III. TRANSPORTATION DEMAND FORECASTING

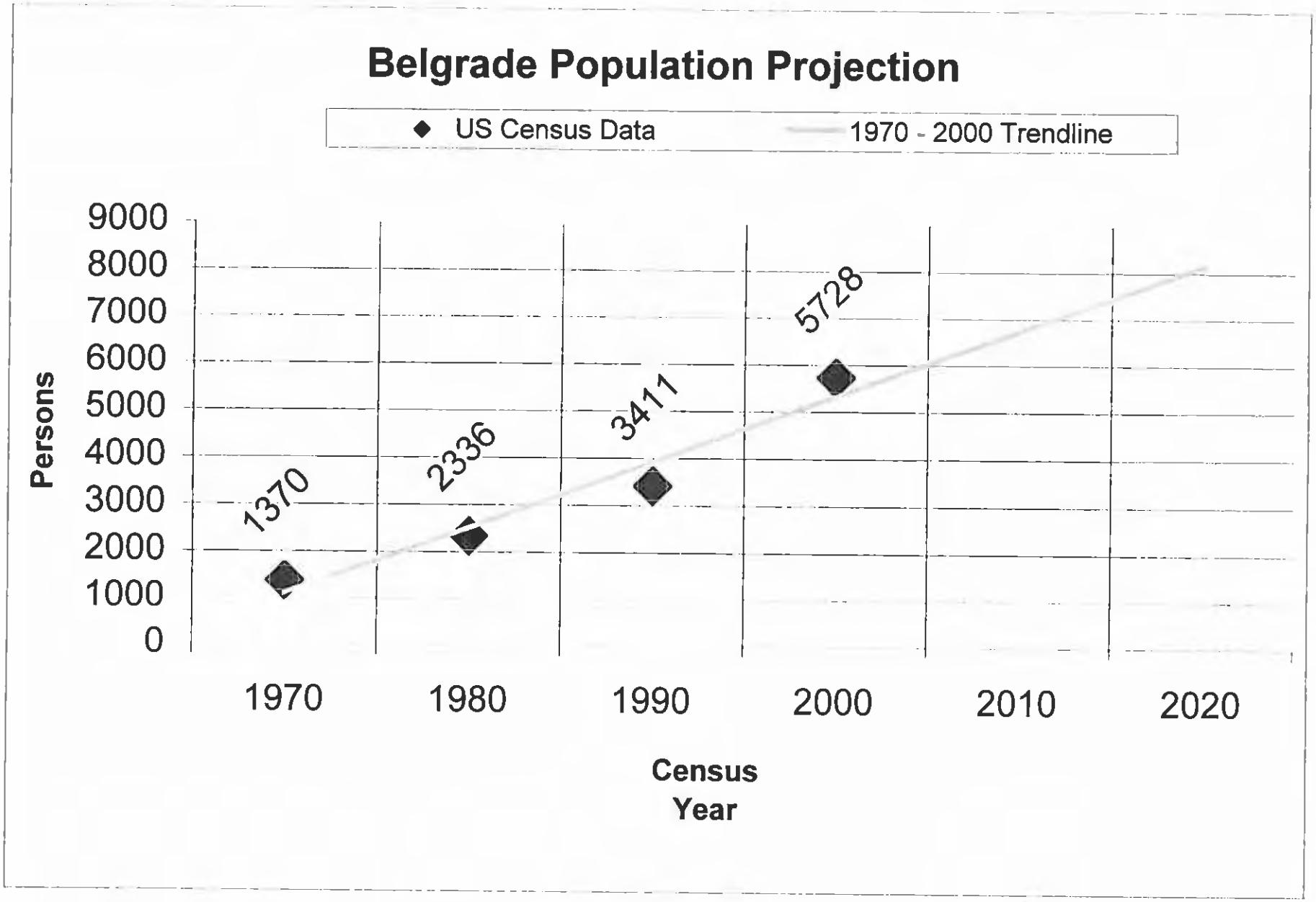
GENERAL

Larger scale transportation plans often employ a sophisticated computer model to evaluate the effects of making transportation improvements on the overall transportation system. No computerized model was prepared or employed for this Belgrade Area Transportation Plan. Engineering judgment and evaluation was used, however, in recommending major projects and Transportation System Management work items to improve the overall traffic circulation in the area.

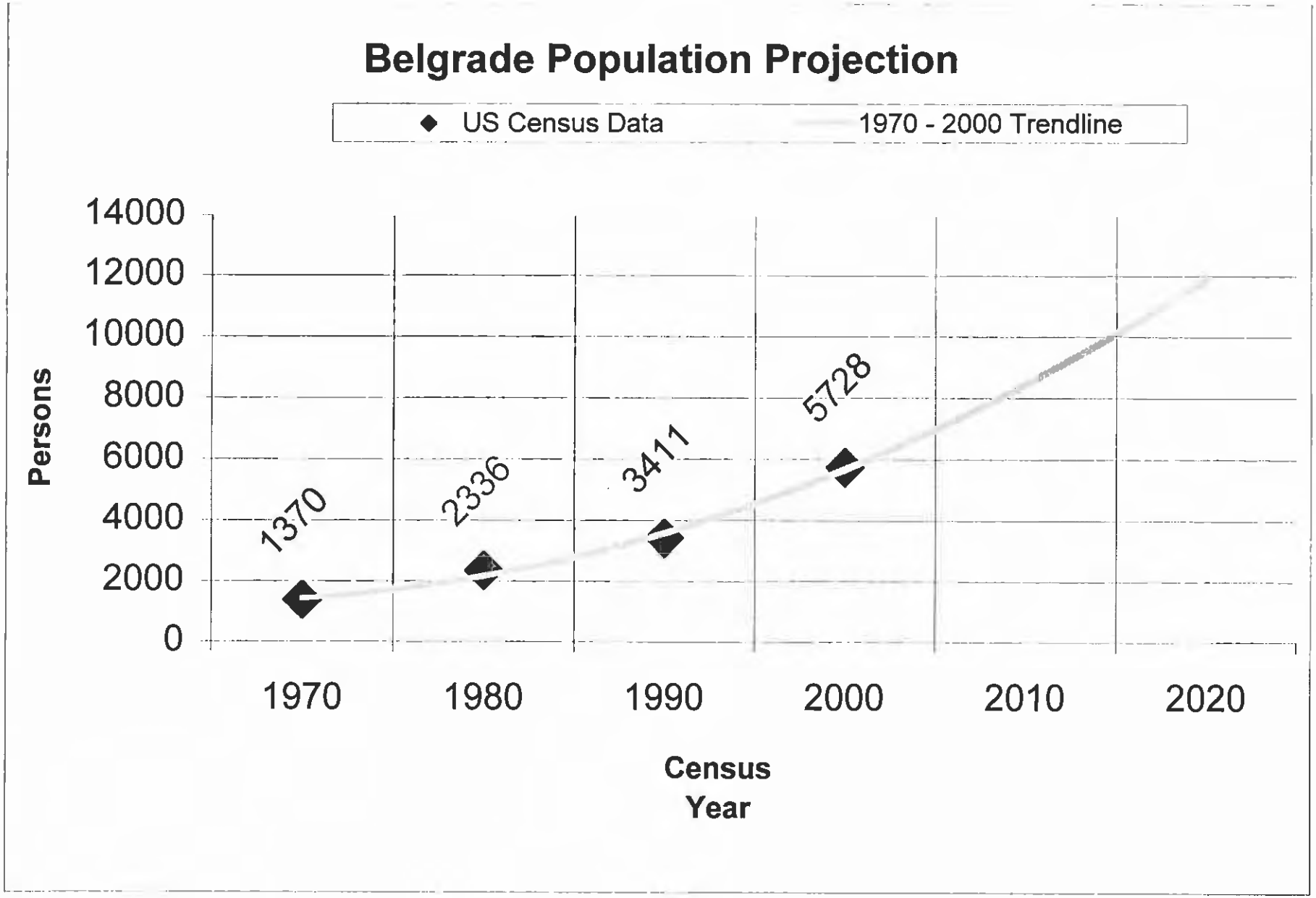
Making general trip generation projections for the undeveloped areas within the study area supports this engineering judgment and evaluation. Perhaps more importantly, the overall population growth and therefore traffic volume growth for the area was distributed based on rate of growth assumptions as indicated on Figure III.1 and discussed below.

POPULATION PROJECTIONS

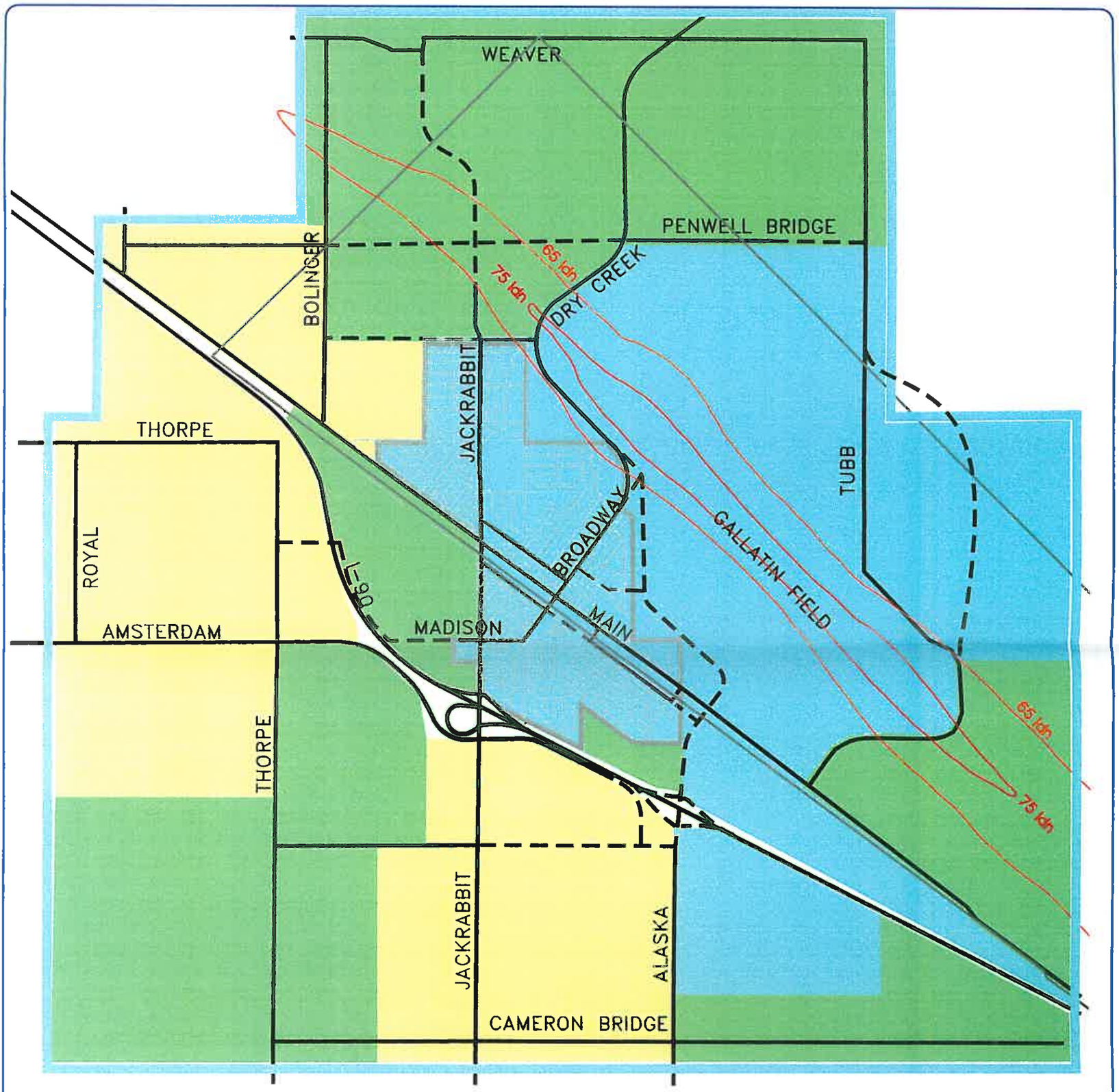
United States Census Bureau data for the City of Belgrade and Gallatin County for the years 1970 through 2000 was used to project the population growth that might be expected in this area in the next 20 years. Two methods of projecting the growth were evaluated. A simple linear projection out to the year 2020 results in an estimated population within the City of Belgrade of just over 8,000 persons. Using a polynomial projection that provides a better fit for the years of record results in a year 2020 population, again for the City of Belgrade, of roughly 12,000 persons. Using the same years of record for Gallatin County, it is clear that while the overall population increased significantly during this same time period, the City's rate of growth was nearly double that of the County.



LINEAR PROJECTION



POLYNOMIAL PROJECTION



GROWTH RATE ASSUMPTIONS

HIGH

MEDIUM

LOW

NOISE 75 ldn

NOISE 65 ldn

AIRPORT INFLUENCE BOUNDARY

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BELGRADE AREA TRANSPORTATION PLAN

FIGURE III .1

Annexations to the City are likely to occur south of Interstate 90 as City water and sewer services become available. In anticipation of this, the areas along Jackrabbit Lane south of Interstate 90 are shown as areas of high growth in the next two decades.

The areas generally north of Amsterdam Road and west of the City of Belgrade are indicated as high growth areas as well, primarily because of recent subdivision activity and development already occurring in the area.

Low growth is indicated for areas already within the limits of the City of Belgrade, which are largely fully developed at this time, and in the areas influenced by Gallatin Field operations.

All other areas within the study area are anticipated to see medium growth.

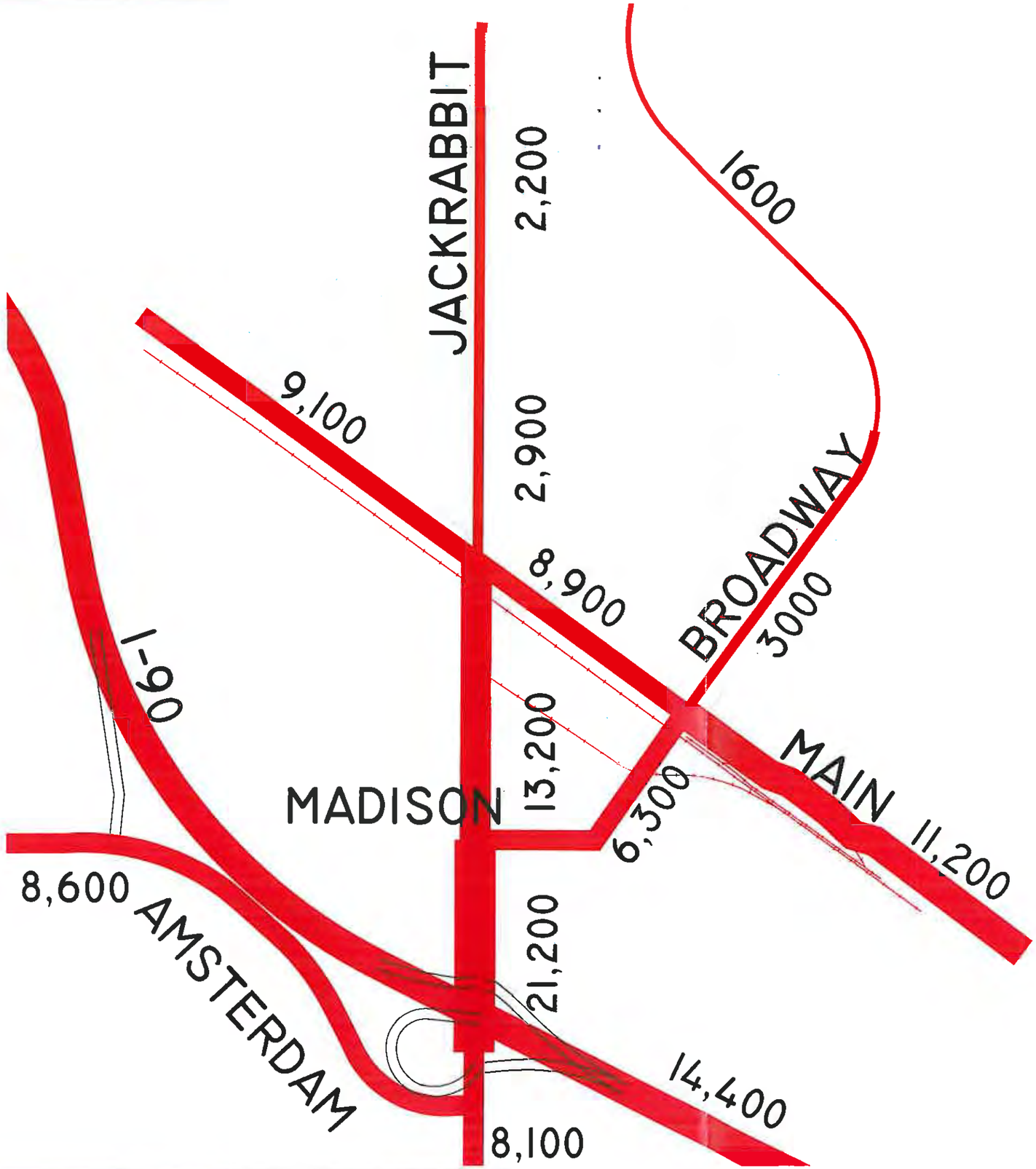
TRAFFIC VOLUME PROJECTIONS

For prediction of traffic volume increases on select road corridors, the three relative levels of growth discussed above were utilized to estimate increases in traffic volumes. Increases in volumes were calculated at rates ranging from 18% per decade in low growth areas, to 47% per decade in high growth areas.

Engineering judgment was used to determine which corridors could be expected to see the greatest increase in traffic volumes generally based on the assumed areas of growth, at rates indicated by census data. These volumes are indicated on Figures III.2 and III.3, for the years 2010 and 2020, respectively. These traffic volumes were used to evaluate proposals for future improvements.

It should be noted, however, that the effects of any individual transportation project should be more fully evaluated prior to implementation. For example, connection of Cruiser Lane to Dry Creek can be expected to immediately increase the volume on Jackrabbit north of Main Street. If the Eastside bypass is then constructed, volumes on

BELGRADE TRAFFIC VOLUMES YEAR 2010



LEGEND

- 0 – 2,000 ADT
- 2,000 – 5,000 ADT
- 5,000 – 10,000 ADT
- 10,000 – 15,000 ADT
- 15,000 – UP ADT

FIGURE III .2

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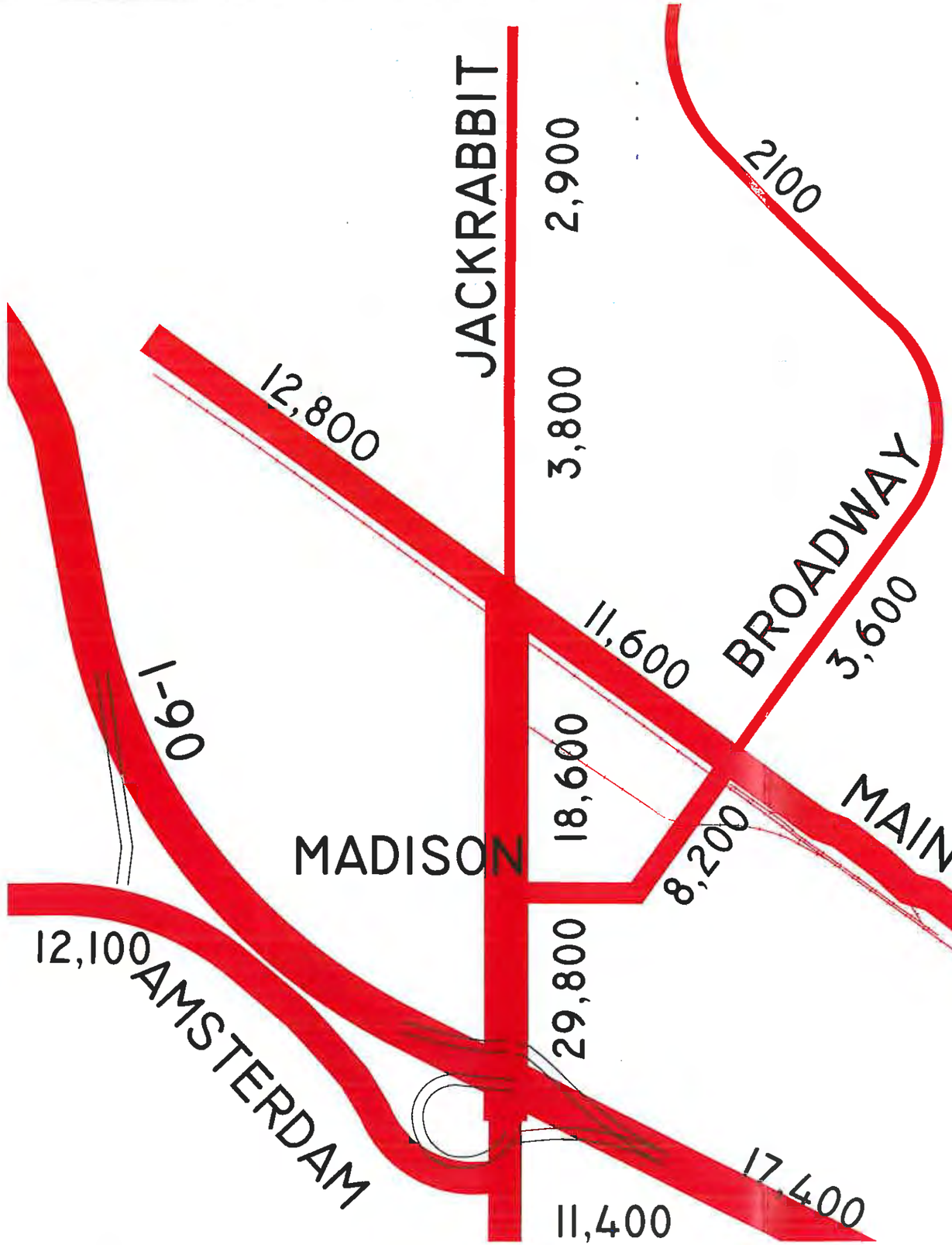
BELGRADE TRAFFIC VOLUMES YEAR 2020



LEGEND

- 0 – 2,000 ADT
- 2,000 – 5,000 ADT
- 5,000 – 10,000 ADT
- 10,000 – 15,000 ADT
- 15,000 – UP ADT

FIGURE III .3

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the north leg of the intersection of Main Street and Broadway could be expected to be significantly less, potentially delaying and/or altering changes to the intersection.