Memorandum

DATE: June 25, 2024
TO: Victoria MPO
CC:
FROM: ATG|DCCM
RE: Transit Supportive Densities Analysis

Introduction

Transit is typically most successful when serving communities with denser concentrations of residents and jobs. Transit propensity examines population and employment densities as a significant initial measure of transit demand. This analysis relies on ATG's Transit Density Benchmarks. These benchmarks are estimated levels of density typically needed to support increasing frequencies of local bus service. Population density benchmarks are measured by the number of people per gross acre, and employment density benchmarks are measured by the number of jobs per gross acre. ATG's Transit Density Benchmarks can be seen in Table 1.

Table 1: Transit Density Benchmarks

Population Density (people/acre)	Employment Density (jobs/acre)	Recommended Service Frequency
0 – 8	0 – 4	Flexible Service
8 – 16	4 – 8	60-Minute Frequency
16 – 26	8 – 16	30-Minute Frequency
Over 26	Over 16	15-Minute Frequency

Population and employment density estimates for 2022 and projections for 2050 were calculated from the most recent Victoria Travel Demand Model, as developed by the TxDOT and the Texas Transportation Institute (TTI), using Traffic Analysis Zones (TAZs) as the unit of geography. These data were compared with the existing transit network in Victoria County.

Existing Transit Conditions in Victoria

Victoria Transit

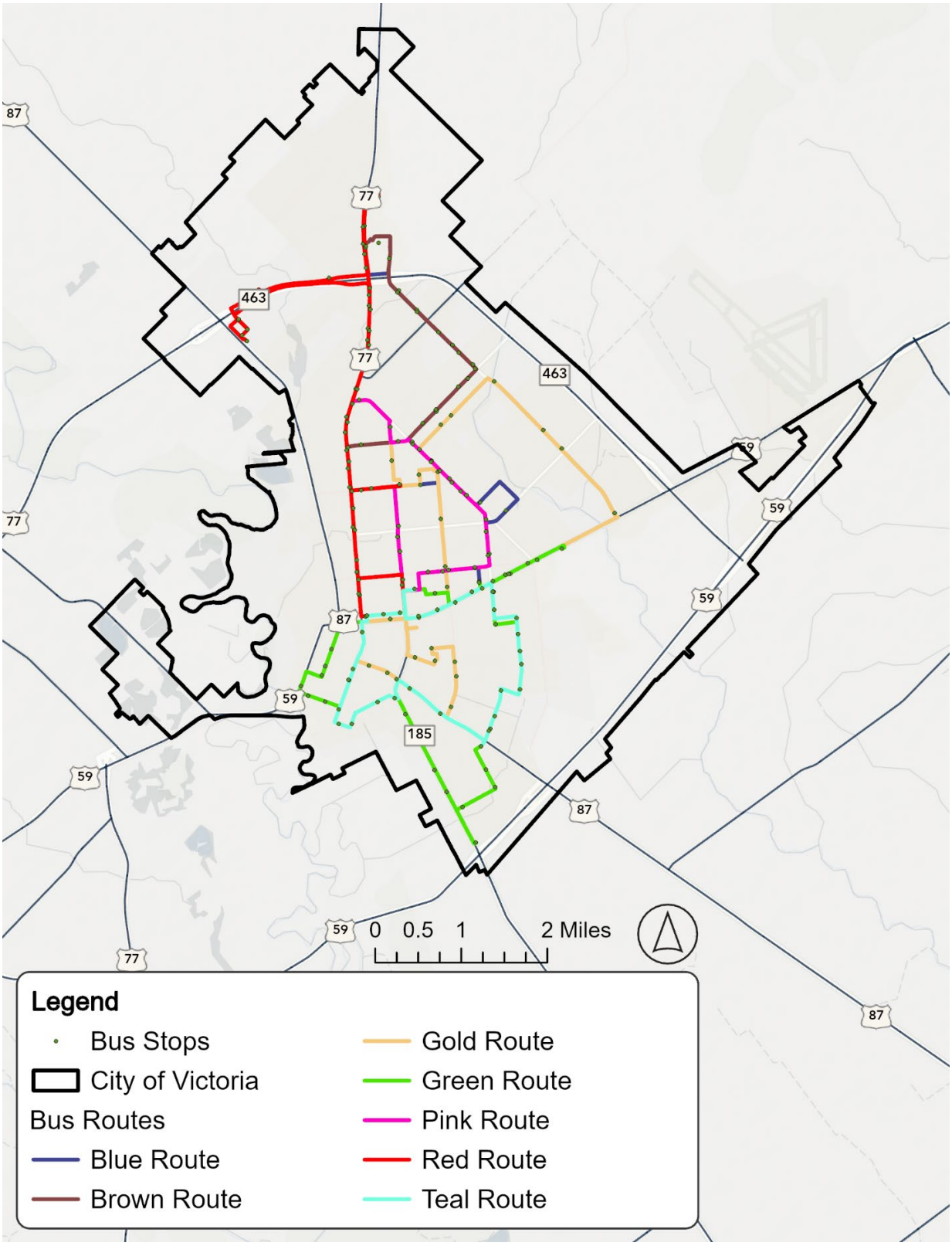
Victoria Transit is a transit agency operated by the Golden Crescent Regional Planning Commission (GCRPC) that provides public transportation services within the city limits of Victoria. The GCRPC also operates RTRANSIT, a curb-to-curb transit service providing services to rural Victoria County along with Calhoun, DeWitt, Goliad, Gonzales, Jackson, Lavaca, and Matagorda Counties.

Victoria Transit offers fixed-route services, including the Red, Blue, Green, and Gold Routes, which provide workweek transportation from 7:00 AM to 6:00 PM Monday through Friday. The Pink, Teal, and Brown Routes provide bus service on weeknight evenings from 6:00 to 10:00 PM, as well as on Saturdays from 11:00 AM to 10:00 PM. Service follows a 30-minute frequency schedule, except for the Gold Route, which comes every hour. Routes run exclusively in one-direction loops. All buses are equipped to transport bicycles, and accessible to those riders who use mobility aids such as wheelchairs. Paratransit services are available within city limits to riders who have a disability that impedes them from riding conventional public transportation. Fares are accessible to the public, ranging from 75 cents to $1.50. Children under the age of 6 ride free of charge. Figure 1 presents a map of Victoria Transit bus routes and stops.

Temporary Service Changes

During the development of this transit analysis, a temporary service reduction due to funding constraints was announced. As of June 3rd, 2024, hours of operation were reduced for the Gold, Teal, Pink, and Brown routes. The Teal, Pink, and Brown routes will operate on the same schedule (30-minute frequency), but service will end two hours early, at 8:00 PM instead of 10:00 PM. The Gold route will cease operations. These changes will be in effect until the end of FY 2024, on August 31st, 2024. The Gold, Teal, Pink, and Brown routes will resume normal operations September 1st, 2024.

Figure 1: Current Transit Routes



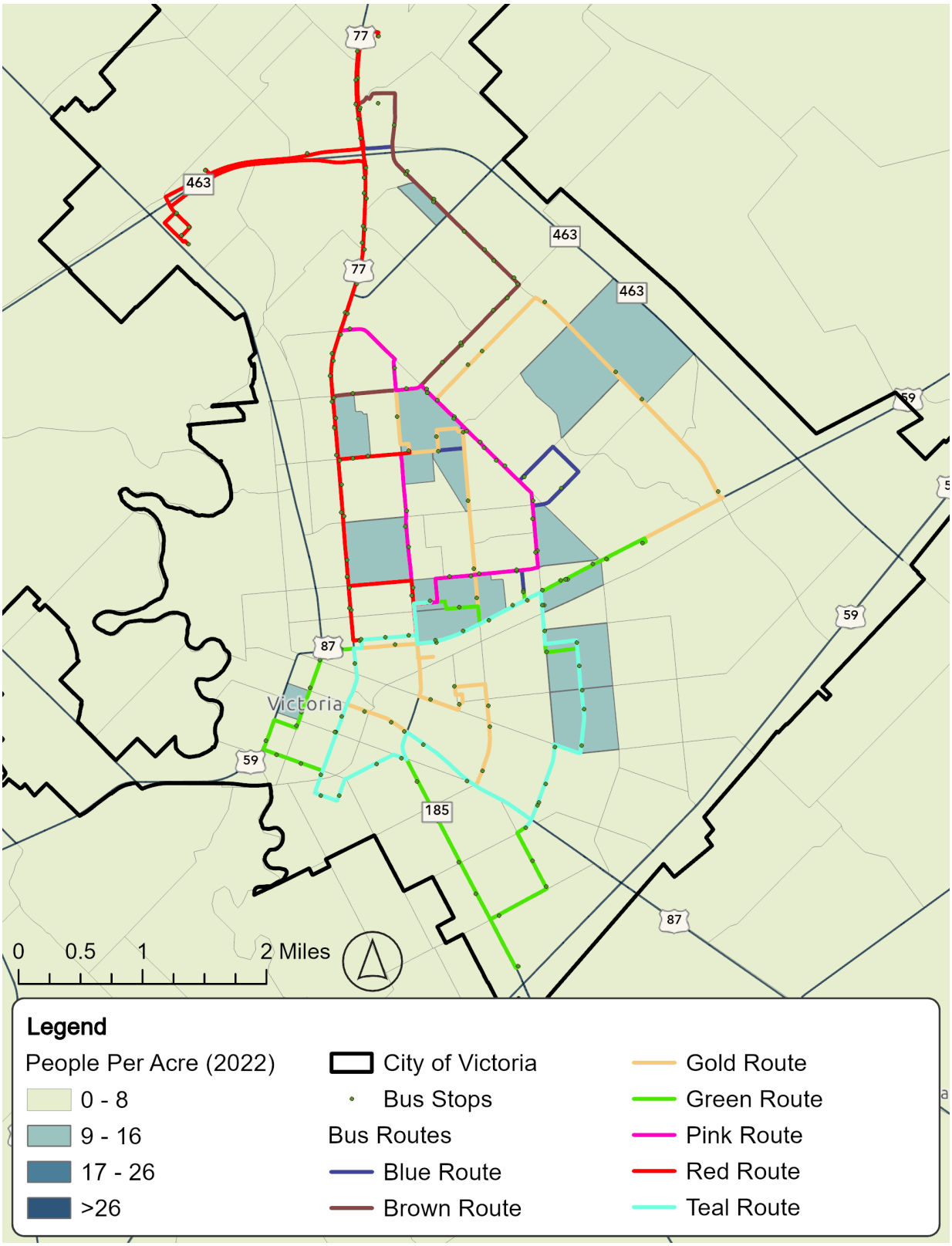
Source: Victoria TDM

Current Transit Propensity

Figure 2 illustrates the distribution of population density in the city of Victoria as it pertains to ATG's Transit Density Benchmarks in relation to existing transit services. Population estimates are for the year 2022 and come from the Victoria TDM. According to the data, every TAZ meeting the population benchmark for fixed service at any interval of frequency has an adjacent bus route which services the area.

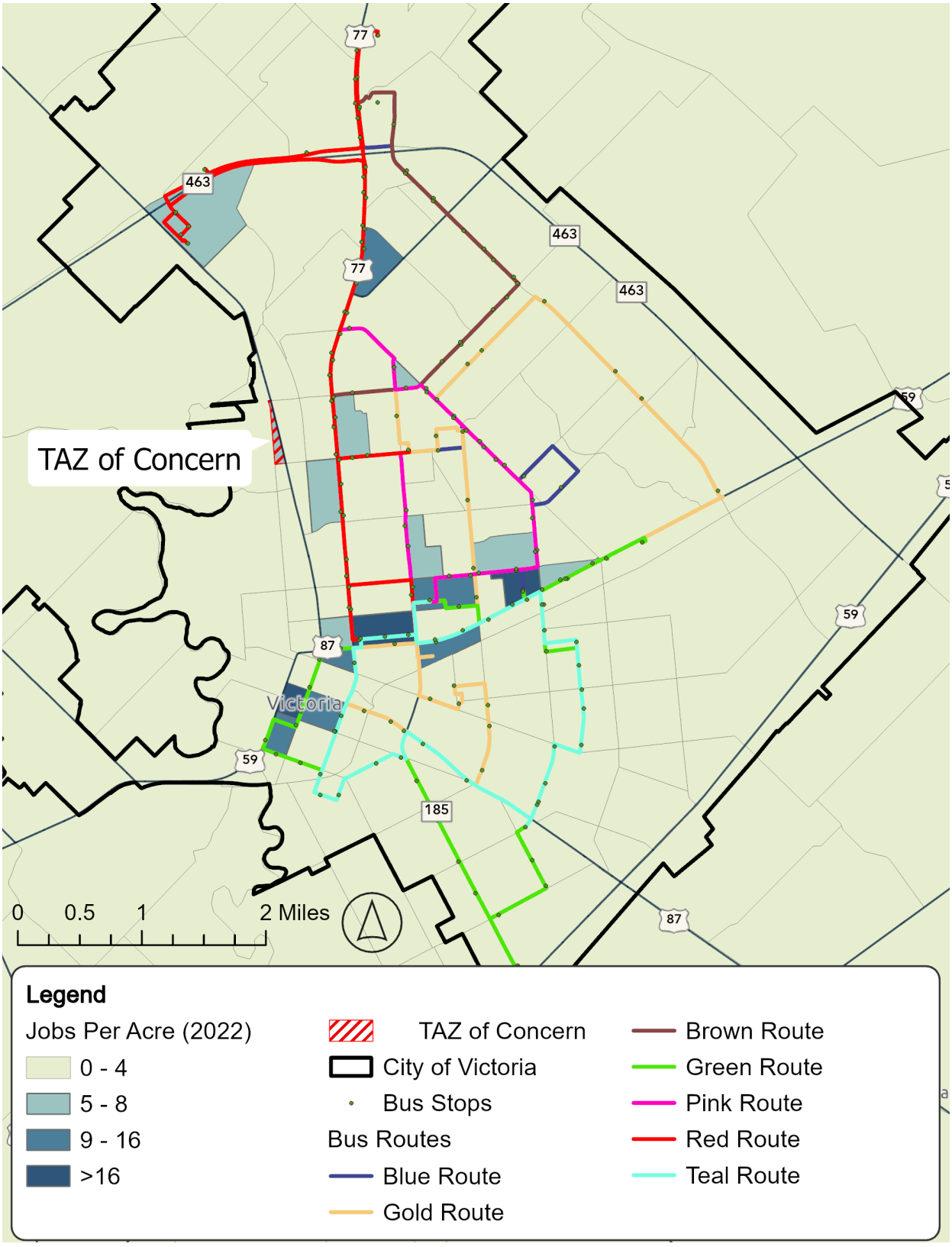
Figure 3 demonstrates the distribution of density of employment opportunities within the city of Victoria in relation to Victoria Transit routes. As shown, all TAZs with higher job densities except for one are currently serviced by bus routes. The lone TAZ that is not serviced by a Victoria Transit bus route can be found on the central-west side of the city and is highlighted in red in Figure 3. This TAZ can be found confined by Main St. and North Vine St. and contains several businesses offering employment to the community including a medical clinic, a restaurant, an insurance office, an apartment complex, a radio broadcasting station, a landscaping company, and a florist.

Figure 2: 2022 Population Density and Transit Routes



Source: Victoria TDM

Figure 3: 2022 Employment Density and Transit Routes

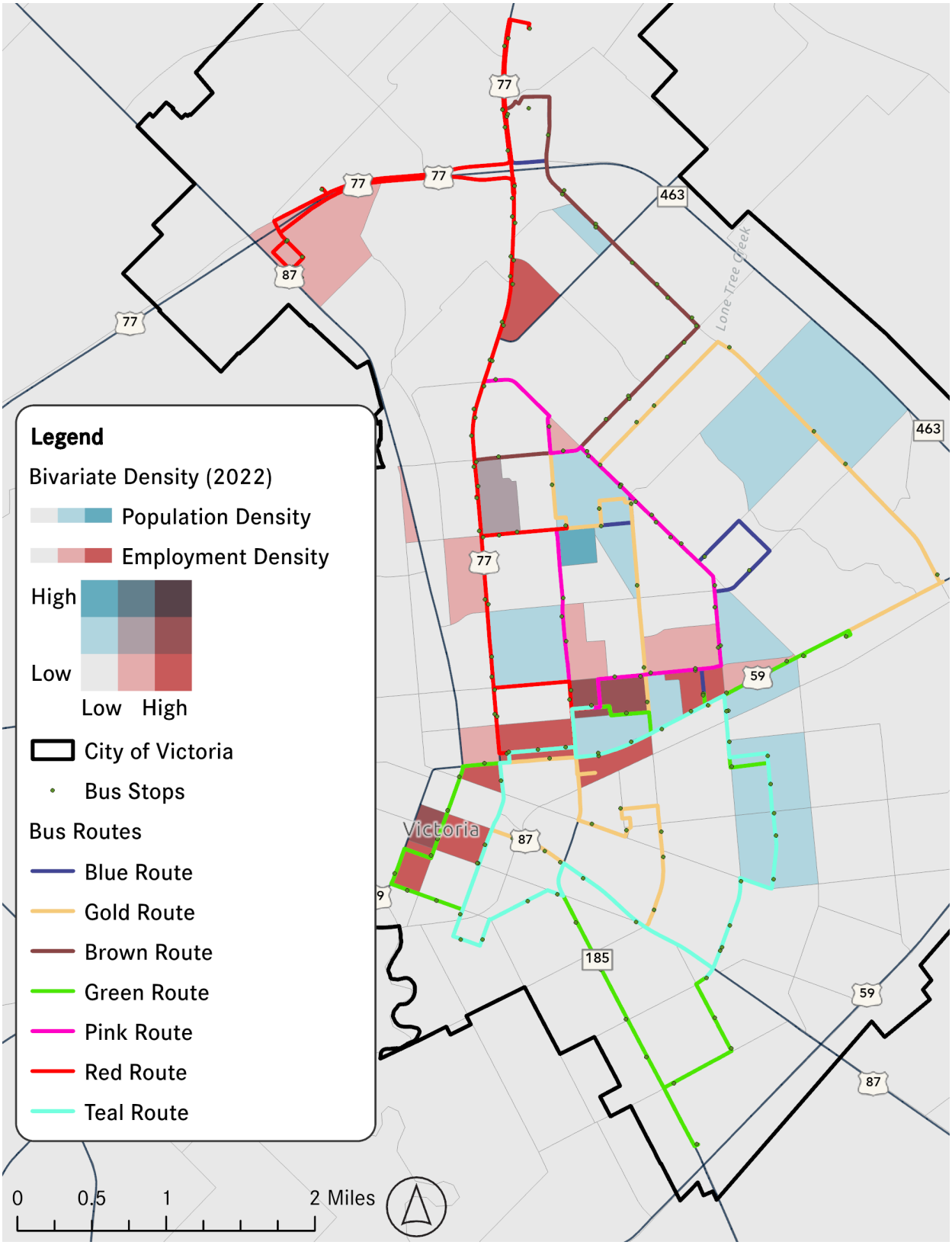


Source: Victoria TDM

Figure 4 presents both density factors, population and employment, in relation to the Victoria Transit service network. In the map, darker colors represent higher density. Blue hues represent population, red hues represent employment, and purple hues represent the coincidence of the two variables. Apart from the previously mentioned area of concern, currently all TAZs with higher densities of population and employment bus stops and routes adjacent to or contained within them.

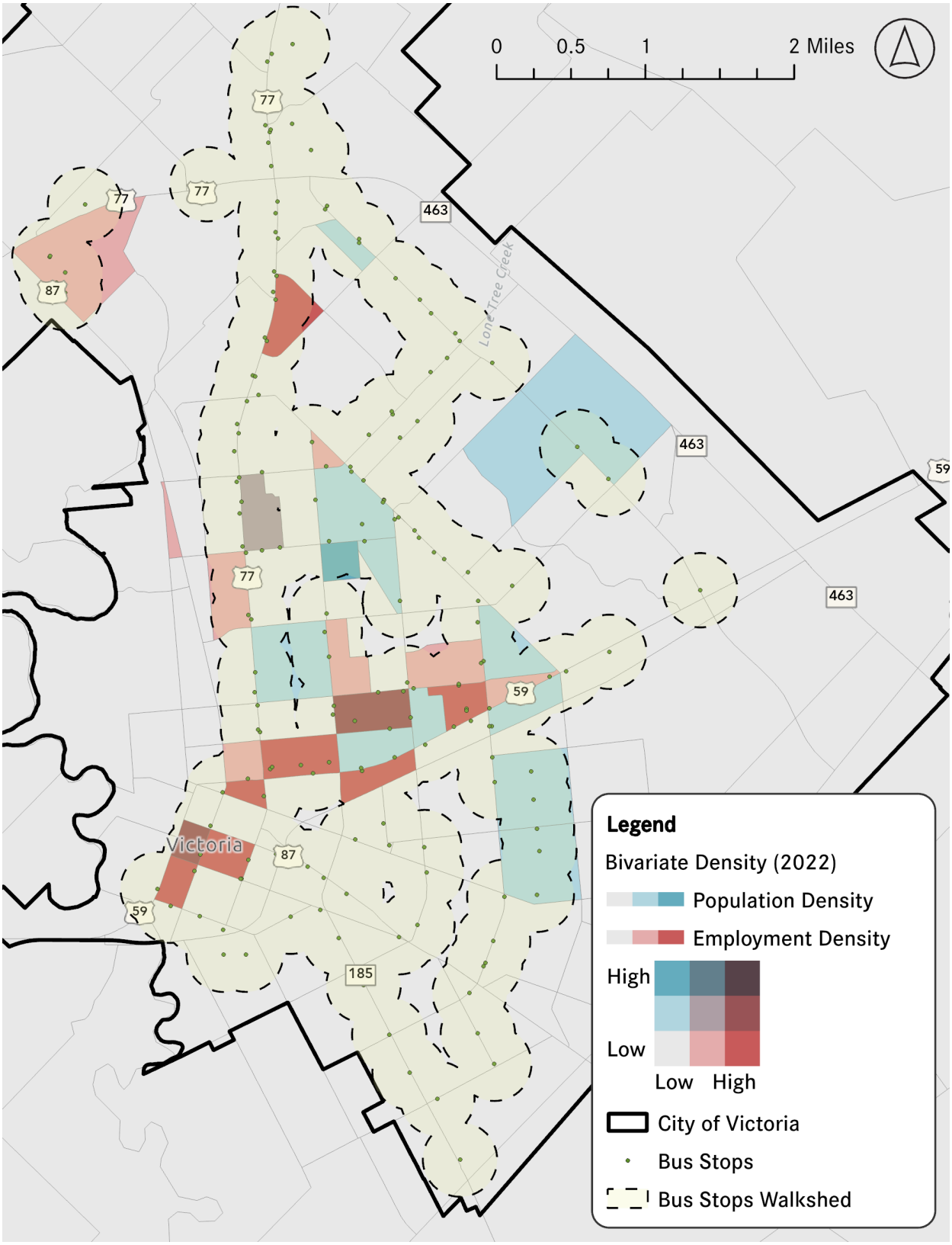
Figure 5 presents a visual representation of the walkshed of Victoria Transit bus stops in relation to population and employment density as determined by the MPO's TDM. A walkshed can be defined as the distance that the average pedestrian would be comfortable walking to a particular destination, in this case transit facilities. Generally, a quarter mile is considered "walking distance." On the map, observers can see the location of the TAZs that are in part or entirely outside of walking distance from Victoria Transit bus stops. These areas include one TAZ with high employment density in the west central side of the city, as well as a significant portion of two densely populated TAZs in the northeast side of the city. There are two TAZ's in the north of the city with higher employment densities where small portions fall outside of the bus stops walkshed.

Figure 4: 2022 Combined Densities and Transit Routes



Source: Victoria TDM

Figure 5: 2022 Combined Densities and Bus Stop Walkshed



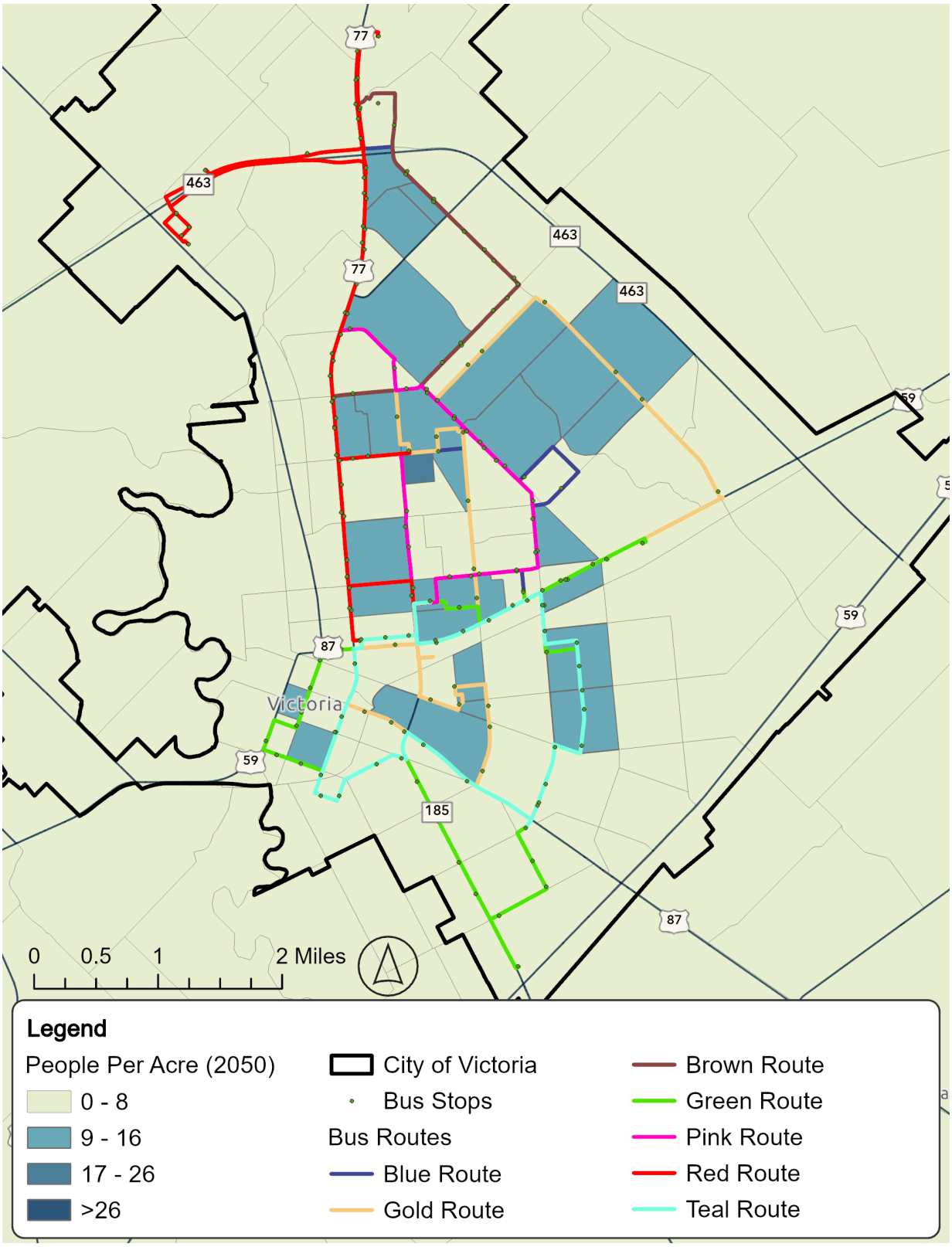
Source: Victoria TDM

Transit Propensity Projections

Population and employment projections for 2050 were taken from the Victoria TDM in order to predict and analyze future transit needs. Figure 6 displays the projected distribution of population density for the year 2050 in relation to the current transit network. The map demonstrates that all TAZs projected to have a significant population density in 2050 would have an adjacent transit route, should the overall network remain unchanged.

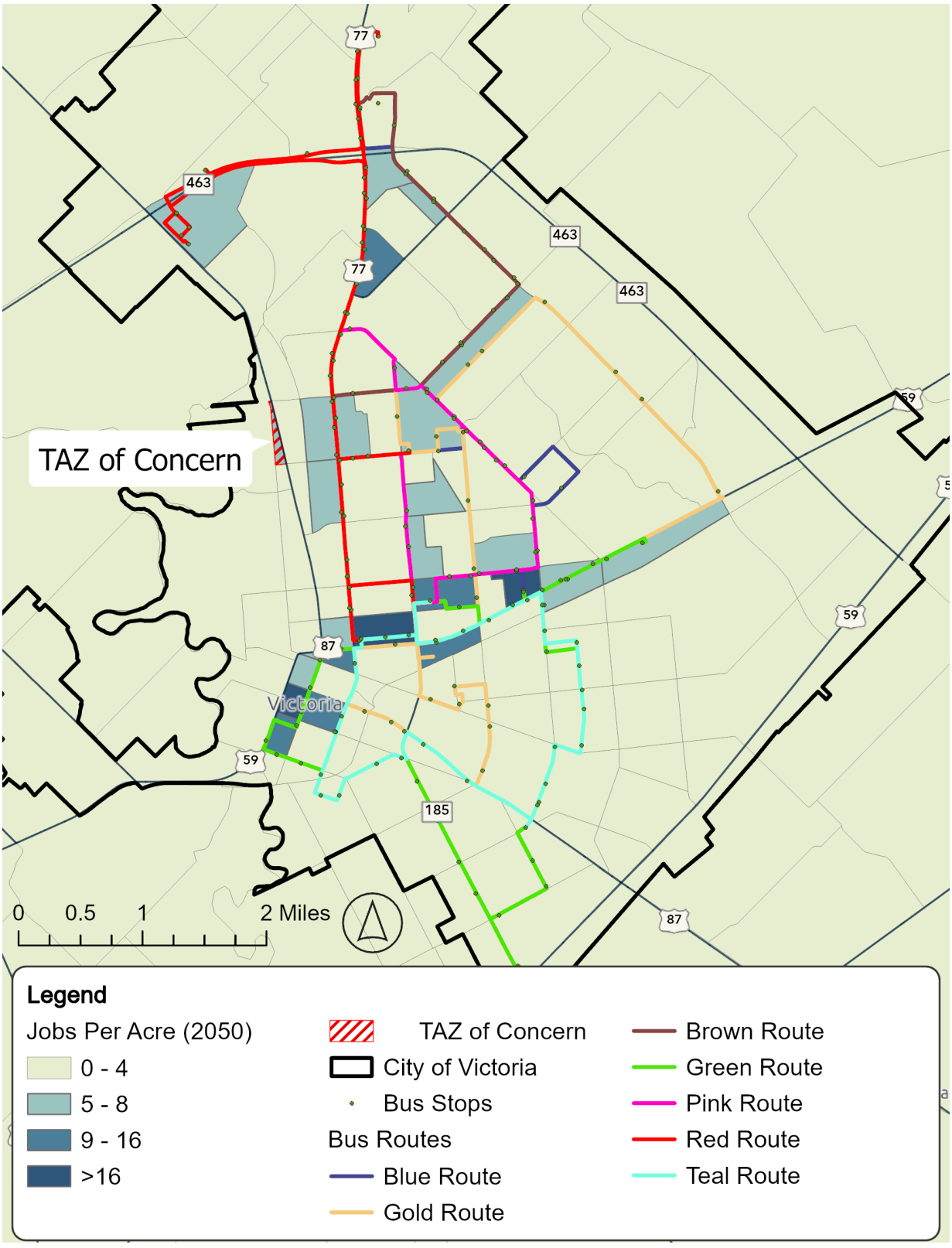
Figure 7 illustrates the distribution of projected employment density for the year 2050. Similarly, all TAZs with densities meeting transit propensity benchmarks would be serviced by an adjacent transit route, save for the same TAZ in the west-central area of the city. This TAZ is highlighted in red.

Figure 6: 2050 Population Density and Transit Routes



Source: Victoria TDM

Figure 7: 2050 Employment Density and Transit Routes

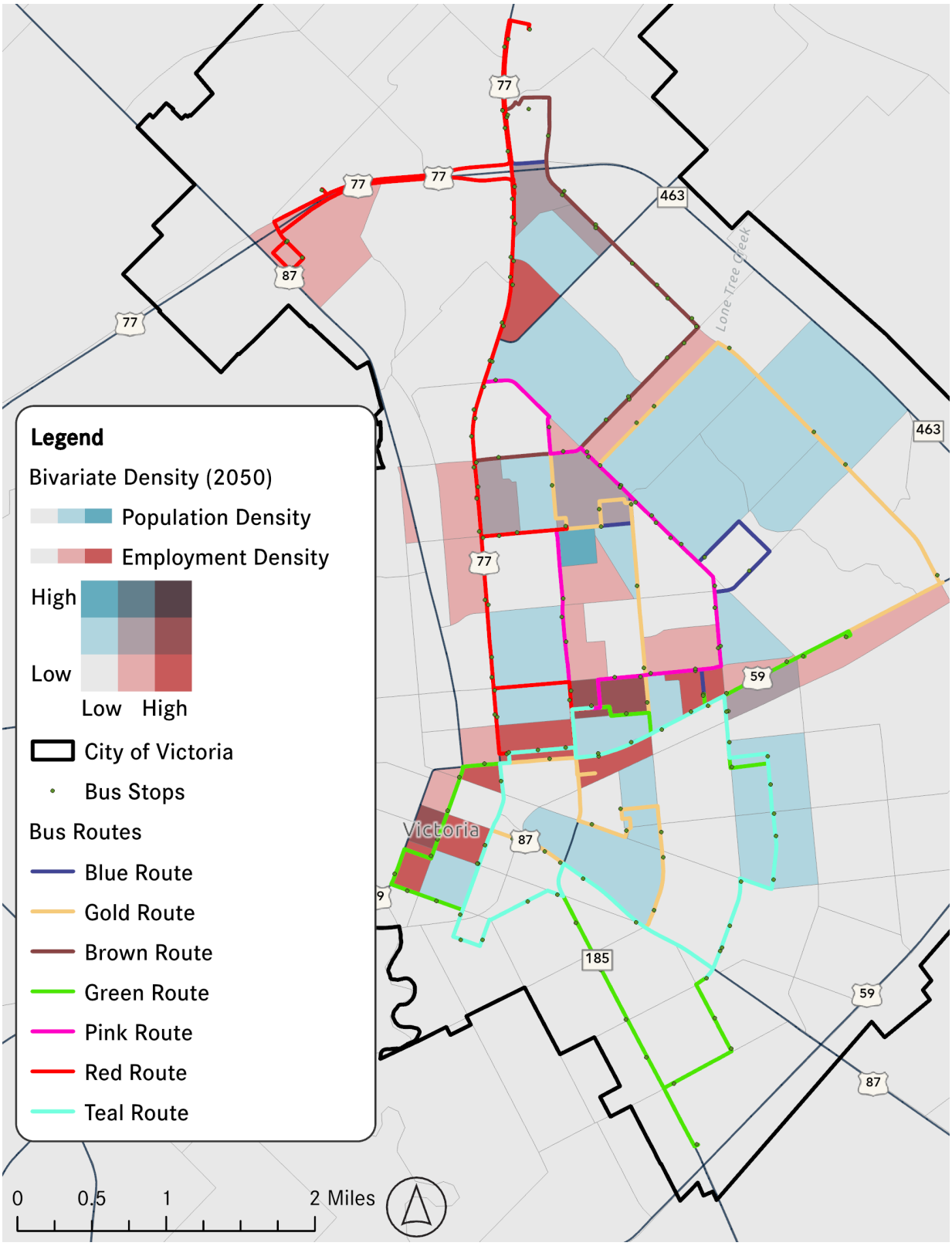


Source: Victoria TDM

Figure 8 presents an illustration of both projected employment and population density within the study area, in relation to the existing transit network. Consistent with the previous figures, the only TAZ without an adjacent route can be found in the west-central portion of Victoria.

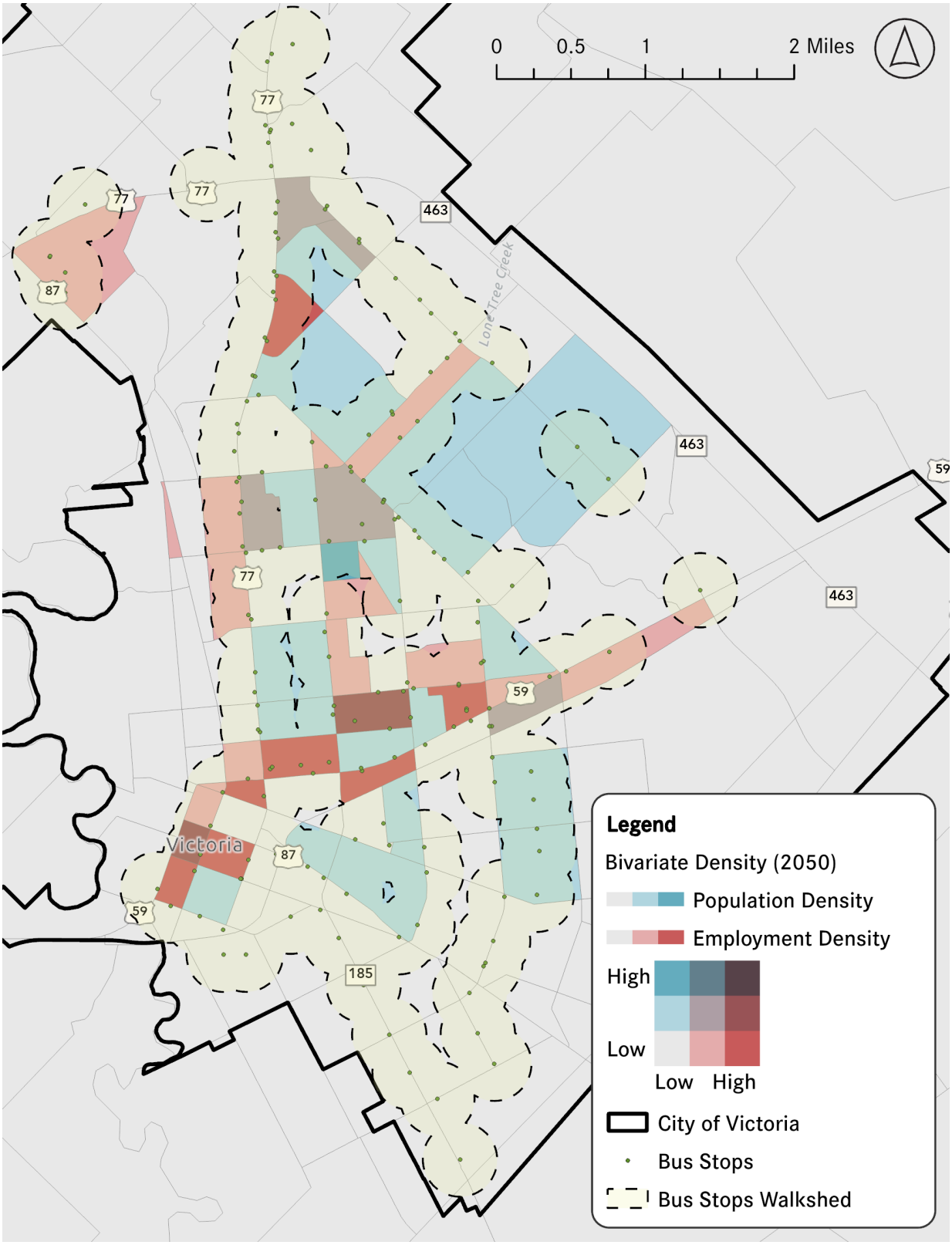
Figure 9 illustrates the projected density of employment and population in relation to the walkshed of Victoria Transit bus stops. Despite the fact that all TAZs with a significant density are serviced by adjacent transit routes, upon analysis, there are some areas where bus stops fall outside of walking distance. These areas include a considerable swath in the northeastern area of the city where population density is projected to be significant, as well as portions of three TAZs in the north central part of the city where higher density of population and employment is projected. One dense TAZ in the west-central side of Victoria remains inaccessible by transit.

Figure 8: 2050 Combined Densities and Transit Routes



Source: Victoria TDM

Figure 9: Combined Densities and Bus Stop Walkshed



Source: Victoria TDM

Conclusion and Recommendations

After analysis of the data surrounding the density distribution of population and employment relative to the operations of the Victoria Transit system, it can be concluded that the current system as it is deigned to operate is near-optimal for the community it serves, non-withstanding current service reductions on the Gold, Teal, Pink, and Brown routes.

Victoria Transit, as it is designed, would offer transit routes that serve almost all areas of the city with significant population and employment density, and are accessible to members of the community with any income and level of ability. Pending resumption of service on the above-mentioned routes with reduced service, these routes are normally available throughout the day until late evening, as well as on Saturdays, empowering residents of Victoria by providing maximum accessibility to employment and general mobility.

Recommendations to further optimize the service provided in the area include:

- Considering increasing local match to preempt possible further reductions in services provided.
- Considering increasing accessibility to employment by expanding service to connect the system to employment opportunities found between the northern extreme of North Vine St. and North Main St.
- Considering the incorporation of two-way bus routes to reduce user travel times.
- Considering the addition of expanded bus routes and new bus stops in the northeast side of the city, in order to improve connectivity through walkable access to transit services. Some examples of roads to consider incorporating into the transit network with associated stops in order to improve access include Ben Jordan St., Miori Ln., and East Airline Rd.
- Considering the addition of expanded bus routes in the residential area southeast of the junction between Zac Lentz Pkwy. and North Navarro St. in order to improve walkable access to transit services. Guy Grant Rd. is an example of an appropriate corridor to which routes and stops could be incorporated in order to address future growth and improve connectivity within the transit system in Victoria.