Table 3-3
I-75 Corridor Study
Arterial Improvement Impacts
North-South Roads

	Evaluation Factors	North-South Roads															
					Livernois Road			Crooks Road			Adams						
		Dequindre (1)	John R. Road (2)	Rochester Road (3)	I-75 to Wattles (4)	Long Lake to Square Lake (5)	Square Lake to Avon (6)	14 Mile to Maple (7)	Square Lake to South Blvd. (8)	Greenfield (9)	Big Beaver to Auburn (10)	Hamlin to Tienken (11)	Opdyke (12)	Joslyn (13)	Baldwin (14)	Sashabaw (15)	Scott Lake (16)
Transportation	**Safety**																
	High Accident Locations Addressed	0	0	7	1	0	0	2	0	0	0	1	4	0	0	2	0
Social	**Residential Displacements**																
	No. of Res. Units Possibly Taken/Mile	0.0	1.0	0.7	1.0	0.0	0.3	0.0	0.0	0.0	0.4	0.0	0.6	8.0	0.0	2.8	0.0
	Community Cohesion																
	Miles of New Local Construction	3	2	6	1	1	4	1	1	1	5	3	5	1	2	5	1
	Aesthetics																
	Level of Impact	Negative	Negative	Positive	Positive	Negative	Negative	Negative	Positive	Negative	Negative	Negative	Positive	Negative	Negative	Negative	Negative
	Environmental Justice																
	Level of Impact	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	50% + minority	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect
Environmental	**Noise**																
	No. of Residential Units Exposed/Mile	29	48	12	32	52	30	20	56	43	37	43	3	6	19	33	32
	Air Quality																
	Level of Impact	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good
	Parks																
	Acres Impacted/Mile	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	2.0	0.2	0.0	0.0	0.0	0.0	0.8	1.0
	Cultural Resources/Historic Properties																
	Number Impacted/Mile	0.0	0.5	1.7	2.0	2.0	0.3	0.0	0.0	0.0	0.8	0.7	0.0	0.0	0.0	0.0	0.0
	Wetlands																
	Acres Impacted/Mile	0.1	1.2	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.2	2.1	2.4	0.0	0.0	0.3	0.0
Economic	**Business Displacements**																
	No. of Displacements/Mile (Businesses)	0.3	0.0	1.5	0.0	0.0	0.0	2.0	0.0	0.0	0.2	0.0	1.6	1.0	1.0	1.0	0.0
Cost	Construction (millions of dollars)	$16.9	$10.9	$55.0	$5.4	$5.5	$23.5	$5.4	$17.0	$3.2	21.8	19.2	$43.8	$5.4	$11.5	$31.0	$5.4
	R-O-W (millions of dollars)	$5.0	$8.0	$25.2	$1.0	$2.0	$11.0	$0.0	$7.0	$0.5	$4.5	$6.2	$26.2	$2.0	$4.5	$11.5	$1.0

Source: The Corradino Group

Table 3-4
I-75 Corridor Study
Arterial Improvement Impacts
East-West Roads

	Evaluation Factors	East-West Roads														
		Taylor Road (17)	13-Mile Greenfield to Southfield (18)	Big Beaver (19)	Quarton (20)	Long Lake Road (21)	Square Lake (22)	South Boulevard (23)	South University Road (24)	Pontiac Lake Road (25)	Dixie (Oakland) (26)	Walton Boulevard Perry Street to Squirrel (27)	Williams Lake Airport to Dixie (28)	County Center Drive (29)	Hakomb Road/ Bridge Lake Road (30)	Dixie Highway (31)
Transportation	Safety High Accident Locations Addressed	0	0	2	0	0	2	0	1	0	1	2	1	0	0	0
Social	Residential Displacements No. of Res. Units Possibly Taken/Mile	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.0	0.0	0.0	0.0	4.0	0.0	0.0	0.5
	Community Cohesion Miles of New Local Construction	1	1	2	1	1	0	7	1	1	0	1.5	1	.5	0	2
	Aesthetics Level of Impact	Neutral	Negative	Neutral	Negative	Negative	Neutral	Negative	Negative	Negative	Neutral	Negative	Negative	Negative	Neutral	Negative
	Environmental Justice Level of Impact	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	26-50% poverty 50% + minority	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect	No disproportionate effect
Environmental	Noise No. of Residential Units Exposed/Mile	0	76	16	22	1	0	31	18	14	0	42	39	0	0	4
	Air Quality Level of Impact	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good	Moderate/ Good
	Parks Acres Impacted/Mile	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Cultural Resources/Historic Properties Number Impacted/Mile	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
	Wetlands Acres Impacted	0.0	0.0	0.0	0.6	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Economic	Business Displacements No. of Displacements/Mile (Businesses)	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0
Cost	Construction (millions of dollars)	$1.9	$5.5	$7.0	$7.0	$5.5	$0.1	$38.2	$5.4	$5.5	$0.3	$8.2	$5.5	$2.7	$2.5	$10.9
	R-O-W (millions of dollars)	$3.3	$0.5	$2.8	$2.5	$1.0	$0.0	$18.7	$0.8	$1.0	$0.0	$2.0	$3.5	$0.0	$0.5	$0.5

Source: The Corradino Group

businesses along 65 miles of widened arterials. The number of noise-exposed residential units is large, as might be expected. There are a limited number of park and wetland areas affected by arterial improvements. Mitigation will be required.

Again, it is noted that to represent these improvements fairly in terms of traffic and impact data, "widening" of an arterial is often indicated. But, further work, in cooperation with local governments will define precisely the improvement to be made that yields the most traffic capacity increase with the least negative impact.

The cost to improve these arterials is expected to total $387 million for construction and $153 million for property acquisition (total equals $540 million).

The cost of SCATS is placed at $40 million. Other ITS improvements, like additional changeable message signs, improved ITS communication networks, and responses to technological changes are forecast to cost another $20 million.

3.1 Project Priorities

To establish priorities of the proposed arterial improvements, the relative performance of each project is examined in six areas: (1) congestion in the base year (1995); (2) congestion in the E+C network under 2025 conditions; (3) congestion in the Plan network under 2025 conditions; (4) the ability to handle future (2025) traffic; (5) the potential to improve safety; and, (6) the amount of freeway traffic carried by an arterial roadway to be improved. The last factor reflects the fact that it is likely I-75 improvements will be completed earlier than the arterials because of the availability of state and federal resources. So, the ability to handle freeway traffic on its way to/from I-75 is considered an important factor in deciding which arterials are fixed first.

The results of prioritizing the arterial projects (Table 3-5) indicates those with the greatest potential to improve safety should be implemented early (i.e., Project No. 3, Rochester Road from north of Big Beaver to Hamlin; Project No. 22, the intersections of Square Lake at Telegraph/Franklin; and Project No. 19, Big Beaver Road from Dequindre to Rochester Roads). All but one (Project No. 14, Baldwin Road) of the top 10 arterial projects (Figure 3-4) experience peak hour congestion in the base year (1995) ranging from 93 percent (Project No. 13, Joslyn Road) to well over 100 percent of capacity. Many of these same roadways are likely to grow more congested in 2025 under E+C conditions. So, they are candidates for early implementation.

The second group of 10 projects includes those with less congestion in the base and E+C conditions (Figure 3-5). Crash experience is also significant, but less so. So, their inclusion in a second grouping is logical.

The data indicate that eight of the last 11 arterial improvement projects in priority order have congestion indices which do not reflect significant problems (Figure 3-6). The four projects that are the exceptions are: Adams Road from Hamlin to Tienken; Livernois from

Table 3-5
Arterial Improvement Priority Scores

Project		Volume-to-Capacity			Volume-to-Capacity			Volume-to-Capacity			Plan Volume			Safety			Freeway Traffic				
Name	No	Base-Year	Percent of Max	Weighted Score[1]	E+C	Percent of Max	Weighted Score[1]	Plan	Percent of Max	Weighted Score[1]	Volume/Mile	Percent of Max	Weighted Score[1]	Crashes	Percent of Max	Weighted Score[2]	% Using I-75	Percent of Max	Weighted Score[2]	Total Score	Priority
Rochester	3	1.00	72	6.55	1.06	79	14.34	0.86	67	12.19	4,877	86	15.63	823	100	18.18	44.37	59	10.70	77.59	A
Square Lake	22	1.39	100	9.09	1.35	100	18.18	1.28	100	18.18	4,594	81	14.72	206	25	4.55	30.10	40	7.26	71.98	B
Adams-1	10	1.16	84	7.59	1.22	91	16.47	0.97	76	13.84	4,613	81	14.78	136	17	3.00	39.23	52	9.46	65.14	C
Big Beaver	19	1.08	78	7.09	1.05	78	14.14	1.00	78	14.18	5,675	100	18.18	239	29	5.28	23.69	31	5.71	64.58	D
Joslyn	13	0.93	67	6.09	1.26	93	16.96	0.70	55	9.94	2,616	46	8.38	28	03	0.62	60.06	80	14.48	56.48	E
Long Lake	21	1.14	82	7.48	0.94	70	12.75	0.79	62	11.22	3,346	59	10.72	28	03	0.62	35.73	47	8.62	51.40	F
Crooks-1	7	1.00	72	6.55	1.04	77	13.99	0.96	75	13.65	3,686	65	11.81	107	13	2.36	8.46	11	2.04	50.41	G
Baldwin	14	0.71	51	4.65	1.20	89	16.23	0.64	50	9.04	2,391	42	7.66	92	11	2.03	43.47	58	10.48	50.14	H
Walton	27	0.99	71	6.46	0.86	64	11.65	0.92	72	13.13	3,944	70	12.64	186	23	4.11	4.69	6	1.13	49.12	I
Crooks-2	8	0.98	70	6.39	0.77	57	10.37	0.74	58	10.50	2,879	51	9.22	107	13	2.36	42.13	56	10.16	49.01	J
Sashabaw	15	0.84	61	5.52	0.94	70	12.72	0.60	47	8.51	2,229	39	7.14	186	23	4.11	44.20	59	10.66	48.66	K
Pontiac Lake	25	1.04	75	6.79	1.27	95	17.19	0.76	59	10.79	2,841	50	9.10	67	08	1.48	3.16	4	0.76	46.12	L
Greenfield	9	1.02	74	6.70	0.87	64	11.73	1.05	82	14.89	2,823	50	9.04	49	06	1.08	10.70	14	2.58	46.03	M
Livernois-3	6	0.81	58	5.30	0.99	74	13.42	0.51	40	7.25	1,908	34	6.11	139	17	3.07	37.26	49	8.99	44.14	N
Dixie-1	26	0.71	51	4.65	0.81	60	10.98	0.78	61	11.14	2,877	51	9.22	175	21	3.87	11.51	15	2.78	42.62	O
Scott Lake	16	1.06	77	6.97	1.02	76	13.74	0.61	48	8.64	2,274	40	7.29	89	11	1.97	13.96	19	3.37	41.97	P
Dixie-2	31	0.11	08	0.72	0.55	41	7.42	0.53	42	7.60	1,550	27	4.97	27	03	0.60	75.39	100	18.18	39.49	Q
County Center	29	1.09	78	7.12	1.09	81	14.69	0.62	49	8.84	2,327	41	7.46	9	01	0.20	3.41	5	0.82	39.13	R
Holcomb	30	0.73	53	4.80	0.95	71	12.85	0.92	72	13.17	1,249	22	4.00	0	0	0.00	16.77	22	4.04	38.87	S
Quarton	20	1.11	80	7.25	1.11	83	15.02	0.50	39	7.12	2,123	37	6.80	60	07	1.33	3.52	5	0.85	38.36	T
Adams-2	11	0.78	56	5.13	0.70	52	9.40	0.52	41	7.48	2,493	44	7.99	174	21	3.84	18.10	24	4.37	38.20	U
Livernois-2	5	0.84	61	5.51	0.81	60	10.98	0.47	37	6.74	1,708	30	5.47	58	07	1.28	33.69	45	8.13	38.11	V
Dequindre	1	0.94	68	6.15	0.85	63	11.52	0.61	47	8.63	2,878	51	9.22	53	06	1.17	3.79	5	0.91	37.60	W
Williams Lake	28	0.85	61	5.58	1.04	78	14.09	0.50	39	7.07	2,275	40	7.29	107	13	2.36	3.81	5	0.92	37.32	X
South	23	0.38	27	2.48	0.65	48	8.76	0.44	35	6.31	1,636	29	5.24	181	22	4.00	15.62	21	3.77	30.56	Y
Opdyke	12	0.30	21	1.94	0.47	35	6.28	0.33	26	4.67	1,299	23	4.16	195	24	4.31	33.81	45	8.15	29.52	Z
Livernois-1	4	0.42	30	2.73	0.58	43	7.87	0.33	26	4.66	1,471	26	4.71	90	11	1.99	23.83	32	5.75	27.71	AA
Thirteen-Mile	18	0.71	51	4.66	0.67	50	9.10	0.20	16	2.85	700	12	2.24	79	10	1.75	0.00	0	0.00	20.60	AB
John R	2	0.25	18	1.62	0.65	48	8.75	0.13	10	1.85	487	9	1.56	80	10	1.77	4.96	7	1.20	16.74	AC
University	24	0.18	13	1.17	0.24	18	3.27	0.10	7	1.36	402	7	1.29	54	07	1.19	32.04	42	7.73	16.01	AD
Taylor	17	NA	NA	NA	NA	NA	NA	0.04	3	0.52	47	1	0.15	0	0	0.00	11.11	15	2.68	3.35	AE

[1]Weight = 0.09097
[2]Weight = 0.18159
Source: The Corradino Group

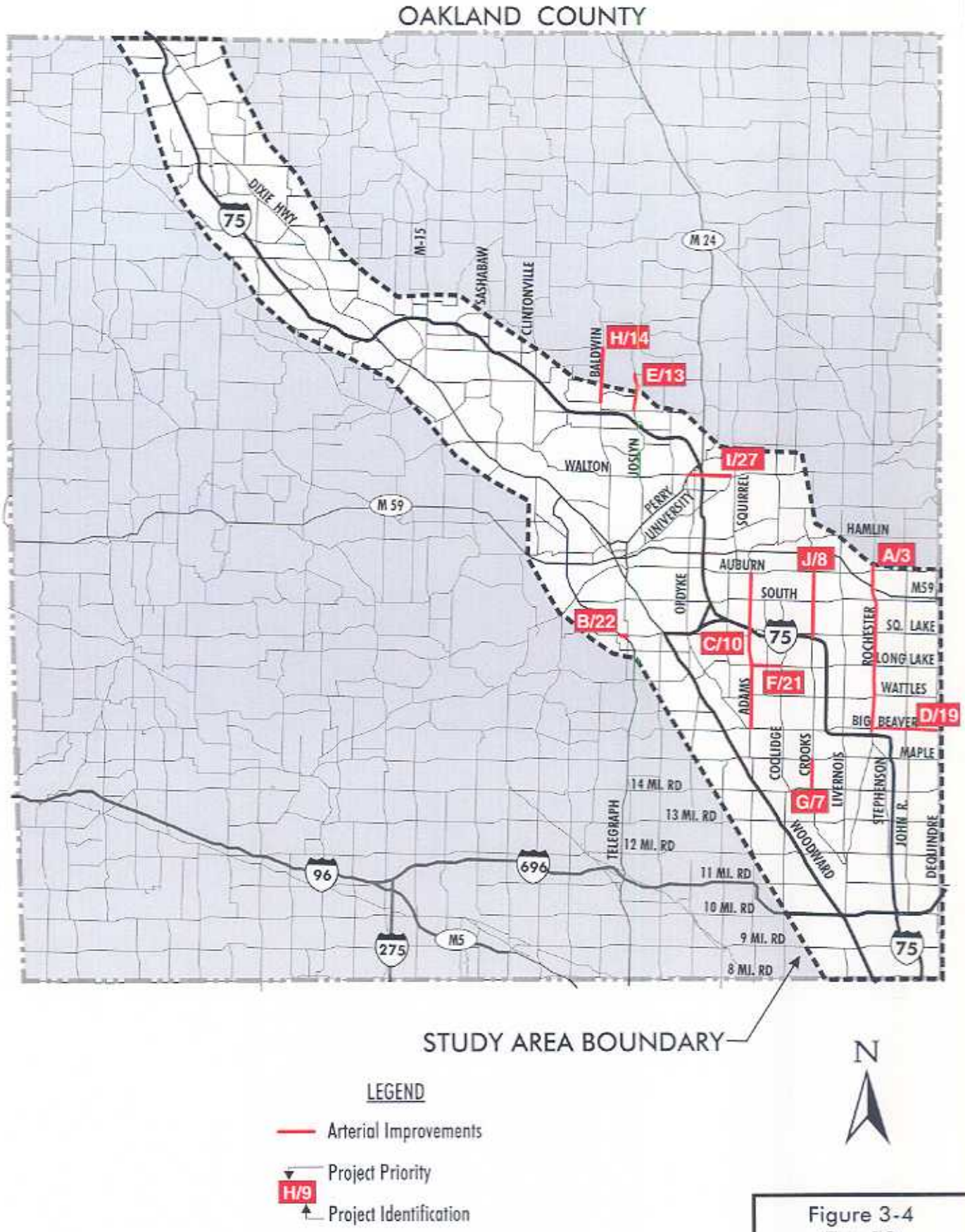

Figure 3-4
Top 10
Arterial Projects

SOURCE: The Corradino Group

L:Projects/2418/graphics/ArtProj.cdr

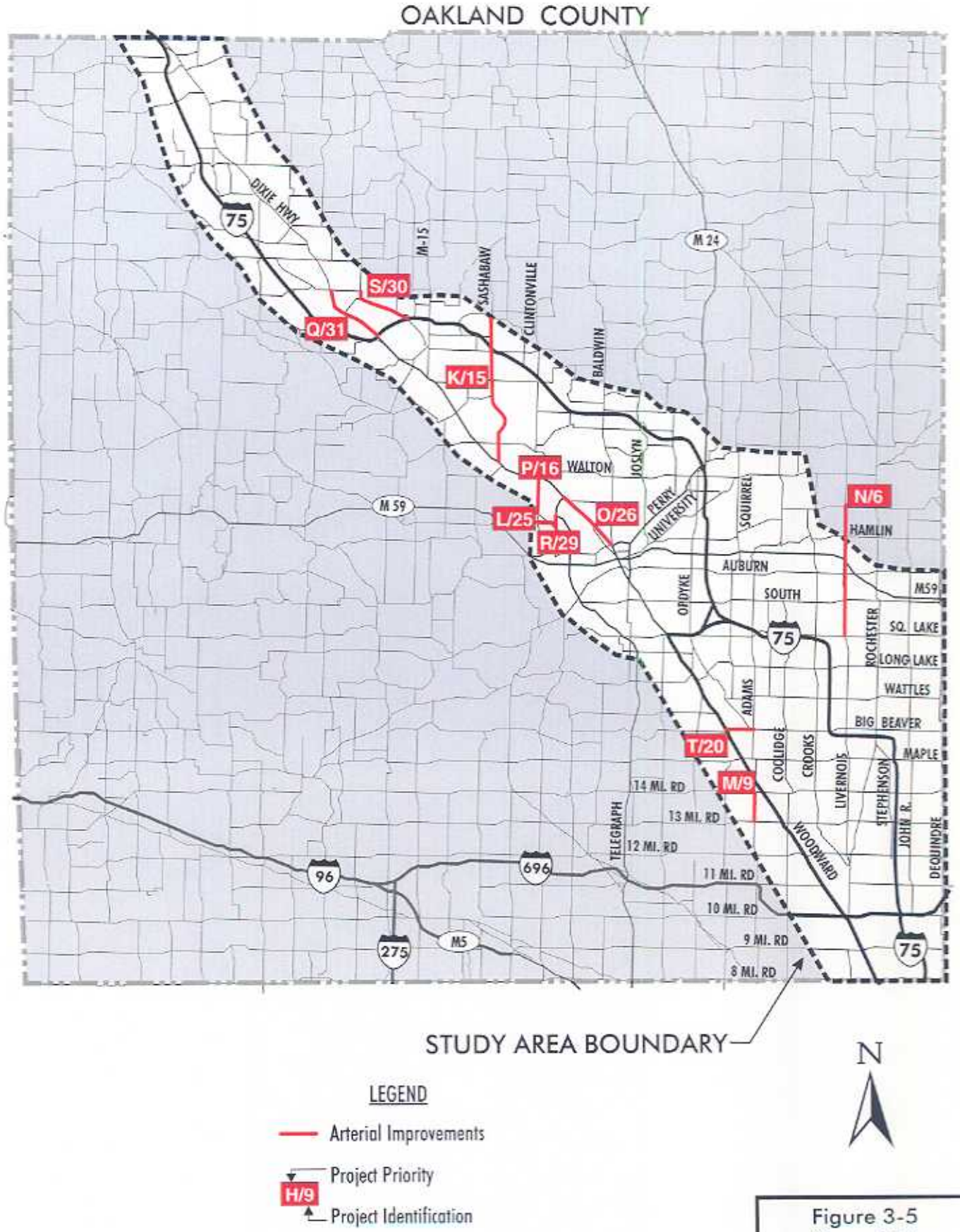

Figure 3-5
Second 10
Arterial Projects

SOURCE: The Corradino Group

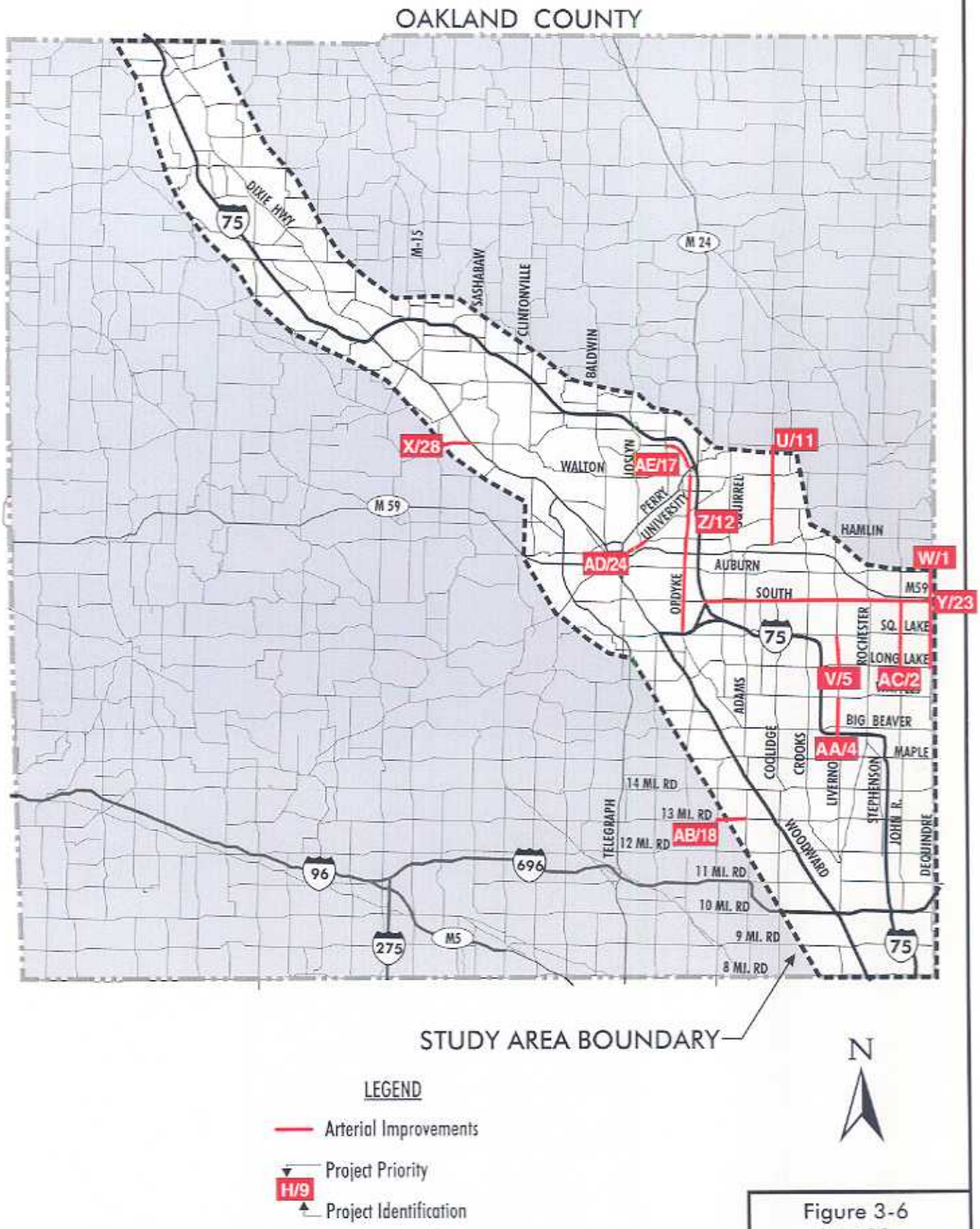

Figure 3-6
Last 11
Arterial Projects

SOURCE: The Corradino Group

L:Projects/2418/graphics/ArtProj.cdr

Long Lake to Square Lake Roads; Dequindre from Long Lake to Auburn; and, Walton Boulevard from Airport Road to Dixie Highway. Additionally, careful monitoring of the crash experiences is needed of Adams, between Hamlin and Tienken Roads; Walton Boulevard from Airport to Dixie; South Boulevard, between Dequindre and I-75; and Opdyke, from Square Lake to Walton because, while congestion pressure might not be that great, the need to improve safety may be.

For I-75, the priority order of the projects is to proceed south to north sequentially from Eight-Mile Road to the north Oakland county line.

3.2 Cost

The total cost of this Plan is placed at $1.05 billion: $447 million for I-75 improvements; $540 million for arterial improvements; and, $60 million for ITS enhancements (Table 3-6).

The cost of arterial improvements by local jurisdiction is illustrated on Table 3-7. The cumulative cost to undertake implementation of the interstate and arterial projects in the priority established are shown on Tables 3-8 and 3-9, respectively.

Local and state governments can now begin to match financial resources to these needs so that the timing of the implementation plan can be established. This matching of resources and needs should be updated regularly as future economic and legislative priorities come into clear view. For example, local funding initiatives, such as used in Troy, or congressional attention to the next version of what is now known as TEA-21, will impact the pace at which improvements can be built. Likewise, the effects of state funding programs like Build-Michigan III, and beyond, will shape the ability to implement the improvements.

Table 3-6
I-75 Corridor Transportation Plan
Cost Summary
(Cost in Millions of 2000 Year Dollars)

Total I-75 Construction = Mainline + Interchanges	$ 430.9
Interstate & Interchange ROW	$ 16.5
Freeway Subtotal	**$ 447.4**
Arterial Construction	$ 387.1
Arterial ROW	$ 152.7
Arterial Subtotal	**$ 539.8**
SCATS	$ 40.0
ITS (various)	$ 20.0
ITS Subtotal	**$ 60.0**
M-59	to be determined
GRAND TOTAL	**$1,047.2**

Source: The Corradino Group

Table 3-7
Cost Estimates by Community
Arterial Projects
(In Millions of 2000 Year Dollars)

Jurisdiction	ROW	Constr. + Engin	Total
Auburn Hills	$20.6	$38.1	$58.7
Beverly Hills	0.5	4.4	4.9
Birmingham	0.5	1.4	1.9
Bloomfield Township	7.6	22.9	30.5
Clawson	0.0	2.7	2.7
Independence Township	4.2	22.2	26.4
Orion Township	6.5	17.0	23.5
Pontiac	8.9	19.0	27.9
Rochester Hills	36.2	88.9	125.1
Royal Oak	0.2	3.0	3.2
Southfield	0.2	2.7	2.9
Springfield Township	0.8	12.1	12.9
Troy	53.5	123.6	177.1
Waterford Township	13.0	29.1	42.1
TOTALS	**$152.7**	**$387.1**	**$539.8**

Source: The Corradino Group

Table 3-8
Cost of I-75 Improvements
In Priority Order
(Cost in Millions of 2000 Year Dollars)

Project Segment	Cost	Cumulative Cost
Eight-Mile to Twelve-Mile (plus I-696 ramp and Twelve-Mile Interchange	$109	$109
Twelve-Mile to Fourteen-Mile (includes Fourteen-Mile Interchange)	24	133
Fourteen-Mile to Rochester (includes Rochester Interchange)	19	152
Rochester to Big Beaver	15	167
Big Beaver to Crooks (includes Long Lake/Crooks Interchange)	56	223
Crooks to Adams	17	240
Adams to South Boulevard	7	247
Joslyn to Baldwin Road	10	257
Baldwin to Sashabaw Road (includes Sashabaw Interchange)	41	298
Sashabaw to M-15[1]	18	316
M-15 to Dixie/U.S. 24 (includes Dixie Interchange)	17	333
Dixie/U.S. 24 to Holly Road	45	378
Holly Road to Grange Hall Road	25	403
Grange Hall to County Line	34	437
SUBTOTAL	$437	$437
Noise Walls	10	447
TOTAL	$447	$447

[1]M-15 interchange considered separately.
Source: The Corradino Group

Table 3-9
Cost of Arterial Improvements in Priority Order
(Cost in Millions of 2000 Year Dollars)

Project Identification			From	To	Total Cost	Cumulative Cost
Priority	No.	Project				
A	3	Rochester	North of Big Beaver	Hamlin	$80.2	$80.2
B	22	Square Lake	Telegraph	Franklin	0.1	80.3
C	10	Adams	Big Beaver	Auburn	26.3	106.6
D	19	Big Beaver	Dequindre	Rochester	9.8	116.4
E	13	Joslyn	Brown	Silver Bell	7.4	123.8
F	21	Long Lake	Coolidge	Adams	6.5	130.3
G	7	Crooks	14 Mile	Maple	5.4	135.7
H	14	Baldwin	Morgan	Waldon	16.0	151.7
I	27	Walton Boulevard	Perry Street	Squirrel	10.2	161.9
J	8	Crooks	Square Lake	Auburn	24.0	185.9
K	15	Sashabaw	Dixie	Clarkston	42.5	228.4
L	25	Pontiac Lake Road	Scott Lake Road	County Center Drive	6.5	234.9
M	9	Greenfield	13 Mile	14 Mile	3.7	238.6
N	6	Livernois	Square Lake	Avon	34.5	273.1
O	26	Dixie (Oakland)	Telegraph	Woodward	0.4	273.5
P	16	Scott Lake	Watkins Lake	U.S. 24/Dixie	6.4	279.9
Q	31	Dixie Highway (US 24)	Davisburg Road	I-75	11.4	291.3
R	29	County Center Drive	Pontiac Lake	Telegraph	2.7	294.0
S	30	Holcomb/Bridge Lake Rd	Davisburg Road	I-75	3.0	297.0
T	20	Quarton	Woodward	Adams	9.5	306.5
U	11	Adams	Hamlin	Tienken	25.3	331.8
V	5	Livernois	Long Lake	Square Lake	7.5	339.3
W	1	Dequindre	Long Lake	Auburn	21.9	361.2
X	28	Williams Lake	Airport	Dixie	9.0	370.2
Y	23	South	Dequindre	I-75	56.9	427.1
Z	12	Opdyke	Square Lake	Walton	70.0	497.1
AA	4	Livernois	I-75	Wattles Road	6.4	503.5
AB	18	13 Mile	Greenfield	Southfield	6.0	509.5
AC	2	John R	Long Lake	South Boulevard	18.9	528.4
AD	24	S. University Drive	Paddock	MLK	6.2	534.6
AE	17	Taylor	Gidings Road	M-24	5.2	539.8
		TOTALS			$539.8	$539.8

Source: The Corradino Group

4. Findings and Next Steps

Overall, the I-75 Corridor Transportation Plan is associated with a total investment of about $1.05 billion, while 20-year user savings are placed at $2.6 billion, both expressed in year 2000 dollars. Many impacts are considered positive; negative effects are considered manageable, particularly in sensitive areas where potential resources like parks, wetlands and historic properties are involved. The single biggest issue will likely be noise impacts near residential areas. But, these impacts will be mitigated by building noise walls along I-75. In residential areas away from I-75 noise will be as problematic if nothing is done. Preparation of the federally-required environmental document that is to precede I-75 reconstruction will document these conditions.

This Final Report will allow local and state governments to partner with a strategy in hand to improve the transportation system and, therefore, the quality of life in the I-75 corridor in Oakland County.