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1974 NATIONAL TRANSPORTATION STUDY UPDATE

1990 PLAN UPDATE NARRATIVE REPORT

Prepared for

STATE OF MICHIGAN

WILLIAM G. MILLIKEN, GOVERNOR

FEBRUARY 1976

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William G. Milliken, Governor

John P. Woodford, Governor's Representative

STATE HIGHWAY COMMISSION

Peter B. Fletcher, Chairman

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Prepared by

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February, 1976

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Vienna, Virginia

NARRATIVE REPORT
NATIONAL TRANSPORTATION STUDY
1990 PLAN UPDATE

The State of Michigan derived useful information through participation in the review and update of the 1990 Plan element of the 1974 National Transportation Study. We found that there were significant modifications to the urban public transportation, physical state, performance characteristics, and cost projection entries. These modifications may stem from several possibilities. The updated data, which increased substantially the number of vehicles previously reported, must assuredly reflect the impacts of the energy situation. In addition to this anticipated phenomenon, it appears that the procedures we employed in the data acquisition, the level and quality of data available, and the conscientiousness of the urban area participants produced an excellent climate for identifying the changes to the 1990 Plan. The update process also provided an excellent structured opportunity to review all of the required 1990 plan data with respect to significant changes.

A summary tabulation of the 1990 Plan updated cost data is presented as Exhibit 1. Urban public transportation capital costs increased by 32 percent over the 1974 NTS reported 1990 plan. Annual costs for 1989 increased by 67 percent. The other urban systems component increased by 160 percent and 420 percent for capital costs and 1989 annual costs respectively.

EXHIBIT 1

COST SUMMARY TABLE FOR CAPITAL COST AND
ANNUAL EXPENDITURE FOR THE 1990 PLAN UPDATE
(In Thousands of Dollars)

PROGRAM AREA	1990 PLAN CAPITAL COST	1989 ANNUAL COST
HIGHWAYS	10,429,905	488,471
URBAN PUBLIC TRANSIT		
BUS TRANSIT	662,747	271,378
RAIL TRANSIT	3,003,640	71,749
OTHER URBAN SYSTEMS	17,823	10,411
PARKING	152,930	6,635
AIRPORTS	821,768	48,840
T O T A L	15,088,813	897,484

Other significant changes in the 1990 plan are presented under the Discussion of Changes as well as a display of the 1990 Plan data by urban area.

PLAN UPDATE APPROACH

Due to the time constraints associated with the plan update activity a number of operational decisions had to be made as part of the project design in the initial start-up phase. It was determined that each set of model data should be sequentially reviewed, analyzed, and updated as appropriate. The first activity was addressed to a thorough review of the State Aviation System Plan vis-a-vis master plan changes which may have become evidenced subsequent to the completion of the 1974 NTS. The only area where a change was indicated was with respect to Bishop Airport within the Flint area.

The 1990 Highway Plan was reviewed with the Highway Planning Division against the backdrop of the extensive analysis and effort which was dedicated to the 1990 Highway plan, and the recently completed Michigan highway needs study. The State of Michigan placed a great deal of emphasis during the 1974 NTS on the highway element and submitted two plans. The first plan realistically displayed needed highway improvements. The second plan conformed vigorously to the requirements within the 1974 NTS with respect to projected funding availability. The 1990 highway plan, which adhered to the requirements of the 1974 NTS, was internally reviewed. The urban areas were provided with opportunity to modify the highway plans during the 1990 plan update cycle.

The major effort of the plan update was placed in the urban public transit as a result of a comparative analyses of all of the 1974 NTS data submittals vis-a-vis current inventories, and an internal indepth projection of 1990 urban system service characteristic and estimated costs. As a result of the internal analysis and review, a series of technical interviews were established with each regional planning agency and local transit authorities. The collected data was analyzed and modified, where required, with respect to base year cost data and the DOT stipulated differential inflation rates. A significant degree of attention was placed on estimating and reporting bus fleet requirements and evaluating the potential impacts of inflation on the reported 1990 Plan cost estimates.

DISCUSSION OF CHANGES

The 1990 Plan changes have been organized with respect to each mode, or form set, to assist in the review of the data forms submitted under separate cover.

- Aviation: As indicated, the only change resultant from the review and update was the new 10,600 foot runway at the Bishop Airport reported on the A-4 form for Flint and the corresponding element on the A-5 form totals. The data was developed from the Bishop Master Plan Study which was completed subsequent to the preparation of the 1974 NTS.
- Highways: The modifications to the Ann Arbor highways with respect to mileages, vehicle miles, capacity miles, and costs resulted from a change in the urban boundaries.

- Urban Public Transportation: This element of the update received the majority of the review attention due to clear anomalies in the projected data and the availability of improved data. The urban public transportation update can best be appreciated through a separate discussion of the bus transit, rail transit (Detroit) and other urban modes (Dial-a-Ride Systems).
- Bus Transit: As a result of the extensive interview and analysis process, there were changes in each of the urban area bus transit plans. The summary results of the urban transit capital costs and annual costs are presented as Exhibits 2 and 3. Exhibit 4 provides an overview of the bus transit cost changes with respect to the 1974 NTS estimates. It should be noted that the current cost of buses is substantially higher (approximately 50%) than the 1971 base year cost. The implication to the state of the 1990 plan bus transit costs, and more importantly realistically escalated costs are very serious. It appears that the short range impacts of programmed services vis-a-vis sources of funds should be a first order priority. It is impossible at this point in time, however, to conduct the type of source of funds analysis necessary to appreciate fully, the potential implications of these planned increased service levels and inflated costs through 1990. The Department of Transportation may be well advised to consider a structured analysis, similar to that included in the 1974 NTS as

EXHIBIT 2

1990 PLAN SUMMARY—CAPITAL COSTS*

	HIGHWAY	URBAN PUBLIC TRANSPORTATION		AVIATION	PARKING	OTHER	TOTAL
		BUS TRANSIT	RAIL TRANSIT				
Ann Arbor	176,241	8,142		3,998		11,120	199,501
Bay City	67,891	3,084		818			71,793
Detroit	3,817,187	573,520	3,003,640	438,170	138,312		7,970,829
Flint	445,591	16,580		48,679	12,843	363	524,056
Grand Rapids	350,082	11,948		16,660	1,775	2,300	382,765
Jackson	70,851	1,632		2,827			75,310
Kalamazoo	138,235	8,880		29,674			176,789
Lansing	240,531	11,712		26,826		3,540	282,609
Muskegon	109,583	3,129		6,574			119,286
Saginaw	142,927	2,328		21,417			166,672
South Bend	38,571	192		2,515		500	41,778
Toledo	28,864	(1)---		1,315			30,179
Urban Total	5,626,554	641,147	3,003,640	599,473	152,930	17,823	10,041,567
Small Urban A, B + ROS	4,803,351	21,600		222,295			5,047,246
T O T A L	10,429,905	662,747	3,003,640	821,768	152,930	17,823	15,088,813

*In Thousands.

(1) Toledo discontinued plan for Dual Mode system and will not purchase its own vehicles.

EXHIBIT 3

1989 OPERATIONS AND MAINTENANCE COSTS*

	HIGHWAY	URBAN PUBLIC TRANSPORTATION		AVIATION	PARKING	OTHER	TOTAL
		BUS TRANSIT	RAIL TRANSIT				
Ann Arbor	10,110	6,074		275		8,281	24,740
Bay City	3,368	2,225		80			5,673
Detroit	179,091	217,216	71,749	33,949	5,847		507,852
Flint	20,598	8,652		1,465	413	135	31,263
Grand Rapids	14,476	6,961		1,677	375	795	24,284
Jackson	3,331	1,533		155			5,019
Kalamazoo	7,172	7,182		1,179			15,533
Lansing	10,350	6,028		1,395		882	18,655
Muskegon	4,957	3,145		307			8,409
Saginaw	6,321	1,827		1,103			9,251
South Bend	1,236	118		275		318	1,947
Toledo	1,522	(1) 189		80			1,791
Urban Total	262,532	261,150	71,749	41,940	6,635	10,411	654,417
Small Urban A, B + ROS	225,939	10,228		6,900			243,067
T O T A L	488,471	271,378	71,749	48,840	6,635	10,411	897,484

*In Thousands.

(1) Michigan portion of Toledo service.

EXHIBIT 4

1990 PLAN COMPARISON
URBAN TRANSIT COSTS*

	1990 PLAN 1974 NTS**		1990 PLAN UPDATE**		PERCENT CHANGE	
	CAPITAL	1989 O & M	CAPITAL	1989 O & M	CAPITAL	1989 O & M
BUS TRANSIT						
Ann Arbor	1,005	500	8,142	6,074	+ 710%	+1115%
Bay City	750	589	3,084	2,225	+ 311%	+ 278%
Detroit	450,000	126,000	573,520	217,216	+ 27%	+ 72%
Flint	6,968	11,014	16,580	8,652	+ 138%	- 22%
Grand Rapids	61,599	9,481	11,948	6,961	- 80%	- 27%
Jackson	360	348	1,632	1,533	+ 353%	+ 341%
Kalamazoo	4,000	4,200	8,880	7,182	+ 122%	+ 71%
Lansing	9,450	4,687	11,712	6,028	+ 24%	+ 29%
Muskegon	1,630	950	3,129	3,145	+ 93%	+ 231%
Saginaw	706	709	2,328	1,827	+ 230%	+ 158%
South Bend	350	195	192	118	- 56%	- 40%
Toledo	8,734	1,637 ¹	---	189	---	- 89%
Total	545,552	160,310	641,147	261,150	+ 17%	+ 63%
OTHER URBAN SYSTEMS	4,000	2,000	17,823	10,411	+ 160%	+ 420%
DETROIT RAIL TRANSIT	2,228,204	43,587	3,003,640	71,749	+ 32%	+ 65%
T O T A L	2,777,756	205,897	3,662,610	343,310	+ 32%	+ 67%

*In Thousands

**Developed per DOT instructions

¹Included Dual Mode System which is not planned in update.

the 1980 Program, as the total impact of all the participant states transit updates is assessed. The 1990 Plan update does not address the near-term financing issues with respect to system expansion which are critical to the state.

- Detroit Rail Transit: The revised estimates for the Rail Transit System were developed from A Comprehensive Transit Proposal for the Detroit Metropolitan Area, dated May 1974.
- Other Urban Transit Systems: Increased interest in Dial-a-Ride Systems has become evident since the completion of the 1974 NTS. Forms were completed and submitted for four (4) completely new systems as part of update activity. These areas are Flint, Grand Rapids, Lansing, and South Bend.