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Analysis of Alternatives for the  
North Gratiot Avenue Improvement in  
Mt. Clemens

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Prepared by the  
Planning Division  
Michigan State Highway Department  
John C. Mackie, Commissioner

Analysis of Alternatives for the North Gratiot Avenue  
Improvement in Mt. Clemens

The Planning Division of the Michigan State Highway Department has been requested to make a planning analysis and evaluation of five alternative extensions of North US-25 (Gratiot Avenue) in Mt. Clemens. The request was submitted by the Route Location Division of the Highway Department as a result of a study concerning the improvement of Gratiot Avenue.

BACKGROUND

The Michigan State Highway Department has scheduled, as part of the Second Five-Year Program, 1962-1967, the widening of Gratiot Avenue in Mt. Clemens from Jones Street to the divided section of Gratiot north of the city limits of Mt. Clemens. This improvement, as part of the "Trunk-line Plan for Mt. Clemens", was planned to accommodate the high traffic volumes that were anticipated as a result of the expected expansion of the Mt. Clemens area, the construction of I-94 east of the city, and the need for connection to the downtown business loop.

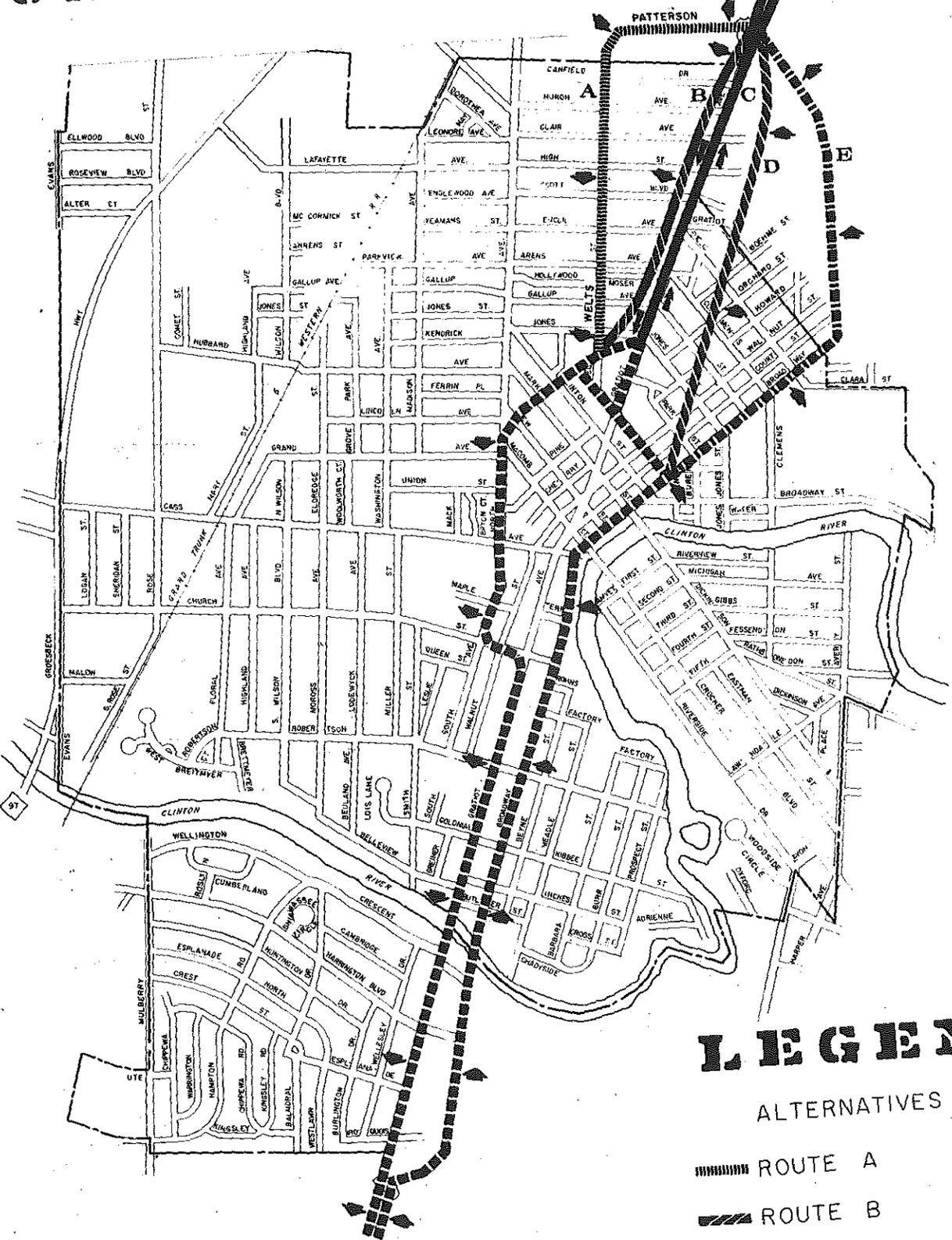
The Route Location Division was asked to prepare a detailed cost estimate of the widening of Gratiot. In the process of determining the costs of the improvement, it was felt that another alternative alignment might be cheaper and provide a better transportation route than Gratiot. Five alternative route locations, including the present Gratiot alignment, were recommended for study. (See Map 1) This study by the Planning Division includes a detailed analysis of the alternatives on the basis of economic, social, transportation, community and developmental factors.

EXISTING CONDITIONS

In the Mt. Clemens area, Gratiot now consists of four 10 foot lanes. The road is not divided. Between Jones Street and Clemens Street, the

# CITY OF MOUNT CLEMENS

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## LEGEND

- ALTERNATIVES
-  ROUTE A
  -  ROUTE B
  -  ROUTE C
  -  ROUTE D
  -  ROUTE E



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average daily traffic at present is approximately 16,000 vehicles. From Clemens Street to Euclid Street the A.D.T. is approximately 15,000 vehicles. The A.D.T. between Euclid Street and the divided section of Gratiot, is approximately 13,000 vehicles.

Existing land uses fronting on Gratiot Avenue are not homogeneous and will affect not only location of the route but also its efficiency upon completion. (See Map 2) Frontage from Jones Street north to the divided section of Gratiot is mostly a mixture of commercial and residential uses. A large tract of industrial land on the east side of Gratiot between Henry B. Joy Boulevard and the Grand Trunk Railroad materially affects the location alternatives east of Gratiot.

#### FUTURE CONSIDERATIONS

The City of Mt. Clemens with the services of Geer Associates-Planning Consultants, has developed a land use plan for the city. Land uses planned for the area which is discussed in this report can be seen on Map 3. The west side of Gratiot Avenue from Jones Street north to Ahrns Avenue is expected to change entirely into commercial use. A small area of commercial use is expected between Brooks Street and Clemens Street on the east side of Gratiot. From Ahrns Avenue north to High Street, residential use is planned for both sides of Gratiot Avenue. Commercial uses are expected from High Street north to the Grand Trunk Railroad on the west side of Gratiot Avenue. A large tract of industrial land will remain on the east side of Gratiot Avenue from Henry B. Joy Boulevard north to the Grand Trunk Railroad. From the Grand Trunk Railroad north, both sides of Gratiot Avenue are planned for residential use.

As urbanization continues, through traffic removed by construction of I-94 will be replaced by area traffic and in fact increase. Because of the increase, the old roadway will become inadequate to handle future

# CITY OF MOUNT CLEMENS

## EXISTING LAND USE



### LEGEND

-  RESIDENTIAL
-  COMMERCIAL
-  INDUSTRIAL
-  PARKING
-  PUBLIC AND SEMI-PUBLIC
-  ELEMENTARY SCHOOL
-  PUBLIC HOUSING
-  VACANT LAND
-  ALTERNATIVES
-  ROUTE A
-  ROUTE B
-  ROUTE C
-  ROUTE D
-  ROUTE E

volumes and will necessitate the construction of a new facility. The Traffic Division has estimated that a new US-25 facility will have to carry 32,000 vehicles (A.D.T.) at Mullett Street. Between Mullett Street and Henry B. Joy Boulevard, traffic will decrease to 29,000 vehicles. Average daily traffic is expected to be 26,000 vehicles between Henry B. Joy Boulevard, and the divided section of Gratiot, decreasing to 25,400 south of Hall Road (M-59).

The two-way facility necessary to carry these volumes of traffic on the Gratiot Avenue alignment would have to be seven lanes wide, as recommended by the Traffic Division. Construction of such a facility would require the acquisition of additional right-of-way on both sides of Gratiot Avenue from Jones Street north to the divided section of Gratiot. Although the city has attempted to maintain a set back line for new buildings which would have allowed this widening, the Route Location Division estimates that the R.O.W. costs, together with construction costs would be substantial, warranting the consideration of other routings. Possible alternatives for the Gratiot alignment are discussed below.

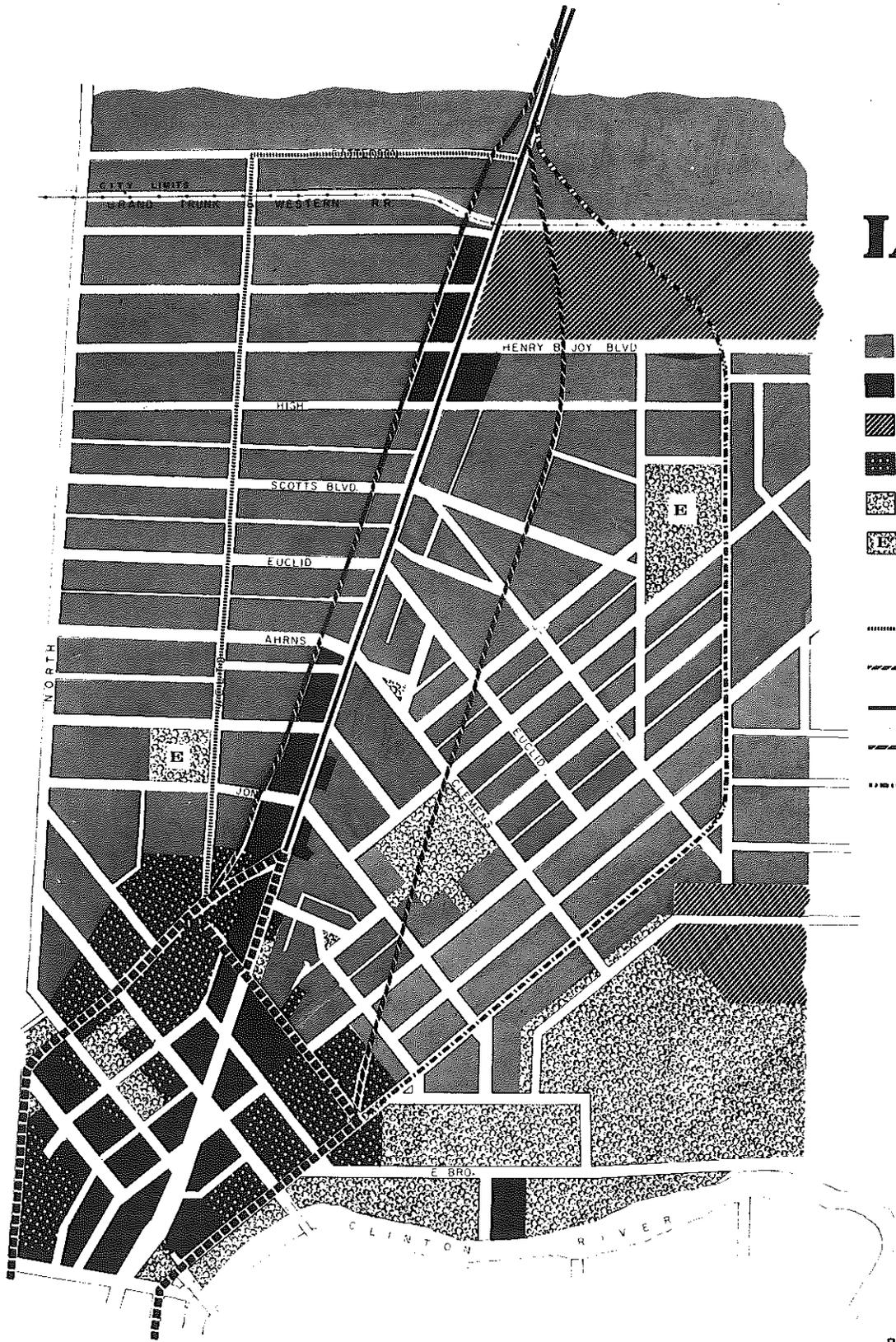
#### EVALUATION OF ALTERNATIVE LOCATIONS

Certain factors apply to all the alternatives. Any of the alternatives should serve not only as a State highway, but also as a major street serving traffic between future urbanization north of Mt. Clemens and the Central Business District. (Map 3) The topography of the area will not have a significant effect on any location because the land is relatively flat, with no natural physical barriers to location at any point.

Each alternative location has certain advantages and disadvantages which should be weighed in choosing the best route. Existing Gratiot

# CITY OF MOUNT CLEMENS

# LAND USE PLAN



## LEGEND

- RESIDENTIAL
  - COMMERCIAL
  - INDUSTRIAL
  - PARKING
  - PUBLIC AND SEMI-PUBLIC
  - ELEMENTARY SCHOOL
- ALTERNATIVES
- ROUTE A
  - ROUTE B
  - ROUTE C
  - ROUTE D
  - ROUTE E



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Avenue will be used as part of any of these facilities no matter which alternative is chosen. (See Map 1) The choice of A or B provides one-way service for south-bound vehicles in coordination with Gratiot which will provide service for north-bound traffic. If C is chosen, Gratiot will carry both north and south-bound traffic. If D or E is chosen, Gratiot will carry south-bound traffic.

#### ALTERNATIVE A

##### Benefits

1. This route, through most of its entirety, follows existing Welts Street north and south and Patterson Street east and west. Hence, costs for R.O.W. acquisition will be negligible.
2. Homes in the residential area through which Welts Street passes do not face onto the route, but on the residential streets abutting this route.
3. This route will tie in well with the west half of the proposed downtown business loop.

##### Disadvantages

1. The route does not follow trip desire lines. Existing Gratiot Avenue, which represents the trip desire line, runs on a northeast-southwest alignment while Alternative A runs north-south on Welts Street and east-west on Patterson Street. As a result vehicles must travel over a longer distance than on the present Gratiot Avenue alignment. The use of existing streets also involves a 90° turn at the intersection of Welts and Patterson Streets requiring acquisition of additional right of way to permit the construction of an adequate turn.

2. The one-way streets of Alternative A form a residential triangle which would be subjected to an unnecessary amount of traffic, taking short-cuts through the triangle. This unnecessary use of the residential streets would reduce the livability of this area.
3. The establishment of a new major street on Welts Street may tend to encourage strip commercial development which would be detrimental to the existing residential character of the area and to the maintenance of values in the central business district.
4. The residential triangle is part of an elementary school attendance area which is bisected by the one-way street on Welts. As a consequence, children attending Lincoln elementary school and living in the triangle, would have to cross the Welts Street leg of Alternative A. In addition, it passes directly in front of the school.

#### ALTERNATIVE B

##### Benefits

1. This alignment involves the least adverse distance of the four alternatives not using the original alignment on Gratiot Avenue. It follows the trip desire axis, paralleling Gratiot Avenue, and ties in well with the west half of the proposed downtown business loop.
2. The alignment will follow the alley on the west side of Gratiot Avenue, acting as a separator between the commercial frontage along Gratiot and the residential land west of Gratiot. Acquisition of R.O.W. for Alternative B provides triangular parcels on the west edge of the route which could be used

for a landscaping or planting strip and act as a buffer between commercial and residential land uses.

3. Alternative B will not disturb the residential character of the land in the school attendance area between Gratiot and North Avenues.
4. The right-of-way for Alternative B will require acquisition of a minimum of individual parcels, because it follows rear property lines of parcels fronting on Gratiot. It will run length-wise to residential property west of the alley and the number of lots to be acquired per block will range from 2 to 5.
5. The location of this alternative would facilitate a smoother flow of traffic, through the use of one-way streets which limit bottlenecks.
6. Because this route would be new along its western leg, access could be controlled to insure a safe and efficient pattern of traffic flow which would enhance the value of commercial land in the C.B.D.

#### Disadvantages

1. Costs will be higher than if existing streets were used.
2. The location of this alternative will eliminate the alley on the west side of Gratiot. This may cause dead end alleys to form in the residential blocks west of Gratiot.
3. Strip commercial development will be encouraged between the one-way pairs, contrary to the proposed land use plan and detracting from the commercial value of the C.B.D. However, commercial uses would be confined by the one-way pairs, thus limiting encroachment in residential areas.

ALTERNATIVE C

Benefits

1. Alternative C uses an existing facility - Gratiot Avenue - in its entirety for alignment and construction.
2. The existing physical character and values of the community are preserved, i.e., Gratiot will be maintained as the main street of Mt. Clemens.
3. Commercial use of land will be limited to frontage on Gratiot Avenue.
4. The Gratiot Avenue alignment will continue to separate the existing school attendance districts of Lincoln and Clemens Elementary schools. Children will not be required to cross a highly traveled traffic artery.
5. Alternative C agrees with the major street section of the Mt. Clemens Development Plan.
6. It ties in very well with the downtown business loop.

Disadvantages

1. Of all five alternatives, Alternative C is the most expensive to construct, due to the high cost of acquiring portions of property fronting on Gratiot for R.O.W.
2. Two-way traffic on one facility-Gratiot Avenue-will be less efficient, because of anticipated volumes and left-hand turning movements.
3. By encouraging commercial strip development, and concentrating traffic on one route, this alignment will create turning movement and traffic conflicts which would be partially avoided by use of one-way streets.

ALTERNATIVE D

Benefits

1. Alternative D follows the general trip desire line, paralleling Gratiot Avenue.
2. Virtually all of this alternative would be new construction; consequently access could be controlled to develop a favorable traffic flow.
3. This alignment ties in well with the business loop.

Disadvantages

1. Alternative D crosses a number of residential streets on a diagonal alignment, forming acute angled intersections and possible hazards for drivers.
2. R.O.W. acquisition will also be complicated by the diagonal pattern, because more properties will be acquired than if the alternative ran parallel to lot lines.
3. This alternative will bisect the Clemens Elementary School attendance district, causing children living west of Alternative D to cross the heavily traveled artery in order to attend school. It also passes diagonally through a neighborhood park presently being developed.
4. Alternative D passes through an existing industrial tract at the north city limits of Mt. Clemens.
5. The residential area through which Alternative D passes is being redeveloped as an Urban Renewal project. The route does not provide any type of boundary for the Renewal area, nor does it integrate well with future plans for the area.
6. An area of public housing will be bracketed on two sides by the one-way pairs with possible commercial intrusion.

## ALTERNATIVE E

### Benefits

1. This route uses existing streets for almost all of its length, reducing right-of-way costs.
2. Alternative E will integrate well with the urban renewal program for this area.
3. This alternative will integrate with local major streets, as proposed in the Master Plan.

### Disadvantages

1. Alternative E does not follow the trip desire line axis, involving an adverse distance from downtown to the north city limits.
2. The route will pass directly past the Clemens Elementary School and bisect its school attendance district.
3. Residential streets between the one-way pairs of Gratiot and Alternative E will be subjected to increased traffic due to persons seeking one or the other of the one-way pairs.
4. Costs of bringing the route up to state highway standards may be excessive because of distances involved and because it is currently only a local city street.

### CONCLUSIONS

The benefits and disadvantages of each alternative route location have been weighed according to their impact upon the economic, social, developmental and transportation factors of the City of Mt. Clemens. On the basis of these considerations and estimates which indicate that sufficient right-of-way and traffic capacity cannot be provided on Gratiot Avenue, it is recommended that the Alternative B alignment (Gratiot Avenue and a new parallel one-way street) be adopted.

The selected alternative follows the existing and anticipated trip desire on Gratiot Avenue. This assures continued use and smoother traffic flow on the pair of one-way streets, and will not increase the through traffic movement on residential streets, as would be the case in the other alternatives. The newly constructed route will be virtually the same length as existing Gratiot Avenue, thereby avoiding adverse distance for the users of this facility.

The selected alternative promotes the adopted development goals and objectives of the Mt. Clemens Master Plan. The streets proposed for state highway use will be well integrated with land uses and with other state highways and major streets. Residential land and school districts on both sides of the one-way pair of streets will retain their character and usefulness. The downtown loop will be enhanced by the improvement of this access from the northern areas of the city. Commercial establishments north of the downtown areas as well as the C.B.D. will share in the improvement, through increased access and improved service provided by the new street.

In constructing this facility, it is recommended that the Highway Department and the local authorities cooperate to attain access control on the new route. Limitation of access will insure the useful life of the new construction. The tendency for the new facility to encourage new commercial growth in the residential area would otherwise depreciate the route. Protection from commercial encroachment should be afforded to the residential lands which will be adjacent to the new route, through enforcement of zoning controls. The planting of a buffer strip of trees and shrubs between the highway and the residences, screening out the view to residential properties, will help and maintain the

values of the residences. The peculiar saw-toothed arrangement of properties to be acquired for the construction of this route lend themselves well to such landscaping.