



WATTLES ROAD

BIG BEAVER

- Bridge Change
- Possible Right-of-Way Acquisition

Figure 3-7
Special HOV Access Ramps
North of Big Beaver

SOURCE: The Corradino Group of Michigan, Inc.

While these type ramps at the Big Beaver interchange would be less disruptive than modifying the interchange itself, they still would likely result in the relocation of 36 multi-family units south of Big Beaver and 16 multi-family units north of Big Beaver. These special HOV ramps could cost approximately \$20 million, exclusive of right-of-way.

The Crooks/Long Lake area is now being designed for new interchange ramping and a collector distributor (CD) roadway system, as a project separate from the I-75 Oakland County Planning/Environmental Study. The concept of a free-flow HOV would be to access the CDs, rather than the mainline lanes. This would likely cause acquisition of cemetery land in the southwest quadrant of Long Lake and I-75. This could be a Section 4(f) issue. All other potential property acquisition is expected to be of land without structures. Ramps in this area could cost \$16 million, exclusive of right-of-way.

In the Adams/Square Lake interchange area, up to 8 multi-family units could be taken in the northeast quadrant. The special HOV ramp treatment is expected to cost \$16 million, exclusive of right-of-way.

Further north, the Square Lake interchange is unusual as there is a left exit northbound. So, the HOV lane would have to pass over or under the left exit and then be accommodated in the northbound mainline section between the Square Lake and M-59 interchanges. The transition of the HOV lane as it moves northbound through the Square Lake Road area would require additional right-of-way that could cause relocation of some 22 multi-family units. The ramping and bridging in the Square Lake area could cost \$11 million, exclusive of right-of-way.

It appears possible to add ramping to and through the M-59 area with no relocation of structures, but private property would have to be acquired. Getting through this interchange with special HOV treatment will likely cost \$30 million, exclusive of right-of-way.

In summary, providing special access to I-75 at key points between M-102 and M-59 could have the following impacts (Table 3-3):

- ✍ 24 business structures
- ✍ 78 single-family dwellings
- ✍ 74 multiple-family dwellings
- ✍ 3 churches, and
- ✍ 3 institutions (school land, an Elks Club and land from a cemetery).

Between M-102 and M-59, an additional eight acres of wetlands could be impacted over and above that likely to occur with the proposed widening of I-75 by one lane without special HOV treatment. The affected wetlands are found especially in the section north of Big Beaver Road.

The total cost of special HOV access treatment could total over \$260 million, exclusive of right-of-way. This would double the cost of widening I-75 by one lane in each direction between M-102 and M-59 (\$250 million) before property acquisition/relocation is considered. If special access ramps were carried farther north to M-15, the costs and impacts would be even greater. On the other hand, if the special HOV access treatment were limited to the I-75 section between I-696 and M-59, the construction cost (i.e., exclusive of right-of-way) would be almost \$180 million over the cost to widen I-75 by one lane in each direction.

Table 3-3
Possible Impacts of Options A and B: Full-Access I-75 HOV

Location	Impact					
	Business Structures	Single-family Dwellings	Multi-family Dwellings	Churches	Institutions	Cost (\$Mil) ¹
North side of M-102	1	8	0	0	0	\$ 30.0
9 Mile Road	13	7	0	1	0	
South side of I-696 Interchange	1	26	0	0	0	\$ 25.7
North side of I-696 Interchange	0	17	0	1	1	\$ 44.6
11 Mile Road area	4	20	0	0	1	\$ 26.0
12 Mile Road Interchange	0	0	0	1	0	\$ 17.7
14 Mile Road Interchange	0	0	0	0	0	\$ 17.5
Stephenson/Rochester	5	0	0	0	0	\$ 8.0
Big Beaver area	0	0	52	0	0	\$ 19.6
Crooks/Long Lake area	0	0	0	0	1	\$ 16.0
Adams/Square Lake area	0	0	0	0	0	\$ 16.0
Square Lake Interchange	0	0	22	0	0	\$ 11.2
South side of M-59 Interchange	0	0	0	0	0	\$ 2.2
North side of M-59 Interchange	0	0	0	0	0	\$ 27.1
South Corridor Pedestrian Bridge						
Additional Costs	NA	NA	NA	NA	NA	\$ 0.8
M-102 to M-59	24	78	74	3	3	\$ 262
I-696 to M-59	9	37	74	2	3	\$ 179

Source: The Corradino Group of Michigan, Inc.

¹Cost to construct, exclusive of right-of-way.

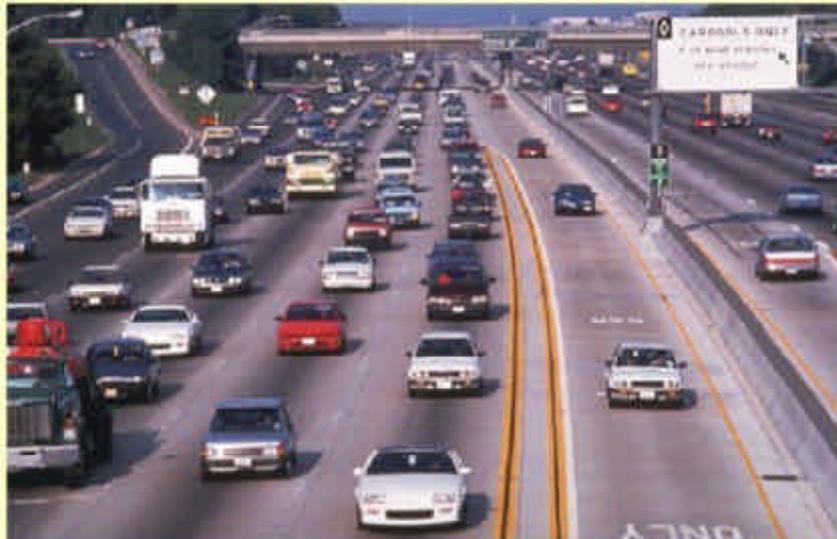
Based on these results, special HOV access treatment (i.e., Options A and B) is not considered feasible and/or prudent in any segment of I-75 and not recommended to be carried any further in the Environmental Impact Statement analysis.

HOV Option C

Because Options A and B are not considered feasible, installing an HOV lane between M-102 and M-15 by simply striping and signing the new lane on the median side of I-75 was examined, i.e., Option C (Figure 3-8). The potential acquisition/relocation impacts here are virtually no different than adding a general purpose lane to I-75. The key, then, is determining if the HOV lane (one in each direction) will carry enough vehicles and persons to pass the various “throughput” tests. To ensure this analysis is complete, another set of tests covers the likelihood that strict enforcement would not be maintained. This latter condition equates to about 20 percent of all vehicles in the HOV lane having just one occupant. This is about double the average violation experienced in HOV lanes in the U.S.

The Basic HOV proves feasible, even with violation of the “2-plus” rule, whether the test is: 1) 700 HOVs in a lane per hour; or 2) more person throughput in the HOV lane than the adjacent general purpose lane; or, 3) the total freeway throughput, northbound, being greater with the HOV lane than with the general purpose lane (Tables 3-4A/3-4B and 3-5A/3-5B).

Signing



HOV Operation



Enforcement

Figure 3-8
Basic HOV
Example Facilities

Table 3-4A
 2025 PM Peak Hour Throughput NB (Vehicles and Persons)
 HOV Lane (2-plus) vs. General Purpose Lane at Key Segments Along I-75
 Basic HOV: M-102 to M-15
 (with NO violators)

	Total HOV Lane Vehicles per Hour	Person Throughput per Lane		Passes Test
		HOV Lane	Adjacent General Purpose Lane (Avg.) ¹	
M-102 to I-696	1,540	3,820	1,900	Yes
I-696 to 12 Mile	2,170	5,350	2,360	Yes
12 Mile to 14 Mile	1,950	4,810	2,050	Yes
Square Lake to M-59	1,980	4,920	2,160	Yes
Sashabaw to M-15	890	2,180	1,590	Yes

Source: The Corradino Group of Michigan, Inc.

¹Numbers differ from those in Technical Memorandum No. 1 because of highway network modifications such as: 1) making the section of I-75 between I-696 and 12 Mile the equivalent of four through lanes compared to three in the original SEMCOG network; and, 2) including the Crooks/Long Lake interchange as now being designed.

Table 3-4B
 2025 PM Peak Hour Total Freeway Person Throughput NB
 HOV Lane (2-plus) vs. General Purpose Lane at Key Segments Along I-75
 Basic HOV: M-102 to M-15
 (with NO violators)

	Add GP Lane Alternate	Add HOV Lane Alternate	HOV Increase	Passes Test
	Peak Hour Person Throughput	Peak Hour Person Throughput	Peak Hour Person Throughput	
M-102 to I-696	11,270	11,420	+ 150	Yes
I-696 to 12 Mile	11,340	12,440	+ 1,100	Yes
12 Mile to 14 Mile	10,320	10,960	+ 640	Yes
Square Lake to M-59	10,570	11,410	+ 840	Yes
Sashabaw to M-15	6,730	6,960	+ 230	Yes

Source: The Corradino Group of Michigan, Inc.

Table 3-5A
 2025 PM Peak Hour Person Throughput NB (Vehicles and Persons)
 HOV Lane (2-plus) vs. General Purpose Lane at Key Segments Along I-75
 Basic HOV: M-102 to M-15
 (with violators)

	Total HOV Lane Vehicles per Hour	Person Throughput per Lane		Passes Test
		HOV Lane	Adjacent General Purpose Lane (Avg.) ¹	
M-102 to I-696	1,660	3,630	1,920	Yes
I-696 to 12 Mile	2,270	5,020	2,390	Yes
12 Mile to 14 Mile	2,020	4,480	2,080	Yes
Square Lake to M-59	2,140	4,710	2,170	Yes
Sashabaw to M-15	1,110	2,340	1,540	Yes

Source: The Corradino Group of Michigan, Inc.

¹Numbers differ from those in Technical Memorandum No. 1 because of highway network modifications such as: 1) making the section of I-75 between I-696 and 12 Mile the equivalent of four through lanes compared to three in the original SEMCOG network; and, 2) including the Crooks/Long Lake interchange as now being designed.

Table 3-5B
 2025 PM Peak Hour Total Freeway Person Throughput NB
 HOV Lane (2-plus) vs. General Purpose Lane at Key Segments Along I-75
 Basic HOV: M-102 to M-15
 (with violators)

	Add GP Lane Alternate	Add HOV Lane Alternate	HOV Increase	Passes Test
	Peak Hour Person Throughput	Peak Hour Person Throughput	Peak Hour Person Throughput	
M-102 to I-696	11,270	11,300	+ 30	Yes
I-696 to 12 Mile	11,340	12,180	+ 840	Yes
12 Mile to 14 Mile	10,320	10,730	+ 410	Yes
Square Lake to M-59	10,570	11,230	+ 660	Yes
Sashabaw to M-15	6,730	6,970	+ 240	Yes

Source: The Corradino Group of Michigan, Inc.

The capital cost associated with the Basic HOV is \$8.5 million which includes about \$3 million to carry the HOV lane over or under the left exit at Square Lake Road. The annual cost to enforce the "2-plus" person rule is estimated at \$4 million. But, even if enforcement were reduced to the extent that violators of the "2-plus person" rule average 20 percent of the vehicles in the HOV lane, the annual enforcement cost could still exceed \$1 million per year. Federal funding assistance may be available for enforcement. There would be virtually no difference in impacts between adding a new lane to I-75 for HOV versus for general purpose use.