

City of
Rochester Hills

Master Thoroughfare Plan Update

June 1998

Amended December 7, 1999
See Figure C-1

Roadway System Components

The five transportation policies listed in the Introduction have served the city as a framework for transportation planning since 1989. The policies shaped the character and technical aspects of the transportation plan. They reflected transportation goals, existing and future constraints on the system, technical analysis and future opportunities. These five policies were reconsidered, revised, and incorporated into this plan. The revised five policies are as follows

- Six-lane major arterial roadways should generally not be built because of sensitive land use environmental adjacencies and the high capital cost of such improvements. The only exception is Rochester Road between Avon and South Boulevard.
- The community must accept a degree of traffic congestion along particular roadways.
- To develop a strategy to direct through-traffic originating outside Rochester Hills to selected routes.
- Transportation projects should be scheduled for implementation according to priority and resource availability. All roadway upgrades should be done in a manner that is sensitive to adjacent land uses and environmental characteristics.
- Alternative modes of transportation management should be pursued as an alternative to roadway construction.

Discussion of these five policies follows.

1. Land use and environmental characteristics adjacent to existing roadways are two criteria against which Rochester Hills' roadways are evaluated. For example, these characteristics include land-use type, the number of individual curb cuts to serve adjacent uses, building scale, setback and other relevant design features. Environmental characteristics include natural features immediately adjacent to or impacted by a roadway.

The volume of traffic projected for some major roadways in the city for the Year 2015 would require a six-lane capacity facility. However, because of the primarily residential land use and environmental characteristics along most roadways in the study area, six lanes would be incompatible with this adjacent land use and/or the environment and, therefore, should not be built. In addition, the capital cost to acquire the required right-of-way to construct the six-lane roadway would likely exceed the funding capability. The only exception is Rochester Road south of Avon. The reason for the exception is the commercial nature of the road and forecasted volume of traffic.

2. The Preferred Alternative is intended to respond to the future traffic needs of the citizen users of the Rochester Hills roadway system. It responds to the transportation plan goals and objectives and implements the intent of the five transportation development policies. It does not satisfy, however, all future traffic needs in the City of Rochester Hills.

Figure 22 illustrates capacity deficiencies that will remain after expansions and improvements to the existing roadway system proposed in the Preferred Alternative are implemented. Most notable is the congestion that will occur on the east-west streets of Tienken, Walton and Avon. Tienken will be at Level of Service "F" from Brewster to Sheldon and at Level of Service "E" from Brewster to Adams. Walton/University will be at Level of Service "F" from Old Perch to Rochester Road, and Level of Service "E" from Brewster to the city limit. The congestion will generally be concentrated in an area bounded by Avon, Rochester Road, Tienken, and Adams. Thus, although many expansions and improvements are called for in the Preferred Alternative, there will remain some significant congestion in parts of the city.

Depending on final decisions made in regard to the proposed new roadway arterial on the Grand Trunk railroad right-of-way, the new arterial roadway would likely provide relief to congestion on Rochester Road north of Avon and on Avon between Rochester Road and Crooks.

3. Priority transportation improvement projects have been identified by the Planning Commission as keys to improving the functioning of the roadway system. These minimum improvements are core elements of the plan, have equal priority, and should be implemented as soon as possible. The improvements include

- Widen all segments of Adams to a four-lane residential boulevard (four lanes and a landscaped median; this roadway is hereinafter referred to as a four-lane residential boulevard) from South Boulevard to Dutton.
- Widen Livernois from Hamlin to Avon to a four-lane residential boulevard.
- Widen Dequindre to a four-lane residential boulevard from South Boulevard to Washington.
- Widen Avon to a four-lane residential boulevard from Rochester Road to east city limit.
- Widen Hamlin to a four-lane residential boulevard from Livernois to Rochester Road.
- Widen Rochester Road to a six-lane residential boulevard from Avon to city limit.
- Construct minor arterial two-lane improvements and collector improvements as shown on the Preferred Alternative.

Figure 22

Preferred Alternative Capacity Deficiencies

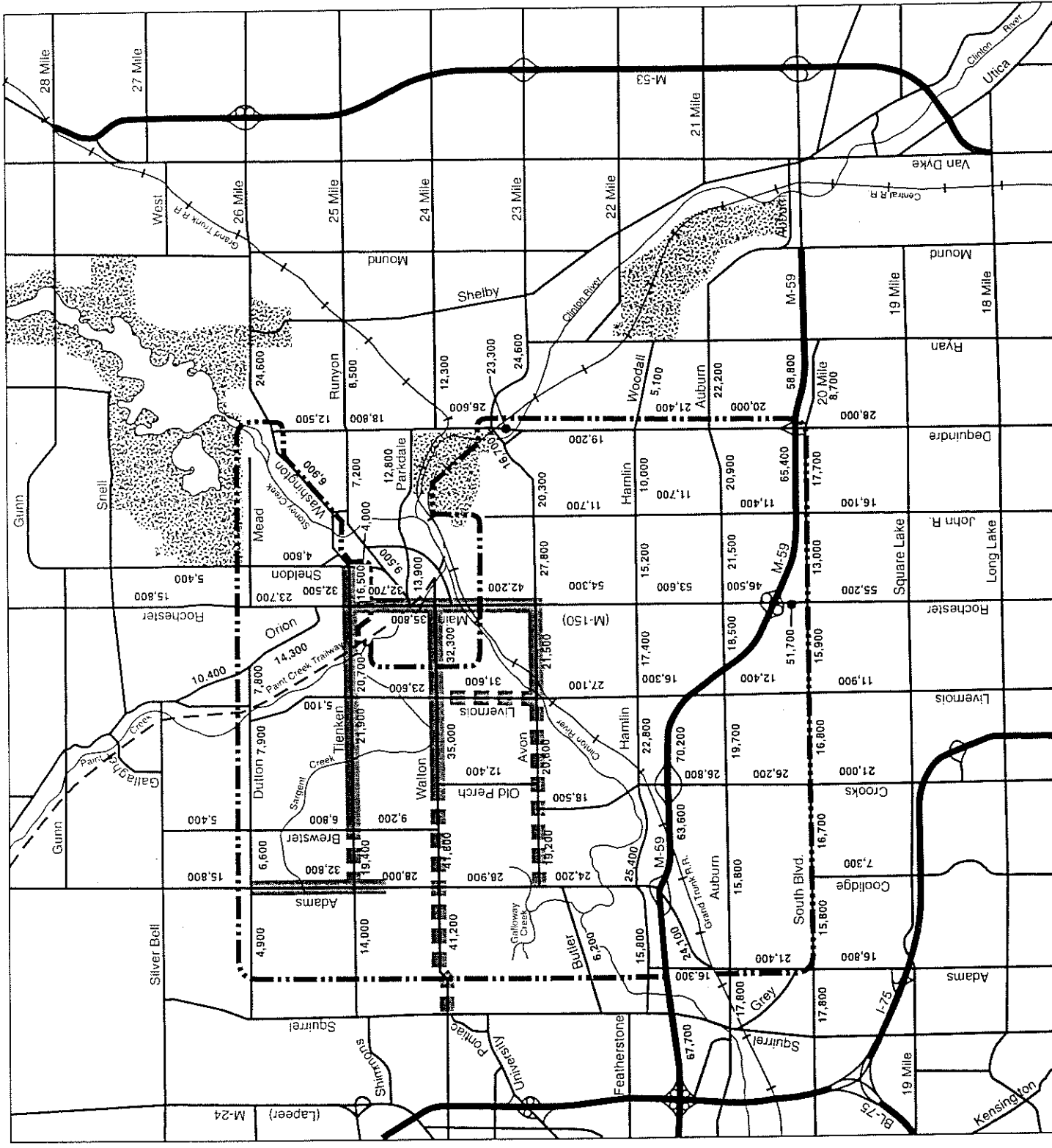
- City Limits
- Levels of Service
- LOS "E"
- LOS "F"

8,500 Forecast ADT (Average Daily Traffic)

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Alternative planned improvements that were considered and not included by the Planning Commission include

- Pursuing the possible development of an east-west principal arterial between M-24 and M-53, generally located in northern Rochester Hills and/or southern Oakland Township, to intercept traffic from the north.
- Improving Dutton to a minor arterial or major arterial.
- Widening Tienken as a major arterial.

The geometrics for the recommended improvements are shown in Table 7.

4. A strategy to intercept and direct a portion of through-traffic away from Rochester Hills roadways is recommended. This diversion strategy in part includes and affects roadways and communities outside Rochester Hills. This strategy should include

- The upgrade of Dequindre Road to intercept traffic from the east and to provide a high-quality connection to M-59. Because much of the traffic currently using Washington and traveling through the Stoney Creek Historic District continues south down Rochester Road/Main Street, improvements to Dequindre (as well as those to Parkdale with an intersection at a Sheldon Road extension) should serve to alleviate some demand on roadways in the northeast corner of the study area. This improvement to Dequindre will also include establishing route continuity in the area of Avon where Dequindre is proposed to be relocated to the east, behind the Yates Cider Mill.
- The proposed re-use of the Grand Trunk railroad right-of-way as a diagonal two- to four-lane, limited-access arterial would serve to divert traffic originating northeast of the study area destined south or southwest of the city from using existing city streets. A special corridor study of the conversion should be initiated as soon as feasible.

5. The provision and encouragement of other than single-occupant auto travel offers potential to reduce congestion and should be pursued. Alternatives include

- Transit service
- Car pools/van pools
- Staggered work hours
- Metering of freeways
- Provision of high-occupancy vehicle lanes

**TABLE 7
2015 ROADWAY GEOMETRIC IMPROVEMENTS**

Roadway	Between	2015 Functional Classification	Recommended Geometric Changes
Dutton	City Limit and Orion	Collector	Paved Roadway Two Lanes
Washington	Tienken to Dequindre	Minor Arterial	Paved Roadway (2 lanes and turn lanes at intersections)
Runyon	Tienken to Dequindre	Minor Arterial	Paved Roadway (2 lanes and turn lanes at intersections)
Avon	Rochester Road to Dequindre	Major Arterial	4-Lane Residential Blvd.
Hamlin	Livernois to Rochester Road	Major Arterial	4-Lane Residential Blvd.
Hamlin	Rochester Road to Dequindre	Minor Arterial	3-Lane Roadway
Adams	South to Auburn	Major Arterial	4-Lane Residential Blvd.
Adams	Auburn to M-59 Interchange	Major Arterial	4-Lane Residential Blvd.
Adams	M-59 to Avon	Major Arterial	4-Lane Residential Blvd.
Adams	Powderhorn Ridge to Dutton	Major Arterial	4-Lane Residential Blvd.
Livernois	Hamlin to Avon	Major Arterial	4-Lane Residential Blvd.
Rochester Road	Avon to South	Major Arterial	6-Lane Residential Blvd.
Dequindre	South to City Limit	Major Arterial	4-Lane Residential Blvd. (including realignment around Yates Cider Mill)
Dequindre	Washington to City Limit	Major Arterial	4-Lane Residential Blvd.
Sheldon	Mead to Tienken	Minor Arterial	3-Lane Roadway

Experience from projects throughout the United States indicates that strategies designed to reduce travel in the traditional peak periods through management are most effective at major employment centers. Given that the city does not have major employment centers, the applicability is minimum. However, the city should cooperate and work with the Traffic Improvement Association of Oakland County to implement such programs that will have a positive impact on the residential end of the work trip. Experience has shown that a comprehensive, travel-demand, management program can reduce peak period travel between 10-15 percent. A following section, Travel Demand Management Strategies, presents further discussion on this matter.

Roadway Geometrics

The geometric design, or cross-section, of a roadway depends on the magnitude and characteristics of projected traffic volumes, the function of the facility, and the adjacent land use and environmental characteristics.

Specifically, several guidelines were used to develop typical roadway cross-section. These include

- Projected traffic volume demand for a facility.
- The existing right-of-way width of roadways.
- The community-defined transportation principles favoring four-lane divided residential boulevards and opposing six-lane arterial roadways.
- Lane requirements to allow for safe operation of the facility with regard to turning movements, reduction in conflicts, potential speeds and other parameters such as adjacent land use.
- Lane requirements to ensure continuity of the arterial cross-sections with regard to safety, minimization of inconsistent geometrics, the most efficient use of construction funds and other parameters such as minimizing disruption/displacement to adjacent land uses.

If only traffic volume was considered when determining the required roadway cross-section, simple mathematical calculations could be used to identify the number of lanes required to design a facility at Level of Service "D." However, other factors such as those listed above were considered in determining typical generalized cross-sections for roadways in the study area (Figures 23 and 24). It is important to recognize, however, that, in a growth community such as Rochester Hills, it is critical to anticipate future roadway demand and to plan for it. Therefore, although a typical cross-section for a minor arterial and collector is designed as 86 feet, it is advised that the cities consider reserving an additional 34 feet of right-of-way along minor arterial roadways as indicated on the Master Right-of-Way Plan included in Appendix C.