	290	367
1231	145	22	1686	1094	1541	1072
1232	625	69	1451	718	826	649
1233	151	12	969	344	818	332
1234	152	34	731	237	579	203
1235	372	235	530	231	158	-4
1236	406	24	562	46	156	22
1237	393	33	600	33	207	-0
1238	465	78	636	87	172	9
1239	138	121	145	130	7	9
1240	281	156	569	2226	287	2070
1241	1171	111	1788	218	618	107
1242	601	86	758	135	157	49
1243	1097	296	1407	2500	310	2204
1244	1911	55	3927	1300	2017	1245
1290	1724	1821	1745	2111	21	290
1291	1668	694	1919	1152	251	458
1292	1268	904	2253	795	985	-109

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**Bank of America**

December 6, 1995

**W. Charles Armstrong**  
Chairman  
Chief Executive Officer

City Council  
City of Portland  
1220 SW Fifth Avenue  
Portland, OR 97204

Dear Council Members:

A State Economic Development Commission meeting prevents me from appearing before you in person today. As Chairman of the Downtown Portland Oversight Committee, however, I wanted to summarize the findings and recommendations of that committee.

The Downtown Portland Oversight Committee was formed to 1) assist in the development of light rail alignment options utilizing the 5th and 6th Avenue Transit Mall; 2) establish criteria to evaluate those options; and 3) forward a recommendation to the South/North Steering Group on whether the options adequately address those criteria or whether alignment alternatives in addition to the 5th/6th Avenue Transit Mall should be advanced into the draft environmental impact statement for further study.

The Oversight Committee went into the process with an open and somewhat skeptical mind and rigorously studied the issues before making a recommendation. The recommendation represents an immense amount of work by technical staff and an exhaustive commitment of time by the participants on the Oversight Committee.

The Committee performed the charge given to it by the project and found that the options being recommended adequately address the criteria adopted by the Metro Council and the Oversight Committee. Of paramount interest to the committee were the questions "Does this alignment work for downtown? Is it good for the economic health of the Central Business District as well as working for transit, autos and pedestrians?" We found the answers to the questions an emphatic "Yes."

Members of the Committee actually went out to the transit mall during the evening commute to visualize first hand the impacts of light rail on the mall. The consensus was that it could work.

The recommended option is favored by the overwhelming majority of the downtown community. It would retain important automobile access on the Mall, enhance the pedestrian environment on the Mall, and would ensure efficient transit operations for both buses and light rail on the Mall with the least construction impacts of any options studied.

CITY COUNCIL  
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Specifically, in the north Mall, the committee concluded the construction impacts can largely be contained within the existing street right of way and stays out of the sidewalks.

Connections to the Mall were also important to the Committee. Harrison Street in the South was recommended, but it should be designed to fit within the median, and there should be a study to determine whether a station is warranted on Harrison near 2nd and 3rd Avenues. In the north, the Committee prefers an alignment that would extend closer to Union Station (via Irving Street) but recognizes another alignment on Glisan Street should be studied until issues of cost, traffic impacts, displacement and ridership can be resolved.

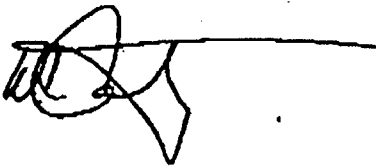
The Oversight Committee also went beyond the original charge of the Committee because of the intense pressure to ensure that 5th and 6th Avenues not only worked but were the best streets for light rail. The Committee concluded that only the 5th/6th alignment be studied further. The Committee believed we could not turn our backs on 20 years of planning and investment, which has created the existing high densities along 5th and 6th Avenues. Also contributing to the Committee's conclusion is that 5th and 6th Avenues have been built to accept light rail. Other streets adjacent to the high density spine, such as 4th and Broadway, have been built for high auto use. Both types of streets are needed for a healthy downtown.

In the end, the Committee voted unanimously for the 5th/6th Avenue alignment. The technical data support that conclusion, the historical data support that conclusion, and, make no mistake, no other option has wider support in the downtown business community.

I also wanted to briefly share with you the committee's concern regarding construction mitigation. The proposed 5th/6th Avenue alignment and the recommended option would minimize the scale and duration of construction of all the alignments and options considered. However, if the construction of South/North is to be completed successfully, it must be completed as quickly as possible with a strong construction management plan. Downtown Portland should be identified as a special construction zone with oversight provided by both Tri-Met and the business community, with appropriate assistance from the City. Moreover, selection of the construction contractor must be designed to maximize adherence to the construction management plan.

I am confident that with the active participation and good intentions of the business community, Metro, Tri-Met and its users and the City of Portland, we can make this alignment another showcase for Portland and the greater metropolitan area.

Sincerely,

A handwritten signature in black ink, consisting of a stylized, cursive name followed by a horizontal line extending to the right.



# Design Option Narrowing Final Report

December 1995

## Steering Group Selects Final Set of Design Options for Impact Study

On Nov. 20, the officials of the South/North Steering Group unanimously adopted a final set of light rail recommendations for study in the Draft Environmental Impact Statement (DEIS). *The Final Design Option Narrowing Report* now goes to the participating governments along the corridor for review. Following local government consensus in December, work on the Draft Environmental Impact Statement will begin Tier II of the study. The DEIS involves evaluating and further refining the options in more detail.

The Draft Environmental Impact Statement is an examination of impacts that a light rail line could have on the air, water, wildlife, traffic, streets, sidewalks, buildings, houses, neighborhoods and other features in the corridor. The process, beginning in January 1996, is expected to take 12 to 18 months to complete. Metro will work with Tri-Met and other involved governments and citizen committees during the study.

In forming its final design option report, the Steering Group took into consideration public comments from the community, technical information and recommendations from three committees. The following is a summary of final design option selections.

### Minimum Operable Segments

The full-length light rail alternative to be examined in the DEIS would run between the vicinity of Clackamas Town Center in Oregon to the Veterans Administration Hospital/Clark College area in Vancouver, Wash. The Steering Group selected four specific construction segments called minimum operable segments (MOS) for further study. They are:

1. Milwaukie Market Place park-and-ride to VA Hospital/Clark College in Vancouver, Wash.
2. Clackamas Town Center area to Rose Quarter area
3. Clackamas Town Center area to Kaiser Clinic area
4. Clackamas Town Center area to Expo Center area

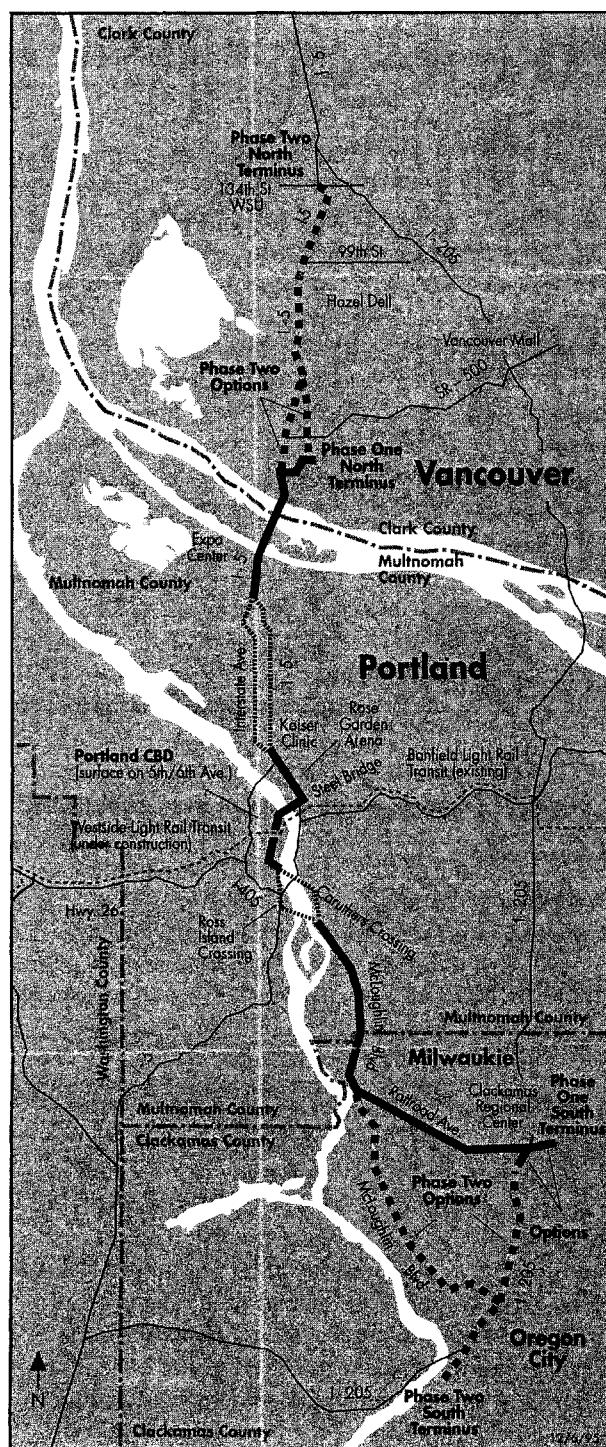
*Note:* A minimum operable segment (MOS) is a light rail alignment that is a segment of the full-length alternative. It can be operated successfully on an interim or long-term basis and can be extended into the full-length alternative at a later time.

### Downtown Portland Alternative

The members of the Steering Group agreed unanimously with the recommendations from all three committees regarding a light rail alternative on the

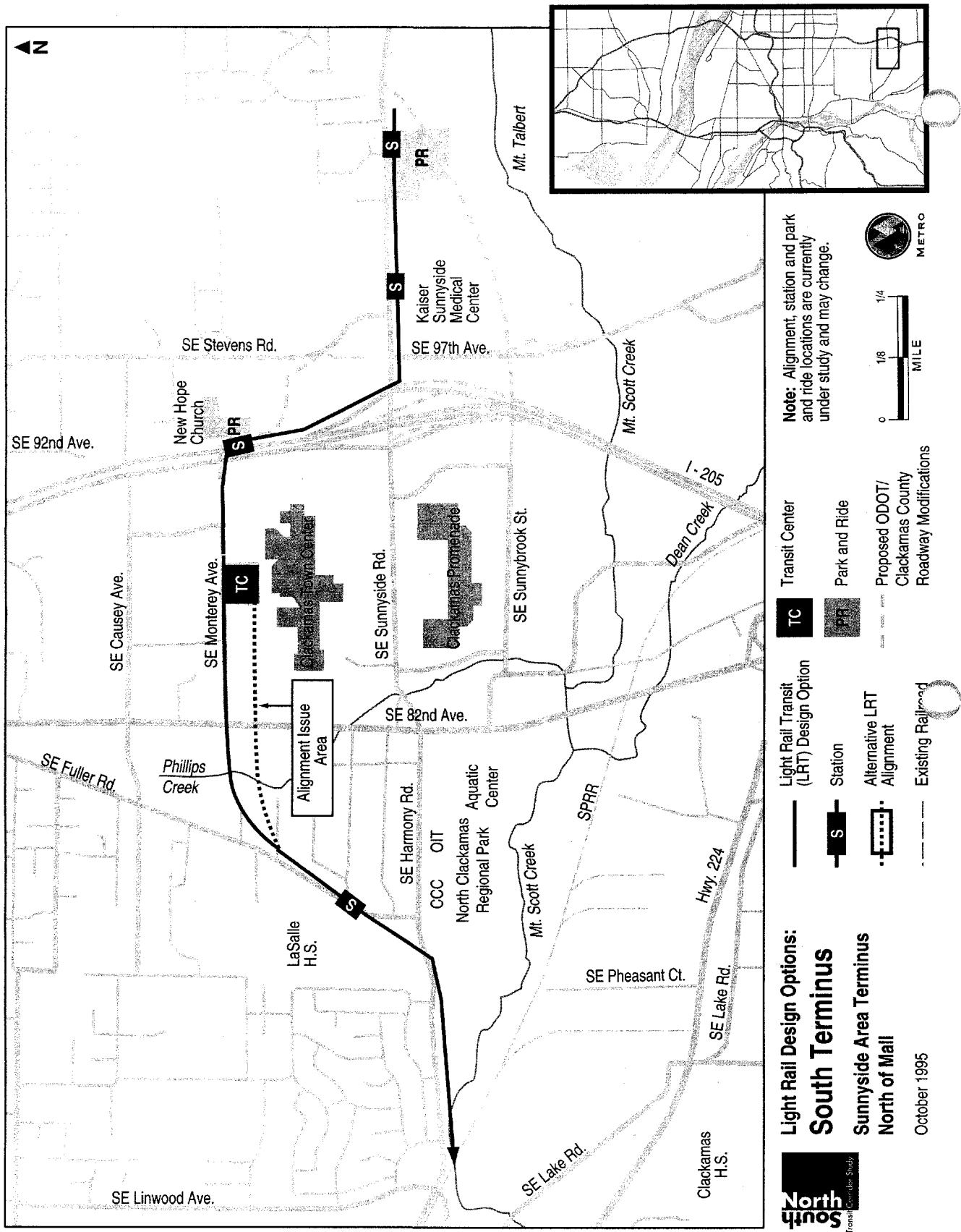
5th/6th Avenue Transit Mall in downtown Portland. Many other streets were studied, but the committees took into consideration the 20 years of planning and development that have gone into creating a high-density spine through the transit mall, as well as the economic and traffic impacts of using other streets. The members commented that construction impacts must be kept to a minimum so that businesses and commuters are not inconvenienced any longer than necessary. The Steering Group's recommendation will be forwarded to the Metro Council for final adoption in December 1995. (See page eight.)

(continues on back page)



South/North Transit Corridor Study Map -  
Phase One and Phase Two

# South Terminus – Sunnyside Area Terminus, North of Mall



## South Terminus (end point) – Sunnyside Area Terminus, North of Mall

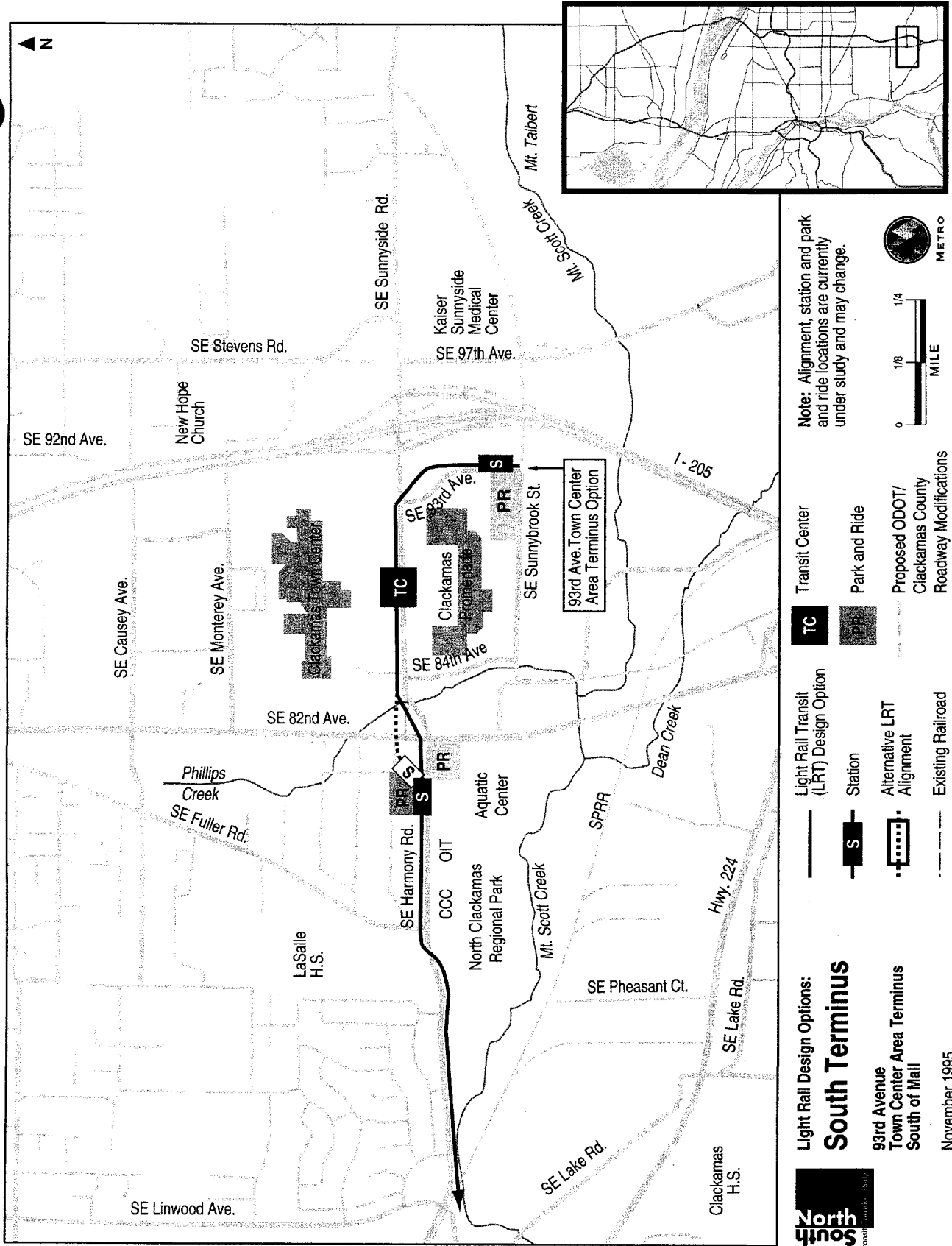
### Description

The terminus station with this option would be located east of the Kaiser Sunnyside Medical Center with a park-and-ride lot located near the intersection of Sunnyside Road and 105th Avenue. The light rail line would travel at grade to a possible Kaiser Medical Center station located south of Sunnyside Road and north of the Mt. Talbert building. It would continue along Sunnyside Road, cross 97th Avenue at grade and then turn north. It would cross Sunnyside Road on a structure, then travel at grade, adjacent to I-205, to the New Hope Church. A station and a park-and-ride lot could be located in the vicinity of the New Hope Church. The LRT would then continue on an overpass

across I-205 and travel at ground level along the south side of Monterey Drive to the vicinity of the existing transit center north of the Clackamas Town Center (CTC). Continuing west, it would cross 82nd Avenue on a structure and continue to Fuller Road at grade. The alignment would curve south along the east side of Fuller Road with a possible station located near LaSalle High School. The line would cross under Harmony Road, curve west and travel along the south side of Harmony Road.

### Rationale

This design option would provide close light rail transit access to the high-density, multi-family residential district north of CTC mall. It would also have a low number of commercial displacements. It would reconfigure the existing transit center near its current location, which is near the main mall entrance and various public facilities. It would also provide the opportunity for mall expansion near the transit center.



# South Terminus - 93rd Avenue CTC Area Terminus, South of Mall

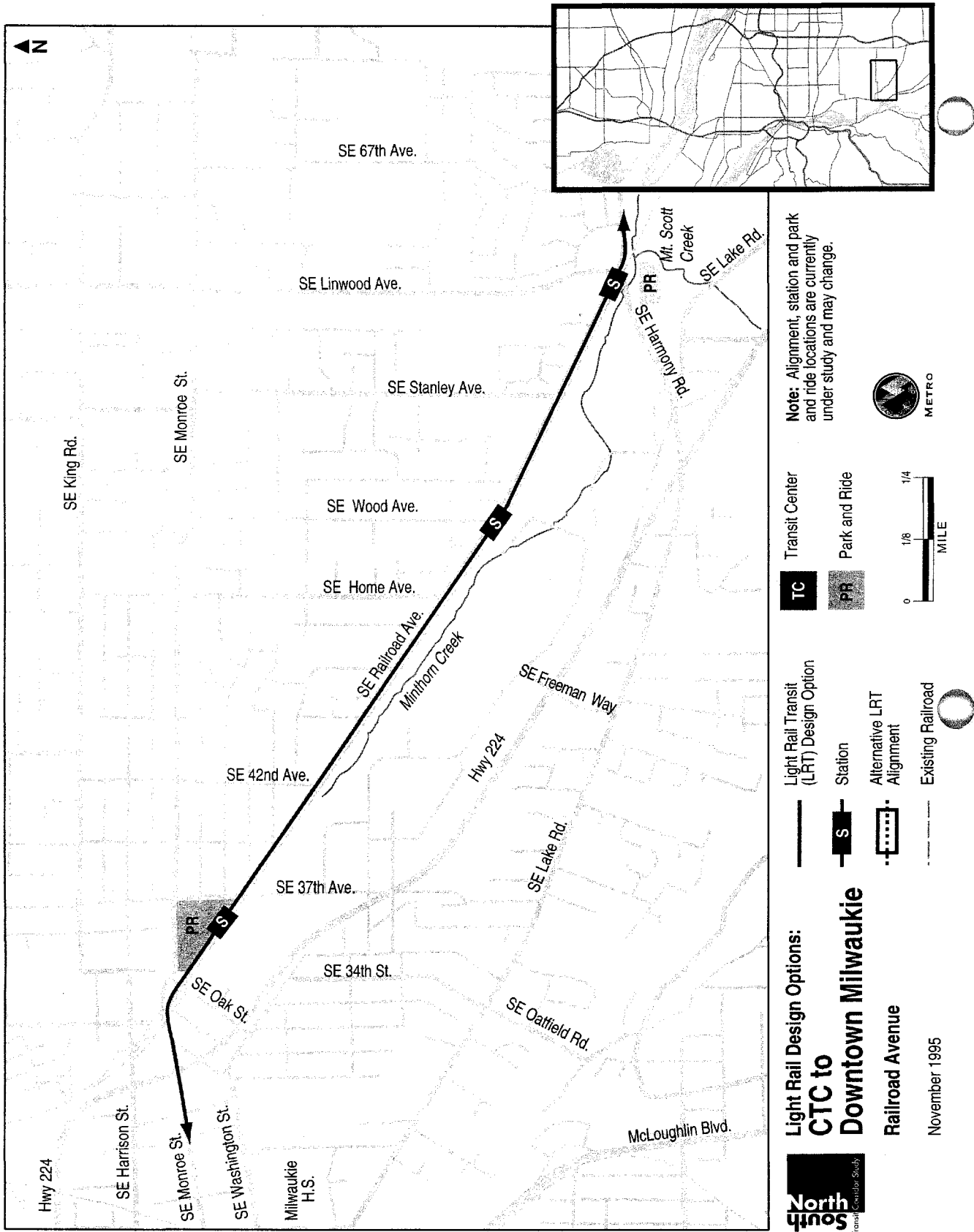
## South Terminus (end point) - 93rd Avenue CTC Area Terminus, South of Mall

### Description

With this option, the southern terminus would be located just east of the Clackamas Promenade, and west of I-205 along 93rd Avenue. A potential park-and-ride lot would be located in the vicinity of 93rd Avenue and Sunnyside Road. From the terminus, the light rail would travel north, cross Sunnyside Road on a structure and curve west, traveling along Sunnyside Road with a transit center located north of Sunnyside Road and south of the mall. From there, the light rail would travel west along Sunnyside Road and Harmony Road. A station and park-and-ride lot could be located in the vicinity of Harmony Road and 82nd Avenue. The alignment would continue west to a station west of Linwood Avenue on the south side of Railroad Avenue, with a park-and-ride lot nearby.

### Rationale

The rationale for studying this design option in the DEIS is to further evaluate the benefits of a south of CTC alignment and a park-and-ride lot and terminus station west of I-205. This design option has lower capital and operating costs. It would also have a shorter travel time through the segment. Fewer residential displacements could be required with this option. Also, the South of Mall option would provide for bus access into the Clackamas Town Center Transit Center through a joint light rail/bus facility across 82nd Avenue. It would locate a light rail station close to the Clackamas Swim Center, Clackamas Community College and the Oregon Institute of Technology branch campus on Harmony Road.



## CTC to Downtown Milwaukie - Railroad Avenue

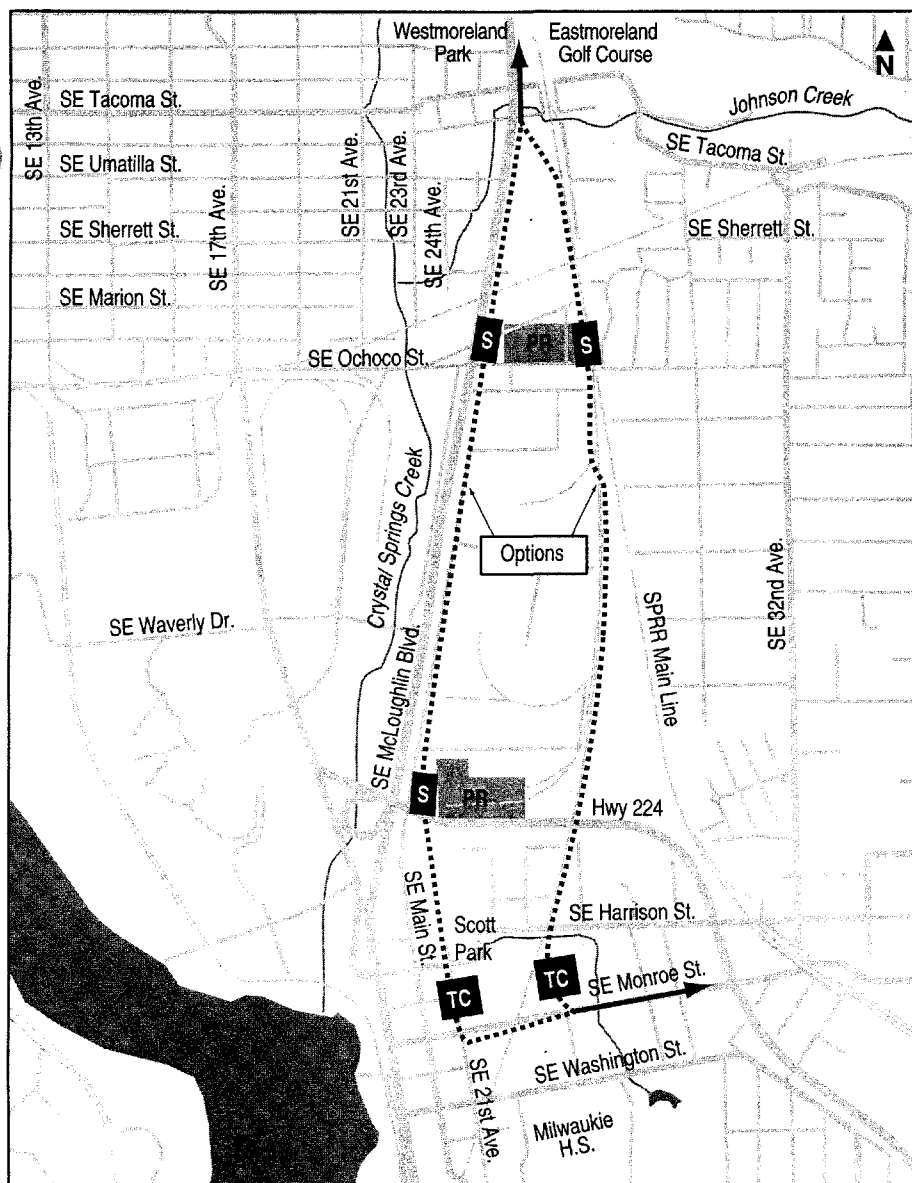
### Description

From the north side of Harmony Road, the light rail alignment would emerge onto the south side of Railroad Avenue by crossing a reconfigured intersection of Linwood, Lake and Harmony roads. A station could be located in this area to serve the neighborhood and a park-and-ride lot. This alignment would then use the existing Railroad Avenue right-of-way, just north of the Southern Pacific (SP) main line. Railroad Avenue would be relocated to the north. A station would be located near Wood Avenue to serve the residential area to the north and industrial park to the south. The alignment would continue adjacent to the Southern Pacific main line to a station and park-and-ride lot just west of 37th Avenue. It would then cross over the main line on a structure in the vicinity of Oak and Myrtle streets, just west of the Milwaukie Market Place. The

structure would continue to an overpass of Highway 224, landing on Monroe Street in downtown Milwaukie.

### Rationale

This design option would provide more direct access to the established neighborhood north of Railroad Avenue. It would also be the least expensive design option and would have the highest weekday ridership of the options reviewed in this segment. Finally, it is the only option that provides a park-and-ride facility to serve the travel shed of the residential area north of Railroad Avenue, preventing these autos from driving through the congested areas near downtown Milwaukie.



## Light Rail Design Options:

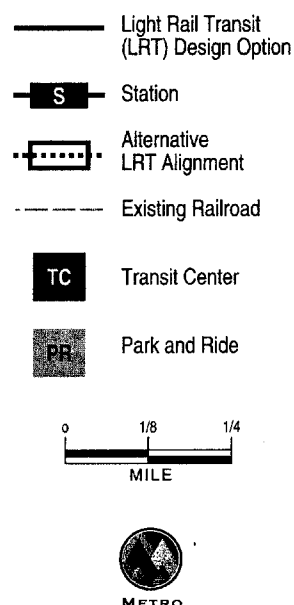
### Milwaukie

Monroe Street/  
SP Branch Line

Monroe Street/  
21st Ave. – McLoughlin Blvd.

October 1995

**Note:** Alignment, station and park and ride locations are currently under study and may change.



## Milwaukie – Monroe Street/SP Branch Line

### Description

In a Monroe Street/Southern Pacific branch line design option, light rail would travel west on Monroe Street from Highway 224 to a possible transit center located between Monroe and Harrison streets near the SP branch line. Light rail would curve to the north and travel adjacent to the east side of the SP branch line, using the existing underpass of Highway 224. An elevated structure would then allow the alignment to cross over to the west side of the SP branch line in the North Milwaukie area, just south of Ochocho Street. A park-and-ride station could be located somewhere in the vicinity between McLoughlin Blvd., Ochocho Street, the SP freight rail line and Johnson Creek. The alignment would then use an existing undercrossing of Tacoma Street to enter the McLoughlin Blvd. segment.

### Rationale

This design option would require the fewest commercial building displacements of any of the Milwaukie design options and would have the second highest net weekday ridership. It would provide light rail access to downtown Milwaukie and would have the third lowest capital cost of the options serving downtown Milwaukie.

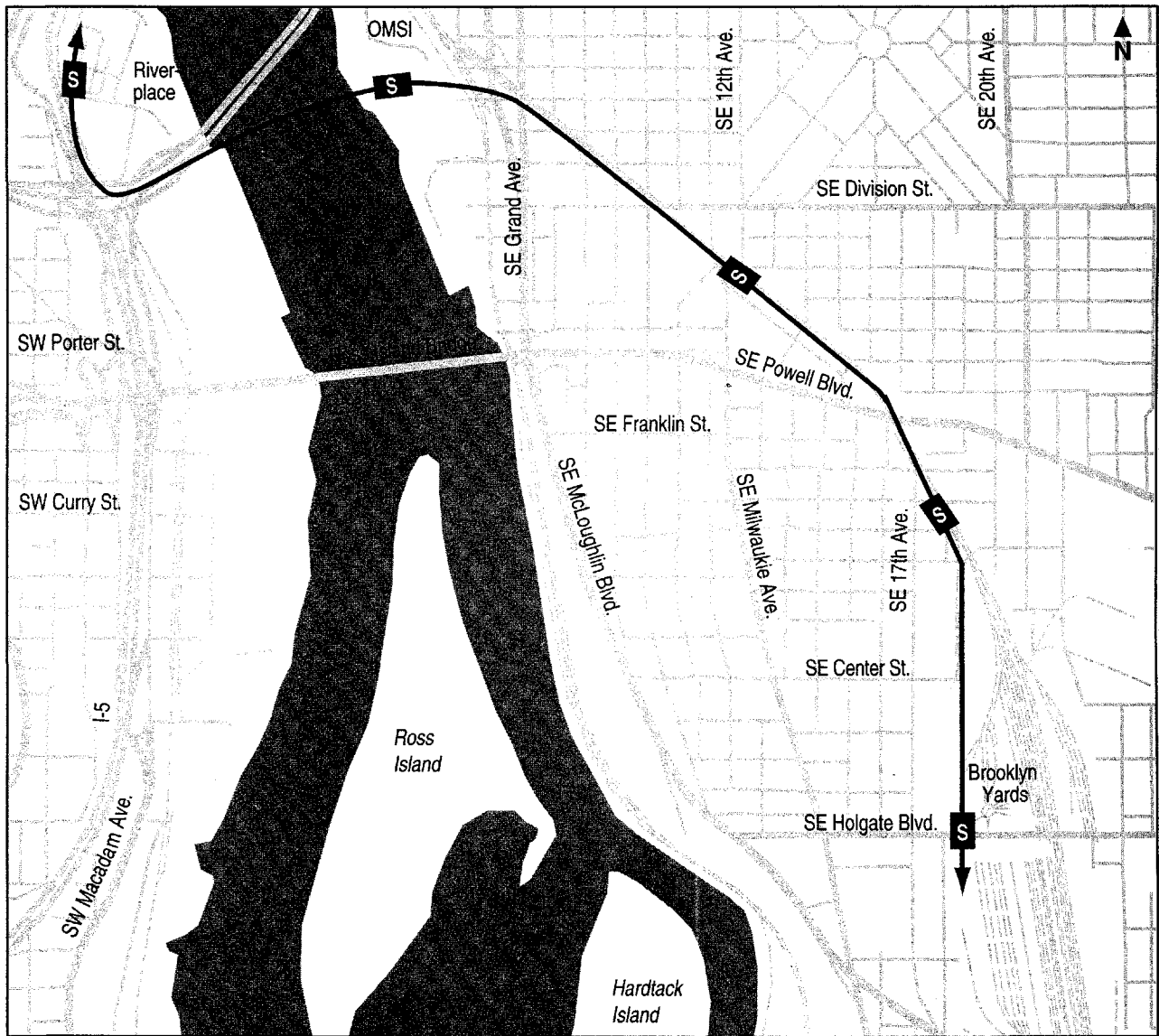
## Milwaukie – Monroe Street/21st Avenue/ McLoughlin Blvd.

### Description

In a Monroe Street/21st Avenue/McLoughlin Blvd. design option, light rail would travel west on Monroe from Highway 224 then turn north to a transit center located behind Milwaukie City Hall on 21st Avenue. From there, the alignment would cross underneath Highway 224, and continue traveling north adjacent to McLoughlin Blvd. A park-and-ride station could be located somewhere in the vicinity between McLoughlin Blvd., Ochocho Street, the SP freight rail line and Johnson Creek. The alignment would then use an existing undercrossing of Tacoma Street to enter the McLoughlin Blvd. segment.

### Rationale

The rationale for studying this design option in the DEIS is to further evaluate the benefits of locating the Milwaukie Transit Center west of the SP branch line, closer to established commercial area of downtown Milwaukie. This design option would provide direct and visible access to downtown Milwaukie and would be the least expensive option to construct of those options providing a station west of the SP branch line. It would also have low operation and maintenance costs.



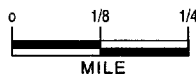
# Light Rail Design Options: South Willamette River Crossing

## West Brooklyn Yards - Caruthers Modified Bridge

October 1995

- Light Rail Transit (LRT) Design Option
- Station
- Alternative LRT Alignment
- Existing Railroad

- TC Transit Center
- PR Park and Ride



**Note:** Alignment, station and park and ride locations are currently under study and may change.



## South Willamette River Crossing - West Brooklyn Yards

### Description

In a West Brooklyn Yards design option, light rail would travel north from SE Reedway Street along the east side of McLoughlin Blvd. The route would then follow the western boundary of Southern Pacific's Brooklyn Yards. A station could be located at SE 18th and Holgate Blvd. Light rail would cross Powell on a new bridge and continue to a station located at SE Clinton Street and Milwaukie Avenue. Light rail would cross over 9th, 8th, Grand Ave. and Martin Luther King, Jr. Blvd. on a bridge to a potential above-grade station near OMSI. Light rail would continue to the Caruthers Modified crossing.

### Rationale

This design option would cost significantly less to construct than the East Brooklyn Yards alignment while serving generally the same employment, retail and residential areas. It would provide access to a similar number of acres of redevelopable land as the East Brooklyn Yards option and more acres of redevelopable land than the PTC/McLoughlin Blvd. option. This option also requires many less residential displacements than other options.

## South Willamette River Crossing - Caruthers Modified Bridge

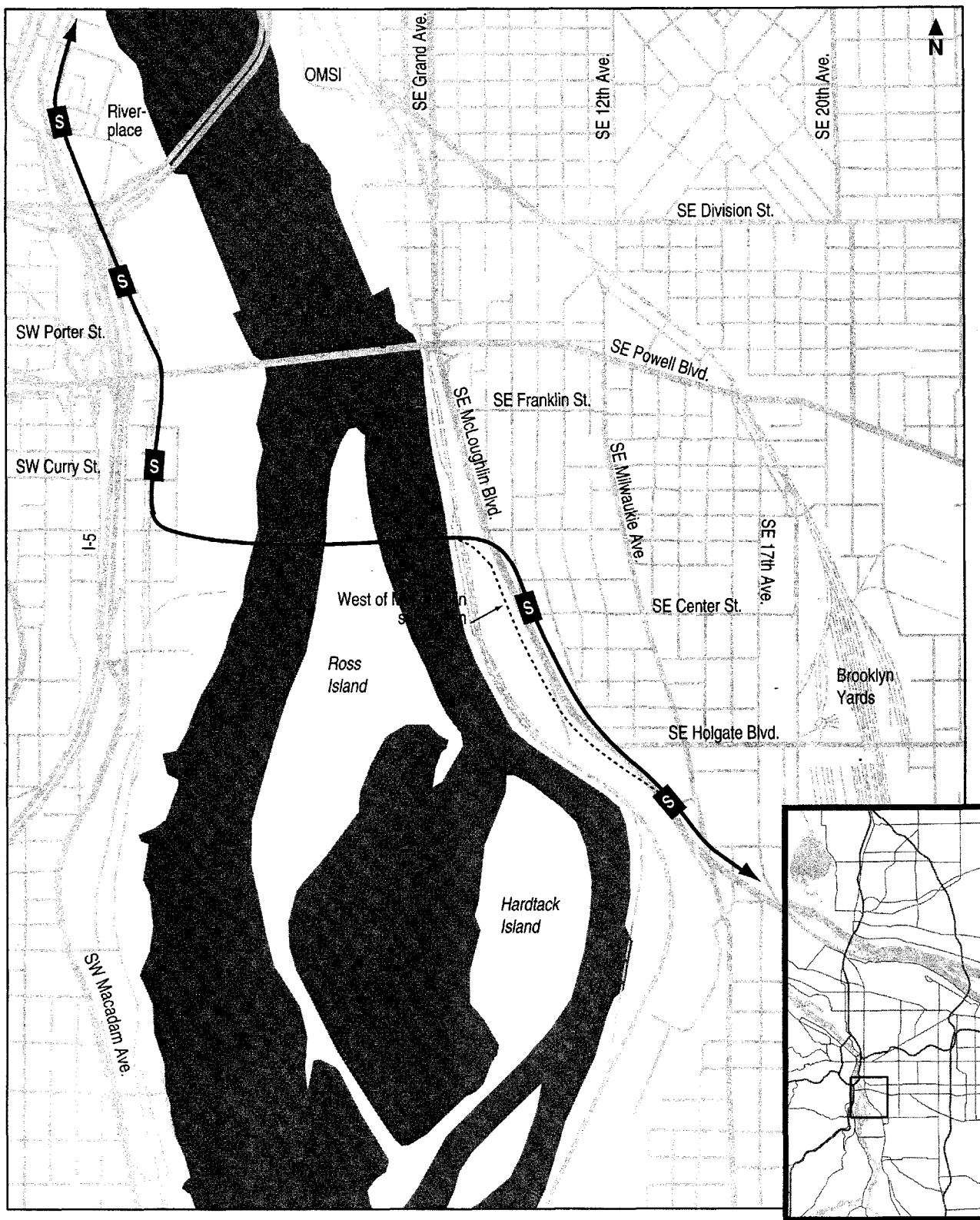
### Description

From an elevated OMSI station, the Caruthers Modified light rail bridge would cross 75 feet above the Willamette River channel. On the west bank, the bridge would split into a westbound and eastbound bridge as it crosses under the Marquam Bridge and weaves through the existing bridge columns. Light rail would cross over Moody Avenue and the Pacific Power and Light substation on structure and return to grade on the west side of the substation. It would continue north and recross Moody Avenue to a Riverplace station.

### Rationale

This option would have a faster travel time compared to other options. It would have the least negative impact on the Willamette River ecosystem by requiring fewer piers in the river (similar to Caruthers/Marquam). It would also avoid adverse impacts on redevelopment parcels on the west bank of the Willamette, north and south of the Marquam Bridge.





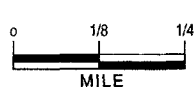
# Light Rail Design Options: South Willamette River Crossing

North Ross Island

October 1995

- Light Rail Transit (LRT) Design Option
- Station
- Alternative LRT Alignment
- Existing Railroad

- TC Transit Center
- PR Park and Ride



**Note:** Alignment, station and park and ride locations are currently under study and may change.



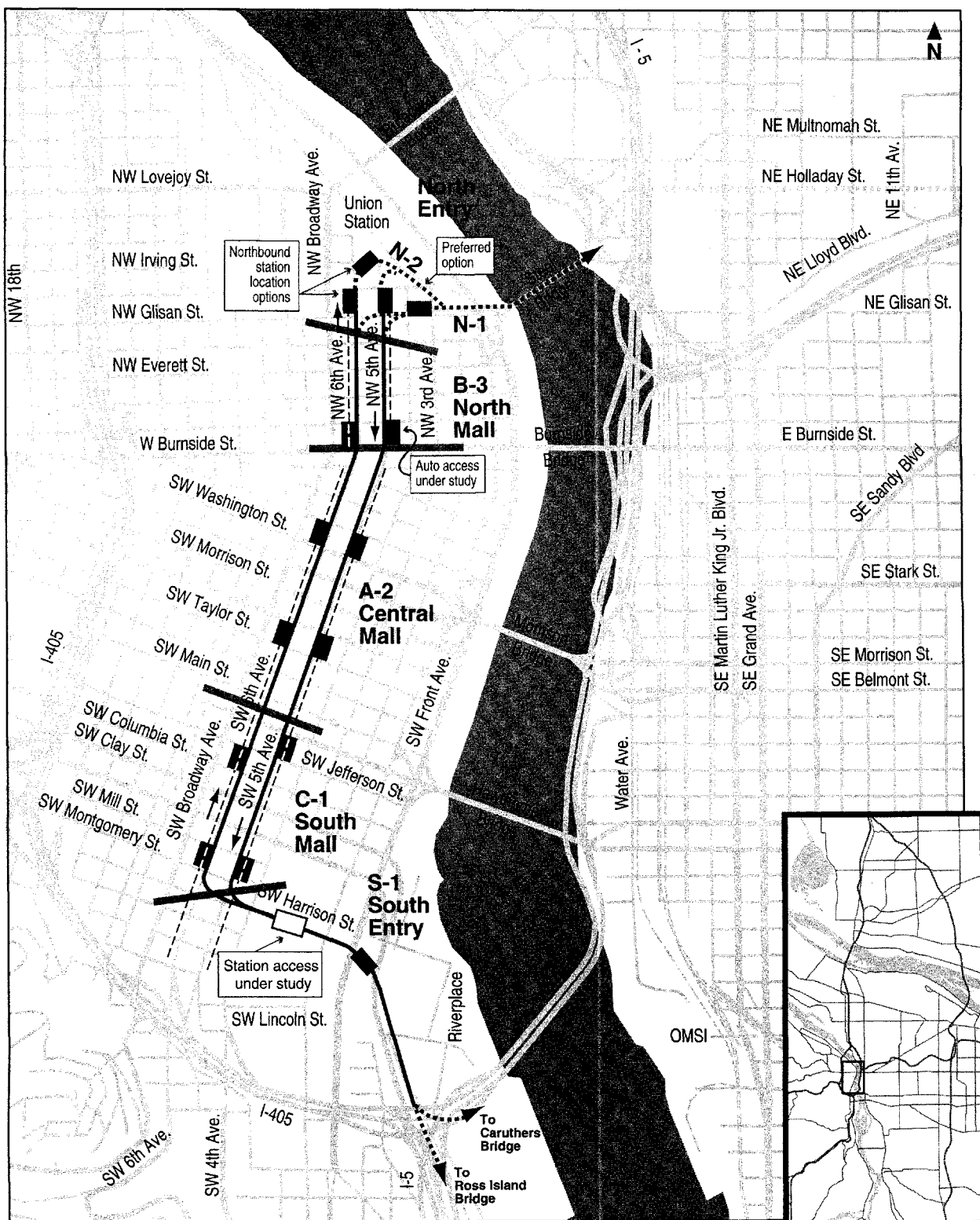
## South Willamette River Crossing - North Ross Island Bridge

### Description

From Tacoma Street, light rail would travel north on the east side of SE McLoughlin Blvd. to possible stations located near SE 16th and Milwaukie avenues and Center Street. It would then cross under SE McLoughlin Blvd. at approximately Bush Street, and cross the Willamette River at the north tip of Ross Island. The bridge would land near Moody Avenue, with a possible station located at Curry Street. It would travel north at ground level to a possible station near Porter Street. From there, it would travel north on the west side of Moody Avenue in its own right-of-way to a potential Riverplace station.

### Rationale

This design option would provide walk access to light rail for more future (year 2015) employees and residents in the North Macadam redevelopment area than the South Parallel option and a number similar to the Mid Ross Island option. It would have less adverse impacts on the Willamette River ecosystem than the South Parallel option (and similar to the Mid Ross Island) due to fewer piers in the river.



## Recommended Light Rail Design Options: Downtown Portland

5th/6th Avenue Transit Mall  
November 1995

- Light Rail Transit (LRT) alignment
- LRT alignment options
- ..... MAX
- Westside LRT
- Existing railroad

- Mall auto access
- Station with no auto access on mall
- Station with auto access on mall

**Note:** Alignment, station and park and ride locations are currently under study and may change.



## Downtown Portland - 5th/6th Avenue Transit Mall

### Description

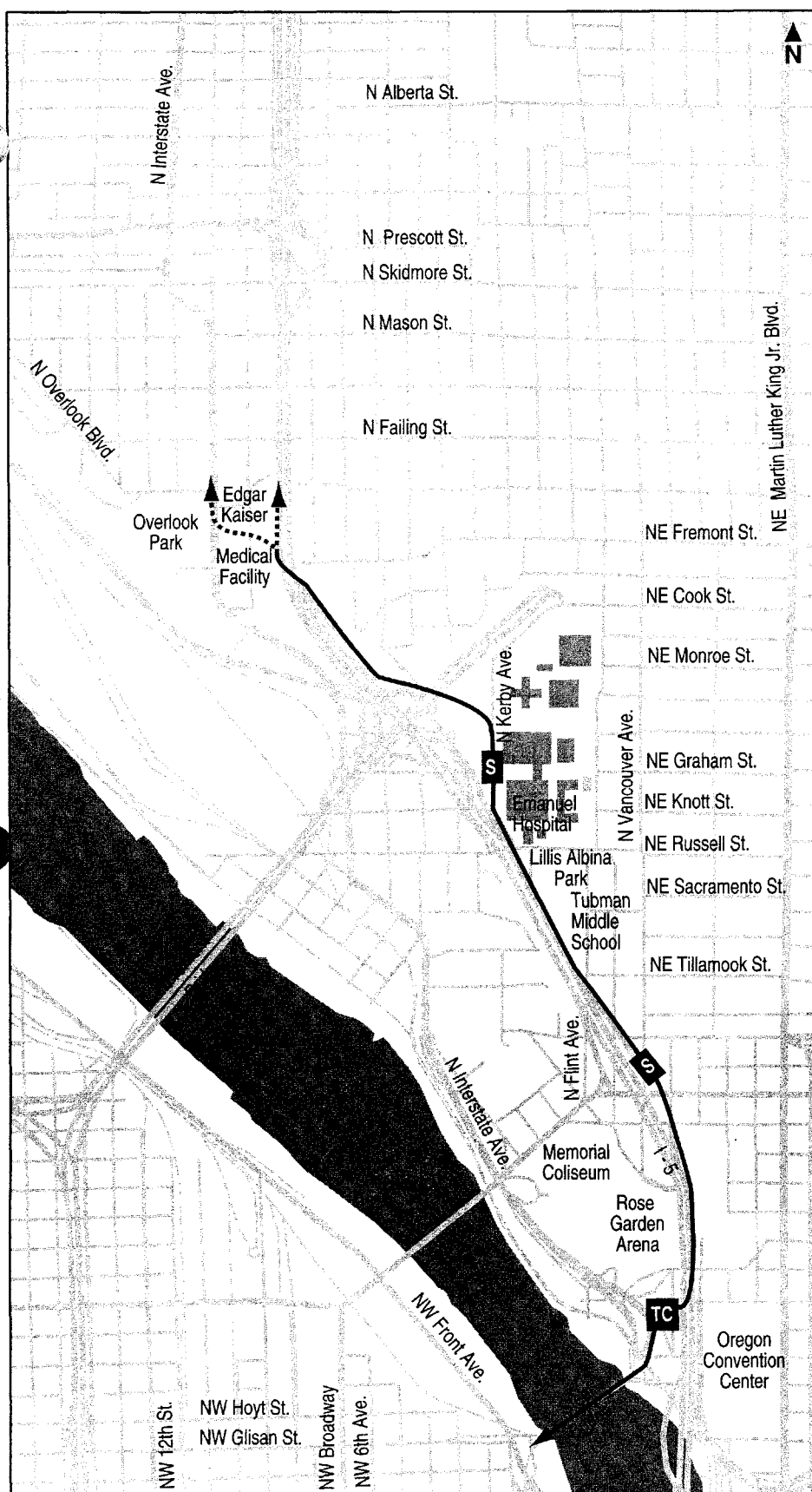
The Steering Group selected the surface alignment on the 5th/6th Avenue Transit Mall to be studied further in the Draft Environmental Impact Statement. In the central mall, light rail and buses will have one lane each. Buses can also share the light rail lane. Auto access will remain much like it is today. On the mall north of W. Burnside, one lane will be used by light rail while the other lane will be shared by autos and buses. South of SW Madison, the transit mall will be extended to PSU and will generally include two auto/bus lanes, one light rail lane and some on-street parking. The south entry for light rail into downtown will be on SW Harrison Street, while the north entry will be from the Steel Bridge on either NW Glisan or NW Irving near Union Station.

The Steering Group further decided that no other subway or surface alignments in downtown should be studied in the Draft Environmental Impact Statement.

### Rationale

The Steering Group found that the downtown option would provide an efficient transit system while preserving and enhancing the economic health and livability of downtown Portland. The proposed option would successfully accommodate buses, light rail, pedestrians and autos on the transit mall. No other surface street or subway alignment in downtown Portland provides a promising alternative to the mall alignment. While the proposed 5th/6th Avenue Transit Mall option would have the least construction impacts, a management plan needs to be developed to minimize both the duration and extent of construction impacts.



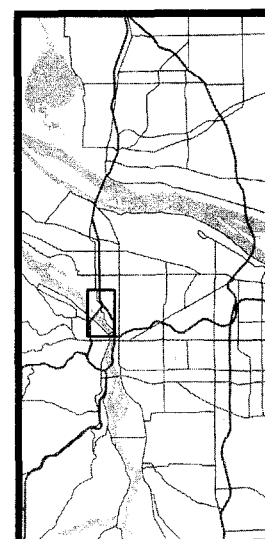
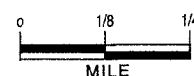


## Light Rail Design Options: Steel Bridge to Kaiser East I-5/Kerby

September 1995

**Note:** Alignment, station and park and ride locations are currently under study and may change.

- Light Rail Transit (LRT) Design Option
- S — Station
- Alternative LRT Alignment
- Existing Railroad
- TC Transit Center
- PR Park and Ride



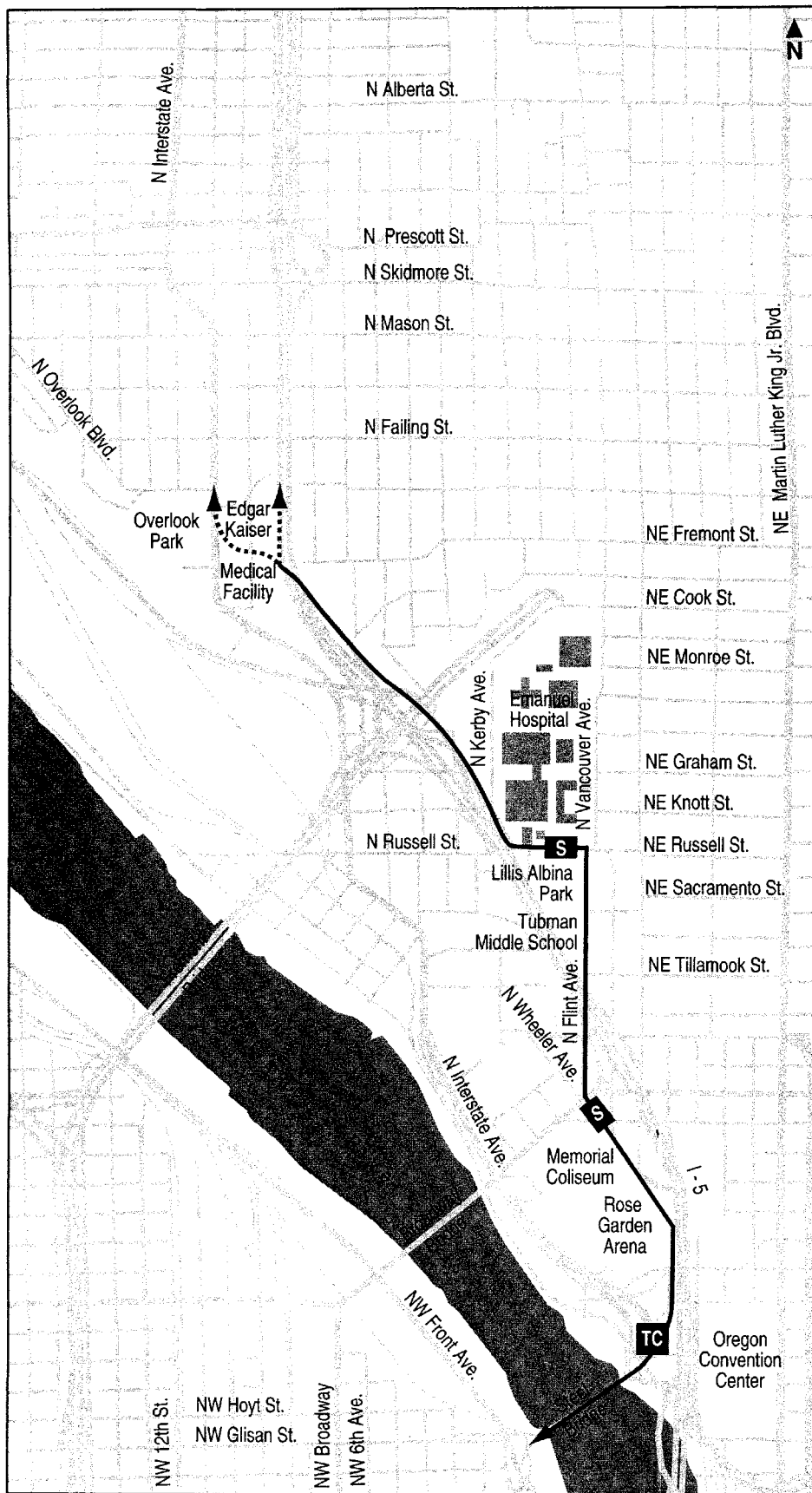
## Steel Bridge to Kaiser Clinic - East I-5/Kerby

### Description

The route would leave the Rose Quarter Transit Center and run beneath the I-5 freeway, turning north along the eastern edge of I-5. It would run along I-5, and pass beneath NE Broadway/Weidler streets. A station above or at the surface serving the NE Broadway Street area could be located between N. Vancouver Avenue and NE Victoria Avenue. The route would continue along the east side of the freeway. This route would follow the east side of I-5 behind Harriet Tubman Middle School and cross N. Russell Street on a bridge to a station in the median of N. Kerby Avenue between N. Graham Street and N. Stanton Street. The route would turn west and pass over I-5 on a bridge and then either proceed north along the west side of the freeway or cross the Kaiser Clinic campus to Interstate Avenue.

### Rationale

The choice between the Wheeler/Russell and the East I-5/Kerby design options will be an important issue to be resolved during the DEIS process. An important basis for making this determination will focus on the ability to plan and develop transit-oriented land uses around stations. Issues of density, timing and certainly of development, traffic integration of light rail with major attractors, equity, capital cost, light rail travel speed/time, reliability, ridership, neighborhood cohesiveness and similar factors will be taken into consideration when evaluating these two options.



South  
North  
Transit  
Study

## Light Rail Design Options: Steel Bridge to Kaiser

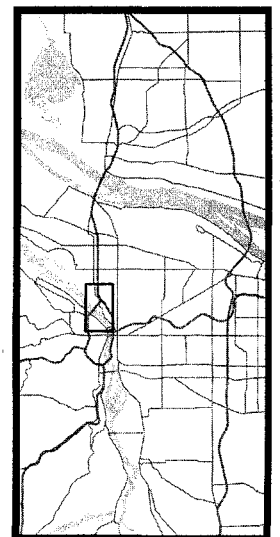
Wheeler / Russell

September 1995

**Note:** Alignment, station and park and ride locations are currently under study and may change.

- Light Rail Transit (LRT) Design Option
- Station
- Alternative LRT Alignment
- Existing Railroad
- TC Transit Center
- PR Park and Ride

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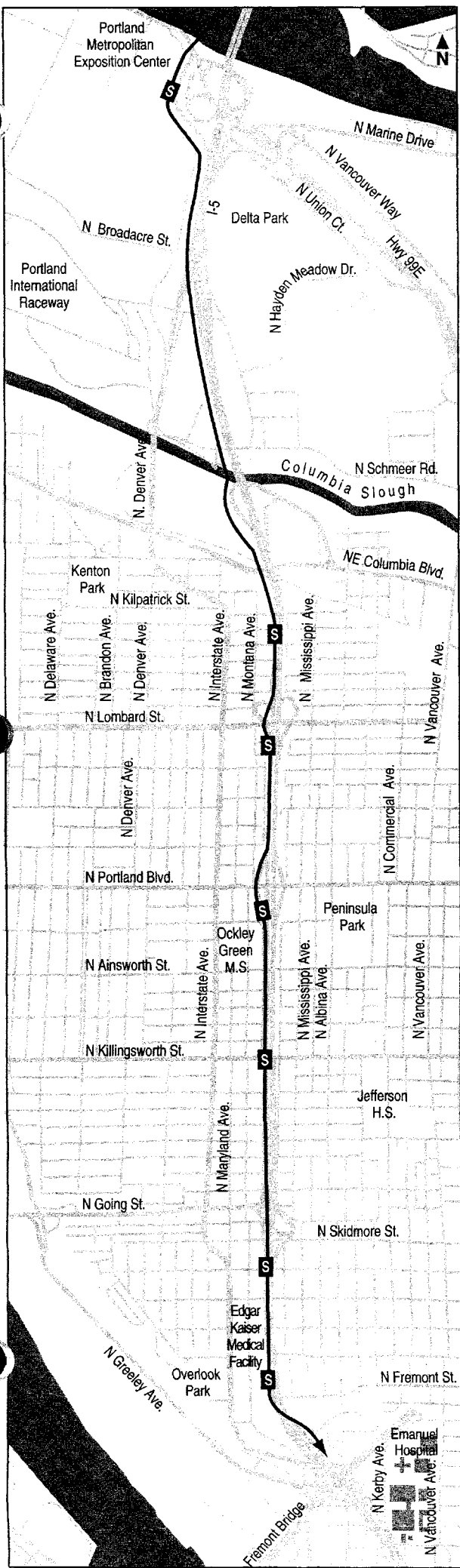
## Steel Bridge to Kaiser Clinic - Wheeler/Russell

### Description

Leaving the Rose Quarter Transit Center, this route would pass along the eastern edge of the Rose Garden Arena with a possible station north of the arena near N. Weidler. It would then cross N. Broadway and N. Weidler streets at street level and continue north along the east side of N. Flint Avenue. The route would turn west at N. Russell Street to the north side of N. Russell with a ground-level station at the south end of the Emanuel Hospital campus. It would climb on a structure and pass over N. Kerby Avenue, Stanton Yard (a city maintenance facility) and N. Mississippi Avenue. The route would curve westward, passing over I-5 on a bridge and then either proceed north along the west side of the freeway or cross the Kaiser Clinic campus to Interstate Avenue.

### Rationale

The choice between the Wheeler/Russell and the East I-5/Kerby design options will be an important issue to be resolved during the DEIS process. An important basis for making this determination will focus on the ability to plan and develop transit-oriented land uses around stations. Issues of density, timing and certainly of development, traffic integration of light rail with major attractors, equity, capital cost, light rail travel speed/time, reliability, ridership, neighborhood cohesiveness and similar factors will be taken into consideration when evaluating these two options.



## Kaiser Clinic to Expo Center - I-5 Freeway Alignment

### Description

The I-5 alternative would begin at a Kaiser Clinic station and proceed north along the western bank of I-5. It would run adjacent to the freeway to a station south of N. Skidmore Street and then pass beneath



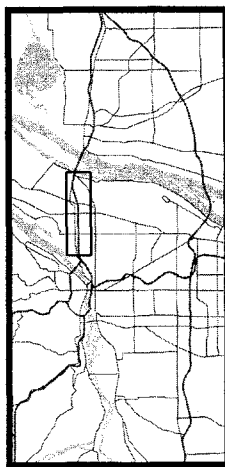
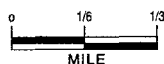
### Light Rail Design Options: Kaiser to Expo Center

#### I-5 Freeway Alignment

October 1995

**Note:** Alignment, station and park and ride locations are currently under study and may change.

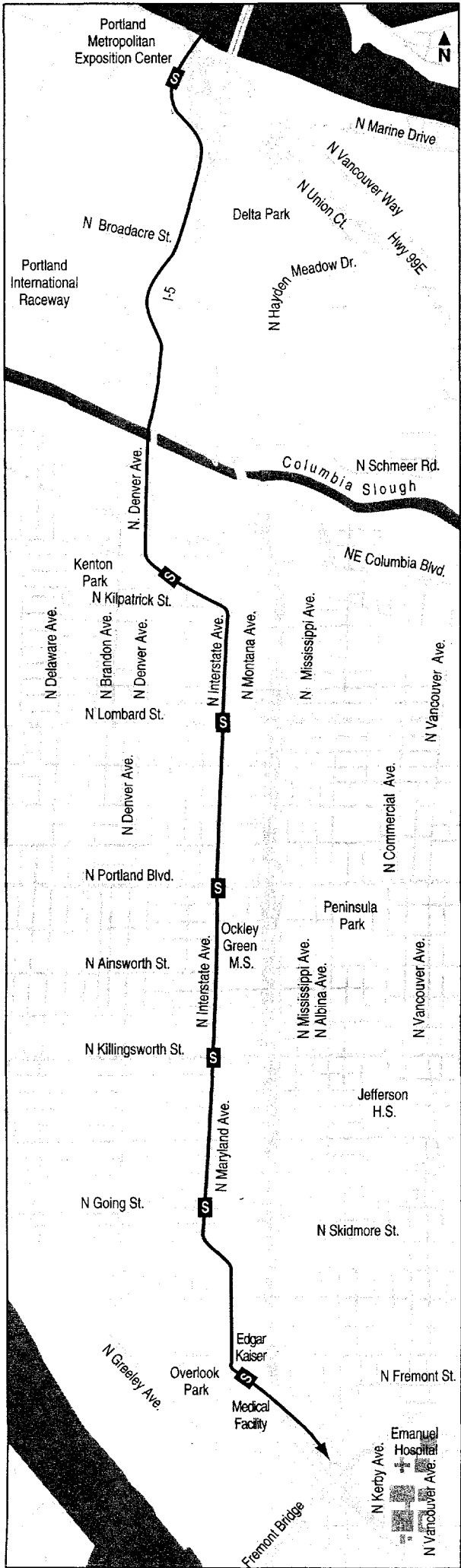
- Light Rail Transit (LRT) Design Option
- Station
- Alternative LRT Alignment
- Existing Railroad
- Transit Center
- Park and Ride



N. Going Street with a box structure. From N. Going Street to N. Killingsworth Street, the route would run above the freeway along N. Minnesota Avenue to west of the freeway ramps. North of a station at N. Killingsworth Street, the route would run directly along the freeway bank and then curve to the west of the freeway ramps to a station south of N. Portland Blvd. It would cross N. Portland Blvd. at the street level and continue north to a N. Lombard station. It would pass over N. Lombard and the freeway ramps on a bridge to N. Baldwin Street and continue north above the level of the freeway to a station at N. Kilpatrick. The route travels north, paralleling the west side of the freeway past PIR and Delta Park, and crosses over Hwy. 99 adjacent to Expo Road. An elevated station would be located near the Expo Center parking lot.

### Rationale

The choice between an Interstate and I-5 alignment will be one of the major issues to be resolved during the DEIS study. It will focus on the ability to plan and develop transit-oriented land uses around stations; capital costs; parking; reliability; ridership; neighborhood density and other similar factors. The Steering Group determined that following review of the technical data for the DEIS, the project will evaluate which North Portland cross-over option would warrant further study.



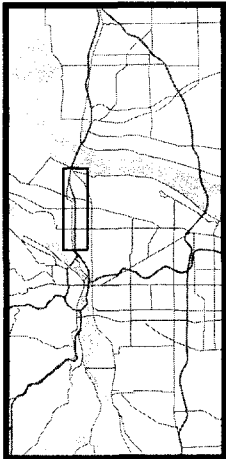
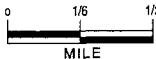
Light Rail Design Options:  
Kaiser to Expo Center

Interstate Avenue Alignment

October 1995

Note: Alignment, station and park and ride locations are currently under study and may change.

- Light Rail Transit (LRT) Design Option
- Station
- Alternative LRT Alignment
- Existing Railroad
- TC Transit Center
- PR Park and Ride



would be provided, except on approaches to N. Going Street and N. Lombard Street, where two lanes in each direction are assumed. Each intersection would be crossed at the street level with stations at Kaiser Clinic, N. Going Street, N. Killingsworth Street, N. Portland Blvd., N. Lombard Street and the Kenton commercial district. The route would travel north along the west side of the Denver viaduct. It would travel across N. Columbia Blvd. and the Columbia Slough on a bridge. It would pass West Delta Park and follow Expo Road to an elevated station near the Expo Center parking lot.

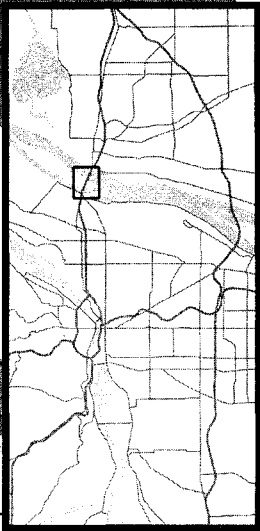
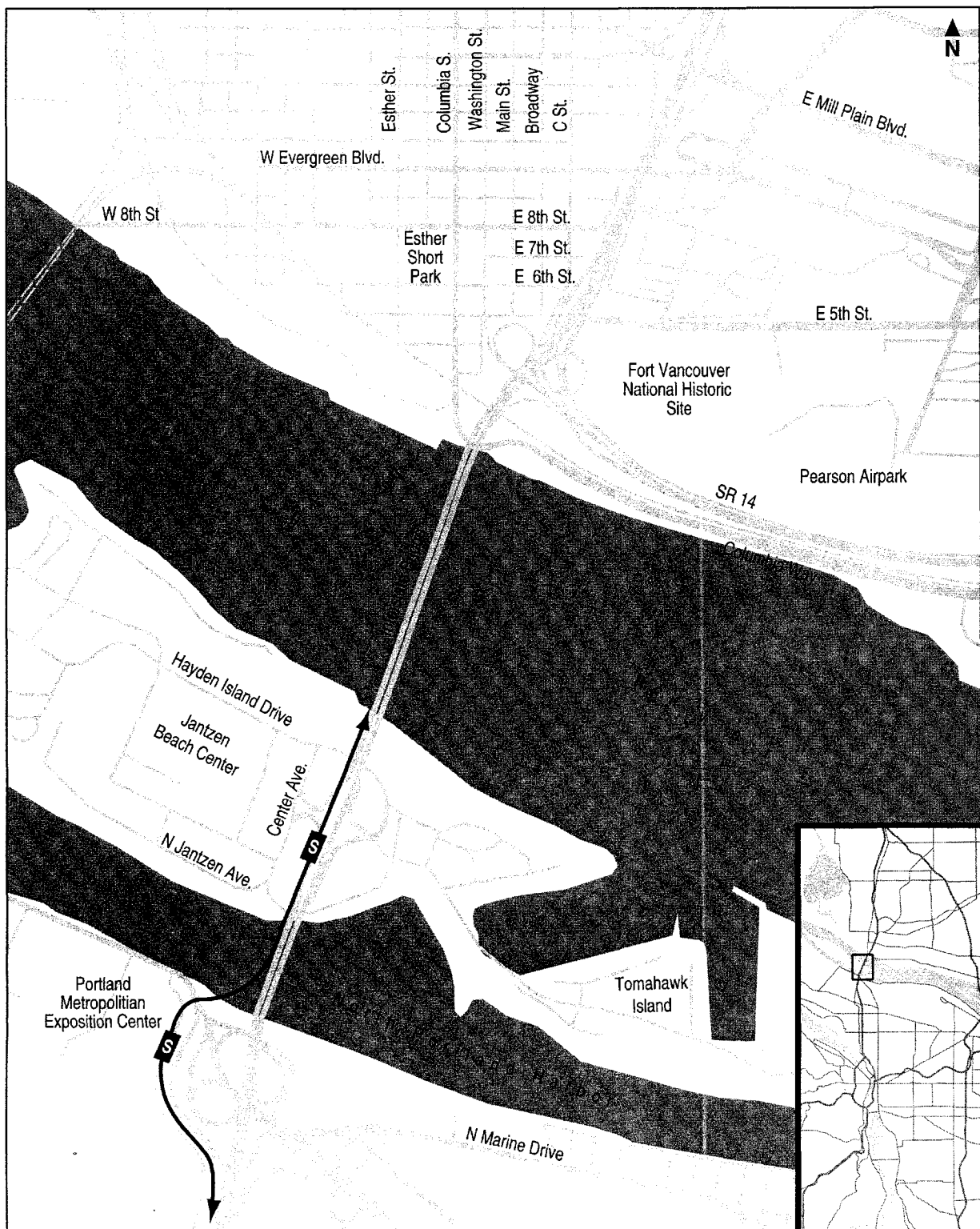
Rationale

The choice between an Interstate and I-5 alignment will be one of the major issues to be resolved during the DEIS study. It will focus on the ability to plan and develop transit-oriented land uses around stations; capital costs; parking; reliability; ridership; neighborhood density and other similar factors. The Steering Group determined that following review of the technical data for the DEIS, staff should evaluate which North Portland crossover option would warrant further study.

Kaiser Clinic to Expo Center - Interstate Avenue Alignment

Description

From the Kaiser Clinic area, light rail would proceed north in the center of Interstate Avenue, generally within the existing right-of-way, except at intersections. One lane of traffic in each direction

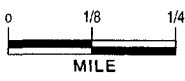


**Light Rail Design Options:**  
**Expo Center to**  
**Hayden Island**  
**West of I-5 (under ramps)**

October 1995

- Light Rail Transit (LRT) Design Option
- S — Station
- Alternative LRT Alignment
- Existing Railroad

- TC Transit Center
- PR Park and Ride



**Note:** Alignment, station and park and ride locations are currently under study and may change.



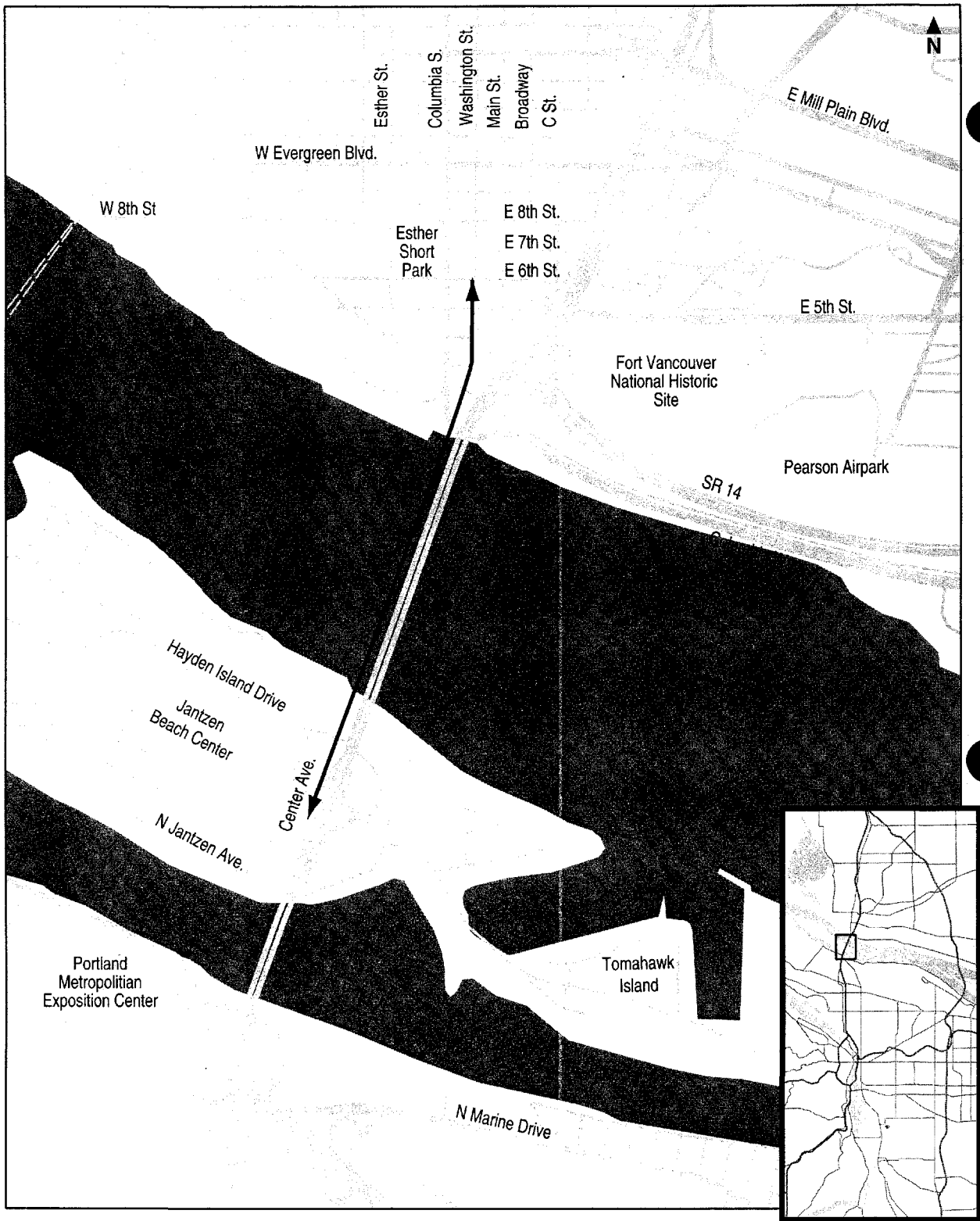
## Expo Center to Hayden Island West of I-5 Under the Ramps

### Description

This route would begin near the Expo Center and proceed north over Marine Drive, crossing North Portland Harbor and Jantzen Avenue on a diagonal bridge. The station would be elevated about 10 feet above the ground and located just north of Jantzen Avenue. The tracks would pass under the I-5 ramps and continue north along the freeway to a bridge that crosses North Hayden Island Drive and the Columbia River.

### Rationale

This option would have similar travel times, ridership and operation/maintenance costs compared to other options studied. It would have significantly fewer impacts than the other options, including less visual and traffic impacts, and fewer potential impacts on the houseboat community.



### Light Rail Design Options: Columbia River Crossing

#### Lift Span Bridge

October 1995

- Light Rail Transit (LRT) Design Option
- Station
- Alternative LRT Alignment
- Existing Railroad

- TC Transit Center
- PR Park and Ride



**Note:** Alignment, station and park and ride locations are currently under study and may change.

## Columbia River Crossing - Lift Span Bridge

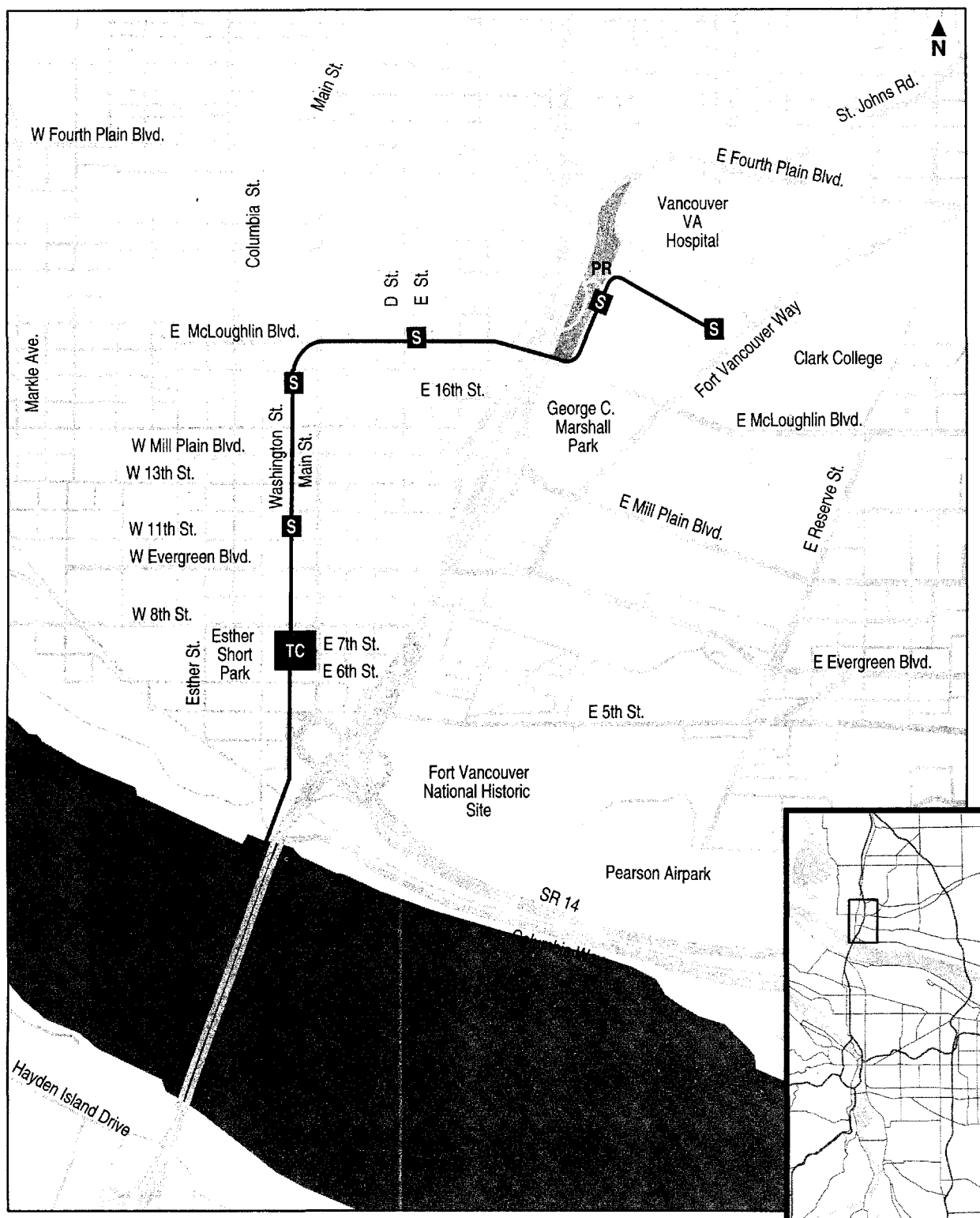
### Description

This bridge would cross the Columbia River parallel to the existing I-5 freeway bridge on the west side and be approximately the same height above the river. After passing over Columbia Street, it would connect with Washington Street in downtown Vancouver. The bridge design would match the lift span of the existing I-5 bridge.

### Rationale

The bridge would be approximately \$101 million cheaper to construct than a tunnel. It would serve the downtown Vancouver area more directly with a station at a redevelopment site and transit center.





South  
North  
Transit  
Corporation Study

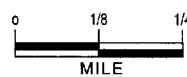
## Light Rail Design Options: Downtown Vancouver to VA Hospital/ Clark College

2-Way on Washington Street

October 1995

- Light Rail Transit (LRT) Design Option
- Station
- Alternative LRT Alignment
- Existing Railroad

- Transit Center
- Park and Ride



**Note:** Alignment, station and park and ride locations are currently under study and may change.



## Downtown Vancouver to VA Hospital/Clark College - 2-Way on Washington Street

This route features a 2-Way on Washington Street in downtown Vancouver. The terminus location is in the vicinity of the Veterans Administration Hospital/Clark College.

### Description

The route would descend from a bridge through a new underpass through the Burlington Northern Railroad berm. It would continue north along Washington Street to a station at the former Lucky Lager Brewery site adjacent to the 7th Street transit center. The route would continue north on Washington with stations between 11th and 12th and

between 16th and 17th. At McLoughlin, the route would turn east and cross the I-5 freeway using the existing McLoughlin Blvd. undercrossing. A station would potentially be located on E. McLoughlin Blvd. between "D" and "E" streets. From McLoughlin Blvd., the route would travel north along the east side of the freeway with a station and park-and-ride near the Veterans Administration Hospital and a station further east near Fort Vancouver Way.

### Rationale

The 2-Way on Washington Street route would be a minute faster, have higher ridership and cost \$31 million less to construct than the Washington/Main street couplet option. It would also provide closer walking access to neighborhoods and redevelopment opportunities west of downtown Vancouver.

(continued from front page)

## North Portland Segment

The Steering Group agreed to forward an all-Interstate Avenue alignment and an all-I-5 freeway alignment for further study. In addition, the Steering Group determined that following review of the technical data for the DEIS, staff should evaluate which North Portland crossover option would warrant further study.

## Design Option Narrowing by Segment

The following list summarizes the final set of design options selected by the Steering Group for further study in the DEIS. Refer to the maps inside to locate each alignment.

1. **South Terminus (end point)** (pages 2 and 3)
  - Sunnyside Terminus, North of Mall
  - 93rd Avenue/CTC Terminus, South of Mall
2. **CTC to Downtown Milwaukie** (page 4)
  - Railroad Avenue
3. **Central Milwaukie** (page 5)
  - Monroe Street and SP Branch Line
  - Monroe Street and 21st Avenue/McLoughlin

Between the Milwaukie and River Crossing Segments, only a SE McLoughlin Blvd. option is being considered.

4. **South Willamette River Crossing** (pages 6 and 7)
  - Caruthers Crossing – West Brooklyn Yards, Caruthers Modified Bridge
  - Ross Island Crossing – North Ross Island Bridge

5. **Downtown Portland** (page 8)
  - 5th/6th Avenue Transit Mall
6. **Steel Bridge to Kaiser Clinic** (pages 9 and 10)
  - East I-5 freeway and Kerby Street Station
  - Wheeler Avenue and Russell Street Station
7. **Kaiser Clinic to Expo Center** (pages 11 and 12)
  - All I-5 Freeway Alignment
  - All Interstate Avenue Alignment
8. **Expo Center to Hayden Island** (page 13)
  - West of I-5 Freeway (under ramps)
9. **Columbia River Crossing** (page 14)
  - Lift Span Bridge
10. **Downtown Vancouver to VA Hospital/Clark College Terminus** (page 15)
  - Two-way on Washington Street
  - New terminus near VA Hospital/Clark College

To obtain a copy of the *Design Option Narrowing Final Report*, call Metro at (503) 797-1757. Or, leave a message on the transportation hotline (listed below).

## December Meetings

Local government meetings are taking place during December to review and take action on the Steering Group final recommendations.

Call the Transportation Hotline for an update of these meetings:

**(503) 797-1900**

or in Clark County:

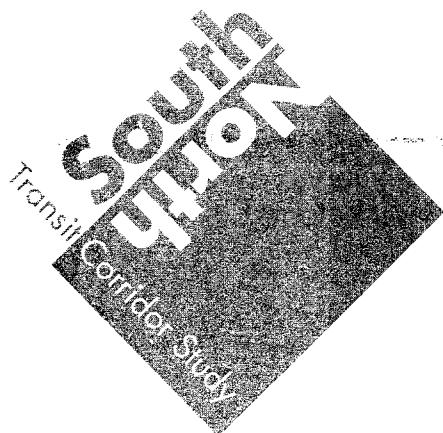
**(360) 750-TRIP**

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## South/North Transit Corridor Study

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Portland, OR 97232

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# Light Rail Recommendations

## Citizens Advisory Committee Makes Recommendations to Steering Group

During the past 12 months, the South/North Citizens Advisory Committee (CAC) has worked with staff and the public to study and evaluate the proposed light rail alignment design options. On Nov. 2, 1995 – after considering technical data, public comment and the South/North Project Management Group's recommendation – the committee formed and adopted recommendations on which light rail alignment design options should advance into the Draft Environmental Impact Statement (DEIS) for 12-18 months of study.

In forming its recommendations, the committee was impressed with the high quality of the technical information, the high level of interest that the design options have generated in the community, and the thoughtfulness behind the PMG recommendation. The committee found unanimous agreement with the recommendation in most of the segments of the corridor. The adjacent list summarizes the design options (by segment) that are recommended by the CAC to move forward for further study in the DEIS.

There are three areas where the CAC recommendations differ from those of the Project Management Group. The following is a summary of how the Citizens Advisory Committee members suggest that the Steering Group amend the PMG recommendations:

### Minimum Operable Segments

The committee discussed at length the PMG recommendations for specific construction segments (called "minimum operable segments") of the project that should be studied in the Draft Environmental Impact Statement. The committee concurs with the PMG-

recommended set of four minimum operable segments (one bi-state and three Oregon-only).

However, the CAC also recommends the addition of a fifth minimum segment from an end point in the downtown Milwaukie/Market Place area to the Expo Center in North Portland. This recommendation is made with an understanding by the committee that the foundation of the South/North Transit Corridor Study is based on adopted regional policy that a bi-state

#### What is an MOS?

*While the South/North Study will be examining a full-length light rail alternative between the Clackamas Town Center area in Oregon City and the Veterans Administration Hospital/Clark College area in Vancouver, Wash., the Federal Transit Administration requires that all Draft Environmental Impact Statements include an examination of minimum operable segments (MOS). MOS's are light rail alignments that are:*

- segments of the full-length alternative
- can be operated successfully on an interim or long-term basis
- can be extended into the full-length alternative at a later time

## Design Option Narrowing by Segment

The following provides a quick summary of the Citizens Advisory Committee recommendations. Refer to the maps inside to locate the design option narrowing recommendations. Other options considered but not recommended are the same as those listed in the Oct. 20 newsletter.

### 1. South Terminus (end point)

*Recommended options:*

- Sunnyside Terminus, North of Mall
- 84th Avenue/CTC Terminus, South of Mall

### 2. Railroad Avenue/Highway 224

*Recommended option:*

- Railroad Avenue

### 3. Central Milwaukie

*Recommended options:*

- Monroe Street and 21st Avenue/McLoughlin
- Monroe Street and SP branch line

Between the Milwaukie and River Crossing segments, only a SE McLoughlin Boulevard option is being considered.

### 4. South Willamette River Crossing

*Caruthers Eastside – recommended option:*

- West Brooklyn Yards

*Caruthers Crossing – recommended option:*

- Caruthers Modified

*Ross Island Crossing – recommended option:*

- North Ross Island

### 5. Downtown Portland

This design option will be discussed and a recommendation will be adopted at the Nov. 9 meeting of the Citizens Advisory Committee.

### 6. Steel Bridge to Kaiser Clinic

*Recommended options:*

- East I-5 freeway and Kerby Street station
- Wheeler Avenue and Russell Street station

### 7. Kaiser Clinic to Expo Center

*Recommended options:*

- All Interstate Avenue alternative
- All I-5 freeway alternative
- Killingsworth Crossover
- Portland Blvd. Crossover
- Kenton Crossover (the Kenton Crossover should receive the highest priority for further study)

### 8. Expo Center to Hayden Island

*Recommended option:*

- West of I-5 freeway (under ramps)

### 9. Columbia River Crossing

*Recommended option:*

- Lift span bridge

*continues on back*

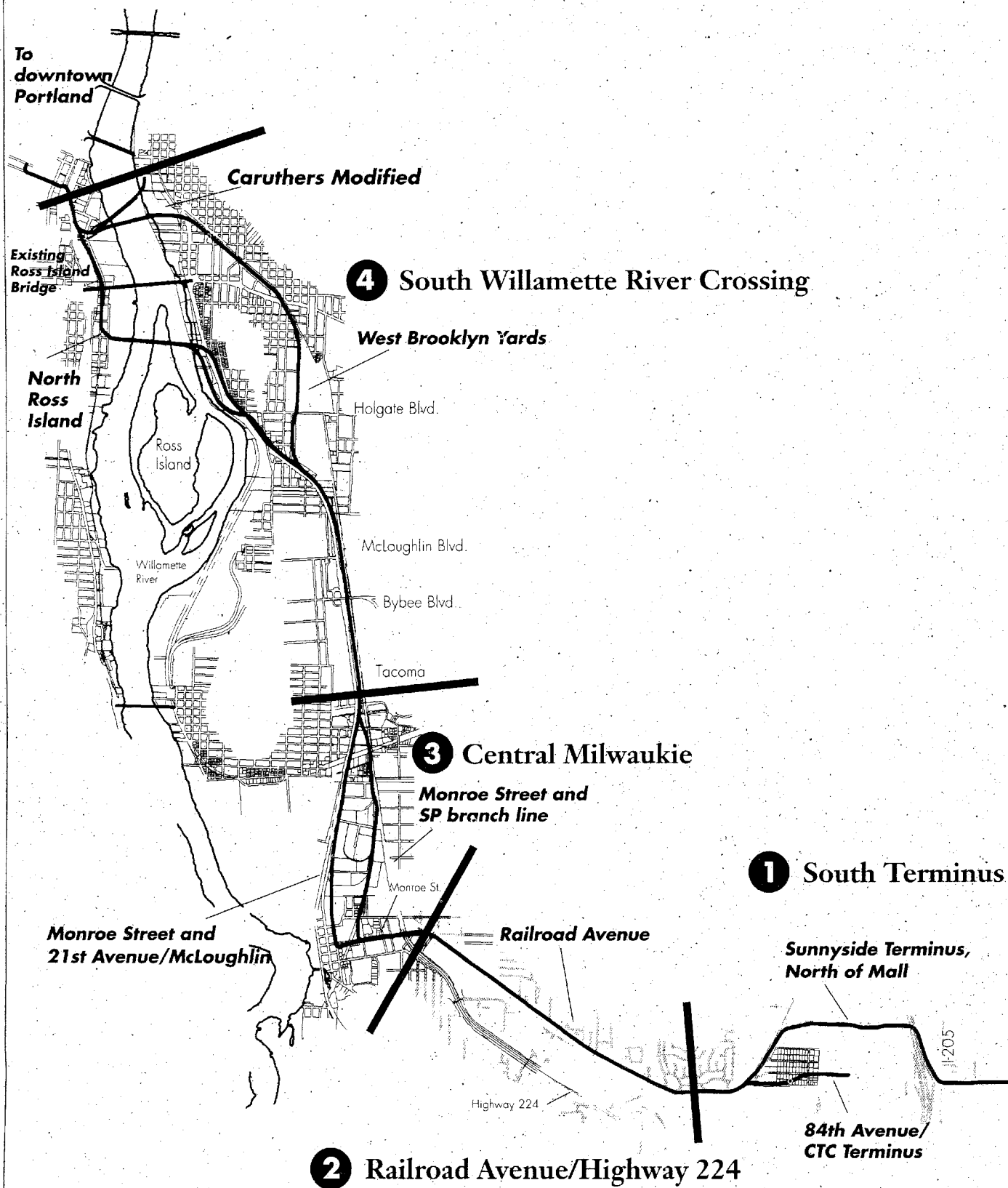
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# South/North Transit Corridor Study

Citizens Advisory Committee  
Light Rail Recommendations

↑ North

## South Corridor

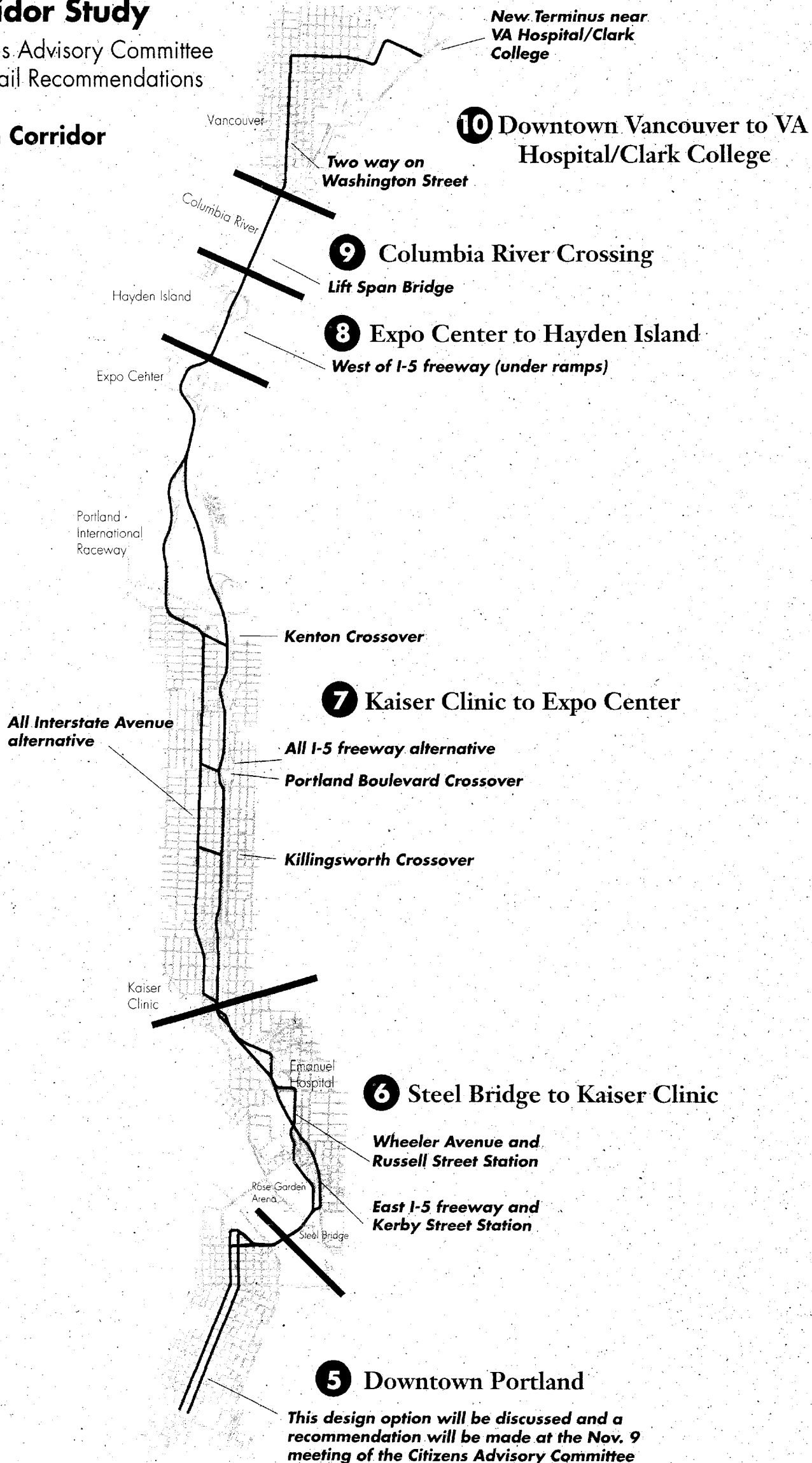


# South/North Transit Corridor Study

Citizens Advisory Committee  
Light Rail Recommendations

↑ North

## North Corridor



project is the goal. In addition, the committee stressed the importance of providing light rail service to North Portland, whether light rail is extended into Clark County.

Therefore, the committee recommended that the additional Oregon-only segment should be studied further to provide the region with important information prior to a final decision on which minimum operable segment should be selected for the first phase of construction.

#### North Portland (Kaiser Clinic to Expo Center)

The committee agrees with the PMG recommendation to forward an all-Interstate Avenue alignment and an all-I-5 freeway alignment for further study in the DEIS. However, the committee recommends that all three of the crossover options between Interstate and I-5 (Killingsworth Street, Portland Boulevard and Kenton) should also be studied fully in the DEIS. The committee feels that there is a possibility that a crossover option may ultimately emerge as the most promising alignment alternative in North Portland and that there is currently too little information on the crossover options to exclude them from further detailed study. The committee also recognizes that limited time and funds may prohibit the study of all three crossover options. If that is the case, then the committee recommends that the Kenton crossover be studied further, along with the all-Interstate and all-I-5 alignment options.

#### Hayden Island

The committee concurs with the PMG recommendation to carry the West of I-5 freeway (under the ramps) option into the DEIS for further study. In addition, the committee stressed the importance of providing light rail access for the island's residents, employees and businesses. The committee does not agree with the PMG recommendation that the Hayden Island station should be considered for possible deferral during initial construction.

### 10. Downtown Vancouver to VA Hospital/Clark College

#### Recommended options:

- Two-way on Washington Street
- New terminus near VA Hospital/Clark College

In August 1995, following an extensive effort to involve the public in the creation of the Clark County and Vancouver Transportation Futures process, C-TRAN amended the northern Phase I terminus from 99th Street to Veterans Administration Hospital/Clark College. Design options previously developed for the North Vancouver and Clark County segments will be narrowed as part of the future phase two extension process.

## Meetings Calendar

The South/North Steering Committee will meet in November to consider the design option recommendations from the Project Management Group and the Citizens Advisory Committee, followed by review by local involved jurisdictions. The meetings are as follows:

#### South/North Steering Committee

- 3 - 5 p.m., Nov. 20  
Adoption of design option recommendation  
Metro Regional Center  
600 NE Grand Ave.

**Tri-Met** - Ross Roberts, (503) 239-6723

- Nov. 22 - Tri-Met Board meeting/review

**City of Portland** - Wendy Smith-Novick, (503) 823-7738

- Nov. 28 - Portland Planning Commission review
- Dec. 6 - Portland City Council meeting/review

**City of Milwaukie** - Nancy Waddell, (503) 786-7658

- Dec. 12 - Milwaukie City Council meeting/review

**Metro** - Marilyn Matteson, (503) 797-1745

- (December date and time to be determined)

### For More Information

**Gina Whitehill-Baziuk**  
Public involvement manage-  
ment/media  
(503) 797-1746

**Jeanna Gernazanu**  
North portion of corridor  
(503) 797-1865

**Susan Shepherd**  
South portion of corridor  
(503) 797-1872

**Marilyn Matteson**  
For information or to  
schedule a speaker  
(503) 797-1745

**For information on  
Clark County,**  
(360) 750-TRIP

### Transportation Hotline, (503) 797-1900

To learn about upcoming South/North meetings, call the Transportation Hotline, (503) 797-1900. You may also leave a message on the hotline to receive information or be placed on the South/North mailing list. Please leave your name, address, ZIP code and phone number. Or, if you have questions and wish to speak with a staff member, call (503) 797-1745.

### South/North Transit Corridor Study

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### Time-Sensitive Material



## **ALTERNATIVE FINANCE PROVISIONS OF SB 1156-C (LIGHT RAIL PUBLIC/PRIVATE TASK FORCE).**

### **Introduction**

Section 14 of SB 1156-C places a specific obligation on Tri-Met to identify up to \$75 million of new financing sources which could be authorized by the Legislature to reduce the State's share of South/North light rail financing. Repayment is contingent upon new financing authorities granted by the 1997 Legislature based on recommendations from the region. Although the language of Section 14 might be construed broadly to allow development of funding methods to "reduce the need in the Portland metropolitan region for long-term transportation funding by the State of Oregon," the clear legislative intent is to develop innovative ways to finance part of the South/North light rail project.

To accomplish this, Tri-Met must establish a public-private task force to report on new funding methods, including innovative public-private mechanisms to capture the value created by projects. Based on the work of the task force, Tri-Met must develop its recommendations to the Legislature "in cooperation with Metro and the Joint Policy Advisory Committee on Transportation of Metro."

In addition to the basic statutory requirement, Tri-Met has a goal of using any new funding sources to reduce the burden on local taxpayers who have approved \$475 million in GO bond authority for the project.

Tri-Met proposes to create a task force of 7-9 citizens, supported by ex-officio membership of Tri-Met and Metro. The task force report will be submitted to JPACT, which will conduct public review and submit its recommendations to Tri-Met and to the Metro Council. This arrangement is intended to (1) stimulate development of innovative ideas from the private sector, (2) allow the task force to work rapidly, and (3) allow public review through the established JPACT process. The ex-officio public members of the task force will serve as support and resources rather than as participants.

### **Tri-Met Objectives**

1. Identify alternative funding sources and methods for the South/North light rail project which can be used to:

- (a) meet the obligation to provide the Legislature with options for reducing the funding commitments for the South/North project made by the State and by local taxpayers;
  - (b) fill funding gaps due to shortfalls in public funds;
  - (c) improve cash-flow and construction flexibility.
2. Identify public and private mechanisms to capture a share of the value created by the South/North light rail project.
  3. Identify and review alternative financing methods for extending the line into Clark County.
  4. Promote private sector investment along rail lines (increase and speed up creation of value which can be captured).

#### Organization of Task Force

The task force will comprise 7 - 9 citizens appointed by Tri-Met. The Task Force will include members with backgrounds in innovative project finance, real estate and development, and public/private partnerships.

The Tri-Met General Manager and Metro Executive will serve as ex-officio members of the task force.

Tri-Met will provide a consultant to support the work of the task force and will provide technical assistance. Tri-Met and consultant will establish an interagency working group to insure coordination between the Task Force and other related efforts, including Governor's work on developing new framework for transportation finance, regional funding initiatives, pursuit of public funding for South/North project, and Metro's congestion pricing study.

The task force will issue its report to Tri-Met by July 15, 1996. Tri-Met will forward the report to JPACT Finance Committee for review and recommendations to JPACT. The Task Force will participate with Tri-Met in presentation of the report to the Legislature.

#### Charge to Task Force

The charge to the Task Force will include the following elements:

December 1, 1995

The task force should consider the full range of possibilities for funding the project but should develop full recommendations, including consideration of implementation issues, for those that have the most promise to significantly fulfill the stated Objectives. The project consists of the full South/North project from Clackamas County to Clark County, without limitation to proposed construction phases or segments.

The funding measures to be considered should include but not be limited to: tolling, capture of added property values (similar to tax increment), joint development of station areas, air rights, "super turn-key" construction, tax-advantaged leasing (cross-border leasing), tax-advantaged debt financing, joint use of right of way and/or facilities, tax credits and exemptions.

Funding opportunities related to but not specifically part of the South/North project should be considered, but implications of such opportunities for other transportation projects and funding should be weighed.

## STAFF REPORT

### CONSIDERATION OF RESOLUTION NO. 95-2251 FOR THE PURPOSE OF RECOMMENDING CREATION OF THE SOUTH/NORTH LIGHT RAIL PUBLIC- PRIVATE TASK FORCE

Date: December 4, 1995

Presented by: Andrew Cotugno

## PROPOSED ACTION

This resolution would recommend the creation of a Public-Private Task Force to consider new financing sources for the construction of South/North Light Rail as called for in SB 1156, the South/North Light Rail funding legislation.

## FACTUAL BACKGROUND AND ANALYSIS

The Oregon Legislature passed Senate Bill 1156 in 1995 which requires Tri-Met to identify new financing sources which could be utilized to reduce the state's share of South/North Light Rail construction costs by up to \$75 million. To accomplish this, Tri-Met will establish a Public-Private Task Force to make recommendations on new financing sources. The recommendations will be forwarded by Tri-Met to the 1997 Legislature in cooperation with Metro and the Joint Policy Advisory Committee on Transportation. Reduction of the state's share of South/North costs is contingent upon the granting of new authorities by the 1997 Legislature.

In addition to the statutory requirement contained in Senate Bill 1156, Tri-Met has a goal of using any new funding sources to reduce the burden on local taxpayers who have approved \$475 million in General Obligation bond authority for the project.

Tri-Met proposes to create a Task Force of 7-9 citizens, supported by ex-officio membership of Tri-Met and Metro. The Task Force report will be submitted to JPACT, which will conduct public review and submits its recommendations to Tri-Met and the Metro Council. This arrangement is intended to 1) stimulate development of innovative ideas from the private sector; 2) allow the Task Force to work rapidly; and 3) allow public review through the established JPACT process. The ex-officio public members of the Task Force will serve as support and resources rather than as participants.

## **Tri-Met Objectives**

1. Identify alternative funding sources and methods for the South/North Light Rail Project which can be used to:
  - a) Meet the obligation to provide the Legislature with options for reducing the funding commitment for the South/North project made by the state and local taxpayers;



- b) Fill funding gaps due to shortfalls in public funds; and
  - c) Improve cash-flow and construction flexibility.
2. Identify public and private mechanisms to capture a share of the value created by the South/North Light Rail Project.
  3. Identify and review alternative financing methods for extending the line into Clark County.
  4. Promote private sector investment along rail lines (increase and speed up creation of value which can be captured).

### **Organization of Task Force**

The Task Force will comprise 7-9 citizens appointed by Tri-Met. The Task Force will include members with backgrounds in innovative project finance, real estate and development, and public-private partnerships.

The Tri-Met General Manager and Metro Executive will serve as ex-officio members of the Task Force.

Tri-Met will provide a consultant to support the work of the Task Force and will provide technical assistance. Tri-Met and consultant will establish an interagency working group to ensure coordination between the Task Force and other related efforts, including the Governor's work on developing a new framework for transportation finance, regional funding initiatives, pursuit of public funding for the South/North project, and Metro's congestion pricing study.

The Task Force will issue its report to Tri-Met by July 15, 1996. Tri-Met will forward the report to the JPACT Finance Committee for review and recommendations to JPACT. The Task Force will participate with Tri-Met in presentation of the report to the Legislature.

### **Charge to the Task Force**

The charge to the Task Force will include the following elements:

The Task Force should consider the full range of possibilities for funding the project but should develop full recommendations, including consideration of implementation issues, for those that have the most promise to significantly fulfill the state objectives. The project consists of the full South/North project from Clackamas County to Clark County, without limitation to proposed construction phases or segments.

The funding measures to be considered should include, but not be limited to, tolling, capturing of added property values, joint development of station areas, air rights, "super turn-key"

construction, tax-advantaged leasing (cross-border leasing), tax-advantaged debt financing, joint use of right-of-way and/or facilities, tax credits and exemptions.

Funding opportunities related to, but not specifically part of, the South/North project should be considered, but implications of such opportunities for other transportation projects and funding should be weighted.

EXECUTIVE OFFICER RECOMMENDATION

The Executive Officer recommends approval of Resolution No. 95-2251.

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF RECOMMENDING	)	RESOLUTION NO. 95-2251
CREATION OF THE SOUTH/NORTH	)	
LIGHT RAIL PUBLIC-PRIVATE TASK	)	Introduced by
FORCE	)	Councilor Rod Monroe, Chair
		JPACT

WHEREAS, The Oregon Legislature in 1995 adopted Senate Bill 1156 to provide state funding for the construction of the South/North Light Rail Project; and

WHEREAS, The Oregon Legislature, through the passage of SB 1156, directed Tri-Met to establish a Public-Private Task Force to identify up to \$75 million of new financing sources which could be authorized by the Legislature to reduce the state's share of the South/North project financing; and

WHEREAS, Senate Bill 1156 requires that the Public-Private Task Force identify and evaluate alternative funding sources, consider innovative funding mechanisms to capture the value created by transportation projects; and

WHEREAS, Tri-Met, in cooperation with Metro and the Joint Policy Advisory Committee on Transportation, is required to make recommendations on new financing sources to the 1997 session of the Oregon Legislature; and

WHEREAS, The reduction of the state's share of the South/North project financing costs is contingent on the enactment of financing authorities by the 1997 Legislature based on recommendations from the region; and

WHEREAS, Tri-Met proposes to create a Task Force of 7-9 citizens, supported by Tri-Met General Manager and Metro Executive serving as ex-officio members; and

WHEREAS, Tri-Met will provide support and technical assistance to the Task Force; and

WHEREAS, Tri-Met will establish an interagency working group to ensure coordination between the Task Force and other related efforts, including the Governor's work on developing a new framework for transportation finance, regional funding initiatives, pursuit of public funding for the South/North project, and Metro's congestion pricing study; and

WHEREAS, The Task Force will issue its report to Tri-Met by July 15, 1996 and Tri-Met will forward the report to the JPACT Finance Committee for review and recommendations to JPACT and the Task Force will participate with Tri-Met in presentation of the report to the Legislature; now, therefore,

BE IT RESOLVED,

1. That the Metro Council recommends that Tri-Met create a citizen task force on public-private finance mechanisms which includes the Metro Executive Officer as an ex-officio member for the South/North Light Rail Project to meet the requirements of SB 1156.

2. That the finance alternatives recommended by this committee be reviewed by the Joint Policy Advisory Committee on

Transportation and the Metro Council prior to a recommendation to the 1997 Legislature.

ADOPTED by the Metro Council this \_\_\_\_\_ day of \_\_\_\_\_  
1995.

J. Ruth McFarland, Presiding Officer

Approved as to Form:

Daniel B. Cooper, General Counsel


95-2251.RES  
ACC:BB:lmk/12-6-95

M E M O R A N D U M

600 NORTHEAST GRAND AVENUE PORTLAND, OREGON 97232 2736  
TEL 503 797 1700 FAX 503 797 1794



**METRO**

Date: December 4, 1995  
To: Metro Council  
From: Mike Burton, Executive Officer   
Subject: **FHWA/FTA Certification Review; Council Presentation**

In June of this year, the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) conducted a three-day Certification Review of the Portland-Vancouver Transportation Management Area (TMA). The review consisted of an evaluation of the transportation planning processes of Metro (Oregon portion of the TMA) and the Southwest Washington Regional Transportation Council (RTC, Washington portion of the TMA).

FHWA and FTA have subsequently released a draft report of their findings. As part of their process, they wish to present a summary of those findings to both JPACT and the Metro Council in December. As such, I am proposing to include their presentation in the Executive Officer Reports agenda at the December 14 meeting. They will make a similar presentation to JPACT earlier that day.

Attached for your review, please find a copy of the Draft Report and a memorandum from Andy Cotugno to me which responds to the report's corrective actions and recommendations. In sum, the following conclusions can be made regarding Metro's transportation planning process:

1. In most areas, Metro has met or exceeded the federal planning requirements and the report recognizes that fact.
2. Where a corrective action or recommendation has been identified, the concern has been or is being addressed.
3. The region remains eligible to expend federal funds.

On behalf of FHWA and FTA, we look forward to presenting their findings on December 14.

ACC:lmk

Attachments

cc: Andy Cotugno  
Mike Hoglund

M E M O R A N D U M

600 NORTHEAST GRAND AVENUE PORTLAND, OREGON 97232 2738  
TEL 503 787 1700 FAX 503 787 1784



**METRO**

Date: December 4, 1995

To: Mike Burton, Executive Officer

From: *AK* Andy Cotugno, Transportation Director

Subject: **FHWA/FTA Certification Review;  
Draft Report and Metro Response**

Attached is the Portland/Vancouver Transportation Management Area Certification Review jointly prepared by the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA). This memorandum is the Metro staff response to the recommendations contained within the draft report.

As noted in the report, the review responds to ISTEA and federal Metropolitan Planning Rule requirements that direct FHWA and FTA to jointly review and evaluate the planning process for Metropolitan Planning Organizations (MPOs) within Transportation Management Areas (TMA) every three years. The Portland-Vancouver area TMA includes two MPOs: Metro and the Regional Transportation Council (RTC) of Southwest Washington.

*Metro Responses*

Responses pertain to FHWA/FTA corrective actions (denoted with a B) and recommendations (denoted with a C) identified for Metro within the draft report. Areas where Metro has met or exceeded expectations and RTC issues are not addressed.

Interagency  
Agreements

I.B.1 Metro should reaffirm, modify, or develop new required agreements, as necessary.

Response: *Agreed. Metro has or will develop or revise planning agreements as spelled out in the Metropolitan Planning Rule.*

I.B.2. Metro should finalize the agreement addressing air quality conformity in the portions of the nonattainment area outside the metropolitan boundary.

*Response: This agreement has been finalized.*

I.C.1. Although a Bi-State Agreement is not specifically required by the Metropolitan Planning Rule, the existing agreement should be updated, since it serves a useful purpose.

*Response: Metro and RTC will update the current agreement.*

#### Regional Transportation Plan (RTP)

VIII.B.1. Metro should complete the Plan and conformity analysis as soon as possible. The FHWA/FTA recognizes that Metro is working diligently toward this goal.

*Response: This action has been addressed. The Interim Federal RTP was adopted by Metro Council in July. The subsequent conformity determination has also been adopted in September and is expected to be approved by FHWA/FTA in December, 1995.*

VIII.B.2. The plan should identify the need for MISs (major investment studies) or planned MISs.

*Response: The Interim Federal RTP has identified current MIS projects underway in the Outstanding Issues section of Chapter 8. Analysis as part of the Phase II RTP update, which will include new or updated performance measures, will identify the need for other MISs.*

VIII.C.1. Metro should revise the draft MIS guidelines, as needed, and issue them in final form.

*Response: Final MIS guidelines will be released in late December or early January.*

#### Transportation Improvement Program (TIP)

IX.B.1. Metro should complete the TIP and conformity analysis as soon as possible. The FHWA/FTA recognizes that Metro is working diligently towards this goal.

*Response: The final programming action for the TIP, the allocation of the \$27 million 2040 Implementation Program was adopted by Metro Council in July. The subsequent preparation of the TIP was completed in November and submitted to FHWA/FTA. The subsequent TIP conformity determination was adopted in September and is expected to be approved by FHWA/FTA December, 1995.*



- IX.B.2.        The TIP should clearly identify federal dollars and total cost.  
*Response:*    *The FY 96 MTIP has delineated federal, state, and local share of total project costs by phase of work, by year, and by funding source.*
- IX.B.3.        Metro should provide analysis/documentation for O&M costs. This was also requested during the IPR.  
*Response:*    *Documentation of O&M costs is provided in the FY 96 MTIP at two locations. First, page nine discusses results of the 1993 State Pavement Management Survey and the Oregon Roads Finance Study. Second, Regional facilities preservation is included as a line item in Appendix F. Metro will work with ODOT and local jurisdictions to further identify O&M costs within the MTIP.*
- IX.B.4.        ODOT should formalize its procedures with MPOs regarding TIP and STIP processing and notification of actions. This should be referenced in the Metro/ODOT agreement.  
*Response:*    *Metro and ODOT staff have begun discussions on joint activities for TIP development. The \$27 million 2040 Implementation Program was a joint ODOT/Metro process. For the upcoming STIP/MTIP, Metro and ODOT will again develop a joint program, and in particular, define state and regional interests through a combined public process. This process and other joint processing actions will be included in our revised agreement.*
- IX.C.1.        The TIP should summarize the project prioritization process. This was also requested during the IPR.  
*Response:*    *Included in the FY 96 MTIP is a description of the overall Portland area project selection criteria. More specific discussions of regional priorities are included in the STP, CMAQ, and Transportation Enhancement areas.*
- IX.C.2.        The TIP should include a list of projects from the previous TIP that were implemented or delayed.  
*Response:*    *The FY 96 MTIP formally addresses both delays and implementation beginning on page 16.*
- IX.C.3.        The TIP should summarize significant public comments that were received during the public review period.  
*Response:*    *The Metro FY 96 MTIP addresses the eight month process for the allocation of the 2040 Implementation Program. Metro has documented for decision-makers the major public involvement topics and can include a summary in this Transportation Improvement Program, and will include the summary in future TIPs.*

### Air Quality

XI.B.1. Metro should complete the conformity analysis on the Plan and TIP as soon as possible. The FHWA/FTA recognizes that Metro is working diligently towards this goal.

*Response: As noted above, the air quality conformity determination for both the RTP and TIP was adopted by the Metro Council in September and is expected to be approved by FHWA/FTA December, 1995.*

### Public Involvement

XII.C.1 Metro should consider whether meeting times, locations, and committee representation is sensitive to the needs of lower income or transit dependent groups.

*Response: Metro staff agree with this comment and is actively pursuing lower income and transit dependent involvement. For example, in response to citizen groups, many meetings/workshops are being held on Saturdays to provide for those who may work evening or afternoon weekday schedules. Metro is also hosting a number of events within neighborhoods, thus increasing outreach to divergent groups. The Metro building itself was, in part, centrally located in order to provide as much access as possible. Also, Metro provides for disabled person access to and involvement in meetings through accessible meeting facilities and sound systems for the hard of hearing.*

*Further, transportation planning public involvement staff has been working with a selected list of interest groups which do not commonly participate in transportation, growth management, and other Metro issues. The goal is to develop contacts within these groups for information sharing and committee recruitment. Staff is also proposing that as committee membership is solicited, relevant socio/economic/ethnic/age background information is requested in order that committee can better reflect the community at large.*

### 15 Planning Factors

XIII.B.1. Tri-Met's TDP (Transit Development Plan) does not provide an adequate basis for transit capital projects. Since Metro is responsible for the transportation planning process in the Portland metropolitan area, they should work with Tri-Met to correct this deficiency.

*Response: Metro and Tri-Met are continuing to jointly develop the RTP Transit System as part of the RTP Phase II update. Included in the work program is the identification of capital needs as part of the financially*

*constrained system. Consistent with system goals and objectives, a list of capital needs will be developed for inclusion in the TDP.*

XIII.C.1. Metro should summarize how they are addressing the 15 Factors in an appendix to the Plan (see RTC's matrix).

*Response: Metro agreed at the IPR that the RTC approach was excellent. Metro will prepare such an appendix to the Interim Federal RTP.*

MB:lmk

Attachment



U.S. DEPARTMENT OF TRANSPORTATION

DEC 1 1995

November 30, 1995

IN REPLY REFER TO

Mr. Andrew Cotugno  
Transportation Director  
Metro  
600 N.E. Grand Avenue  
Portland, OR 97232

Mr. Dean Lookingbill  
Transportation Director  
S.W. Washington Regional  
Transportation Council  
1351 Officer's Row  
Vancouver, WA 98661

Re: Portland/Vancouver  
Planning Certification Report

Dear Messrs. Cotugno and Lookingbill:

The Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) are pleased to submit for your information and use our final certification review report. As you are aware, FHWA/FTA conducted a joint certification review of the Portland/Vancouver area transportation planning process June 19-22, 1995. A draft report describing the findings of the federal review was provided for comment.

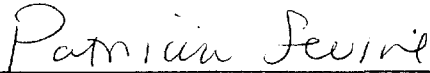
The report describes our observations and findings and includes specific recommendations for improvements. We are scheduled to make a joint FHWA/FTA presentation of the report findings and recommendations before the RTC Board on December 5, 1995 and 4:00 p.m. and before JPACT on December 14 at 7:15 a.m. and the Metro Council on December 14 at 2:00 p.m.

We would like to thank you and your staffs for their time and assistance during our review. Our overall impression from our review is that the planning process is of high caliber and is continuing, cooperative and comprehensive.

Please contact Bill Kappus (FHWA) on (360) 753-9485, Fred Patron (FHWA) on (503) 399-5749 or Patricia Levine (FTA) on (206) 220-7954 if you have any questions regarding this review or regarding the specific details for the presentation and discussion at the meetings indicated above.

Portland/Vancouver Planning  
Certification Report  
Page Two

Sincerely,



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Patricia Levine  
Acting Regional Administrator  
Federal Transit Administration



---

for Gene K. Fong  
Division Administrator  
FHWA Washington Division



---

Robert G. Clour  
Division Administrator  
FHWA Oregon Division

Enclosure

# **Portland/Vancouver Transportation Management Area Certification Review**

## **INTRODUCTION**

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Metropolitan Planning Rule (23 CFR 450.334) require that the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) jointly review and evaluate the transportation planning process for each Transportation Management Area (TMA) (urbanized areas with a population greater than 200,000) no less than every three years.

The FHWA and FTA conducted a certification review of the transportation planning process in the Portland/Vancouver TMA from June 19 to 22, 1995. The TMA is composed of two metropolitan planning organizations (MPO's): Metro in Portland, Oregon and the Southwest Regional Transportation Council (RTC) in Vancouver/Clark County, Washington. The review included joint opening and closing sessions (where both MPO's attended), as well as individual sessions with each MPO. Meetings were also held with elected officials and invited citizens. A list of attendees at each session is attached to this report.

The major planning issue facing the TMA is rapid regional growth. There is significant travel demand between the two MPO's, and therefore, across state boundaries. Approximately one-third of Clark County's work force commutes to Oregon, with approximately 10,000 to 15,000 Oregon residents commuting to Clark County. Interstate 5 is operating at capacity during increasingly longer peak periods. Additionally, the Portland/Vancouver area is recognized as a single air quality maintenance area (AQMA) and is classified as nonattainment for ozone and carbon monoxide. RTC and Metro have responded cooperatively to these regional issues with a variety of sophisticated planning programs.

In 1992, an Independent Planning Review (IPR) was conducted by the FHWA/FTA for the Portland metropolitan area (copies are available from The FHWA). Outstanding issues from that review are also addressed in this report.

## RESULTS of the PLANNING REVIEW

The transportation planning process in Portland/Vancouver TMA is certified subject to corrective actions.

RTC and Metro have clearly demonstrated that both MPO's contribute to a continuing, cooperative, and comprehensive transportation planning process. Following are findings, corrective actions, and recommendations based on the meetings held from June 19 to 22, 1995 as well as a previous review of planning documents provided by each MPO.

*Findings* are statements of fact based on the FHWA/FTA observations during the site visit or made during the review of planning documents. *Corrective actions* are areas where action needs to be taken to correct a regulatory deficiency. *Recommendations* are areas that could be improved, but do not represent a regulatory deficiency.

The conclusions of the review are presented below, generally in the order they were discussed with each MPO.

### RTC & METRO

#### I. Agreements

##### A. Findings

1. Bi-state coordination between the MPO's is commendable and demonstrates substantial improvement since the 1992 IPR.
2. RTC's agreements were developed soon after ISTEA was passed and have incorporated many of ISTEA's principles.
3. The majority of Metro's agreements are old and may not meet current requirements.
4. Both MPO's have agreements that are in draft form and need to be finalized.

##### B. Corrective Actions

1. Metro should reaffirm, modify, or develop new required agreements as necessary.
2. Metro should finalize the agreement addressing conformity in the portions of the nonattainment area outside the metropolitan area boundary.
3. RTC should finalize the agreement with Washington State Department of Transportation (WSDOT).

##### C. Recommendations

1. Although a Bi-State Agreement is not specifically required by the Metropolitan Planning Rule, the existing agreement should be updated, since it serves a useful purpose.

## **RTC**

### **II. Metropolitan Transportation Plan**

#### **A. Findings**

1. RTC has adopted a Metropolitan Transportation Plan that meets the requirements of the regulations. It was one of the few Plans in the State that was considered complete by the regulatory deadline.
2. RTC's alternative scenario analysis is noteworthy as it describes the existing, no build, and build networks in a concise tabular format that can be easily read and understood by the public.

#### **B. Corrective Actions - None.**

#### **C. Recommendations**

1. The presentation of financial constraint analysis could be expanded. A more detailed analysis of how revenues are estimated is needed. The Metropolitan Planning Rule provides specific guidance on financial plans (preamble page 58060, 1st column). RTC should provide analysis/documentation of operation and maintenance (O&M) costs.
2. RTC should include substantive information from C-Tran's Transportation Development Plan (TDP) in the Plan, rather than just referencing it. Transit financing information should be included in a format consistent with the highway analysis.
3. RTC should develop MIS procedures and describe them in the Plan. The FHWA/FTA is aware that WSDOT is developing MIS procedures, therefore, it may be wise for RTC to wait until these are available before developing their own procedures. RTC should review Metro's MIS procedures, which are very good and may be useful.
4. The Plan should include more specific policy recommendations, actions, or implementation measures especially for new ISTEA subjects like non-motorized travel, freight, transportation demand management measures (TDMs)--and address how these subjects are incorporated into the planning process. During the next certification review, the FHWA/FTA would expect to see these subjects explicitly addressed in the Plan.
5. RTC should identify and discuss transportation enhancement activities in the Plan.

### **III. TRANSPORTATION IMPROVEMENT PROGRAM (TIP)**

#### **A. Findings**

1. RTC's definition of a TIP amendment is more stringent than federal regulations, and results in more frequent State TIP (STIP) amendments than are required.



2. RTC's project selection procedure provides for project selection of the first two years of TIP projects. This practice may result in over programming, as in fact, two years of funds appear to be available in year one. For example, if a project is moved from year two to year one without a corresponding move of another project from year one to year two, year one is no longer fiscally constrained. In addition, the State of Washington manages the program on a statewide basis. As this is practiced, the State may obligate more funds in one urbanized area than are programmed in year one in that area, resulting in not all funds that are programmed in another urbanized area being available in that area. The State obligates funds on a first come, first serve basis. This practice can result in priority projects for an urbanized area not being funded in the year in which they were programmed. In addition to the over programming issue, this also creates a public disclosure issue, i.e., the public should know whether RTC is able to deliver the project in the TIP in the year programmed.
3. RTC's project prioritization process is very good.

B. Corrective Actions

1. RTC should clarify its project selection procedures for each funding category. While multiple-year project selection is not encouraged, if it is employed, there must be full disclosure in the TIP and STIP of the fact that implementation of projects in the year programmed cannot be guaranteed. All participants must agree with the process, financial constraint must be maintained by year and by funding category, TCM priority must be maintained for each non-attainment area, and care must be taken that conformity is not violated as projects are advanced. In addition, project selection actions must be consistent with an open public involvement process and, to the extent possible, should follow the priorities set within the federally approved STIP.
2. RTC should provide analysis/documentation for O&M costs. The TIP should show that funds are adequate for O&M needs, and if not, explain why.

C. Recommendations

1. RTC's project selection procedure should be modified so that when a project is moved from year two to year one, project(s) equaling the same amount of funds should be moved from year one to year two in order to maintain fiscal constraint. RTC's TIP and the Washington STIP should fully disclose how the program is managed and that in any given MPO the funds programmed may not be available in the year programmed due to the statewide management on a first come, first serve basis.
2. The TIP should summarize significant public comments that were received during the public review period.

**D. Comment**

1. RTC should be aware that funding estimates provided by the State include unobligated balances that are incorrect for determining annual programs. Annual programs should be limited to estimates of annual apportionments. This may mean that the STIP is not financially constrained. The FHWA/FTA will discuss this further with WSDOT.

**IV. CONGESTION MANAGEMENT SYSTEM (CMS)**

**A. Findings**

1. RTC is a leader in the state in developing and implementing their CMS.

**B. Corrective Actions - None.**

**C. Recommendations - None.**

**V. AIR QUALITY**

**A. Findings**

1. There has been significant improvement on bi-state coordination of air quality programs.
2. RTC is performing its own modeling for air quality and travel demand forecasting.
3. RTC is conducting project conformity analysis for their member jurisdictions.

**B. Corrective Actions - None.**

**C. Recommendations - None.**

**VI. PUBLIC INVOLVEMENT**

**A. Findings**

1. RTC has adopted a public involvement policy that meets the minimum requirements of the Metropolitan Planning Rule. However, RTC's public involvement activities actually go beyond the requirements of this policy.

**B. Corrective Actions - None.**

**C. Recommendations**

1. RTC should document their actual public involvement and public outreach activities (since they go beyond the basic requirements of their public involvement policy) so this information is available to the public and interested agencies.
2. RTC could develop a menu of public involvement techniques to be included in the public involvement policy during the next cyclic review. This "menu" could be kept as an internal notebook.

## **VII. 15 FACTORS**

### **A. Findings**

1. The 15 Factors are successfully incorporated into RTC's Transportation Plan.
2. RTC's 15 Factor summary matrix, which was prepared as an exhibit for the certification review meetings, is very useful.

### **B. Corrective Actions - None.**

### **C. Recommendations**

1. RTC could include the 15 Factor summary matrix in the Plan.

## **Metro**

## **VIII. REGIONAL TRANSPORTATION PLAN**

### **A. Findings**

1. Metro's 2040 process has significantly enhanced the transportation planning process and contributed to a strong linkage between transportation, land use, and air quality.
2. Metro does not have a conforming Plan that meets the requirements of the regulations. However, the process for developing the Plan is very good and is expected to result in a high quality product.
3. The Plan does not identify where MISs might be needed. However, Metro has developed draft MIS guidelines, which should result in a high quality process for Metro, as well as provide a useful model for other MPO's.
4. Metro has done a good job demonstrating financial constraint. The Plan includes both a constrained and a preferred (or "vision") network which allows Metro to show the difference between their transportation vision and a financially constrained program. Although federal requirements do not require the development of preferred network, it is a useful tool for Metro and responds to issues raised during the IPR.

### **B. Corrective Actions**

1. Metro should complete the Plan and conformity analysis as soon as possible. The FHWA/FTA recognizes that Metro is working diligently towards this goal.
2. The Plan should identify the need for MISs or planned MISs.

### **C. Recommendations**

1. Metro should revise the draft MIS guidelines, as needed, and issue them in final form.

## **IX. TIP**

### **A. Findings**

1. Metro does not have a conforming TIP that meets the requirements of the regulations.
2. In the past, communication problems between Metro and the Oregon Department of Transportation (ODOT) have resulted in delays in approving the STIP and in processing STIP amendments.
3. As requested during the IPR, Metro has addressed "preservation of existing facilities."

### **B. Corrective Actions**

1. Metro should complete the TIP and conformity analysis as soon as possible. The FHWA/FTA recognizes that Metro is working diligently towards this goal.
2. The TIP should clearly identify federal dollars and total cost.
3. Metro should provide analysis/documentation for O&M costs. This was also requested during the IPR.
4. ODOT should formalize its procedures with MPO's regarding TIP and STIP processing and notification of actions. This should be referenced in the Metro/ODOT agreement.

### **C. Recommendations**

1. The TIP should summarize the project prioritization process. This was also requested during the IPR.
2. The TIP should include a list of projects from the previous TIP that were implemented or delayed.
3. The TIP should summarize significant public comments that were received during the public review period.

## **X. CMS**

### **A. Findings**

1. Metro has a very good approach to meeting the requirements for the interim CMS.
2. Metro has adequately responded to comments made during the IPR to address management systems.

### **B. Corrective Actions - None.**

### **C. Recommendations - None.**

## **XI. AIR QUALITY**

### **A. Findings**

1. Metro is recognized as a national leader in travel demand forecasting and air quality modeling, as was noted during the IPR.
2. Metro does not have a conforming Plan or TIP.
3. Metro conducts the conformity analysis for the portion of the nonattainment area in Washington County that is outside the MPO boundary.

### **B. Corrective Actions**

1. Metro should complete the conformity analysis on the Plan and TIP as soon as possible. The FHWA/FTA recognizes that Metro is working diligently towards this goal.

### **C. Recommendations - None.**

## **XII. PUBLIC INVOLVEMENT**

### **A. Findings**

1. Metro's public involvement activities are exemplary. Metro's efforts were also commended during the IPR.
2. The representation and comments at the citizen session demonstrates Metro is doing a good job on public involvement.
3. There was some concern voiced during the citizen session that some of Metro's public involvement processes are not sensitive to lower income or transit dependent groups in terms of meeting times, locations, and committee representation.

### **B. Corrective Actions - None.**

### **C. Recommendations**

1. Metro should consider whether meeting times, locations, and committee representation is sensitive to the needs of lower income or transit dependent groups.

## **XIII. 15 FACTORS**

### **A. Findings**

1. Metro has addressed the 15 Factors in the planning process.

B. Corrective Actions

1. Tri-Met's TDP does not provide an adequate basis for transit capital projects. Since Metro is responsible for the transportation planning process in the Portland metropolitan area, they should work with Tri-Met to correct this deficiency.

C. Recommendations

1. Metro should summarize how they are addressing the 15 Factors in an appendix to the Plan (see RTC's matrix).

State of Oregon  
Department of Environmental Quality

Memorandum

Date: December 6, 1995

To: JPACT  
From: John Kowalczyk  
Subject: Briefing: Carbon Monoxide and Ozone Maintenance Plans

There are administrative and legal ties between transportation plans and air quality plans that necessitate close coordination between DEQ and Metro. DEQ is beginning a process of seeking Metro review and recommendations on transportation related issues which are part of draft air quality maintenance plans for carbon monoxide and ozone. Expected adoption of these plans by the Environmental Quality Commission early next year will ensure that: 1) citizens of the Portland area breathe healthy air over the next ten years, 2) Clean Air Act imposed impediments to industrial growth are removed, and 3) threats of federal highway fund sanctions are eliminated.

#### METRO RESPONSIBILITIES

As lead agency for air quality transportation planning, Metro is responsible for:

- o Defining the transportation emissions budget needs in air quality plans.
- o Identifying the transportation control measures (TCM's) that need to be a part of the states air quality strategy.
- o Conducting conformity analysis of transportation plans with air quality plans.

#### IMPACT OF AIR QUALITY PLANS ON METRO

Under Clean Air Act requirements Metro must:

- o Demonstrate conformity of transportation plans with air quality plans to approve transportation projects and receive federal transportation funding.
- o Assure TCM's in the states air quality plan are being implemented in a timely manner and provide priority funding for them.

#### CONFORMITY PROCESS CHANGES

The current conformity procedure of requiring transportation emissions to be less than 1990 levels and less in the build versus no build scenario will change when air quality maintenance plans are approved by EPA. This change can provide an easier and more assured way of demonstrating conformity.

- o New conformity procedures will eliminate the 1990 emission cap and build/no-build requirement and substitute an emission budget consistent with the regional transportation plan when EPA approves air quality maintenance plans.
- o The Regional Transportation Plan emissions, for years beyond the last year of the maintenance plan, will need to comply with the emission budget of the last year of the maintenance plan (2006).

#### HISTORY OF CO/OZONE IN THE PORTLAND AREA

- o The National Carbon Monoxide was exceeded about one in every three days in the 1970's.
- o The National Ozone standard was exceeded by about 50% in the 1980's.
- o Air pollution control strategies were heavily oriented toward motor vehicle and industrial emissions.
- o Attainment of the carbon monoxide and ozone standards was reached in the early '90s.

#### INTRODUCTION TO AIR QUALITY MAINTENANCE PLANS

Under Clean Air Act provisions, once attainment of air quality standards is reached an area can be reclassified to attainment upon approval of a 10 year air quality maintenance plan by EPA. Key points regarding maintenance plans include:

- o Plan must demonstrate continued attainment despite expected growth.
- o Attainment classification removes industrial growth impediments (Emission offsets and Lowest Achievable Emission Rate requirements).



Memo To: JPACT  
December 6, 1995  
Page 3

- o Conformity is changed to an emissions budget concept.
- o Contingency plans must be included in case nonattainment reoccurs during maintenance period.
- o Next 10 year maintenance plan must be submitted to EPA at least two years prior to expiration of previous maintenance plan.

#### CARBON MONOXIDE AND OZONE MAINTENANCE PLANS

DEQ has been developing air quality maintenance plans for the Portland area for Carbon Monoxide and Ozone. This process has involved broad input from all affected sectors and the legislature. The Carbon Monoxide plan primarily reflects efforts of the City of Portland to develop the Central City Transportation Management Plan. The Ozone plan primarily reflects efforts of a Governor's Task Force and the 1993 Legislature.

Maintenance of the Carbon Monoxide Standards is projected because of the high degree of effectiveness of new motor vehicle emission control systems. Carbon monoxide attainment is projected to be maintained even if some existing control strategies (downtown parking lid and oxygenated fuel) are phased out. Maintenance of the Ozone standard is projected to be difficult and will require a substantial number of new emission control strategies.

Attachments 1 and 2 present the issues with respect to the Carbon Monoxide and Ozone Maintenance plans. Final transportation emission budgets for Carbon monoxide and Ozone precursors and the final mix of strategies for the Ozone plan are not defined as of this writing but they are expected to be in the next few weeks. Recent changes to the Metro population and employment forecasts for the region have necessitated Metro to conduct new transportation emission modelling. This information is currently being integrated into the plans by DEQ.

Attachment 3 presents the potential transportation control measures that need to be included in the maintenance plans.

#### METRO DELIBERATIONS AND RECOMMENDATIONS

Appropriate Metro Committees will be asked to provide comment and recommendations on at least the following issues relating to the air quality maintenance plans in the weeks ahead:

- o Transportation Emissions Budgets
- o TCM's to be included in the Maintenance Plans

Memo To: JPACT  
December 6, 1995  
Page 4

o Transportation Control Measures to Balance the Ozone  
Maintenance Plan.

Attachment 4 is the tentative schedule for review and adoption of  
the maintenance plans.

**Portland Area CO Maintenance Plan  
Summary of Strategies and Key Issues  
September 13, 1995**

## **STRATEGY OVERVIEW**

### Affected Area

The affected area is the Oregon portion of the Air Quality Maintenance Area (within the Metro boundary). The boundary is in the process of being split from the Vancouver area to expedite approval by EPA.

### Process

The Central City Transportation Management Plan (CCTMP) served as the primary planning study to develop maintenance plan strategies applicable to the Central City. Strategies are being closely coordinated with the Southwest Washington Air Pollution Control Authority and the Southwest Washington Regional Transportation Council to ensure that strategies have no adverse impacts on Vancouver CO nonattainment issues.

### Time Frame of Maintenance Plan

The plan is designed to span ten years from 1996 (expected EPA approval) to 2006. EPA would require an update in 2004 to last for another ten years or more.

### Strategy Elements

- Emission reductions from the federal new car program and certified woodburning appliances
- Central City Transportation Management Plan (CCTMP) to replace the Downtown Parking and Circulation Policy (DPCP)
- Oxygenated Fuel dropped as a fuel requirement starting with the 1997/1998 winter season
- Three Emissions Budgets to be developed: 1) Airshed: Metro boundary area; 2) Hot Spots: CCTMP area and the 82nd Ave. corridor
- Enhanced vehicle inspection and maintenance (I/M) program and expansion of the I/M boundary (may not be needed, depending upon modeling results)

## **TRANSPORTATION CONTROL MEASURES**

- Parking controls: The parking lid in the DPCP area is removed, but maximum parking ratios are basically retained in the downtown and expanded into the Lloyd District and other areas of the CCTMP; an initial 750-space pool (allocation for structured parking)

in the downtown is established as replacement parking for existing buildings to compensate for surface lots previously removed for new developments.

- Four Light Rail Lines (South/North Line considered to be two separate lines)
- Regional annual transit service expansion of 1.5% consistent with the financially constrained RTP

[Note: The CCTMP transportation modeling was based on an annual transit service expansion of 2.4% for the Central City area.

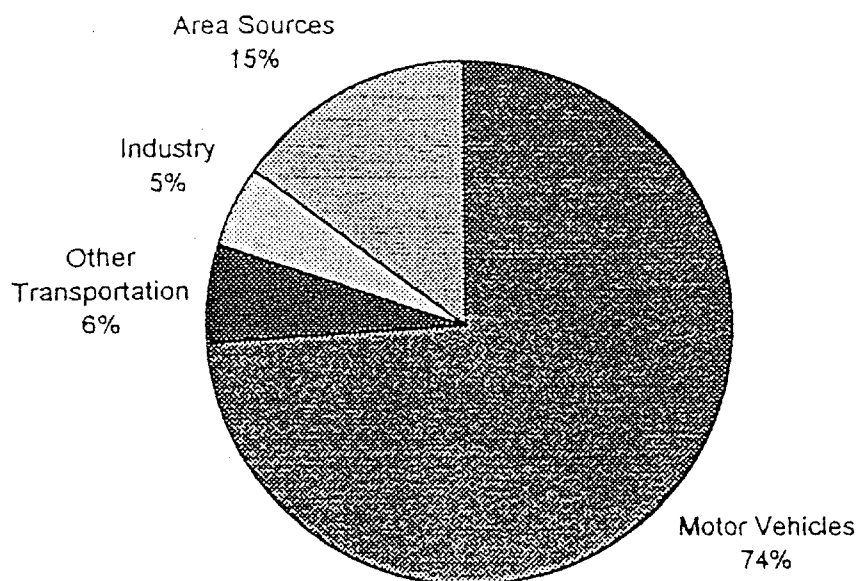
- Existing on-street carpool permit parking program continued
- Tri-Met's carpool marketing program continued
- TMA to be formed in Lloyd District

## **STRATEGY ISSUES**

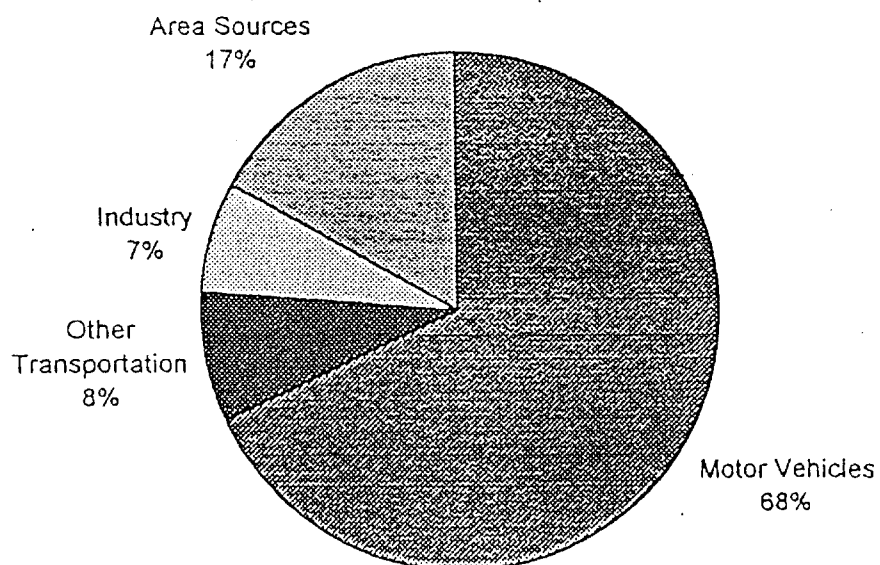
- Parking lid removal to be based upon a completed "worst case" analysis of an additional 7,204 parking spaces being built under the High Growth development of the CCTMP
- Elimination of the Oxygenated Fuel requirement results in a one-time, motor vehicle emissions increase of approximately 30% in 1998
- The regional transit service increase of 1.5% may involve trade-offs in transit service supply to meet the future demand for service in the Central City, e.g., some areas might have to forgo increases in service to accommodate ridership demand in the CCTMP.
- Parking offsets for an additional 853 parking spaces are needed for the interim period lasting until EPA approves the CO Maintenance Plan. (The 1975 model year lock-in for the Portland area I/M program appears to be sufficient to supply the offsets.)
- An emissions growth allowance is needed to replace existing offset requirements for new industry, or major plant expansions.

# Winter CO Pie Charts for Portland Area

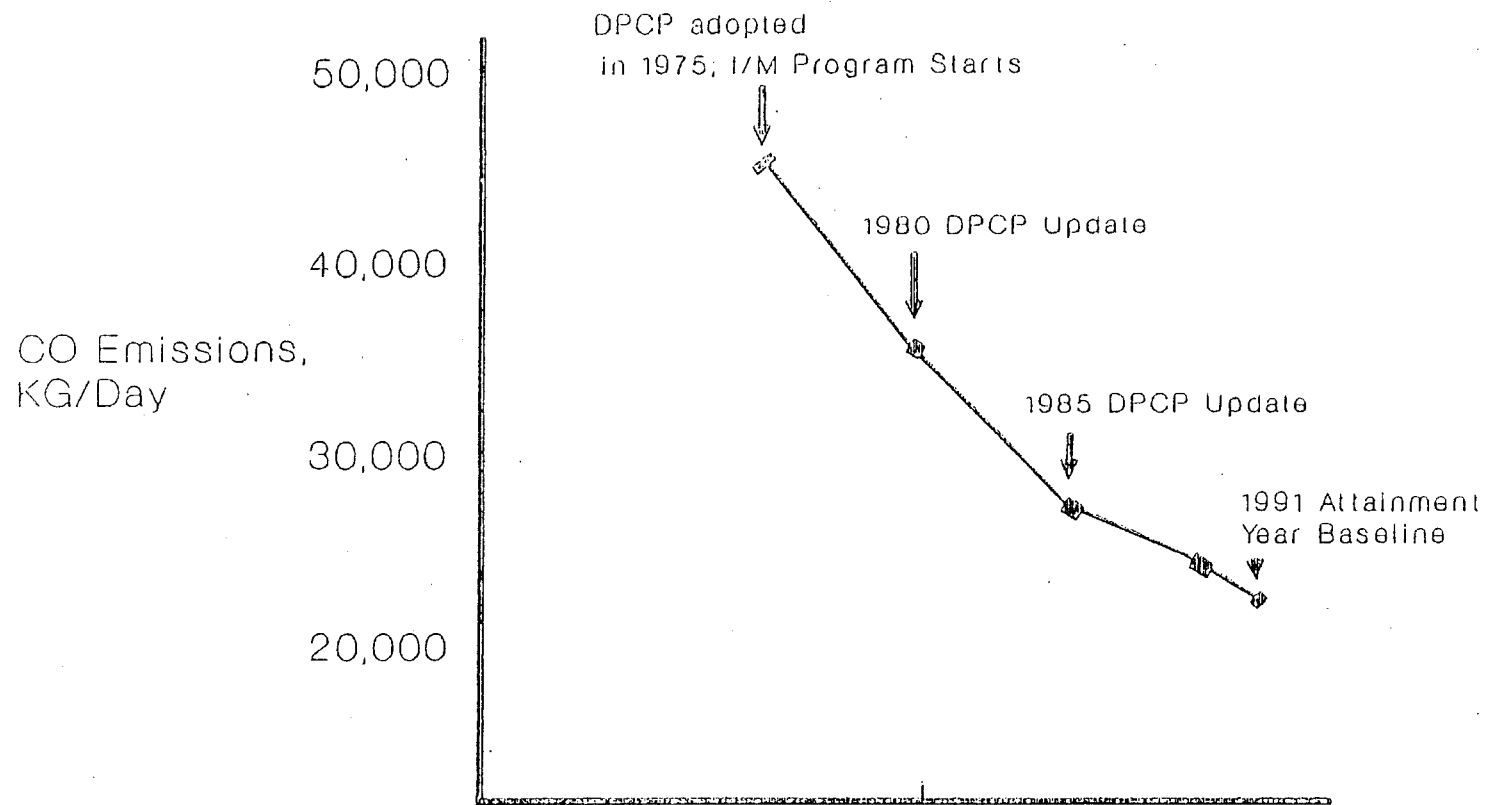
## Portland Area 1990 CO Souce Contributions



## Portland Area 2006 CO Source Contributions (Subject to Change)



# Motor Vehicle CO Emissions Trend in Downtown Portland (1976 to 1991)



Data

Year	CO Em's, KG/Day
1976	45,466
1980	36,111
1985	27,347
1989	25,093
1991	23,587

1970

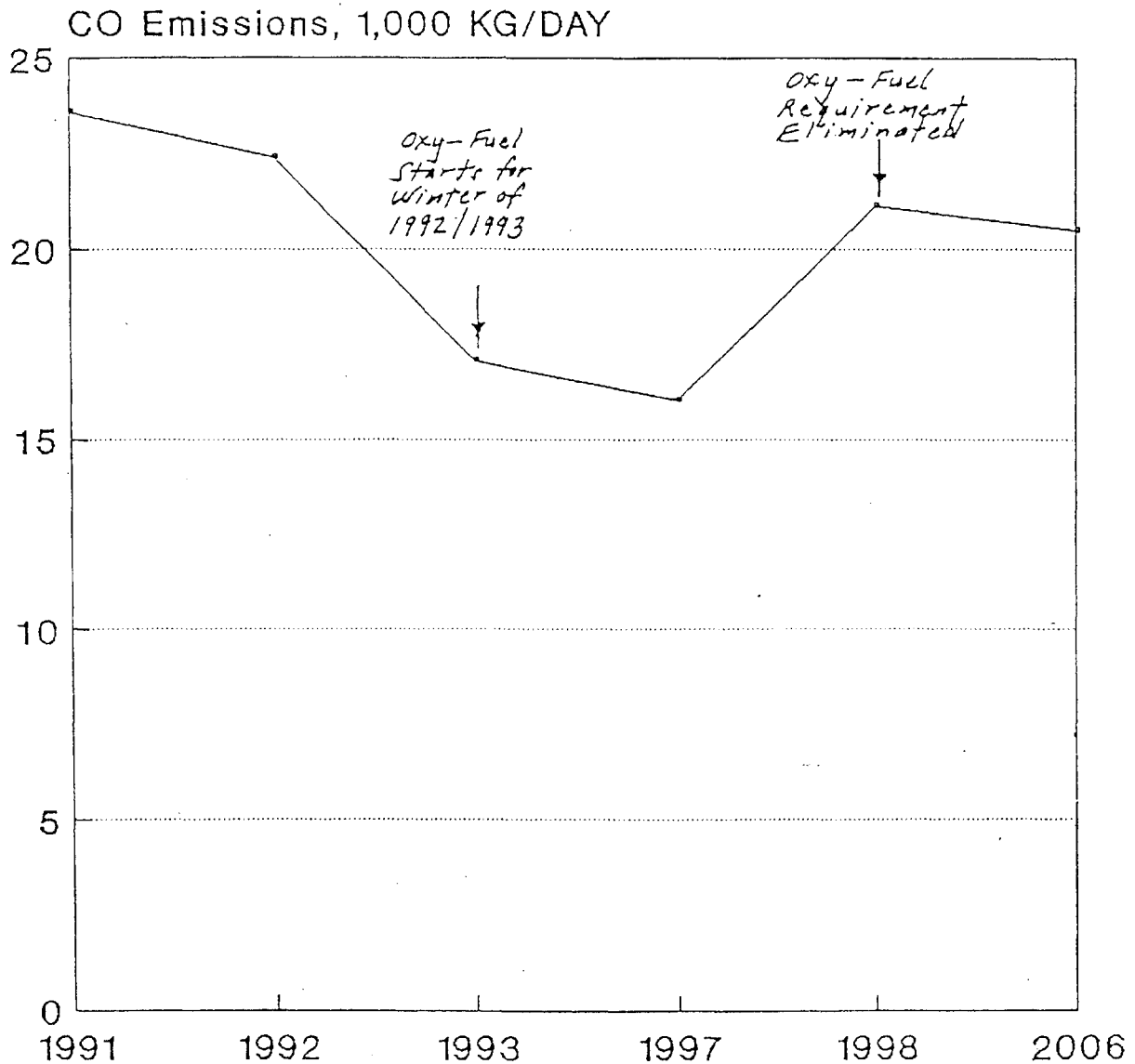
1980

1990

YEAR

*Revision  
(9-18-95)*

## Projected Motor Vehicle CO Em's for Downtown Portland (1991 to 2006)



— Years (January 1)

*Note: 1991 is the attainment baseline year.*

## Ozone Plan Issues

### STRATEGY DEVELOPMENT PROCESS

- 1991: HB 2175 - Established Governor's Task Force (GTF)
- 1992: Governor's Task Force recommended plan
- 1993: HB 2214 - Adopted plan with some revisions
- 1994: Rule development with nine advisory committees
- 1995: HB 3348 (vetoed) - Intended to amend plan
- 1995: Interagency consultation with Metro
- 1996: Adopt plan and submit to EPA

### STRATEGY OVERVIEW

- **Initial Base case assumptions**
  - Motor vehicle programs:
    - Federal Tier I motor vehicle program
    - Existing vehicle inspection program
  - Area source programs:
    - Federal area source rules for consumer products, autobody refinishing and architectural coatings
    - Stage II vapor recovery program
  - Industrial programs:
    - VOC RACT for existing industry
    - BACT and growth allowance for new and expanding industry
- **1995 Legislature - HB 2214 directed strategy (principally GTF recommendations)**
  - Vehicle inspection:
    - Enhanced vehicle inspection
    - Expanded inspection boundary (EQC to establish; ~10% more vehicles)
    - Eliminate old car exemption for 1975 and newer vehicles
  - Trip reduction:
    - Mandatory parking ratio for non-residential development (10% reduction in new space utilization)
    - Employee Commute Options (ECO) (10% reduction in commute trips for 50-100 employees, 20% reduction for 100 and more employees)
    - Land use changes due to Region 2040 and the TPR
  - California Lawn and Garden Standards



- **January 1995 Rebalance of Maintenance Plan**
  - New EPA nonroad engine rules
  - Replace federal area source rules with state rules
  - Updates to EPA emission factors and growth factors
  - Net result: 1.1% surplus VOC reductions from strategy
- **DEQ Advisory committee recommendations**
  - January 1995 Rebalance +1.1%
  - Reduce stringency of ECO -0.9%  
(10% reduction from 50 or more employees)
  - Limit mandatory parking ratio to -0.2%  
non-retail/dining land uses
  - Net +0.0%
- **1995 Legislature - HB 3448 revisions<sup>1</sup>**
  - January 1995 Rebalance +1.1%
  - Add federal Low Emission Vehicle Program +0.2
  - Maintain ECO at HB 2214 level -0.0%
  - Reduce inspection boundary expansion -0.4%
  - Limit parking ratio program to voluntary -0.8%
  - Net +0.1%
- **Final rebalance**
  - New Metro population and travel forecasts
  - Revised enhanced vehicle inspection program
  - Voluntary PSEL donation program
  - Final strategy mix and options to rebalance will be presented

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<sup>1</sup> HB 3448 also directed DEQ to pursue a public education program and a lawnmower replacement program to offset more stringent ECO. Although HB 3448 was vetoed, DEQ is still pursuing these programs. Vehicle inspection boundary expansion restrictions from HB 3448 were also included in DEQ FY 1995 budget.

## **TRANSPORTATION CONTROL MEASURES**

Potential TCMs to be identified in the ozone maintenance plan include:

- Transit Supply commitments in the RTP constrained network
  - 1.5% annual service expansion until 2005;
  - 2005-2015 .5% annual service expansion;
  - North/South High Capacity Transit (and feeder bus service).
- Pedestrian and Bicycle supply commitments in the RTP constrained network
- Congestion management projects in the RTP constrained network
  - Traffic signal optimization projects
  - Ramp Metering (I-5, I-84, I-405 and Highway 217)
- TDM measures adopted by DEQ
  - ECO
  - Parking Ratios (if applicable)
- Land Use assumptions in RTP
  - Urban Growth Boundary assumption, resulting in increased parking costs;
  - Land-use changes inherent in the population and employment allocation

## **STRATEGY ISSUES**

- The final rebalance of the maintenance plan may require adjustments to the strategies in the plan.
- What will the level of participation in the voluntary PSEL reduction program be by industrial sources, and how much industrial growth allowance can be provided?
- Will reductions from the education program and lawnmower buyback program be available? What will be used as the backup strategy in case target reductions are not achieved?

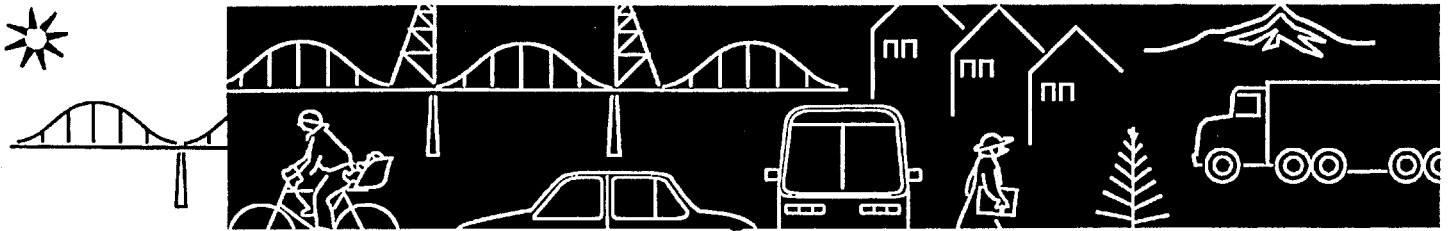
**Potential TCM's to be Included in  
Maintenance Plans  
(Specifics of Elements Still Being Developed)**

- 1) 2040 Land Plans
- 2) Central City Transportation Plan Parking Measure
- 3) Public Transit Improvement
  - Regional annual increase in service
  - CCTMP area annual increase in service
- 4) Alternative Mode Projects
- 5) Specific New Ramp Metering Projects
- 6) DEQ ECO Program
- 7) DEQ Parking Ratio Program

## Ozone/CO Maintenance Plans Schedule

### Metro/DEQ

8/25/95	TPAC	Information
9/13/95	Workgroup	Information
10/18/95	Workgroup	Information/Discussion
10/27/95	TPAC	Information/Discussion
11/8/95	Workgroup	Action
11/9/95	JPACT	Information/Discussion
11/21/95	TPAC	Action
11/22/95	MPAC	Information
11/30/95	MTAC	Information/Action
12/5/95	Trans Plng Comm	Information
12/13/95	MPAC	Action
12/14/95	JPACT	Action
12/19/95	Trans Plng Comm	Action
1/4/96	Metro Council	Action
2/23/96	EQC	Action



## Community Bridge and Road Program

### What is the Community Bridge and Road Program?

The Community Bridge and Road Program is a package of transportation projects to maintain the livability and economic health of our region. The projects provide a well-balanced mix of ways to get around the region. It will:

- rehabilitate bridges over the Willamette River
- make roads safer and reduce congestion by increasing capacity
- maintain critical arteries for commerce
- make connections for public transit
- construct pedestrian improvements and bike lanes
- provide access to key commerce centers

### Why consider doing this now?

Increased congestion is one sign of the challenge we have to stay on top of the growth the region is experiencing. The money we get to support improvements to key bridges and roads does not keep pace. We can wait no longer and must take responsibility to meet our needs.

### How is transportation tied to growth?

A safe, efficient transportation system that offers a variety of choices for getting around is an important part of maintaining the livability and economic vitality of our region. Growth is putting increasing pressure on our ability to maintain and improve our transportation system.

Metro's 2040 planning process is addressing the choices we have on how this region should grow. It's estimated that one million more people will live here in the year 2040. Citizens from throughout the area participated in the development of the Region 2040 growth concept which is now being considered for adoption by the Metro Council.

Transportation investments that support the 2040 Growth Concept are a key part of making the concept work. Providing the right mix of road, pedestrian, transit, bicycle and freight improvements to support higher density developments that offer a mix of housing and services helps to maintain the quality of life we have all come to enjoy.

### What would the program do?

The program would finance projects for construction throughout the region over the next six years. The projects will make getting around the region safer, reduce congestion and help enhance the longevity of the transportation investments we have already made, including key bridges.

### What would this cost and who would pay?

The region has identified a list of critically needed projects that would cost approximately \$200 million. One of the key choices that must be made is selecting a method (or methods) to raise sufficient dollars to fund the program. We've been looking at a number of funding methods: a regional gas tax, diesel tax, vehicle registration fee, business license fee, or property tax.

### For more information:

To request additional information about the Community Bridge and Road Program, add your name to the mailing list or schedule a speaker for a community group contact Metro's transportation hotline, (503) 797-1900.

# What do you think?

The Region is considering asking for voter approval of a regional measure to fund a package of transportation projects throughout the metropolitan area to improve our bridges and roads.

The Community Bridge and Road Program is being developed through a cooperative planning effort of Clackamas, Multnomah and Washington Counties, the City of Portland, the Port of Portland and Metro.

## Your opinion at this early stage is important to us.

That's why we've scheduled a series of Open Houses in early December at key locations around the region. We'll show you the projects; you tell us what you think. On the basis of this public input, the local jurisdictions and the Metro Council will decide in January how to proceed and how to integrate the regional effort with a state transportation financing proposal.

More information on the Community Bridge and Road Program is given on the other side of this page. We hope to see you at one of the open houses listed below.

**Beaverton – Monday, December 4**  
5 – 8 p.m. (drop in any time)  
oral comment period begins at 6 p.m.  
Beaverton City Hall  
4755 SW Griffith Drive  
Tri-Met bus lines 54 and 59

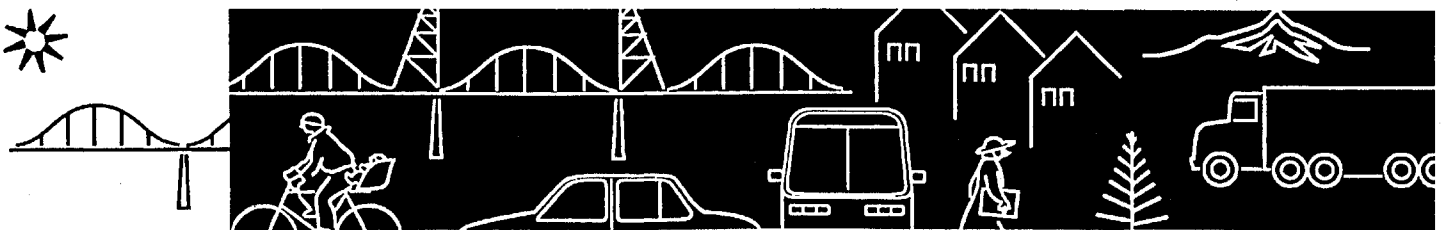
**Hillsboro – Wednesday, December 6**  
5 – 8 p.m. (drop in any time)  
oral comment period begins at 6 p.m.  
Washington County Public Service Bldg.  
155 N. First Ave.  
Tri-Met bus line 57

**Lake Oswego – Thursday, December 7**  
5:30 – 8:30 p.m. (drop in any time)  
oral comment period begins at 6 p.m.  
Lake Oswego City Hall  
380 A Avenue  
Tri-Met bus lines 35, 78, 36 and 37

**Milwaukie – Monday, December 11**  
5 – 8 p.m. (drop in any time)  
oral comment period begins at 6 p.m.  
Milwaukie Center  
5440 SE Kellogg Creek Drive  
Tri-Met bus line 29

**Portland – Wednesday, December 13**  
5 – 8 p.m. (drop in any time)  
oral comment period begins at 6 p.m.  
Metro Regional Center  
600 NE Grand Avenue  
Tri-Met bus line 6, or take MAX to the Oregon Convention Center


**Gresham – Thursday, December 14**  
5 – 8 p.m. (drop in any time)  
oral comment period begins at 6 p.m.  
Gresham City Hall  
1333 NW Eastman Parkway  
Tri-Met bus lines 4 and 23 or take MAX to Gresham City Hall





## Community Bridge and Road Program


m:


Legend


 Benefits freight access and movement


 Preserves and repairs bridge

 Bicycle improvements

 Pedestrian improvements






 Traffic calming improvements

 Traffic improvements

 Safety improvements


**S Rivergate Rail Overpass**

N Lombard project will reduce rail and conflicts, improve safety and improve S rivergate employee and freight access.






**109th/Kinnaman-219th**

2-lane road relieves congestion and reduces vehicle miles traveled by straightening north-south route.





**Murray Blvd./Farmington-Terman Improvements**

Widens narrow, 2-lane bridge with wider 5-foot segments on each side, improves TV intersection to reduce congestion.






**22nd/99W-Bonita**

Relieves severe congestion by widening, adding turn lanes and improving signals. Also improves safety.





**5/217 Interchange**

Interchange is nearly at gridlock. Project improves traffic flow while minimizing impact on the area's road network.





**Qualatin-Sherwood Expressway**

Traffic is overwhelming the road network in northern Washington County. Project reduces that congestion by adding 4-lane highway between I-5 and Hwy 99W.





**Boeckman Rd Extension**

Project provides a needed east/west connection from 95th to Tooze in the City of Gresham.





**Hwy 43 Improvements**

Narrow road has no turn lanes or pedestrian and bicycle facilities. The project will add turn lanes, curbs, sidewalks and bike lanes from N West Linn City Limits to Marylhurst Dr.






**Hwy 43/Marylhurst Dr Intersection**

Intersection has an inadequate signal and no pedestrian or bicycle facilities. The project will improve the traffic signal, add sidewalks and bike lanes.






**16 Hwy 43/Cedar Oak Intersection**

Widen Hwy 43 at Cedar Oak Dr. intersection to ease congestion and add needed sidewalks and bike lanes.






**19 Oatfield Road: Webster to 82nd**

This congested narrow road has no turn lanes or continuous pedestrian and bicycle facilities. The project will widen the road to 3-lanes, add turn lanes, traffic signal and install sidewalk on west side.






**20 Sunnyside Rd: 122nd to 132nd**

This is a congested narrow road with no turn lanes or pedestrian or bicycle facilities. The project adds additional lanes, curbs, sidewalks and bike lanes and preserves the right-of-way for a future transit corridor.






**21 122nd/129th: Sunnyside to King**

Adds turn lanes, curbs, sidewalk and bike lanes to a congested narrow road with no turn lanes or pedestrian and bicycle facilities.






**24 SE Foster Rd: County Line to Portland City Limit**

Reduces congestion at three intersections, improves safety at Pleasant Valley School, provides separate bike lanes, completes Foster Rd. improvements.






**25 Powell Valley Rd: Burnside to Kane**

Provides a traffic signal at a congested 4-way stop, improves bicyclist and pedestrian safety and completes partially developed facility in Gresham.






**27 Wallula Ave: Division St. to Stark St.**

Develops a 3-lane multi-modal urban collector street with bicycle, pedestrian and drainage improvements, to reduce projected congestion and improve safety.







**28 Glisan St: 202nd Ave to 207th Ave**

Develops a 5-lane urban arterial street with bike and pedestrian facilities, reduces congestion, provides a missing segment west of 202nd Ave and east of 207th Ave.






**32 Frontage Rd Congestion: City of Troutdale at I-84**

Reduces congestion and conflicts between local and through traffic, including trucks, autos, bikes and pedestrians, with traffic control and turn lane improvements.






**39 SE McLoughlin Neighborhood Traffic Calming**

Preserve neighborhood livability by reducing problems caused by cut-through traffic and speeding.







**46 NE Broadway/Weidler**

Rebuild street to provide access and safety for pedestrians, transit riders and bicyclists in this rapidly changing business district and neighborhood.







**49 US 30/Killingsworth Freight Improvements**

This project will relieve congestion and improve safety on Columbia Blvd and Airport Way and ease truck access to I-205.







**51 Central Eastside Access/Water Avenue Extension**

Reduce truck congestion by improving access to I-5 from the industrial district; encourage commercial redevelopment.







**58 NW Lovejoy Reconstruction: 14th to Broadway Bridge**

Provide key road improvements to open up land for high-density, affordable housing development close to downtown jobs. Project will include ramp reconstruction, sidewalks and transit facilities.





**64 St. Johns Neighborhood Truck Protection**

Preserve neighborhood livability by lowering noise and reducing cut-through truck traffic from the St. Johns business district to Columbia Blvd.





**65 St. Johns/Rivergate Access**

Develops alternatives to improve freight mobility between US 30-St. Johns Bridge and N/NE Portland industrial area and reduce traffic on neighborhood streets.





**68 Expand Citywide Signal System**

Reduce traffic congestion and improve management of traffic in the City of Portland by improving traffic signal operations.




**69 Signal Optimization**

Reduce traffic congestion and improve management of traffic in East Multnomah County and City of Gresham by timing traffic signals to reduce motorist delays.







**13 A Street: 3rd to State Street**

Reconstructs deteriorating street surface of "A" Ave. in Lake Oswego.







**18 Washington Street Bridge**

Existing wooden bridge is narrow and has load limits. The project will replace the bridge with a new structure.






**33 Carver Bridge**

Replace existing narrow and functionally obsolete bridge over the Clackamas River with a new structure and realign the approaches.





**53 Broadway Bridge Rehabilitation**

The deck, sidewalks and mechanical systems are deteriorating and need replacement to extend the life of the bridge.





**54 Burnside Bridge Rehabilitation**

This is a lifeline route for emergencies. The lift span needs to be replaced and its supports need strengthening in case of an earthquake.





**55 Hawthorne Bridge Rehabilitation**

This is a very old (historic) bridge and needs new decks and paint to preserve its structural strength.






**56 Morrison Bridge Rehabilitation**

The lift span that opens the bridge needs to be replaced, sidewalks need repair and it needs to be painted to keep rust from weakening the structure.



**57 West Burnside Redevelopment**

Reconstruct badly rutted pavement, add traffic signals to allow smoother traffic flow and provide safer pedestrian crossings from NW 14th to 23rd Ave.



The Community Bridge and Road Program is being developed through a cooperative effort of governments including Clackamas, Multnomah and Washington Counties, the Port of Portland, the City of Portland and Metro.

# Community Bridge and Road Program

We want your comments!

Bulk Rate U.S. Postage PAID Portland, OR Permit No. 6018



# Community Bridge and Road Program: Draft List Of Priority Projects

## Safety

### 1 Hwy 47 Bypass

Large trucks and traffic are safety problems in downtown Forest Grove. The bypass will take this traffic around downtown.

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### 2 TV Hwy/Yew Street to Cornelius East City Limits

North-South traffic cannot move across TV Hwy in Cornelius. Accidents snarl traffic on TV Hwy. The project corrects these problems and improves intersection safety.

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### 4 Farmington/173rd-185th

Corrects serious safety problems at intersections for autos, bikes and pedestrians by adding turn lanes, signals.

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### 6 Allen Blvd./Murray-Erickson

Corrects serious safety problems at three intersections by adding turn lanes and improving signals.

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### Stafford Rd Intersections: Borland, Childs, Rosemont

This narrow road has no turn lanes or pedestrian and bicycle facilities. The project will add signals, turn lanes and bike lanes.

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### 12 Boones Ferry: Madronna to Country Club Rd.

This 4-lane road has no turn lanes or continuous pedestrian facilities. The project will add turn lanes where necessary, upgrade signals and add curbs, sidewalks and bike lanes.

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### 17 Hwy 43/Pimlico Intersection

Adds a much-needed traffic signal at the intersection of Highway 43 and Pimlico.

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### 22 SE Foster Rd at 162nd

Reduce accidents and relieve congestion by constructing left turn lanes and signaling intersection. Improve pedestrian and bicycle safety by adding sidewalks and bike lanes.

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### 23 SE Foster Rd at Jenne

Prevent accidents and relieve congestion by structing left turn lanes and signaling intersection. Improve pedestrian and bike safety by adding sidewalks and bike lanes.

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### 26 5th St: Main St. to Cleveland St.

Improves safety of pedestrians and motorists, provides enhanced connection between MAX and Downtown Gresham, redevelops the roadway consistent with higher density downtown urban development.

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### 29 Halsey St: 223rd Ave to 238th Ave

Replaces and upgrades a 2-lane rural road with a 3-lane minor arterial street serving as a regional bicycle, pedestrian, and transit route, with safe accommodations for each mode of travel, connecting central Fairview and Wood Village.

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### 30 223rd Ave. Railroad Overcrossing

Eliminates a bottleneck at I-84 and reduces congestion by replacing a narrow and hazardous railroad overcrossing. The new structure will safely accommodate trucks and buses, pedestrians and bicyclists.

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### 31 Halsey St: 238th Ave to Historic Columbia River Highway

Completes the regional bike, pedestrian and transit route with a 3-lane minor arterial street, in coordination with new urban development, providing a safe and efficient facility between central Wood Village and Troutdale.

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### 34 Lents Pedestrian and Bicycle Enhancements

Makes streets safer for pedestrians and bicyclists in the Lents neighborhood along SE Foster Road and Woodstock from 87th to 103rd by constructing sidewalks and bike lanes and making crossing improvements.

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### 35 Johnson Creek Blvd: 36th to 45th

This heavily-used narrow road has no pedestrian or bicycle facilities. The project will add curbs, sidewalks and bike lanes.

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### 36 Harrison Street: McLoughlin to Hwy 224

Harrison Street is a primary route connecting the city center to neighborhoods. The project will add bike lanes and a landscaped median.

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### 37 17th Ave: McLoughlin to Milwaukie City Limits (north)

To improve safety for motorists, pedestrians and bicyclists the project will complete bike lanes and add a sidewalk on the west side of 17th.

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### 38 SE Tacoma Street: 28th to 32nd

Complete pedestrian and bicycle links and other safety features between the Tacoma Overpass and 32nd.

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### 40. 39th/42nd Bikeway

Address the need for safe north-south bicycle travel by implementing a continuous bikeway from Holman to Crystal Springs.

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### 41 SE 45th Traffic Calming

This project will create safe, convenient and separate areas for walking, cycling and parking and reduce speeding between Woodstock and Harney.

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### 42 52nd/53rd/57th Bikeway

Address the need for safe north-south bicycle travel by implementing a bikeway from Prescott to Harney. This bikeway project connects the Cully Blvd Reconstruction Project and the Springwater Corridor Trail.

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### 43 Holgate Bikeway

Implement bike lanes on SE Holgate from 42nd to 136th to provide a continuous east-west bikeway.

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### 44 Hawthorne Blvd: 32nd to 39th

Construct improvements to help pedestrians and bicyclists get to businesses and services safely in this highly congested neighborhood business district.

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### 45 Burnside Bike Lanes: 28th to 74th

Provide an important missing link between the existing SE Ankeny bicycle boulevard and Burnside bike lanes east of 74th.

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### 47 NE Tillamook Bikeway

Provide a five mile bikeway from Flint to 92nd to serve schools, businesses and recreational destinations in this corridor.

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### 48 NE Cully Reconstruction

This street has no sidewalks or drainage and is heavily used by residents to walk to transit, shopping and school. Project will repair NE Cully from Lombard to Prescott and will include sidewalks, bike lanes, street trees, drainage and signal improvements.

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### 50 NE 42nd Traffic Calming

This project will link incomplete sections of sidewalk, create safer and more convenient crossing opportunities and reduce speeding.

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### 52 Willamette River Bridges Bike and Pedestrian Access

Sidewalks and bikeways are non-existent or too narrow for safe crossing. The project will rebuild curb and sidewalks for bike and pedestrian safety on the Broadway, Hawthorne and Sellwood Bridges.

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### 59 N Greeley/Interstate Bikeway

Connect existing bicycle lanes in North Portland to downtown by construction of a separated pathway on this high-speed road.

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### 60 N Vancouver/Williams Bike Lanes

Serve north-south bicycle travel needs by improving bike access from the central city to areas north.

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### 61 SW Vermont Traffic Calming

This project will create safe, convenient and separate areas for walking, cycling and parking and reduce speeding on this residential street from 38th to 45th.

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### 62 Bertha Blvd. Bikeway

Construct a missing bicycle link to connect Beaverton-Hillsdale Highway to Vermont.

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### 63 Hillsdale Town Center

Construct intersection and crossing improvements to help pedestrians and bicyclists safely get to businesses and schools along Beaverton-Hillsdale Highway.

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### 66 N Marine Drive Freight Improvements

Improve access and safety for trucks and employees to Rivergate, marine terminals and rail yards.

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### 67 S Rivergate Rail Overpass

This N Lombard project will reduce rail and road conflicts, improve safety and improve S Rivergate employee and freight access.

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## Congestion

### 3 209th/Kinnaman-219th

New 2-lane road relieves congestion and reduces vehicle miles traveled by straightening a key north-south route.

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### 5 Murray Blvd./Farmington-Terman Improvements

Widens narrow, 2-lane bridge with wider 5-lane segments on each side, improves TV Hwy intersection to reduce congestion.

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### 7 72nd/99W-Bonita

Relieves severe congestion by widening, adding turn lanes and improving signals. Also improves safety.

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### 8 I-5/217 Interchange

This interchange is nearly at gridlock. Project improves traffic flow while minimizing the impact on the area's road network.

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### 9 Tualatin-Sherwood Expressway

Traffic is overwhelming the road network in southern Washington County. Project relieves that congestion by adding 4-lane tollway between I-5 and Hwy 99W.

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### 10 Boeckman Rd Extension

The project provides a needed east/west connection from 95th to Tooze in the City of Wilsonville.

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### 14 Hwy 43 Improvements

This narrow road has no turn lanes or pedestrian and bicycle facilities. The project will add turn lanes, curbs, sidewalks and bike lanes from N West Linn City Limits to Marylhurst Dr.

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### 15 Hwy 43/Marylhurst Dr Intersection

This intersection has an inadequate signal and no pedestrian or bicycle facilities. The project will improve the traffic signal, add sidewalks and bike lanes.

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## Legend

- 🚚 🚛 Benefits freight access and movement
- ⛶ Preserves and repairs bridge
- 🚲 Bicycle improvements
- 🚶 Pedestrian improvements
- 🚶 Traffic calming improvements
- 🚗 Traffic improvements
- 🚶 Safety improvements

The projects included in this first phase have been selected because they would improve some of the most significant transportation problems in our region. In particular, they will *improve safety, ease congestion, or preserve our transportation investment.*

To make it easier to identify and review the individual projects, we have grouped them into the above categories. The numbers adjacent to the project name have been appropriately placed on the map on the back of this page. The small picture icons further identify the specific transportation improvements to be gained from each project.

### 32 Frontage Rd Congestion: City of Troutdale at I-84

Reduces congestion and conflicts between local and through traffic, including trucks, autos, bikes and pedestrians, with traffic control and turn lane improvements.

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### 39 SE McLoughlin Neighborhood Traffic Calming

Preserve neighborhood livability by reducing problems caused by cut-through traffic and speeding.

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### 46 NE Broadway/Weidler

Rebuild street to provide access and safety for pedestrians, transit riders and bicyclists in this rapidly changing business district and neighborhood.

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### 49 US 30/Killingsworth Freight Improvements

This project will relieve congestion and improve safety on Columbia Blvd and Airport Way and ease truck access to I-205.

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### 51 Central Eastside Access/Water Avenue Extension

Reduce truck congestion by improving access to I-5 from the industrial district; encourage commercial redevelopment.

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### 58 NW Lovejoy Reconstruction: 14th to Broadway Bridge

Provide key road improvements to open up land for high-density, affordable housing development close to downtown jobs. Project will include ramp reconstruction, sidewalks and transit facilities.

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### 64 St. Johns Neighborhood Truck Protection

Preserve neighborhood livability by lowering noise and reducing cut-through truck traffic from the St. Johns business district to Columbia Blvd.

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### 65 St. Johns/Rivergate Access

Develops alternatives to improve freight mobility between US 30-St. Johns Bridge and N/NE Portland industrial area and reduce traffic on neighborhood streets.

🚚 🚛

### 68 Expand Citywide Signal System

Reduce traffic congestion and improve management of traffic in the City of Portland by improving traffic signal operations.

🚗

### 69 Signal Optimization

Reduce traffic congestion and improve management of traffic in East Multnomah County and City of Gresham by timing traffic signals to reduce motorist delays.

🚗

## Preservation

### 13 A Street: 3rd to State Street

Reconstructs deteriorating street surface of "A" Ave. in Lake Oswego.

🚶

### 18 Washington Street Bridge

Existing wooden bridge is narrow and has load limits. The project will replace the bridge with a new structure.

🚶 ⛶ 🚲 🚶

### 33 Carver Bridge

Replace existing narrow and function obsolete bridge over the Clackamas River with a new structure and realign the approaches.

🚶 ⛶ 🚗 🚲 🚶

### 53 Broadway Bridge Rehabilitation

The deck, sidewalks and mechanical system are deteriorating and need replacement to extend the life of the bridge.

⛶ 🚗

### 54 Burnside Bridge Rehabilitation

This is a lifeline route for emergencies. The lift span needs to be replaced and its support strengthening in case of an earthquake.

⛶

### 55 Hawthorne Bridge Rehabilitation

This is a very old (historic) bridge and needs new decks and paint to preserve its structural strength.

⛶

### 56 Morrison Bridge Rehabilitation

The lift span that opens the bridge needs to be replaced, sidewalks need repair and it needs to be painted to keep rust from weakening the structure.

⛶

### 57 West Burnside Redevelopment

Reconstruct badly rutted pavement, add traffic signals to allow smoother traffic flow and provide safer pedestrian crossings from NW 14th to 23rd Ave.

🚗 🚲 🚶



# What Is The Community Bridge And Road Program?

**T**he Community Bridge and Road Program is a package of regional transportation projects aimed at easing some of the worst traffic bottlenecks, building safer streets, maintaining access to our important commerce centers and preserving crucial existing transportation investments, such as the bridges over the Willamette River. The program is being developed through a cooperative effort of Clackamas, Multnomah and Washington Counties, the Port of Portland, the City of Portland and Metro and would finance specific construction projects throughout the region. ✱

The growth the region has been experiencing is putting pressure on our ability to maintain and improve our transportation system. Increased congestion is one sign of the challenge we have to stay on top of this growth. A safe, efficient transportation system that offers a variety of choices for getting around is an important part of maintaining the livability and economic vitality of our region.

As we move through our communities each one of us can identify key intersections or access points, portions of major streets or other areas that need to work better and be safer. A significant barrier to improving our transportation system, however, is funding. The money we get to support improvements to our key bridges and major roads does not keep pace with our needs. Although traffic is growing, gas tax revenues are declining due to improved fuel efficiency, inflation and federal cutbacks. In addition, road money collected by the state pays for improvements to major highways and freeways and for maintenance. Improvements to our through streets, those that connect our communities, have no direct source of revenue. ✱

**We need your help.**

**Please answer the following questions about the Community Bridge and Road Program and send to:**

Community Bridge and Road Program  
Metro  
600 NE Grand  
Portland, OR 97232-2736

Fax (503) 797-1794  
or call (503) 797-1900 (Comment Line)  
and leave your comments

1. From what you know, is the Community Bridge & Road Program a worthwhile idea to further explore? Yes ☐ No ☐

2. Is the size of the program about right for a first phase program?  
About right ☐ Too big ☐ Too small ☐

3. Are there projects reflected here that you feel should be dropped from the program? If so, what are they?

4. Are there projects that you believe absolutely must be included in the program? If so, what are they?

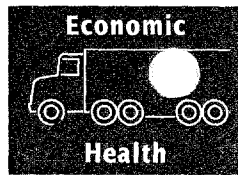
## Shaping The Program: The Key Choices

As we develop The Community Bridge and Road Program, there are a number of decisions that need to be made early on. Those we talked to told us it is important to:

- *rehabilitate our bridges to ensure their safety and increase their life expectancy*
- *reduce congestion*
- *reduce hazardous traffic locations*
- *improve the safety for bicyclists and pedestrians*
- *provide access for commerce and freight to get to and from our markets*
- *calm traffic through our neighborhoods*
- *generally maintain the quality of life we have all come to enjoy.*

With that in mind, we must begin defining a program. How big should this program be? What projects should be included? How would we fund such a program? How could a regional roads program relate to a possible state transportation financing proposal?

One of the key choices is selecting a method (or methods) sufficient dollars to fund projects such as the ones identified on the right. This first attempt at identifying a preliminary Bridge and Road Program contains 69 projects that are critical to the way we move around the region. Their combined cost is approximately \$200 million. We've been looking at a number of funding methods that have been used around the country: a regional gas tax, diesel tax, vehicle registration fee, business license fee, or property tax. \*



5. Would you be willing to pay an extra fee so that projects such as the ones shown here could be constructed? Yes ☐ No ☐

6. If yes to Question #5, what regional funding method(s) would you support? (Please rank 1-6, with #1 being your first preference.)

_____ gas tax	_____ business license fee
_____ diesel tax	_____ property tax levy
_____ vehicle registration fee	_____ other, please indicate _____

7. Do you have any other comments?

If you would like to be on our mailing list about the Community Bridge and Road Program, please give us your name and address:

Name \_\_\_\_\_  
Street Address \_\_\_\_\_  
City/State/Zip \_\_\_\_\_

*Thank you for taking the time to help.*

## Help Us Out, Please.

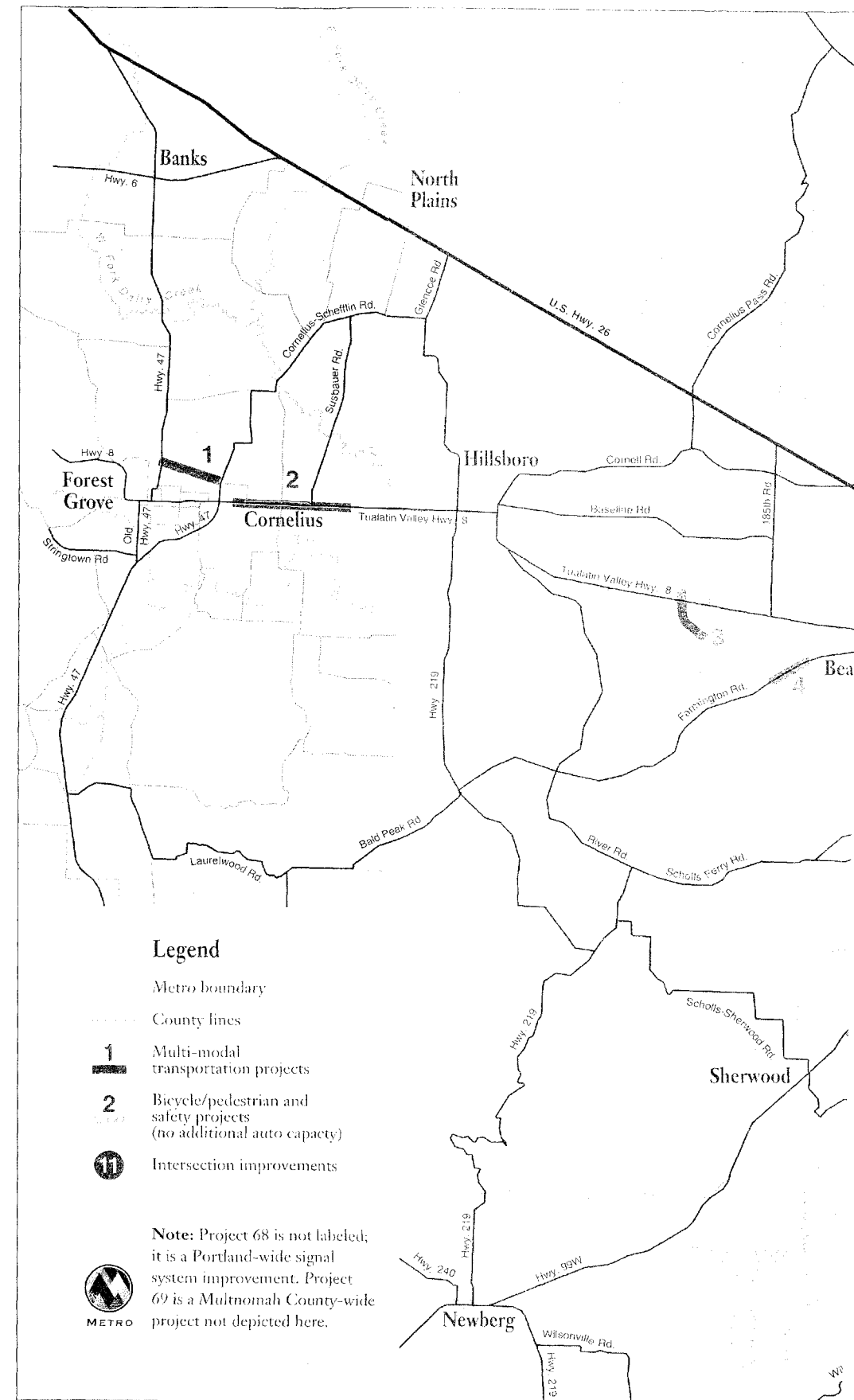
Need your help in shaping The Community Bridge and Road Program. What size program, if any, makes sense? Does this list represent the major needs for a first phase program? Are there specific projects you would like to see included? Excluded? What about funding methods?

Please take a moment to fill out the survey form included with this map and drop it in the mail to us. Because we feel we must take responsibility to meet our ever growing transportation needs, we hope to decide how to proceed early next year. If you have questions, need additional information or would like a speaker to come out to talk to a group about this program, please call our comment line at (503) 797-1900. **And please get your comments to us by Wednesday, January 3, 1996. ☆**



## Next Steps ...

All comments received by 5:00 p.m. January 3, 1996 will be forwarded to the Metro Joint Policy Advisory Committee on Transportation (JPACT — a committee made up of elected and appointed officials from throughout the region) and the Metro Council. A tentative hearing to further assess a possible program has been scheduled for January 18, 1996 at 7:00 p.m. in the Metro Council Chambers, Metro Regional Center, 600 NE Grand Ave., Portland. Please call the comment line to confirm this meeting date and time or to learn of other opportunities for public input into transportation issues in the region. ✧



# Program?

## Help Us Out, Please.

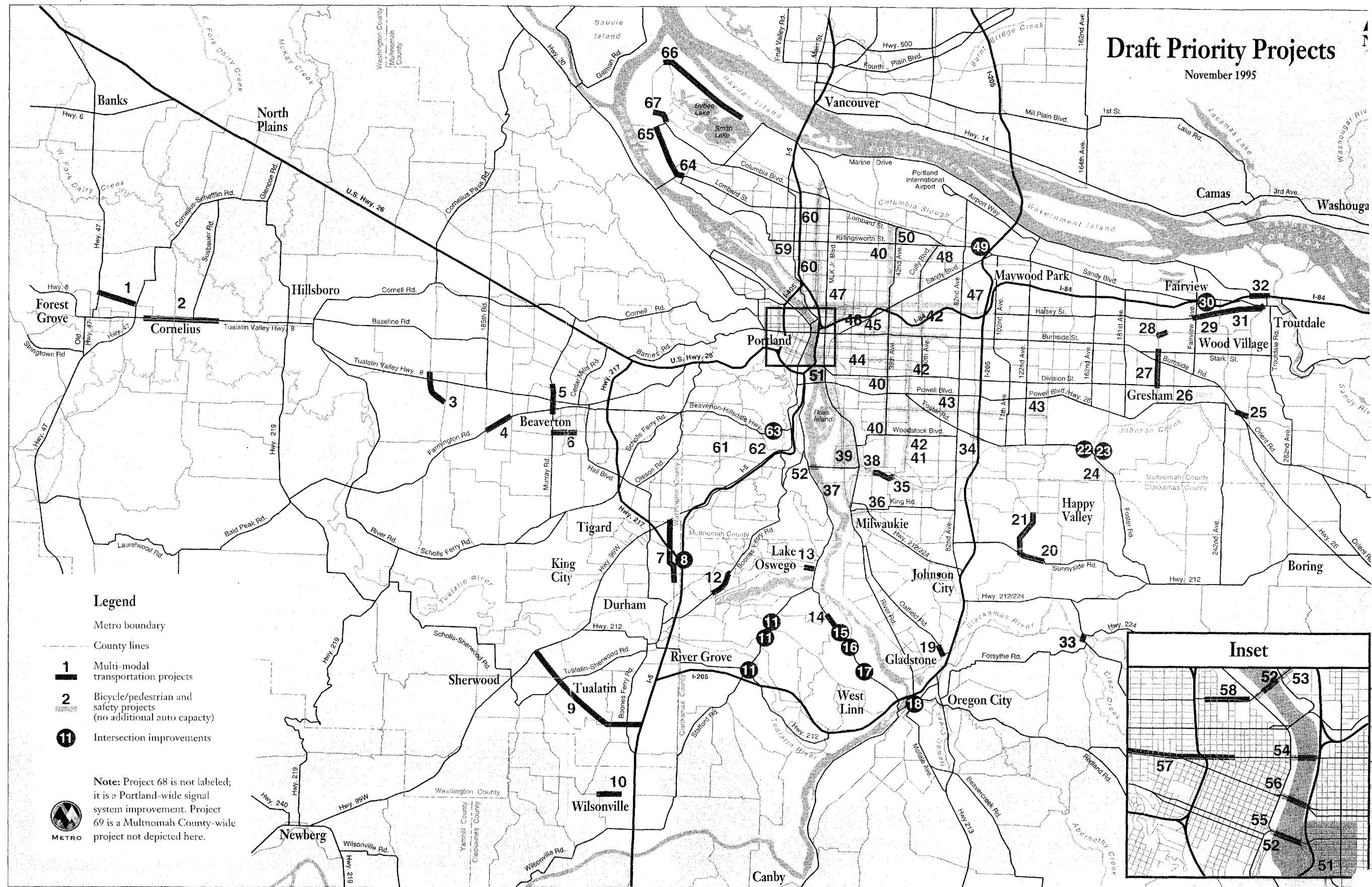
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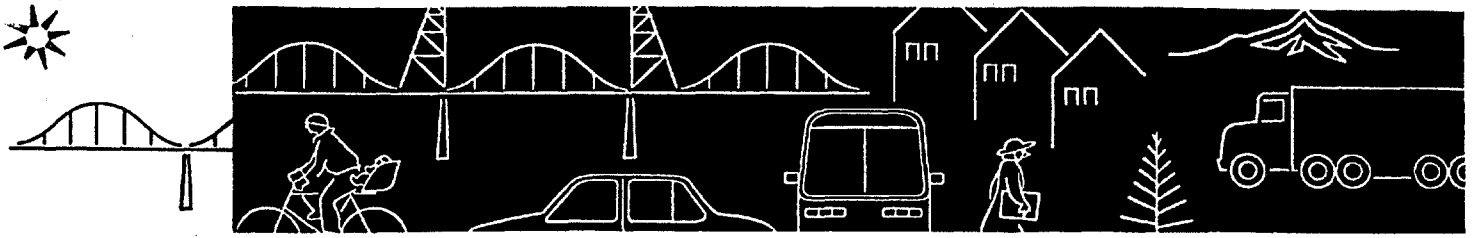
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# Community Bridge and Road Program

*The Community  
Bridge and Road  
Program is being  
developed through a  
cooperative effort  
of governments  
including Clackamas,  
Multnomah and  
Washington counties,  
the Port of Portland,  
the City of Portland  
and Metro.*



WASHINGTON  
COUNTY,  
OREGON



Port of Portland

CITY OF  
PORTLAND



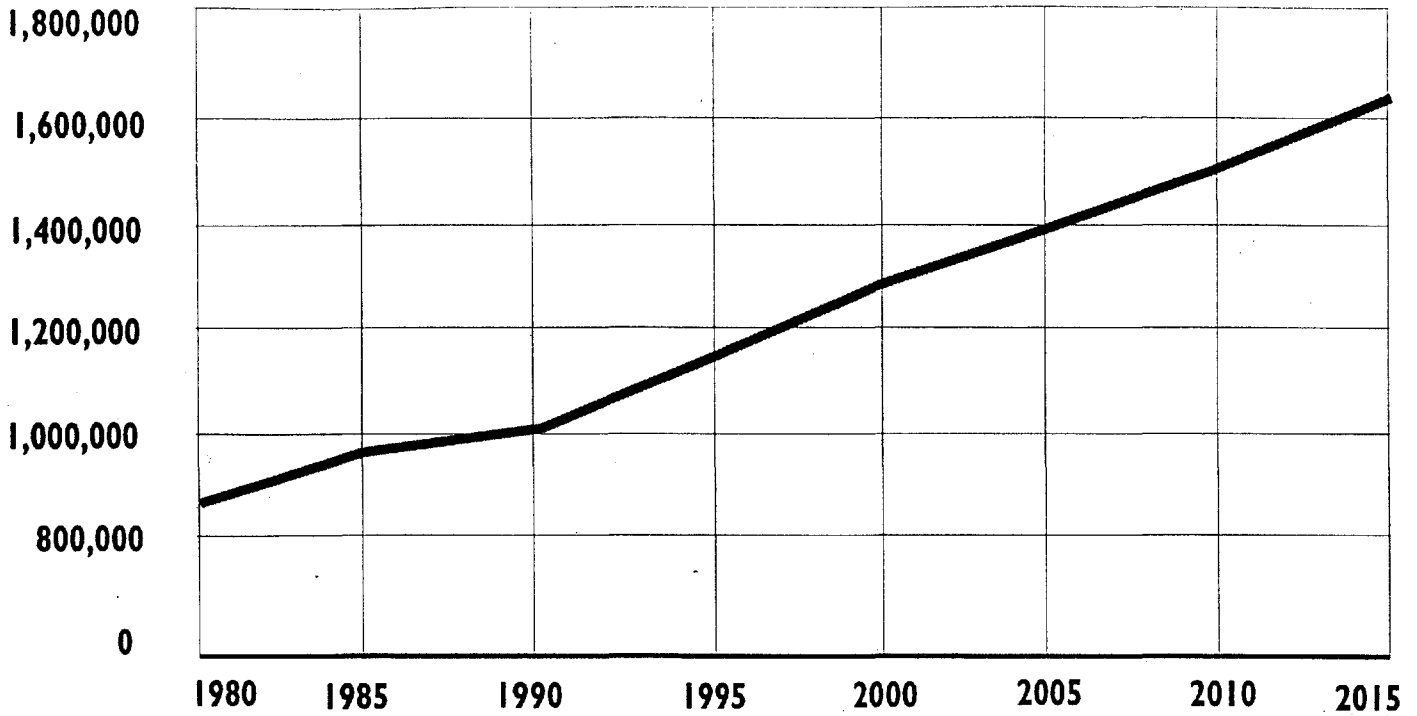
# Community Bridge and Road Program

## **The problem we face**

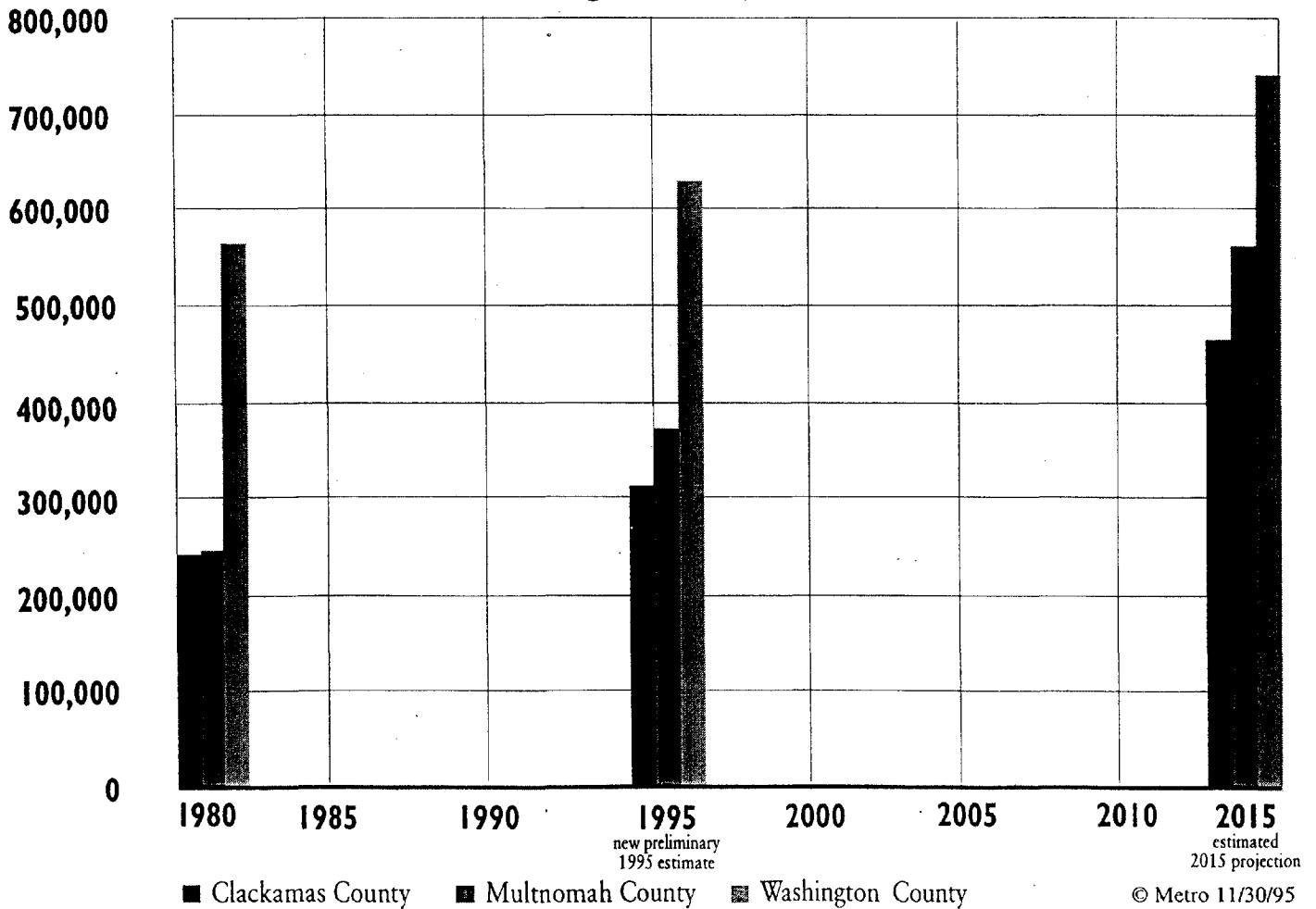
- Population growth has increased our transportation needs
- Revenues are decreasing due to fuel efficiency
- Costs are increasing due to inflation

# Community Bridge and Road Program

## Total Population Growth

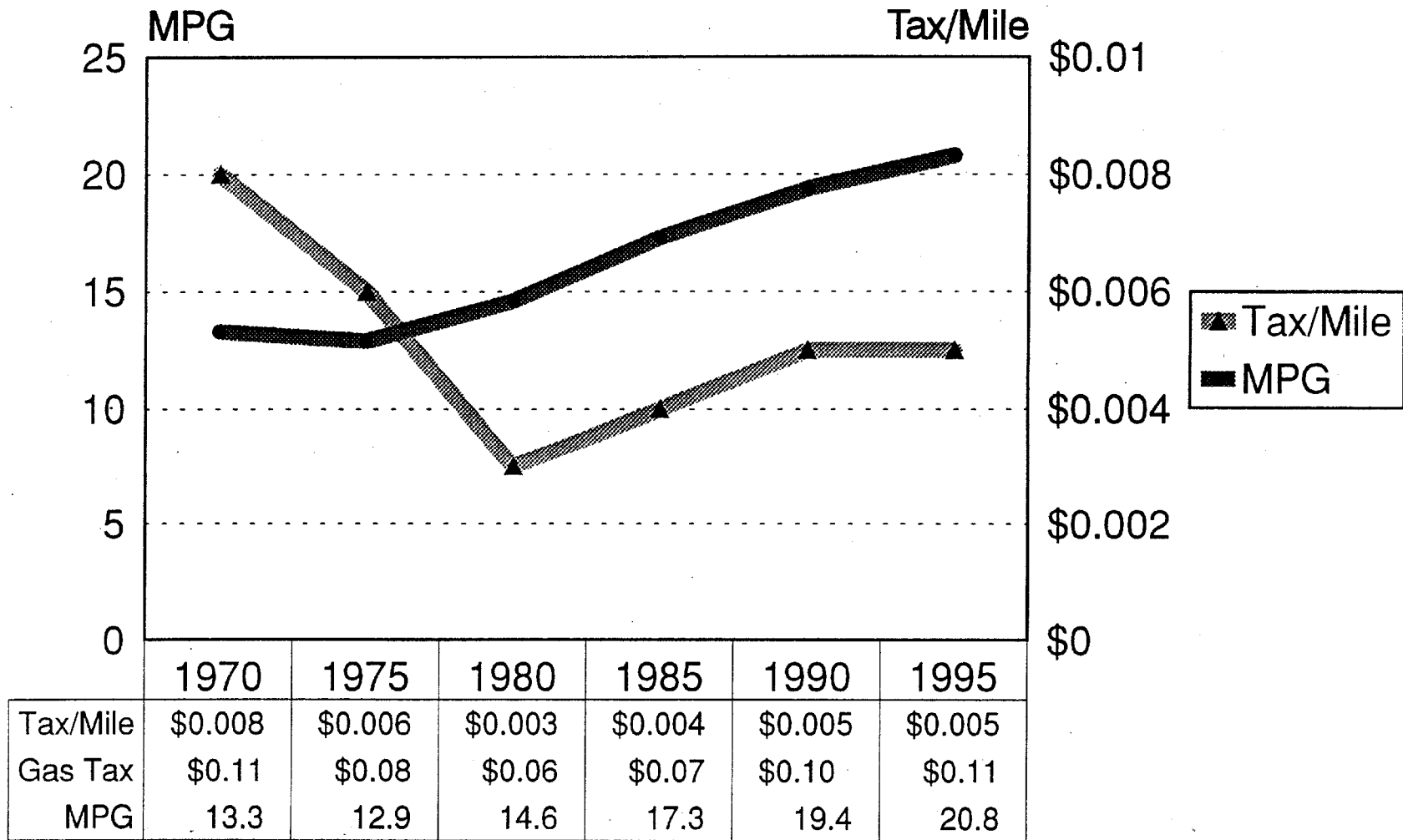


## Population Growth Trends for Multnomah, Clackamas, and Washington Counties



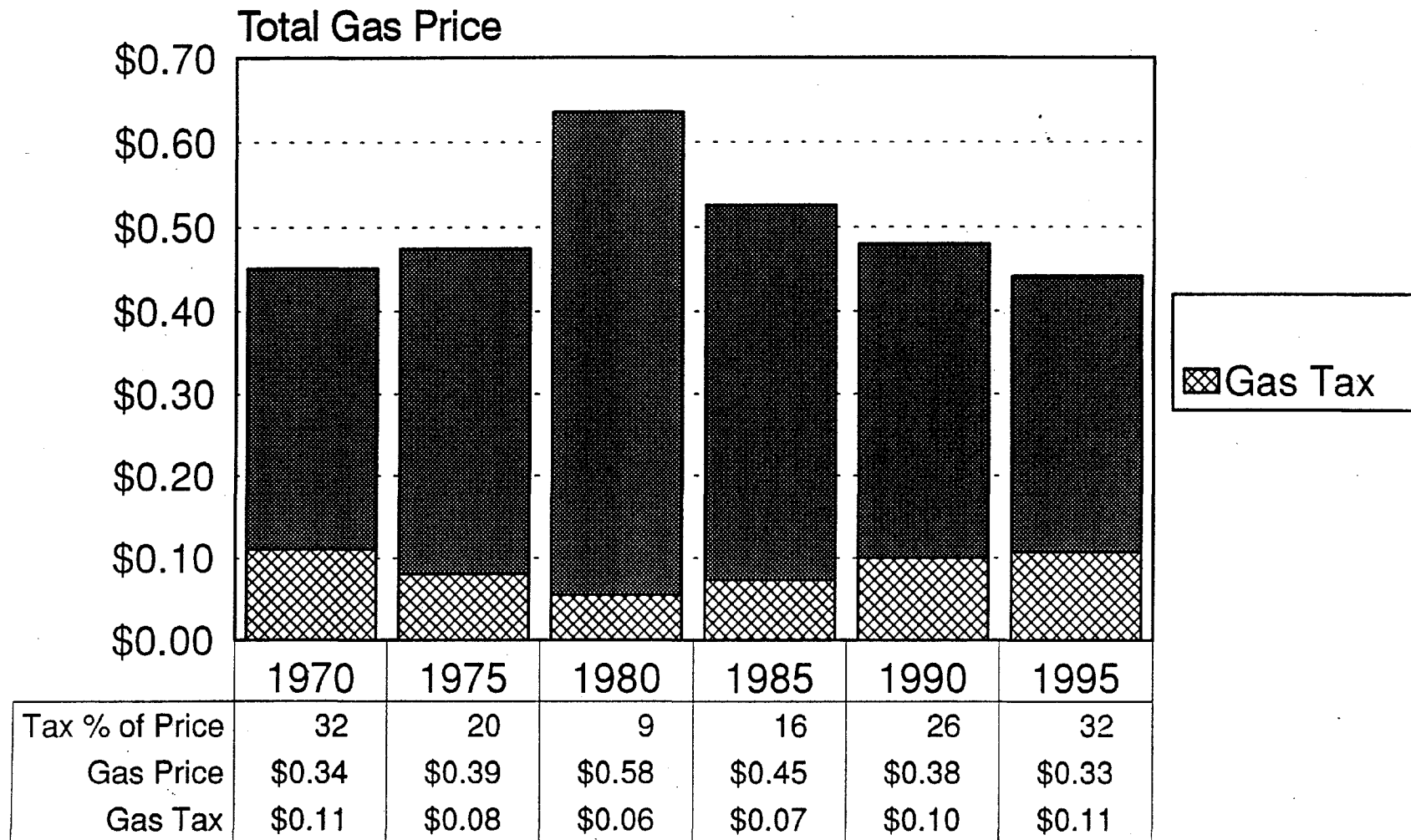
# Gas Tax Per Mile

## vs. Fuel Efficiency



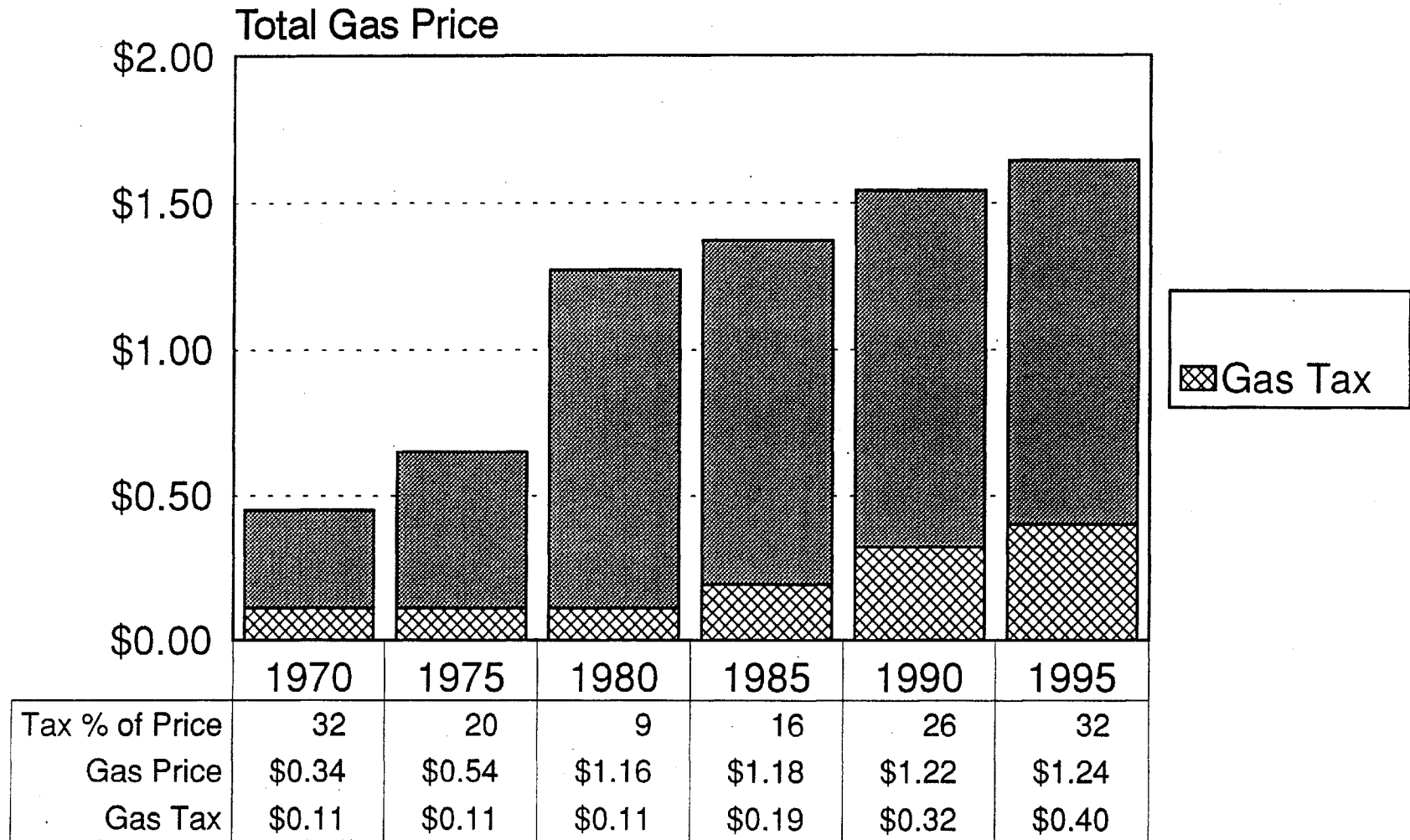
# Gas Tax vs. Total Gas Price

(constant 1970 dollars)



# Gas Tax vs. Total Gas Price

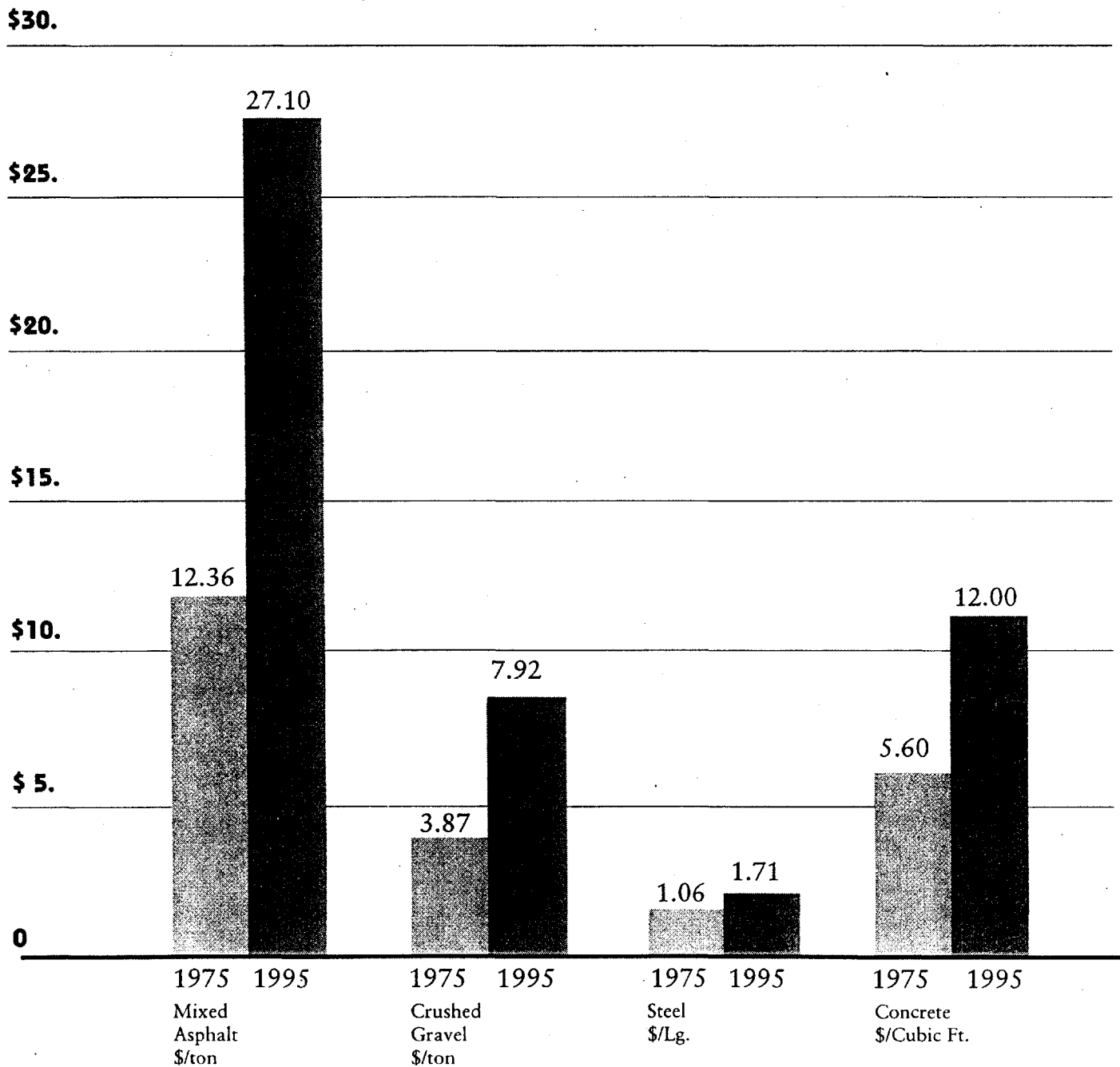
(year of receipt dollars)





# Community Bridge and Road Program

## Construction Material Unit cost Comparison 1974- 1995



# Community Bridge and Road Program

## **What is included in maintenance?**

Taking care of what we have

- Chip seal
- Snow plow
- Overlays
- Pothole covering
- Bridge painting (rust protection)
- Sweeping
- Grass cutting

## **What is included in modernization?**

Improving what we have

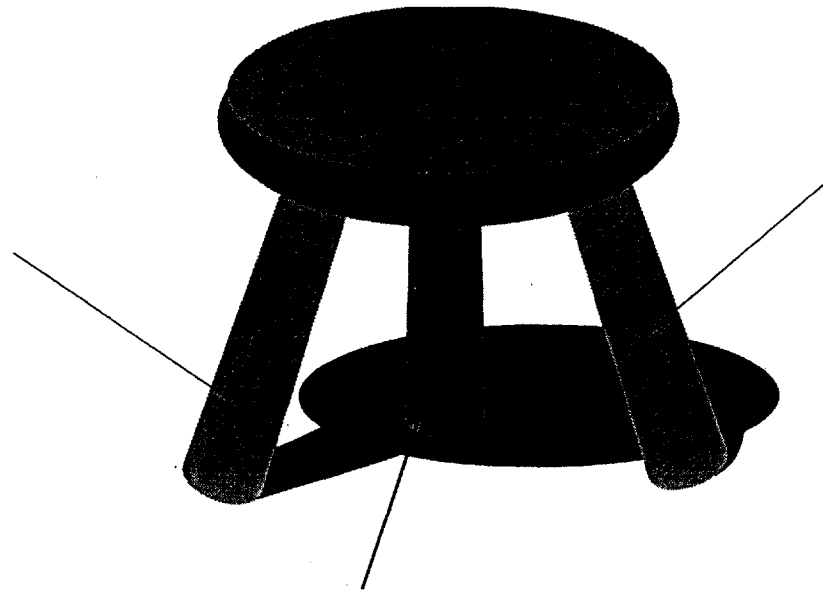
- Roadway widening (new lanes or wider lanes)
- New turn lanes
- “Smart” signals
- Bike lanes
- New sidewalks and crosswalks
- Transit shelters

# Community Bridge and Road Program

## Transportation Revenue Sources

### Road and Bridge Maintenance and Preservation

- State Highway Fund
  - state gas tax
  - truck weight-mile tax
  - vehicle registration fee
- Local Gas Taxes
  - Multnomah County
  - Washington County
- City of Portland Parking Management District Fees



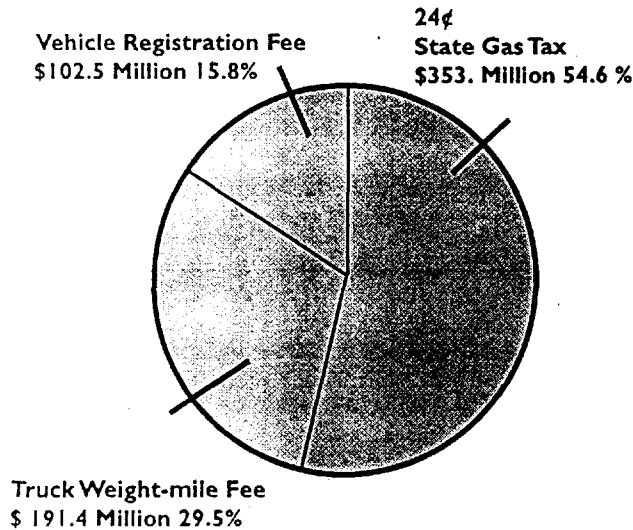
### Transit Operations and Expansion

- Federal Transit Revenues
- Federal Surface Transportation Program
- State Lottery Revenues
  - light rail construction
- Property Taxes
  - light rail construction
- Local Employer Payroll Tax
- Passenger Fares

### Road Improvement and Expansion

- Federal Highway Trust Fund
  - federal gas tax
  - diesel tax
  - truck-related taxes
- Local Improvement Districts (LIDs)
- Fees on New Development
  - traffic impact fees
- Property Taxes
  - Washington County Major Streets Transportation Improvement Program (MSTIP)

# Revenues Available for Transportation Improvements



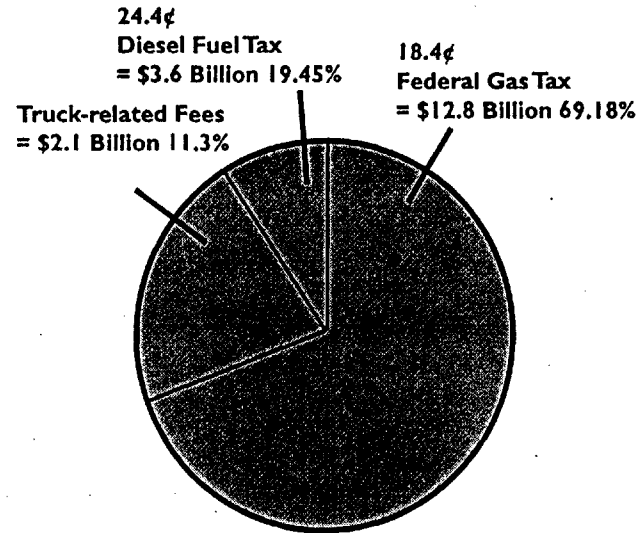
## State

Estimated Annual State Revenues from Road User Fees

Currently, 60% of state highway funds are being spent by ODOT to maintain and improve state highways (\$83 million in the Metro region) and 40% are being spent to maintain city and county roads( \$92 million in the Metro region).

Source: ODOT

Note: Estimated gross revenues from Fiscal year 1994



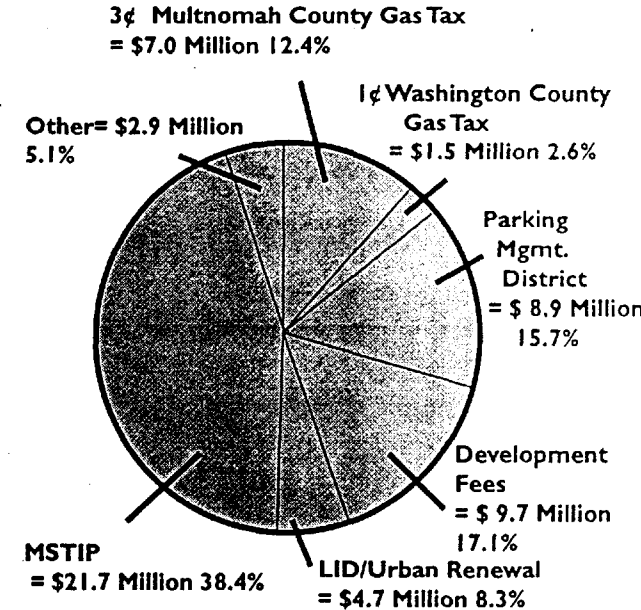
## Federal

Estimated Annual Federal Revenues from Road User Fees

Out of the \$200 million in federal funds coming to Oregon this year, two-thirds are spent by ODOT on highways and one-third is spent on city and county roads and other local projects.

Source: ODOT

Note: Estimated gross receipts for Fiscal Year 1993



## Local

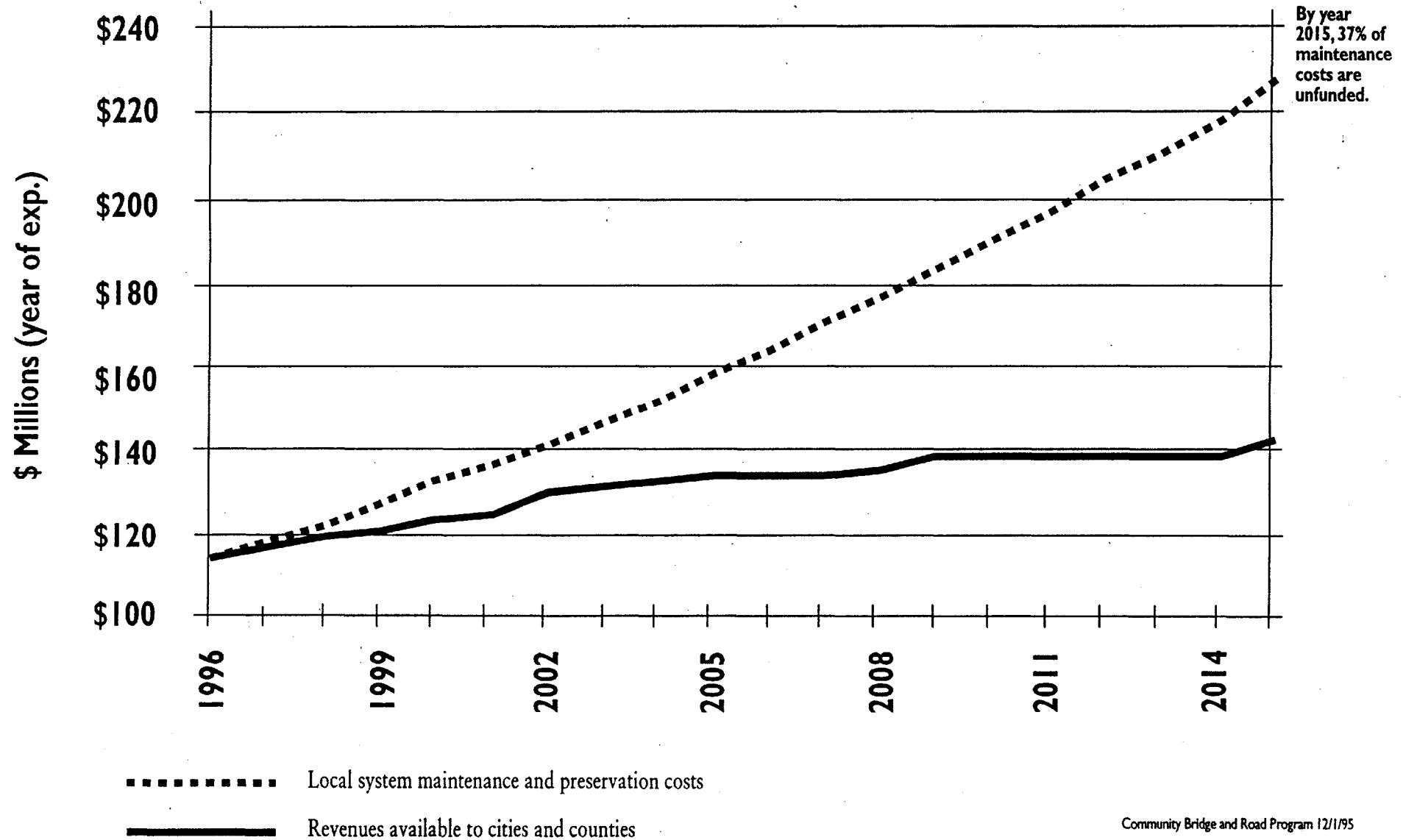
Estimated Annual Local Revenues Available for Transportation Improvements

This year, 70% of local transportation funds are being used to improve and expand city and county roads. The remaining 30% is being spent to maintain and preserve existing roads.

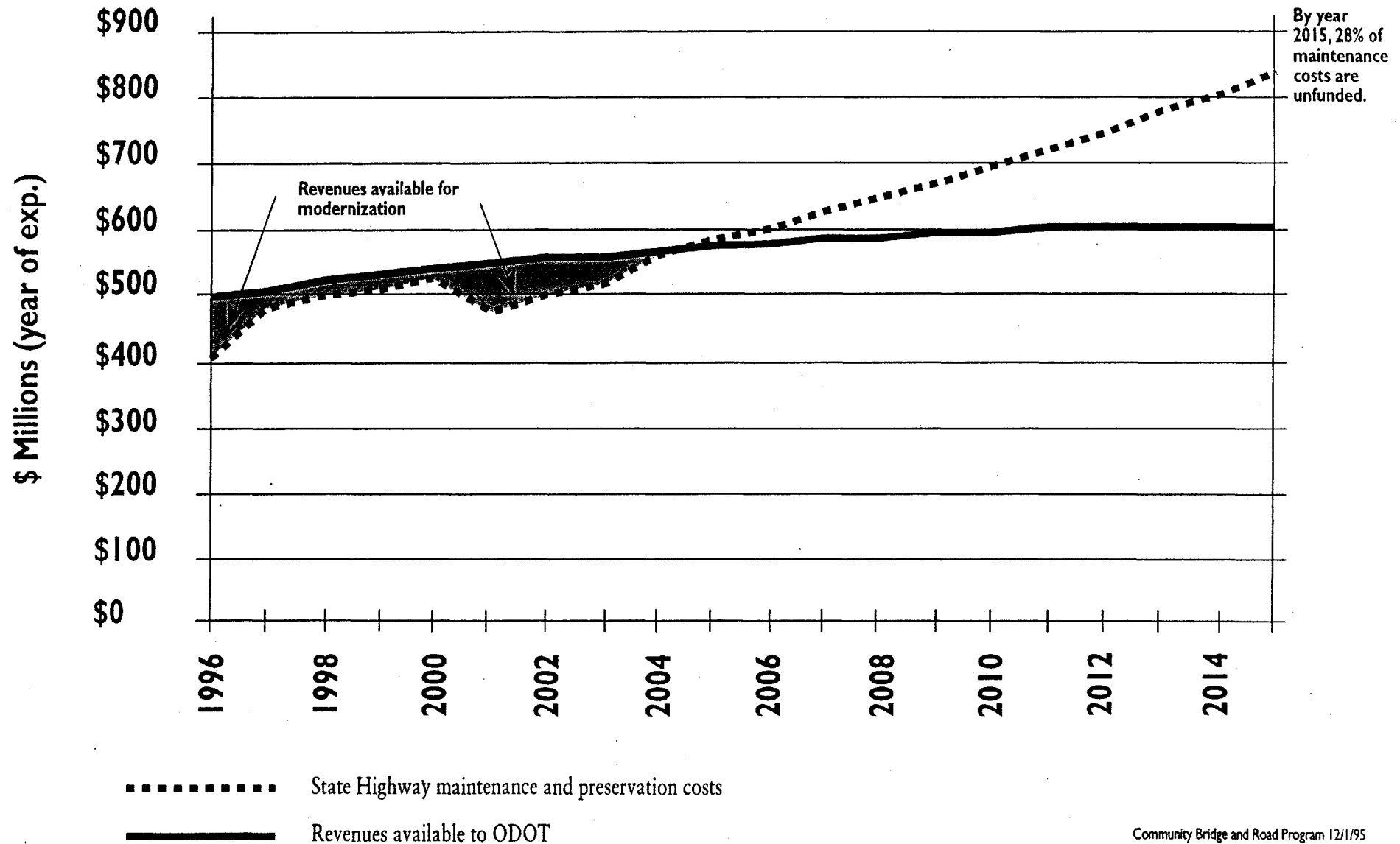
Source: Portland area local governments

Note: Estimate gross receipts for Fiscal year 1995

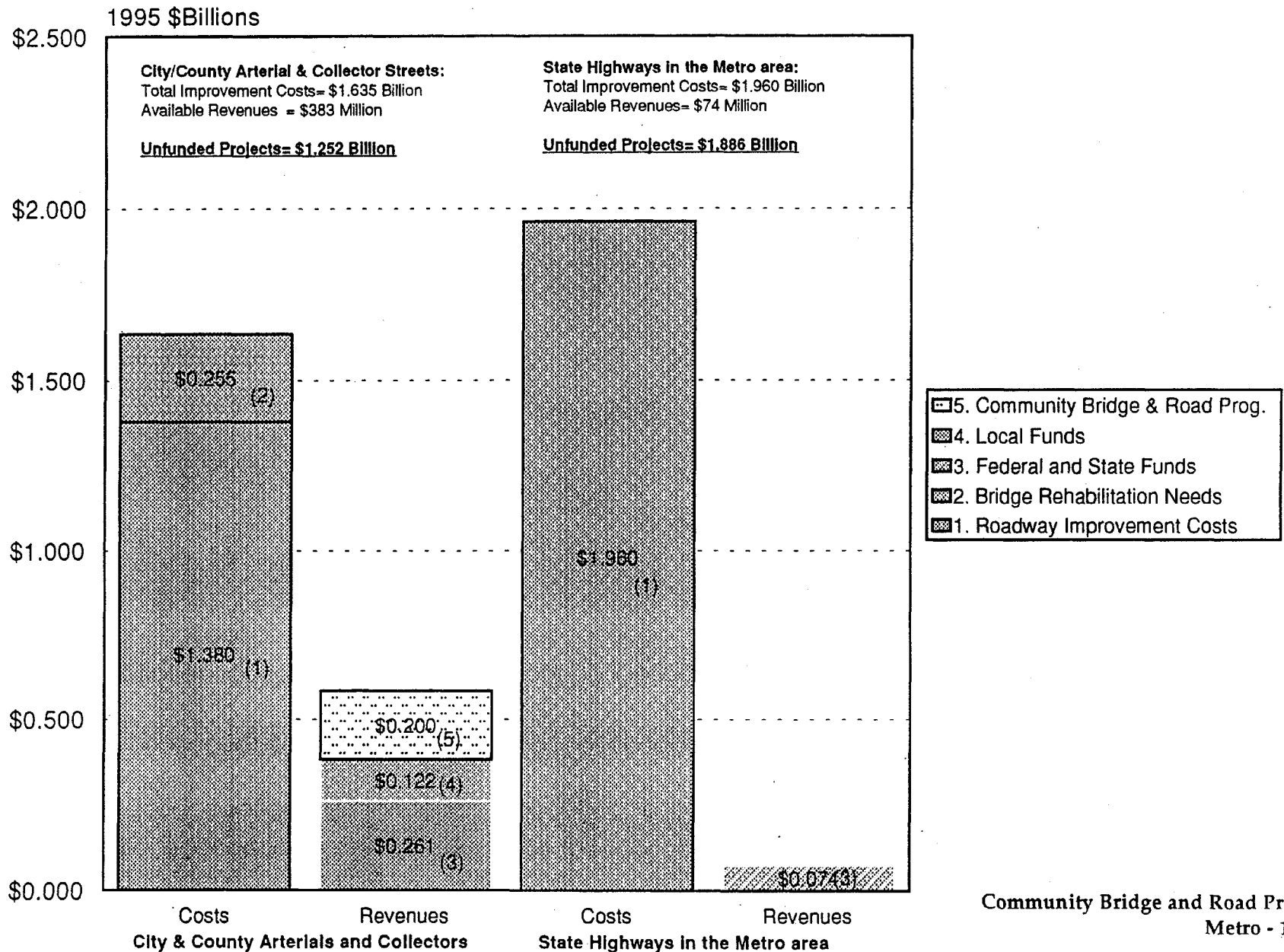
# Funds Available for Local System Maintenance



# Funds Available for Maintenance and Modernization of State Highway System



# Regional System Expansion/Improvement: 20-Year Costs and Available Revenues



# Community Bridge and Road Program

## Possible new revenue options

(to fund \$100 million in projects in 10 years)

### Regional gas tax on autos

2.75 cents per gallon – \$15.98\* average yearly cost per vehicle

or

### Combined regional gas tax on autos and diesel tax on trucks

2.25 cents per gallon –

\$54.55\*\* average yearly cost per truck

\$13.07 average yearly cost per auto

or

### Regional vehicle registration fee

\$8.33 per passenger vehicle per year

or

### Real estate transfer tax

.4% of sale transaction – \$400 per \$100,000 house sale

or

### General obligation bond measure

15.85 cents per \$1,000 of assessed valuation

\$15.85 per \$100,000 house per year

---

#### Notes

To fund a project list costing more than \$100 million, use a multiplier on the rates.

Maximum allowable rate under current law for a regional vehicle registration fee is \$15 per year for a passenger vehicle; therefore, the maximum project list that could be funded with this source is \$180 million in 10 years.

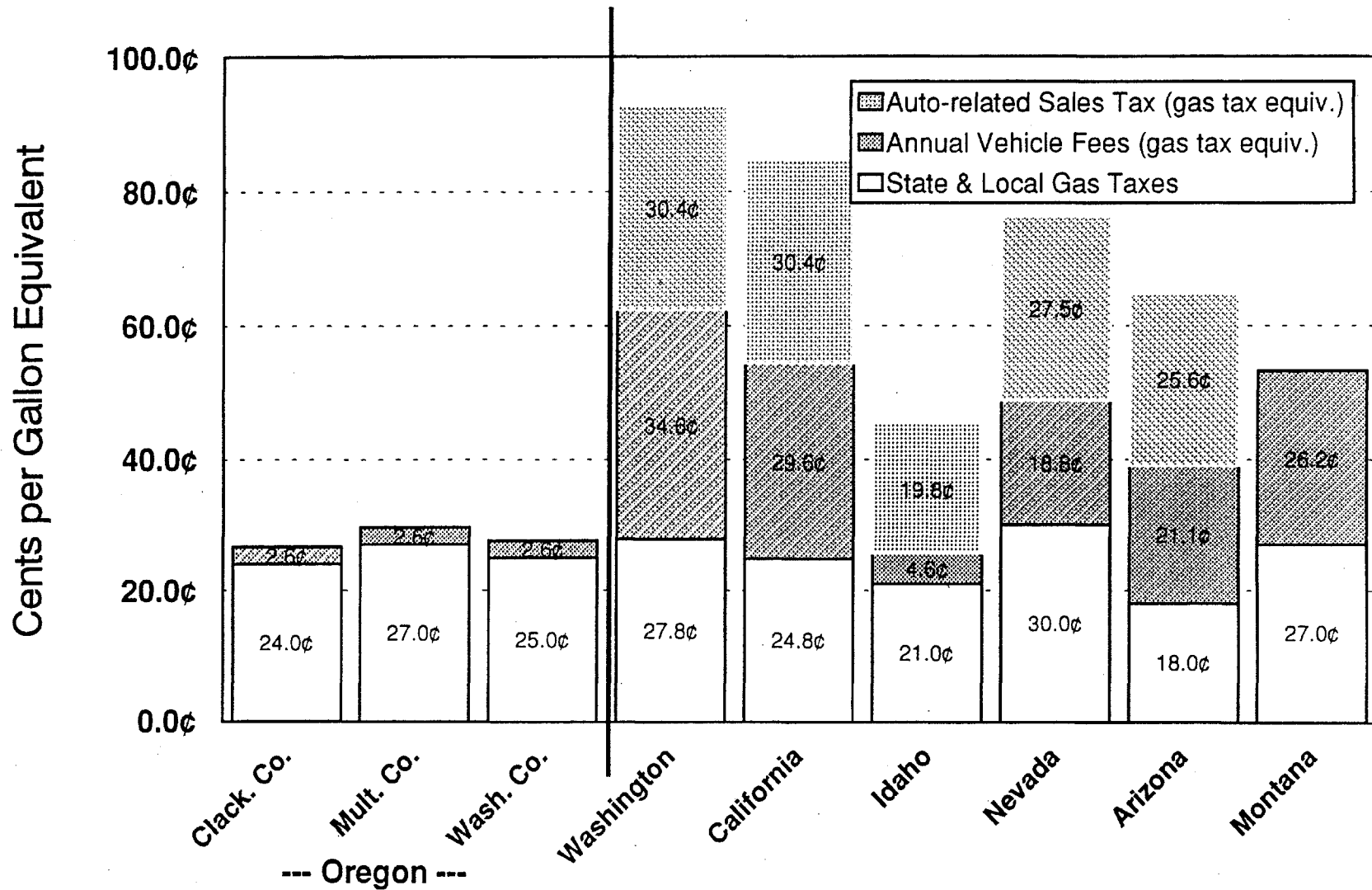
For the gas tax, diesel tax, vehicle registration fee and real estate transfer tax, the rate could be lower by 10-15% by borrowing against revenues beyond the 10-year period.

\* Based on 12,000 miles per year at 20.7 miles per gallon average fleet efficiency

\*\* Based on 30,000 miles per year at 5.5 miles per gallon



# Comparison of Automobile-Related Taxes



Source: Oregon Department of Transportation, Auto/Truck Section

Community Bridge and Road Program  
Metro - 12/5/95

## Comparison of Automobile-Related Taxes

Tax Source	In Effect Today			Bordering States				Other Western States	
	Clack. Co.	Mult. Co.	Wash. Co.	Washington	California	Idaho	Nevada	Arizona	Montana
State Gas Tax	24.0¢	24.0¢	24.0¢			21.0¢		18.0¢	27.0¢
Local Gas Tax	0	3¢	1¢			0		0	0
<b>State &amp; Local Gas Taxes</b>	<b>24.0¢</b>	<b>27.0¢</b>	<b>25.0¢</b>	<b>27.8¢*</b>	<b>24.8¢*</b>	<b>21.0¢</b>	<b>30.0¢*</b>	<b>18.0¢</b>	<b>27.0¢</b>
Registration Fees	\$15/year	\$15/year	\$15/year	\$36/year	\$29/year	\$27/year	\$33/year	\$20/year	\$16/year
Personal Property Tax on Cars	0	0	0	\$165/year	\$143/year	0	\$76/year	\$103/year	\$136/year
<b>Total Annual Fees Paid at Registration</b>	<b>\$15/year</b>	<b>\$15/year</b>	<b>\$15/year</b>	<b>\$201/year</b>	<b>\$172/year</b>	<b>\$27/year</b>	<b>\$109/year</b>	<b>\$123/year</b>	<b>\$152/year</b>
(Tax Equivalent in cents/gallon)**	(2.6¢)	(2.6¢)	(2.6¢)	(34.6¢)	(29.6¢)	(4.6¢)	(18.8¢)	(21.1¢)	(26.2¢)
Prorated Sales Tax on Cars***	0	0	0	\$177/year	\$177/year	\$115/year	\$160/year	\$149/year	0
(Tax Equivalent in cents/gallon)**	0	0	0	(30.4¢)	(30.4¢)	(19.8¢)	(27.5¢)	(25.6¢)	0
<b>Total Auto-Related Taxes in Equivalent cents/gallon</b>	<b>27.2¢</b>	<b>30.2¢</b>	<b>28.2¢</b>	<b>92.8¢</b>	<b>84.8¢</b>	<b>45.4¢</b>	<b>76.3¢</b>	<b>64.7¢</b>	<b>53.2¢</b>

\*California and Washington tax rates include sales tax. Nevada includes average local option tax.

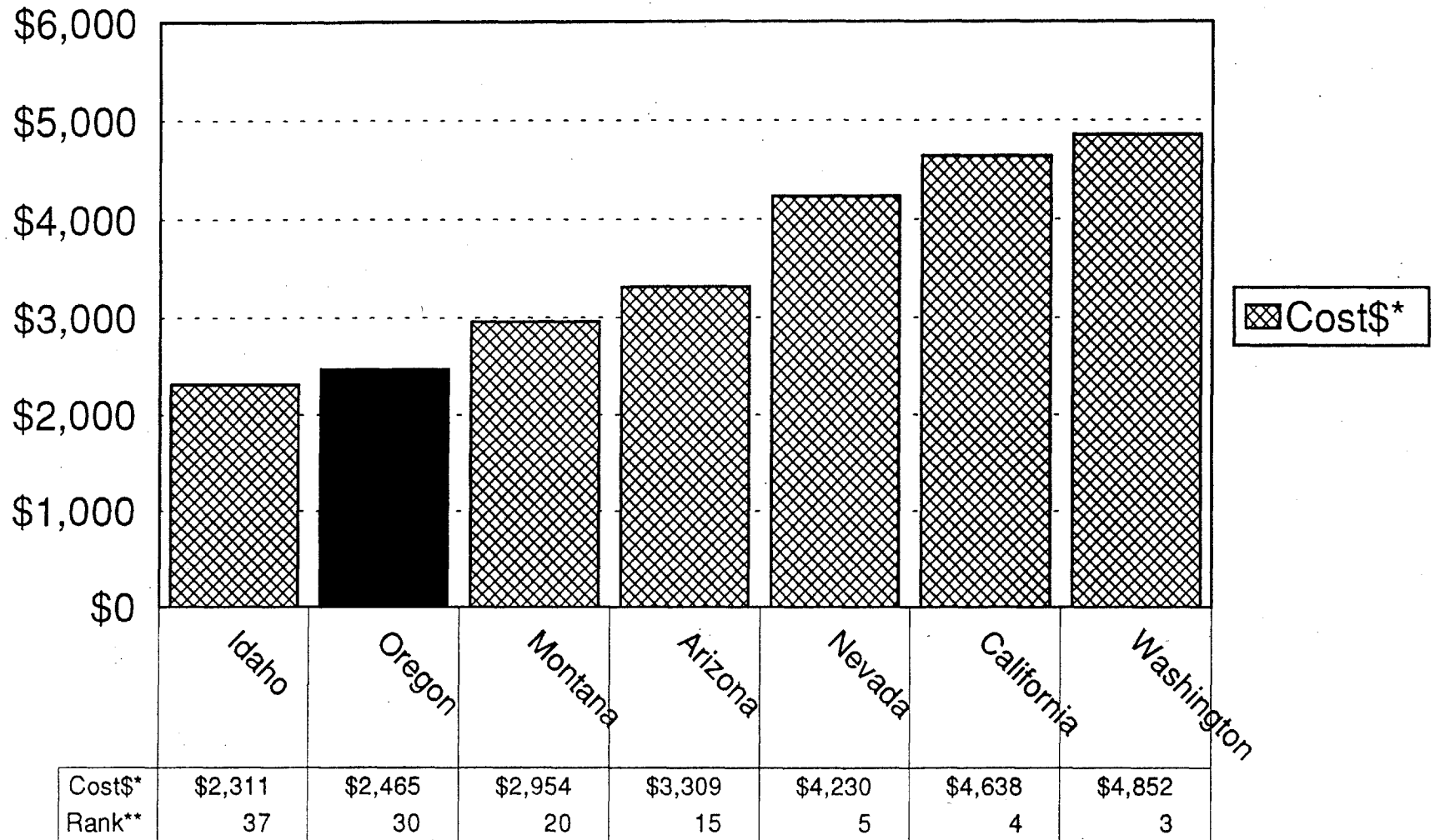
\*\*Equivalent tax per gallon calculated using 581 gallons per year (12,000 miles per year at 20.7 miles per gallon).

\*\*\*Prorated over eight years.

Source: Oregon Department of Transportation, Auto/Truck Section

# Truck Fees and Taxes (1994)

Weight = 30,000 Lbs.

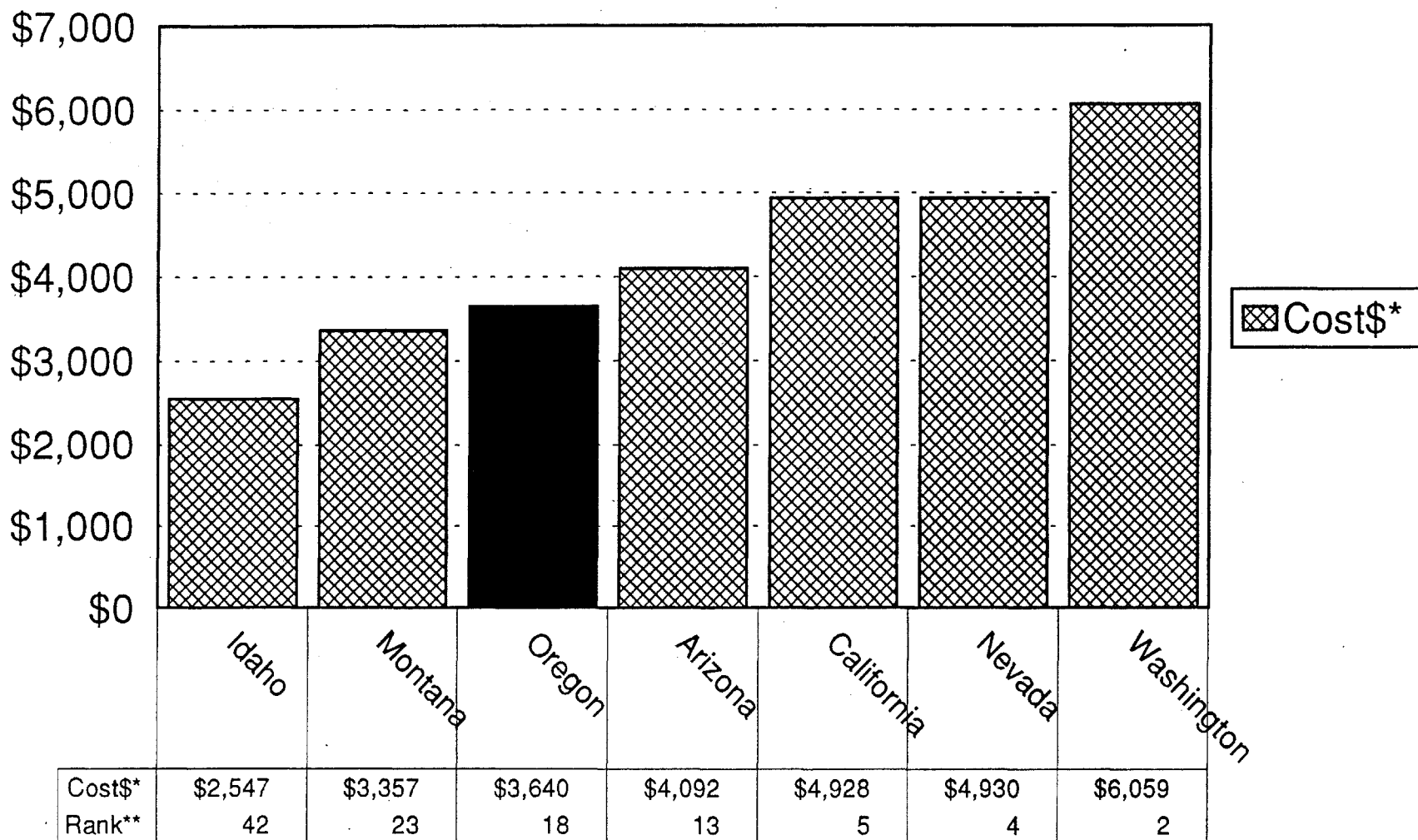


\* Assuming 50,000 miles per year in the state

\*\* 1 = highest cost state of 50 states

# Truck Fees and Taxes (1994)

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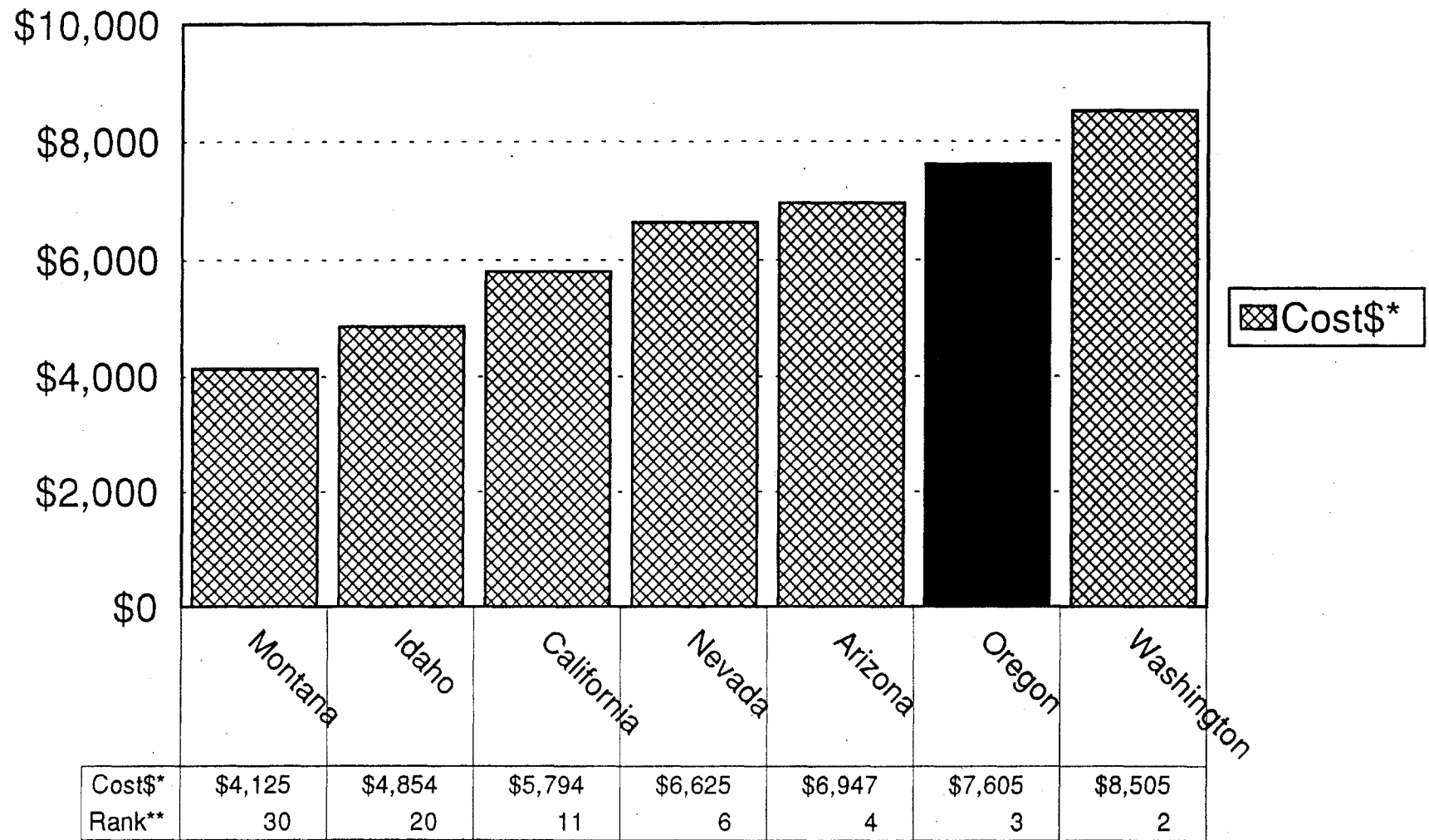


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# Truck Fees and Taxes (1994)

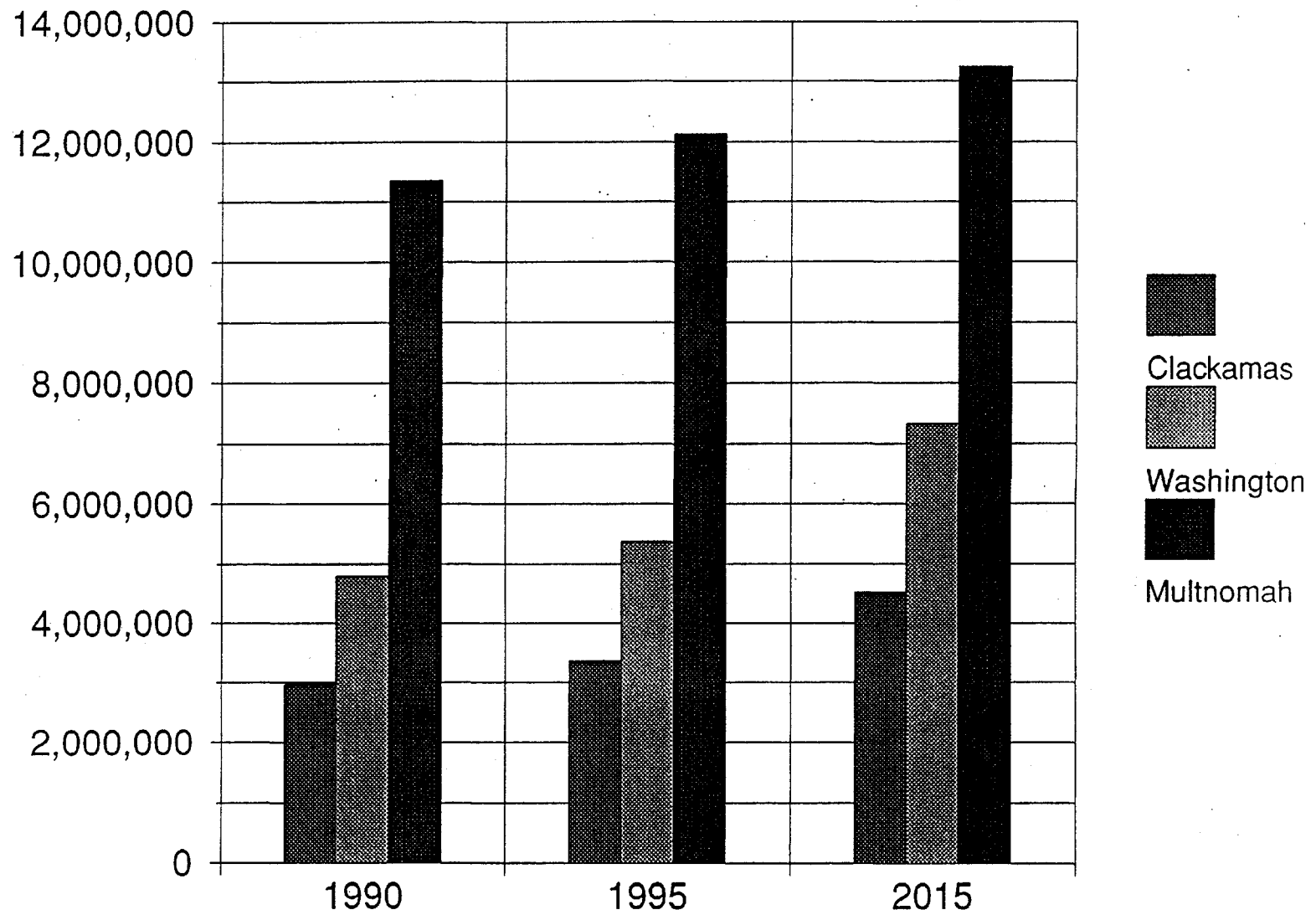
Weight = 80,000 Lbs.



\* Assuming 50,000 miles per year in the state

\*\* 1 = highest cost state of 50 states

# Vehicle Miles Traveled by County



	Pop Growth 1995-2015	VMT Growth 1995-2015
Clackamas	49%	34%
Washington	51%	36%
Multnomah	18%	9%

# Community Bridge and Road Program

## **Transportation funding summary**

- Existing revenues pay mostly for maintenance
- By 2010 maintenance will be underfunded
  - state highways 28% underfunded
  - city/county roads 37% underfunded
- Over the next 20 years funding for improvements is severely limited.
  - state highways fall 98% short
  - city and county roads fall 77% short

**Community Bridge and Road Program  
Regional Project Nominations (11/20/95)**

Num	Original Number	Project Name	Description	Freight	Bridges	Bicycle	Ped.	Traffic Calming	Traffic Improv.	Rehab.	Safety	Estimated Costs
1	WC029	Hwy 47 Bypass/Council Creek-Quince	Construct 2-lane connection from Quince and TV Hwy to Hwy 47 near its intersection with Beal. Includes bike lanes and shoulders for pedestrians. Acquires right-of-way for future improvements.	X		X	X		X		X	\$2,700,000
2	WC012	TV Hwy/Yew Street to Cornelius East City Limits	Complete installation of bike lanes, curbs, bus turn-outs and sidewalks, interconnect traffic signals, add a park and ride on Baseline.			X	X		X		X	\$2,900,000
3	WC006	209th/Kinnaman-219th	Construct new 2-lane arterial with bike lanes connecting 219th at TV Hwy to 209th at Kinnaman.			X			X		X	\$2,700,000
4	WC008	Farmington/173rd-185th	Widen to 5 lanes with bike lanes and sidewalks. Install traffic signals at Kinnaman and Rosa.			X	X		X		X	\$5,183,000
5	WC004	Murray Blvd./Farmington-Terman Improvements	Widen Murray Blvd. to 5 lanes, widen bridge, add bike lanes, sidewalks and bus turnouts.	X		X	X		X		X	\$8,332,000
6	WC010	Allen Blvd./Murray-Erickson	Construct turn lanes and traffic signal improvements at the intersections of Allen/Wilson, Allen/Erickson and Allen/141st, includes bike lanes.			X			X		X	\$2,605,000
7	WC007	72nd/99W-Bonita	Widen to 5 lanes, add bike lanes and sidewalks on both sides, provide bus pull-outs.			X	X		X		X	\$5,000,000
8	WC002	I-5/217 Interchange	Supplement ODOT funding to upgrade the I-5/Hwy. 217 Interchange and the Hwy. 217/72nd Ave. Interchange.	X		X	X		X		X	\$17,800,000
9	WC001	Tualatin-Sherwood Expressway (EIS)	Design 4-lane limited access road from Hwy 99 to I-5, includes bikeway.	X		X					X	\$8,900,000
10	CC014	Boeckman Rd Extension	Widen and extend Boeckmen Rd. from 95th to Tooze, includes signal at 95th and railroad crossing.			X	X		X			\$2,170,000
11	CC005	Stafford Rd Intersections	Construct traffic signals, bike lanes and turn lanes at intersections at Borland, Childs and Rosemont.			X			X		X	\$1,000,000
12	CC012	Boones Ferry: Madronna to Country Club Rd.	Add turn lanes, curbs, sidewalks, bike lanes, and intersection improvements.						X		X	\$1,500,000
13	CC010	A Street: 3rd to State Street	Reconstruct "A" Ave. in Lake Oswego.							X	X	\$1,200,000



**Community Bridge and Road Program  
Regional Project Nominations (11/20/95)**

Num	Original Number	Project Name	Description	Freight	Bridges	Bicycle	Ped.	Traffic Calming	Traffic Improv.	Rehab.	Safety	Estimated Costs
14	CC019	Hwy 43 Improvements	Widen Hwy 43 from N West Linn City Limits to Marylhurst Dr., includes sidewalks and bike lanes.			X	X		X		X	\$290,000
15	CC020	Hwy 43/Marylhurst Dr. Intersection	Widen Hwy 43 at Marylhurst Dr. intersection and improve traffic signal, add sidewalks and bike lanes.			X	X		X		X	\$200,000
16	CC021	Hwy 43/Cedar Oak Intersection	Widen Hwy 43 at Cedar Oak Dr. intersection, includes bike lanes and sidewalks.			X	X		X		X	\$205,000
17	CC018	Hwy 43/Pimlico Intersection	Install traffic signal at intersection of Highway 43 and Pimlico.								X	\$75,000
18	CC009	Washington Street Bridge	Replace existing wood bridge and add bike lanes.		X	X	X				X	\$1,300,000
19	CC015	Oatfield Road: Webster to 82nd	Widen to 3-lanes, add southbound left turn lane at Oatfield/Webster intersection, install traffic signal at Gloucester, install sidewalk.			X	X		X		X	\$1,300,000
20	CC003	Sunnyside Rd: 122nd to 132nd	Widen to 5-lanes, includes sidewalks and bike lanes.			X	X		X		X	\$5,000,000
21	CC004	122nd/129th: Sunnyside to King	Widen to 3-lanes with sidewalks and bike lanes, smooth out curves.			X	X		X		X	\$3,800,000
22	PD022	SE Foster Road at 162nd	Reconstruct SE 162nd Ave. intersection to improve safety and ease congestion.			X	X				X	\$2,000,000
23	PD024	SE Foster Road at Jenne	Reconstruct SE Jenne Rd intersection to improve safety and ease congestion.			X	X				X	\$2,000,000
24	MC008	Foster Rd: County Line to Portland City Limit	Improve Foster with shoulder bikeways, improve intersection at Foster Rd. at 172nd Ave.			X	X				X	\$1,800,000
25	MC001	Powell Valley Rd	Widen Powell Valley Rd. from Burnside Rd. to Kane Rd to 5 lanes, includes bike lanes and sidewalks.			X	X		X		X	\$250,000
26	MC021	5th St.: Main St. to Cleveland St.	Reconstruct street to improve safety, add pedestrian improvements.			X	X				X	\$303,000
27	MC020	Wallula Ave: Division St. to Stark St.	Widen roadway, add curbs, sidewalks, bikeway, storm sewers, street lights, turning lanes and intersection improvements.			X	X		X		X	\$1,935,000
28	MC007	Gilsan St.: 202nd Ave to 207th Ave	Upgrade Gilsan to a 5-lane arterial with bike lanes and sidewalks.			X	X		X		X	\$1,420,000
29	MC006	Halsey St.: 223rd Ave to 238th Ave	Widen Halsey to 3-lanes with bike lanes, pedestrian improvements and bus pull-outs.			X	X		X		X	\$870,000

**Community Bridge and Road Program  
Regional Project Nominations (11/20/95)**

Num	Original Number	Project Name	Description	Freight	Bridges	Bicycle	Ped.	Traffic Calming	Traffic Improv.	Rehab.	Safety	Estimated Costs
30	MC002	223rd Ave. Railroad Overcrossing	Widen bridge overcrossing on 223rd Ave at I-84 to make vehicle, bike and pedestrian access safer.	X		X	X		X		X	\$1,119,000
31	MC009	Halsey St.: 238th Ave to Historic Columbia River Hwy	Widen Halsey to 3-lanes with sidewalks, bike lanes and bus pull-outs.			X	X		X		X	\$1,800,000
32	MC017	Frontage Rd Congestion: City of Troutdale at I-84	Construct turn lanes and add traffic signals to ease congestion, add bike lanes and sidewalks.	X		X	X		X		X	\$550,000
33	CB01	Carver Bridge	Replace existing bridge over the Clackamas River, realign the approaches and install traffic signal at Springwater/Hwy 224 intersection.		X	X	X		X		X	\$4,730,000
34	PD031	Lents Pedestrian and Bicycle Enhancements	Pedestrian and bike improvements along SE Foster Road/ Woodstock from 87th to 103rd.			X	X				X	\$500,000
35	CC002	Johnson Creek Blvd.: 36th to 45th	Construct improvements including 2 travel lanes, sidewalks, curbs, bike lanes and street lights.	X		X	X		X		X	\$1,500,000
36	CC027	Harrison Street: McLoughlin to Hwy 224	Design and construct Harrison St. as a multi-modal boulevard with landscaped median, 2 travel lanes, bike lanes and sidewalks.			X	X				X	\$2,100,000
37	CC024	17th Ave: McLoughlin to Milwaukie City Limits (north)	Design and construct continuous sidewalk on west side of 17th Ave, complete bike lanes.			X	X		X		X	\$620,000
38	PD041	SE Tacoma Street: 28th - 32nd	Improve SE Tacoma from 28th to 32nd, add 2 travel lanes, bike lanes, curbs, street lights, trees and sidewalks.			X	X				X	\$623,000
39	PD038	SE McLoughlin Traffic Calming	Enhance safety, construct pedestrian improvements, calm traffic in SE McLoughlin neighborhoods.				X	X				\$1,000,000
40	PD003	39th/42nd Bikeway	Develop bikeway from NE Columbia to SE Crystal Springs, through Hollywood Town Center.			X		X			X	\$200,000
41	PD005	SE 45th Traffic Calming	Enhance safety, construct sidewalks, bike lanes, pedestrian improvements on SE 45th: Woodstock to Harney.			X	X	X			X	\$600,000
42	PD007	52nd/53rd/57th Bikeway	Develop bikeway on from NE Sandy to SE Harney			X		X			X	\$150,000
43	PD028	Holgate Bikeway	Implement bike lanes on SE Holgate from 42nd to 136th.			X					X	\$100,000

**Community Bridge and Road Program  
Regional Project Nominations (11/20/95)**

Num	Original Number	Project Name	Description	Freight	Bridges	Bicycle	Ped.	Traffic Calming	Traffic Improv.	Rehab.	Safety	Estimated Costs
44	PD026	Hawthorne Bike, Pedestrian and Transit Improvements	Improve bike, pedestrian and transit access along SE Hawthorne Blvd. from 32nd to 39th.			X	X				X	\$2,070,000
45	PD015	Burnside Bike Lanes	Re-stripe E Burnside bike lanes from 28th to 74th Ave.			X			X		X	\$250,000
46	PD014	Pedestrian and Bike Improvements NE Broadway/Weldier	Reconstruct sidewalks, add transit shelters and stops, street lights and bike lanes.			X	X				X	\$1,570,000
47	PD042	NE Tillamook Bikeway	Develop bikeway along NE Tillamook from NE Flint to 92nd.			X					X	\$250,000
48	PD019	NE Cully Reconstruction	Add two-travel lanes, bike lanes and sidewalks from Prescott to Lombard.			X	X				X	\$1,800,000
49	XF06	US 30/Killingsworth Freight Improvements	Improve connection between US 30 - Killingsworth and Columbia Blvd. via 92nd Ave.	X		X	X		X		X	\$14,710,000
50	PD004	NE 42nd Traffic Calming	Construct sidewalks, speed reduction devices, and pedestrian improvements on NE42nd: Killingsworth to Lombard.				X	X			X	\$510,000
51	PD018	Central Eastside Access/Water Avenue Extension	Construct improvements on access routes from Central Eastside to the Ross Island Bridge.	X		X	X		X		X	\$5,000,000
52	PD001	Willamette River Bridges Bike and Pedestrian Access	Improve bike and pedestrian access to the Broadway, Hawthorne, and Sellwood Bridges		X	X	X				X	\$1,300,000
53	MB001	Broadway Bridge Rehabilitation	Repair and preserve the Broadway Bridge. The deck, sidewalks and mechanical systems are deteriorating and need replacement to extend the life of the bridge.		X				X	X	X	\$16,055,000
54	MB002	Burnside Bridge Rehabilitation	Repair and preserve the Burnside Bridge. The lift span needs to be replaced and its supports need strengthening in case of an earthquake.		X					X	X	\$2,952,000
55	MB004	Hawthorne Bridge Rehabilitation	Repair and preserve the Hawthorne Bridge. This is a very old (historic) bridge and needs new decks and paint to preserve its structural strength.		X					X	X	\$7,836,000
56	MB005	Morrison Bridge Rehabilitation	Repair and preserve the Morrison Bridge. The lift span that opens the bridge needs to be replaced, sidewalks need repair and it needs to be painted to keep rust from weakening the structure.		X					X	X	\$3,161,000

**Community Bridge and Road Program  
Regional Project Nominations (11/20/95)**

Num	Original Number	Project Name	Description	Freight	Bridges	Bicycle	Ped.	Traffic Calming	Traffic Improv.	Rehab.	Safety	Estimated Costs
57	PD016	West Burnside Redevelopment	Pavement reconstruction, traffic signal upgrades, pedestrian crossing improvements from NW 14th to NW 23rd.				X		X		X	\$4,690,000
58	PD034	NW Lovejoy Reconstruction	Remove NW Lovejoy ramp from 14th to Broadway Bridge and NW 14th Ave. Construct new ramp at 9th Ave. Build sidewalks and add street lights, trees and transit facilities on Lovejoy.		X	X	X			X	X	\$11,900,000
59	PD025	N Greeley/Interstate Bikeway	Implement bike lanes on N Greeley to connect to Interstate Ave.			X					X	\$1,100,000
60	PD043	NE Vancouver/Williams Bike Lanes	Stripe bike lanes on NE Vancouver and Williams from Broadway to Martin Luther King, Jr. Blvd.			X					X	\$100,000
61	PD044	SW Vermont Traffic Calming	Enhance safety, construct sidewalks and bike lanes, calm traffic on SW Vermont from 30th to 45th.			X	X	X			X	\$1,185,000
62	PD013	Bertha Blvd. Bikeway	Widen shoulders to provide bike lanes on Bertha Boulevard from SW Vermont - Capitol Hwy.			X			X		X	\$400,000
63	PD027	Hillsdale Town Center	Provide improvements for bike, pedestrian, transit and vehicle access to Hillsdale Town Center.			X	X				X	\$1,200,000
64	PD033	St. Johns Neighborhood Truck Protection	Improve operations and construct improvements to reduce traffic on neighborhood streets adjacent to N Lombard from St. Johns to Columbia.	X				X			X	\$1,000,000
65	XF07	St. Johns/Rivergate Access Study	Develop alternatives to improve freight mobility between US 30-St. John's Bridge and N/NE Portland Industrial area and reduce traffic on neighborhood streets.	X							X	\$100,000
66	XF01	N Marine Drive Freight Improvements	Widen N Marine Dr. to 4 lanes from Columbia Slough Bridge to 2.7 miles east to move freight to and from the marine terminal and rail yards.	X		X			X		X	\$14,200,000
67	XF02	S Rivergate Rail Overpass	Construct N Lombard rail overcrossing to provide safe and efficient vehicle access to Rivergate area.	X		X	X		X		X	\$4,250,000
68	PD021	Expand Citywide Signal System	Expansion of signal system to monitor and manage intersection and optimize traffic operation.								X	\$1,202,000

**Community Bridge and Road Program  
Regional Project Nominations (11/20/95)**

Num	Original Number	Project Name	Description	Freight	Bridges	Bicycle	Ped.	Traffic Calming	Traffic Improv.	Rehab.	Safety	Estimated Costs
69	MC016	Signal Optimization	Improve traffic management in East Multnomah County and City of Gresham by optimizing traffic signals to reduce motorist delays.								X	\$1,230,000

**Grand Total**

**\$200,351,000**

## REGIONAL PARKING RATIOS

*(parking ratios are based on spaces per 1,000 sq ft of gross leasable area unless otherwise stated)*

Land Use	Required Parking Should Be No More than the Following Ratio <sup>1</sup> (DEQ Voluntary Maximums)		Maximum Permitted Parking with a ratio of 125 percent	
	Zone 1	Zone 2	Zone 1	Zone 2
General Office (includes Office Park and Government Office)	1.9	2.7	2.4	3.4
Light Industrial	1.3	1.5	1.6	1.9
Industrial Park (gross square feet)	1.1	1.4	1.4	1.8
Manufacturing	1.3	1.6	1.6	2.0
Warehouse (gross square feet; parking ratios apply to warehouses 150,000 gsf or greater)	0.2	0.3	0.25	0.38
Airport (stalls/million annual passengers (MAP))		733		917
University/College (includes Technical College) (spaces/# of students and staff)	0.1	0.2	0.125	0.25
High School (spaces/# of students and staff)	0.1	0.1	0.125	0.13
Tennis Racquetball Court	0.8	1.0	1.0	1.3
Sports Club/Health Spa	3.5	4.3	4.4	5.4
City Recreation Center (gross square feet)	2.0	2.5	2.5	3.1
Bowling Center (number of lanes)	3.2	4.1	4.0	5.1
Movie Theater (spaces/number of seats)	to be determined			
Church/Synagogue (spaces/number of attendees)	0.1	0.5	0.125	0.6
Furniture/Carpet Store	0.8	1.0	1.0	1.3
Hardware/Paint/Home Improvement	2.7	3.4	3.4	4.3
Shopping Center/Discount Store (needs more data)	3.3	4.1	4.125	5.1

Land Use	Required Parking Should Be No More than the Following Ratio <sup>1</sup> (DEQ Voluntary Maximums)		Maximum Permitted Parking with a ratio of 125 percent	
	Zone 1	Zone 2	Zone 1	Zone 2
Family Restaurant	7.4	9.1	9.25	11.4
Quality Restaurant	10.0	12.0	12.5	15.0
Fast Food with Drive Thru (includes without drive thru)	8.1	9.9	10.1	12.4
Casual Dining <sup>2</sup>	12.4	15.3	15.5	19.1
Bank with Drive-In	3.4	4.3	4.25	5.4
Supermarket	2.3	2.9	2.9	3.7
Hospital/Medical/Dental Clinic	to be determined			
<b>Land Uses Not Subject to DEQ Program</b>				
Hotel/Motel	to be determined			
Single Family Detached	1	1		
Residential unit, less than 500 square feet per unit, one bedroom	1	1	1.25	1.25
Multi-family, townhouse, one bedroom	1	1.25	1.25	1.6
Multi-family, townhouse, two bedroom	1	1.5	1.25	1.9
Multi-family, townhouse, three bedroom	1	1.75	1.25	2.2

Zone 1 is Portland central city less North Macadam, Central Eastside, Northwest Triangle and Lower Albina.

Zone 2 is the rest of the region within the Air Quality Maintenance Area boundary.

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10/26/95

1. Parking ratios reflect a combination of ITE and Portland studies or Portland peak parking studies when ITE data was not available.

4. Casual Dining type restaurants include Chili's, El Toritos, Olive Garden, Red Lobster, Tony Romas.

## NAME

## AFFILIATION

NAME	AFFILIATION
✓ Earl Brunenauer	Portland
✓ Susan McLean	Metro
✓ GREG GREEN	NEQ
✓ Craig J. Lomnick	Cities of Clackamas Co.
LEON SKILES	METRO
✓ Pat Collmeyer	NGI
✓ DAVE STURDEVANT	CLARK County
✓ Claudette LaVert	Cities of Mult.
✓ Meeky Buzzard	City of Portland
Gordon Oliver	The Oregonian
✓ Bob Post	TRI-MET
LORAN SHAW	METRO
✓ Carol Kelson	METRO
✓ Lisa Whitcomb - Bayview	Metro
✓ Jennifer Graylett	Congressman Ron Wyden
✓ Bob Clair	FHWA - Salem OR
✓ Lisa Hanf	FHWA - Region 10 / Portland
✓ Pat Seerle	F.T.A - Region 10 - Seattle
✓ Kertty Lehtola	Washington County
✓ Fred Patron	FHWA - Oregon Div.
✓ Dean Lookingbill	RTC - Vancouver
✓ GB ARROWSTON	TRI-MET
✓ DAVID YADEN	



COMMITTEE MEETING TITLE SPACT

DATE 12-14-95

NAME

**AFFILIATION**

MATTHEW GARRETT

SEN. HATFIELD

Laurie Garrett

ТН - дег

✓ Royce E. Fallon

City of VANCOUVER

✓ Mary beyer

WSDOT

✓ TANYA COLLIER

MULTNOMAH COUNTY

Bence Wagner

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✓ Ch. Weiss

© Williams Co.

✓ Tom Walsh

Tr-met

✓ Nyke Burton

MetroExco

Red Monroe

Metro Council

✓ Andy Cotugno

Metro

Dave Yaden

Trj - met

✓ Patrick McCar

WASTRO

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CITIES OF WASH. CO.

Richard Brundage

Math

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CITY OF PORTLAND

Rob Sandoz

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✓ JOHN KOWALCZYK

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