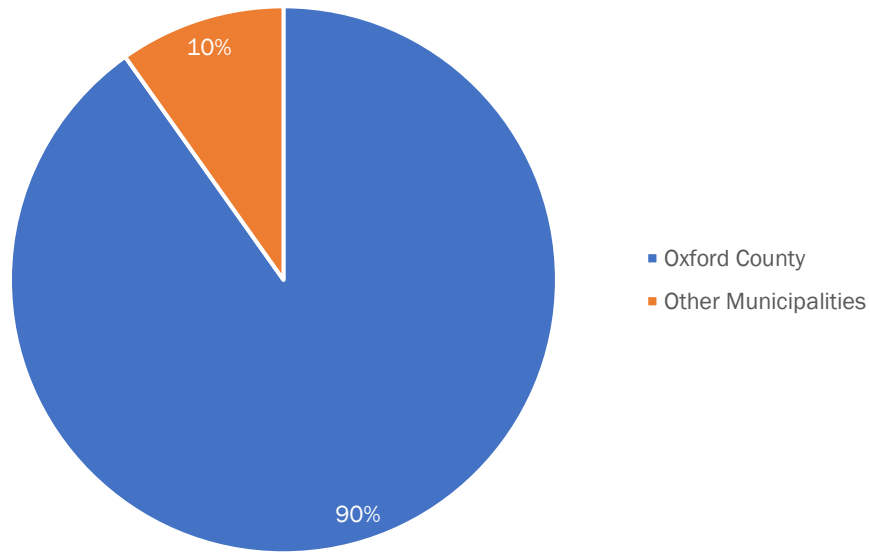
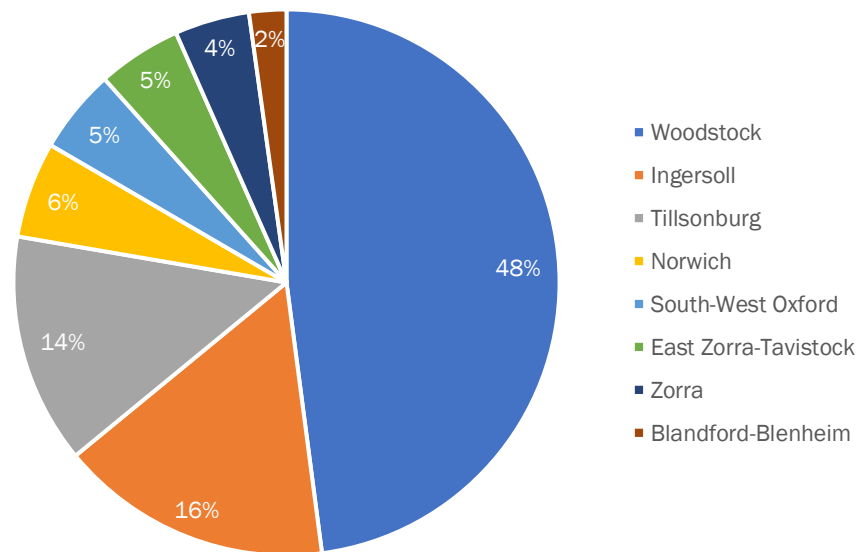


# **APPENDIX B**

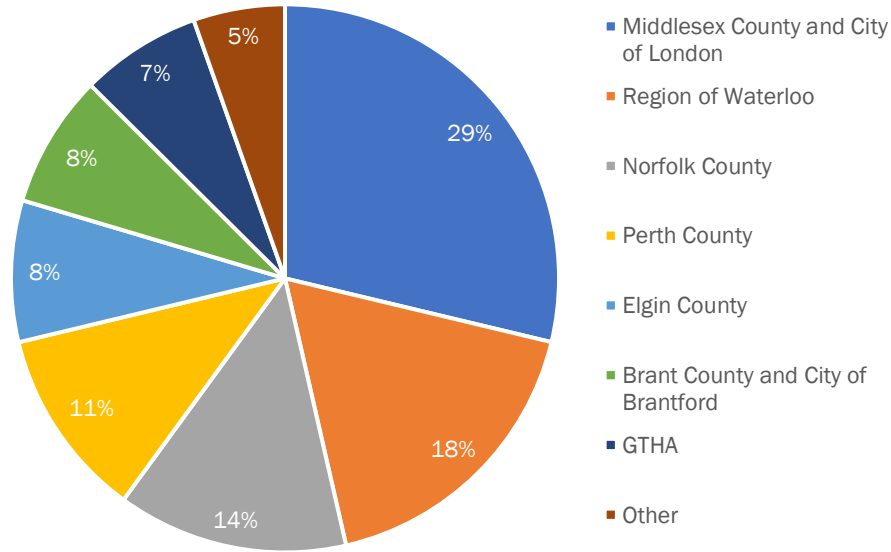
**Origin – Destination Patterns**



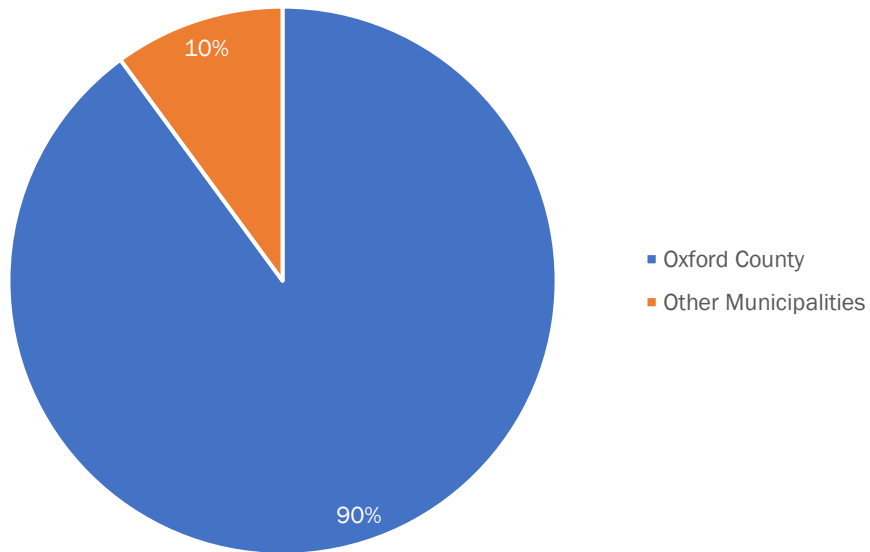
**FIGURE 1: TRIP DESTINATION, OXFORD AS ORIGIN**



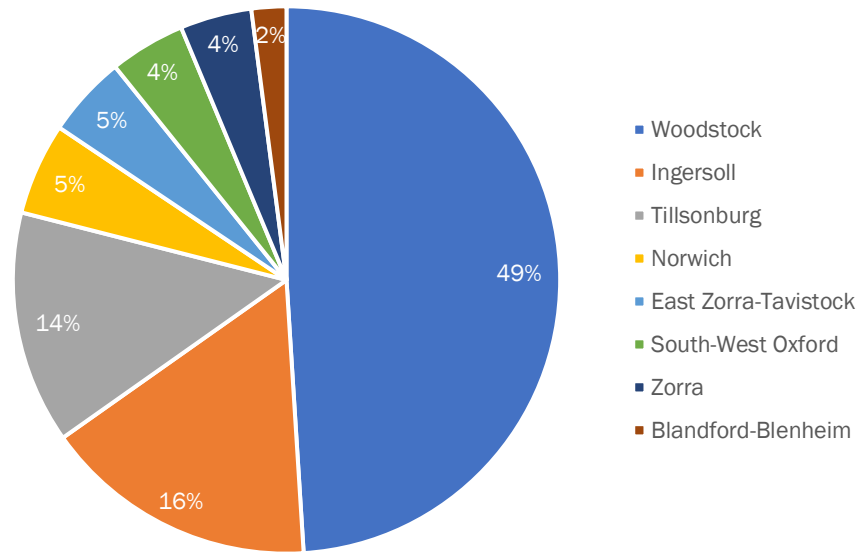
**FIGURE 2: TRIP DESTINATION WITHIN OXFORD, OXFORD AS ORIGIN**



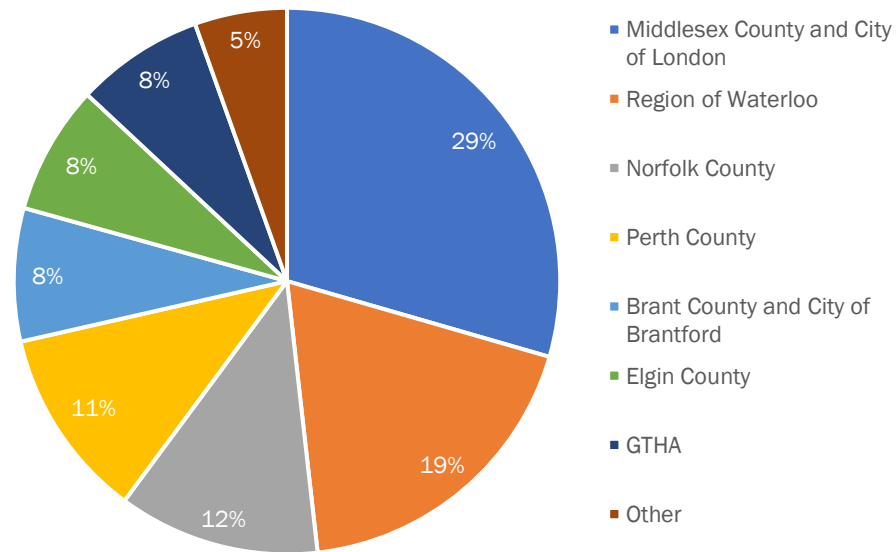
**FIGURE 3: TRIP DESTINATION OUTSIDE OXFORD, OXFORD AS ORIGIN**



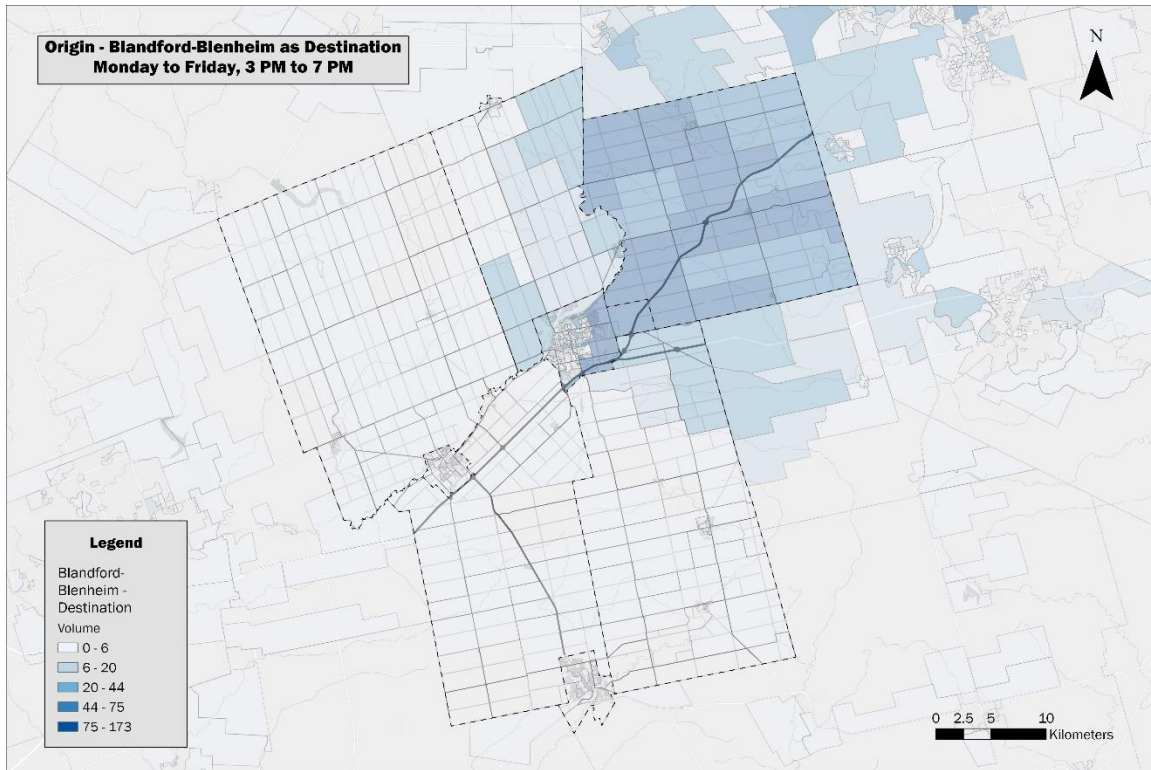
**FIGURE 4: TRIP ORIGIN, OXFORD AS DESTINATION**



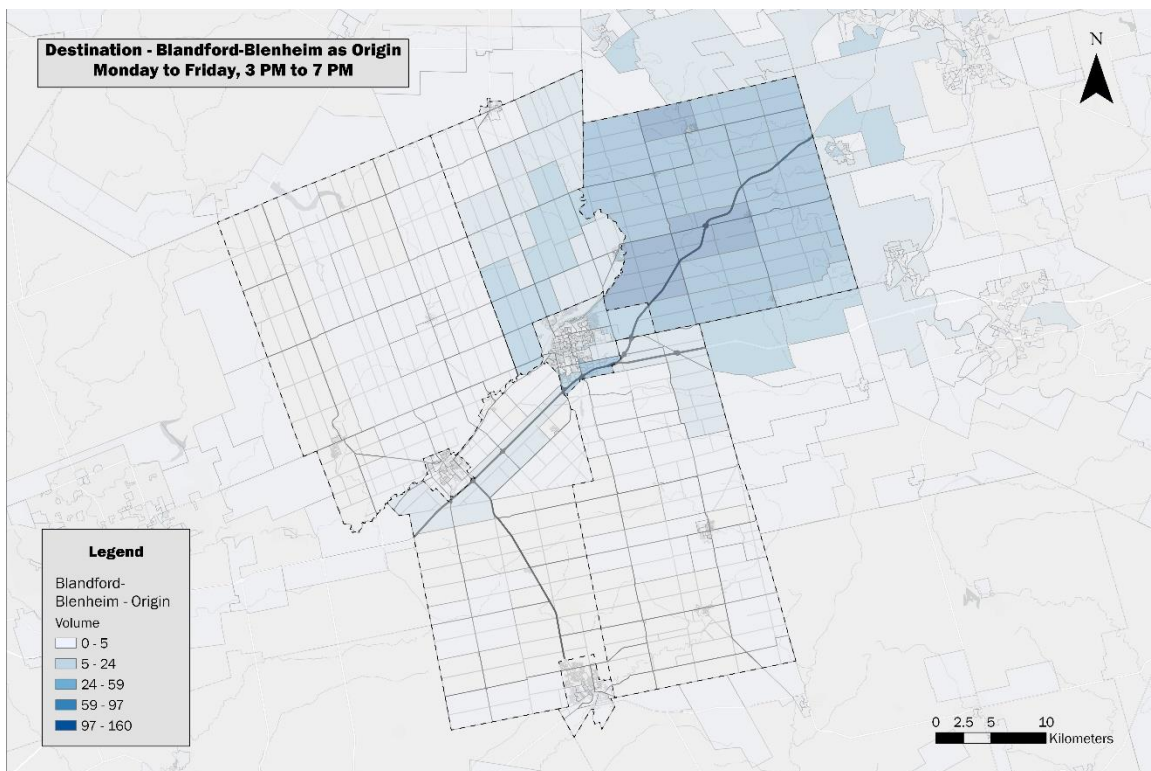
**FIGURE 5: TRIP ORIGIN INSIDE OXFORD, OXFORD AS DESTINATION**



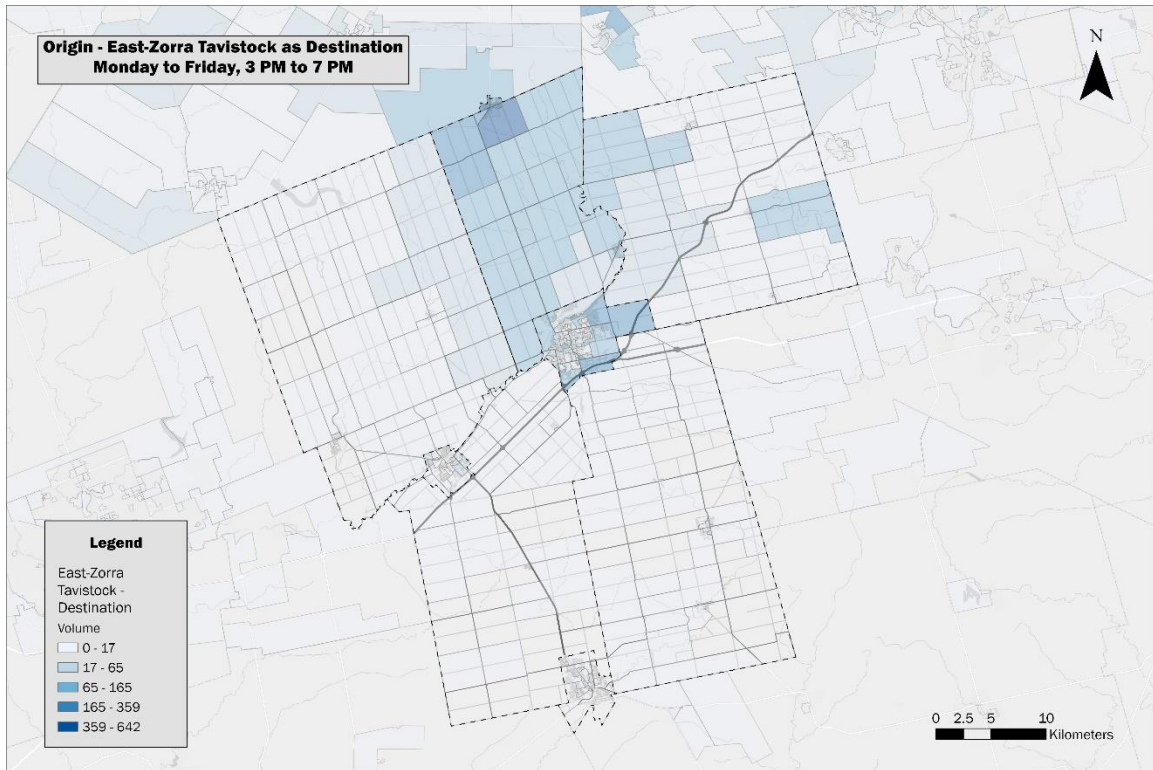
**FIGURE 6: TRIP ORIGIN OUTSIDE OXFORD, OXFORD AS DESTINATION**



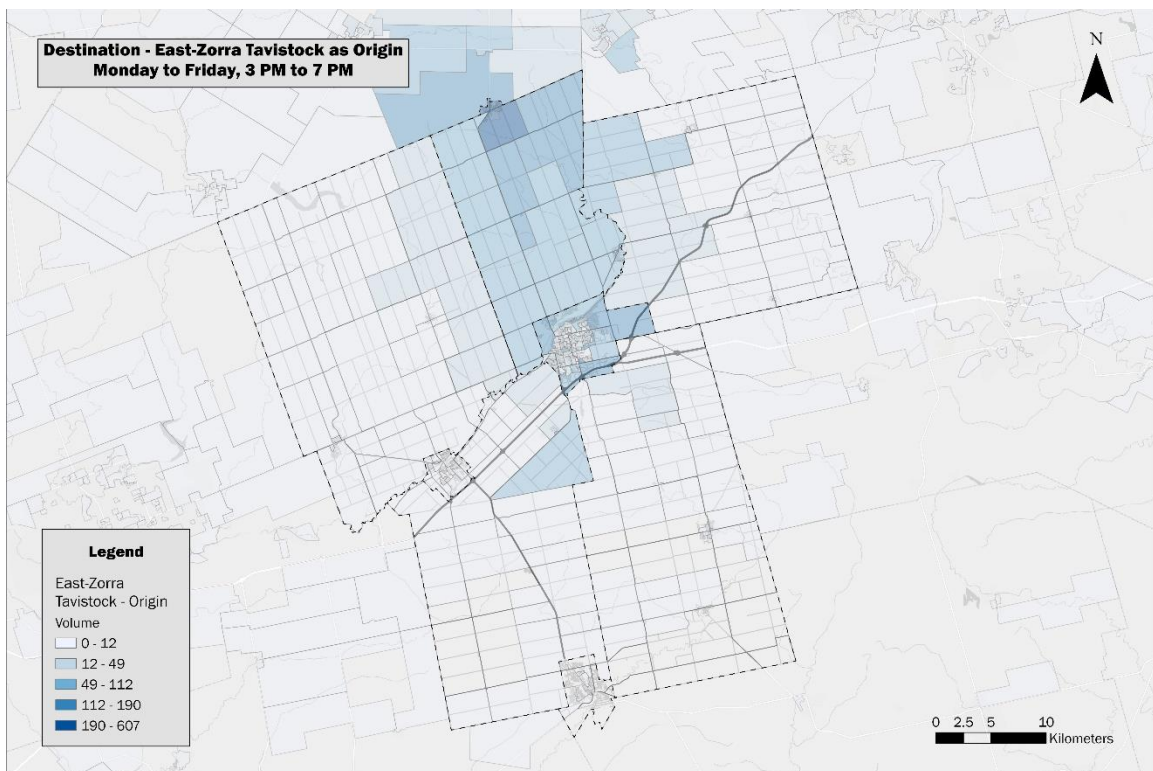
**FIGURE 7: ORIGIN TRIPS – BLANDFORD-BLENHEIM AS DESTINATION**



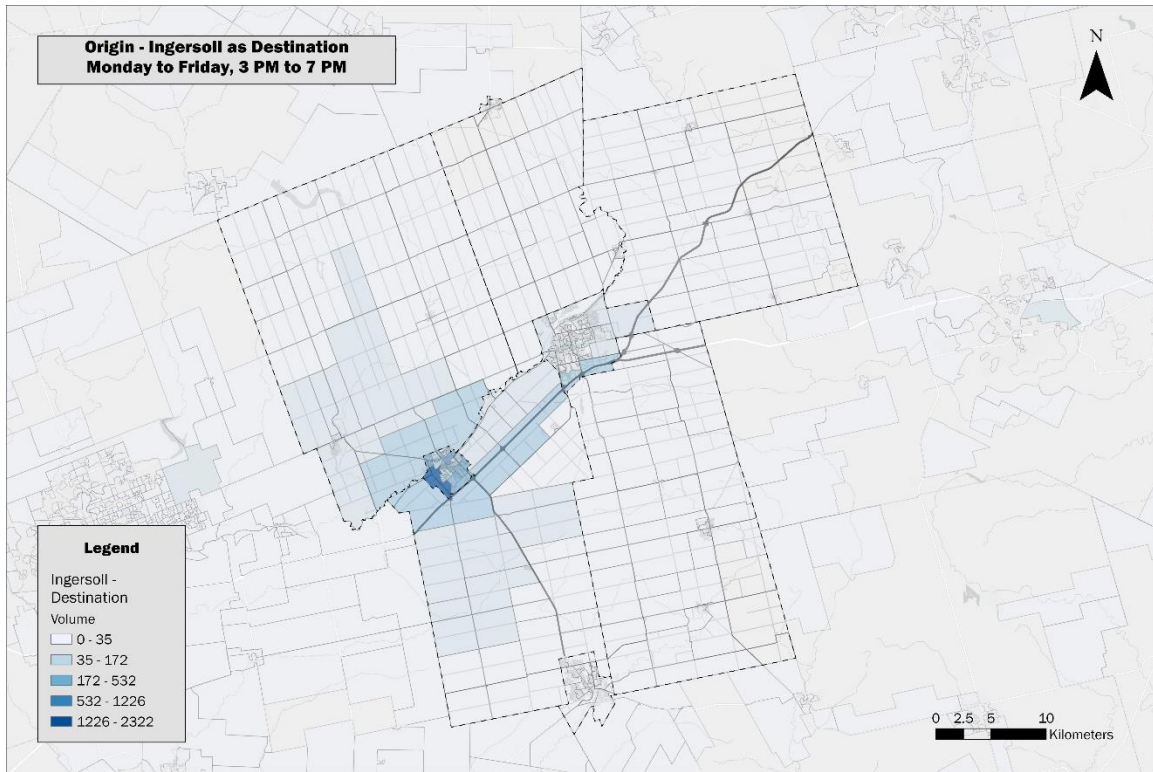
**FIGURE 8: DESTINATION TRIPS – BLANDFORD-BLENHEIM AS ORIGIN**



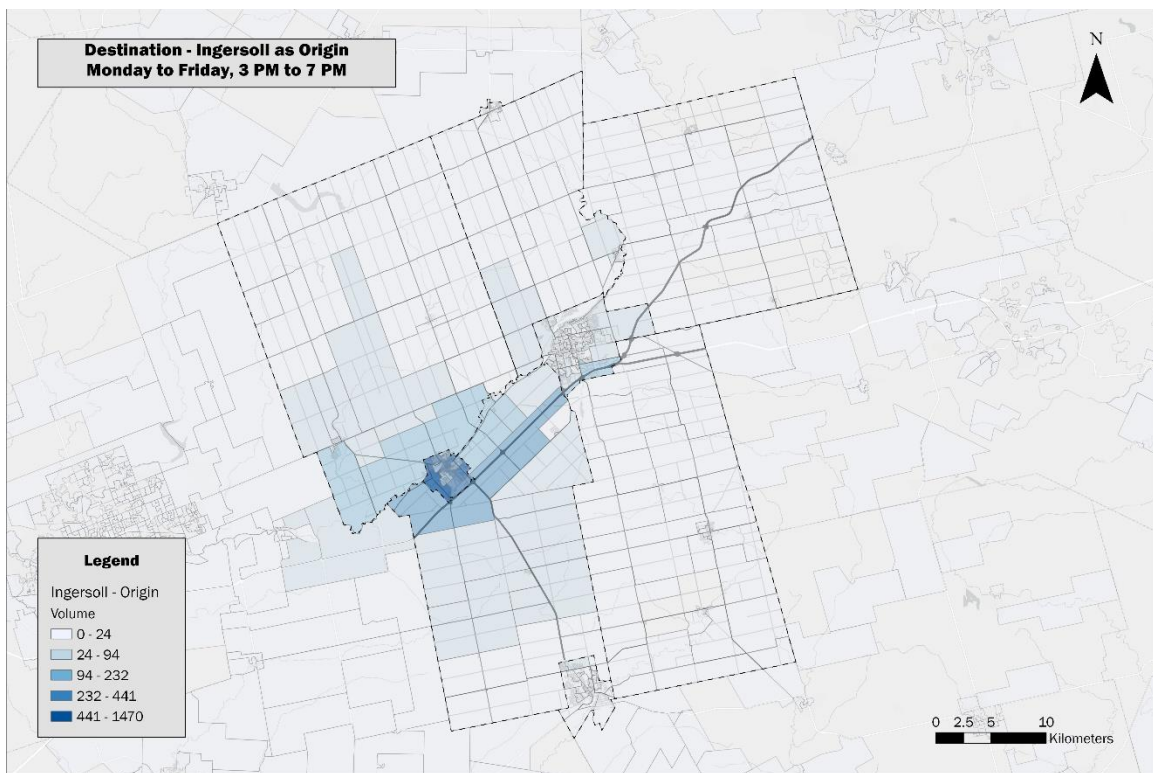
**FIGURE 9: ORIGIN TRIPS – EAST-ZORRA TAVISTOCK AS DESTINATION**



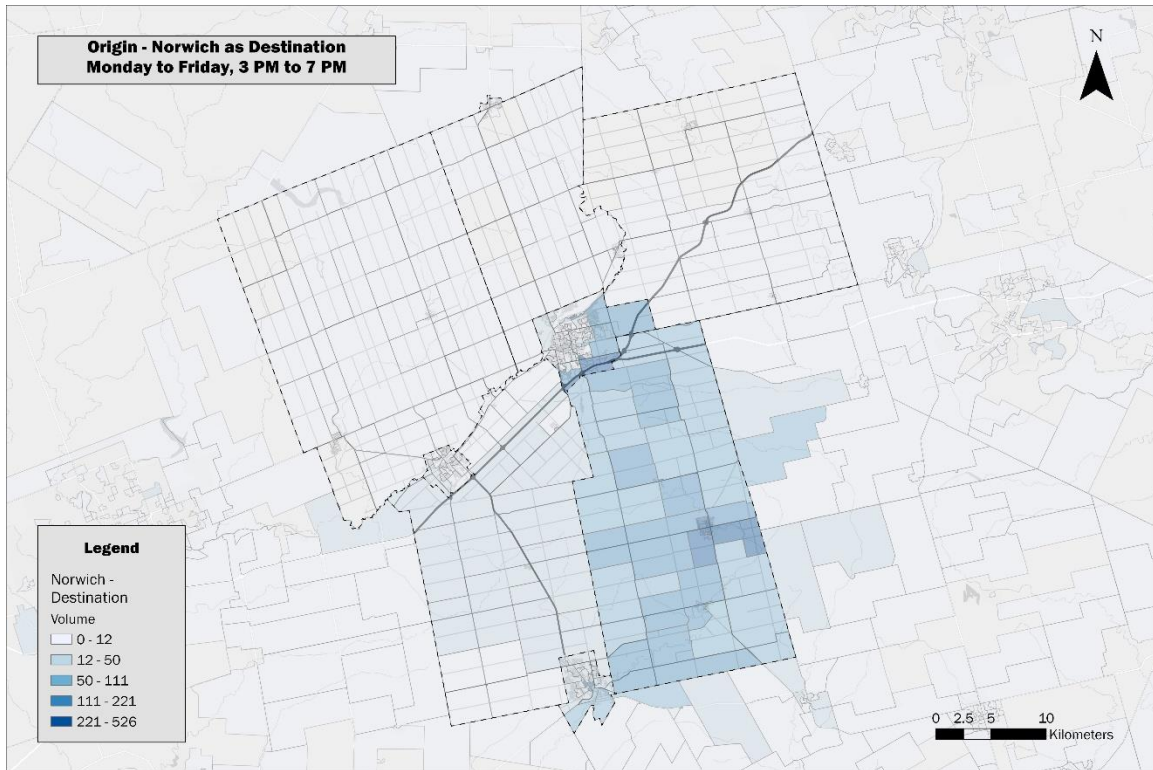
**FIGURE 10: DESTINATION TRIPS – EAST-ZORRA TAVISTOCK AS ORIGIN**



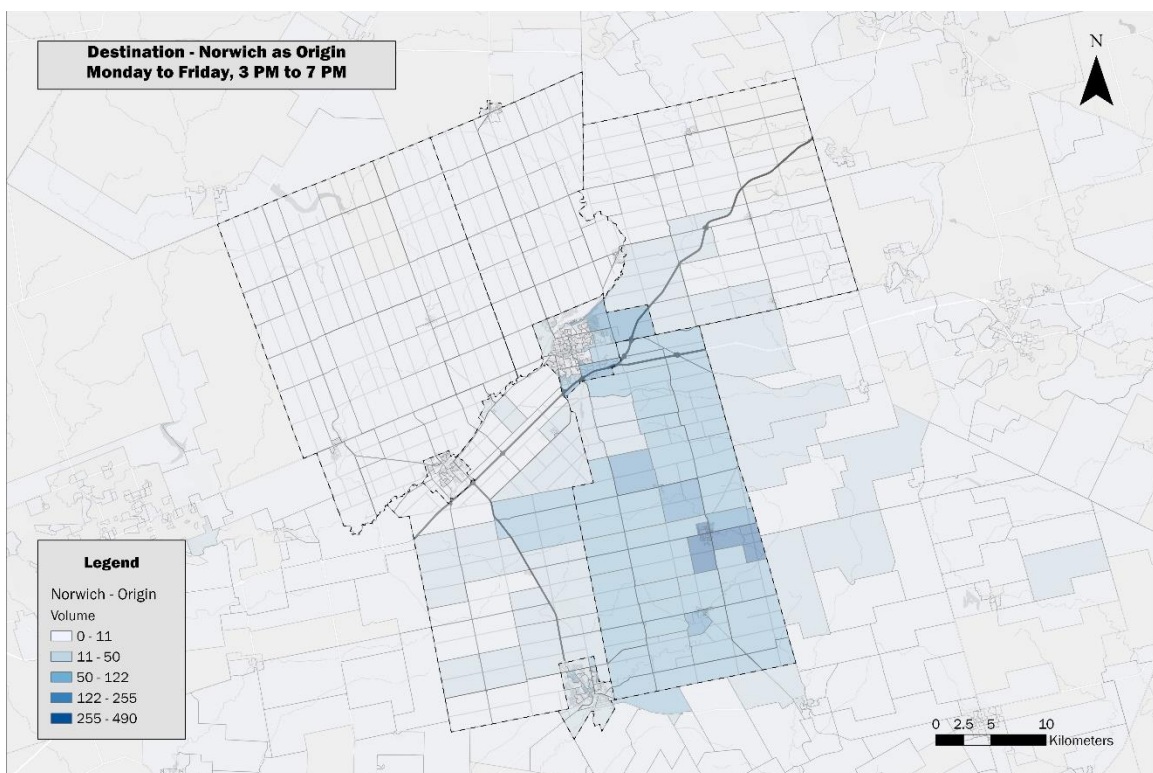
**FIGURE 11: ORIGIN TRIPS – INGERSOLL AS DESTINATION**



**FIGURE 12: DESTINATION TRIPS – INGERSOLL AS ORIGIN**

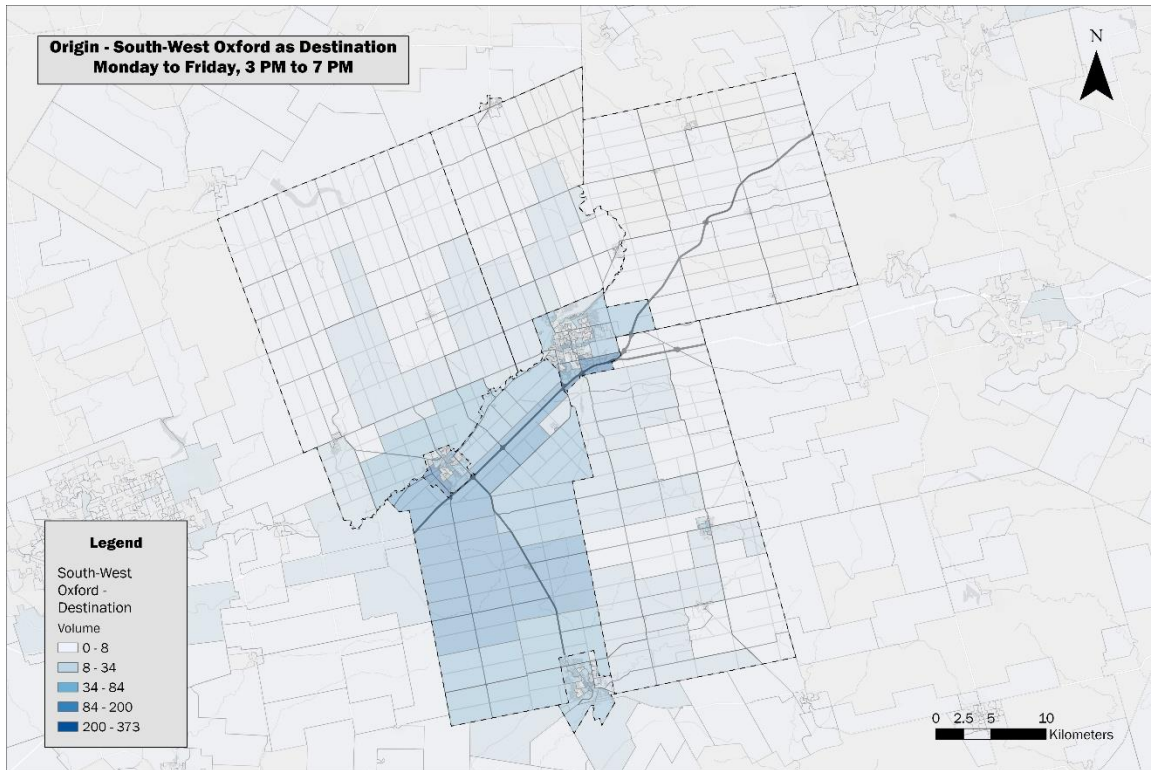


**FIGURE 13: ORIGIN TRIPS – NORWICH AS DESTINATION**

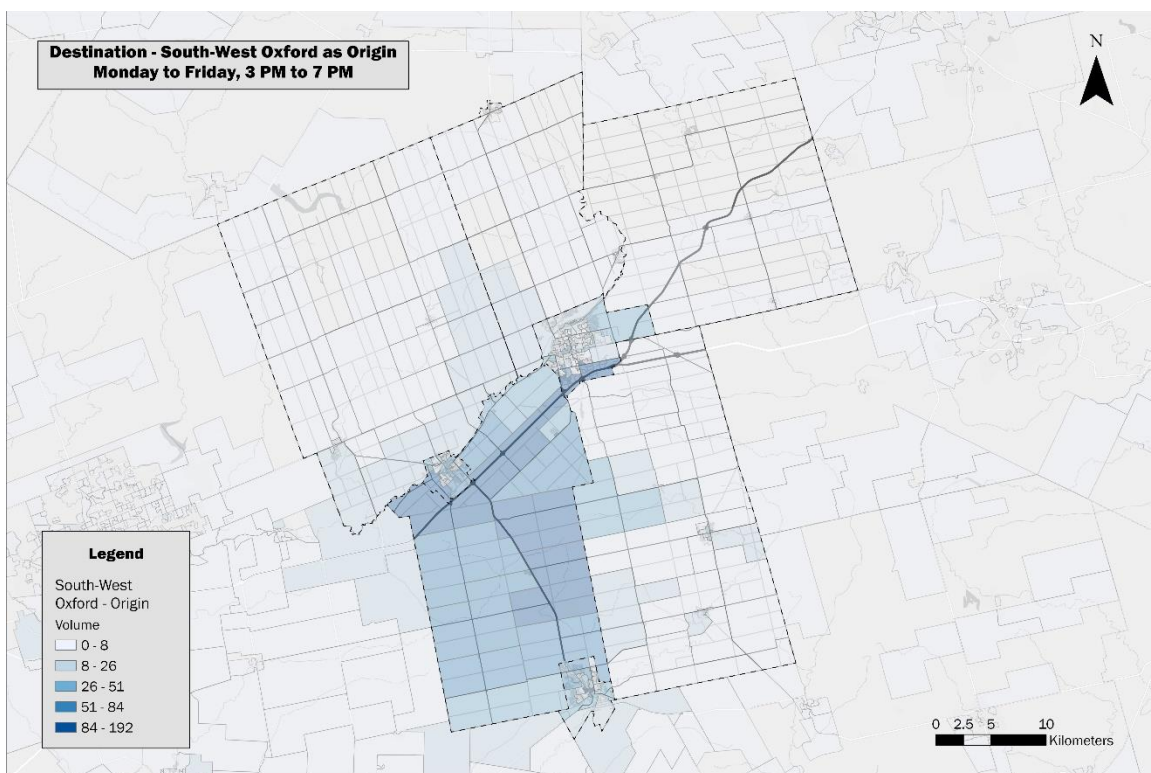


**FIGURE 14: DESTINATION TRIPS – NORWICH AS ORIGIN**

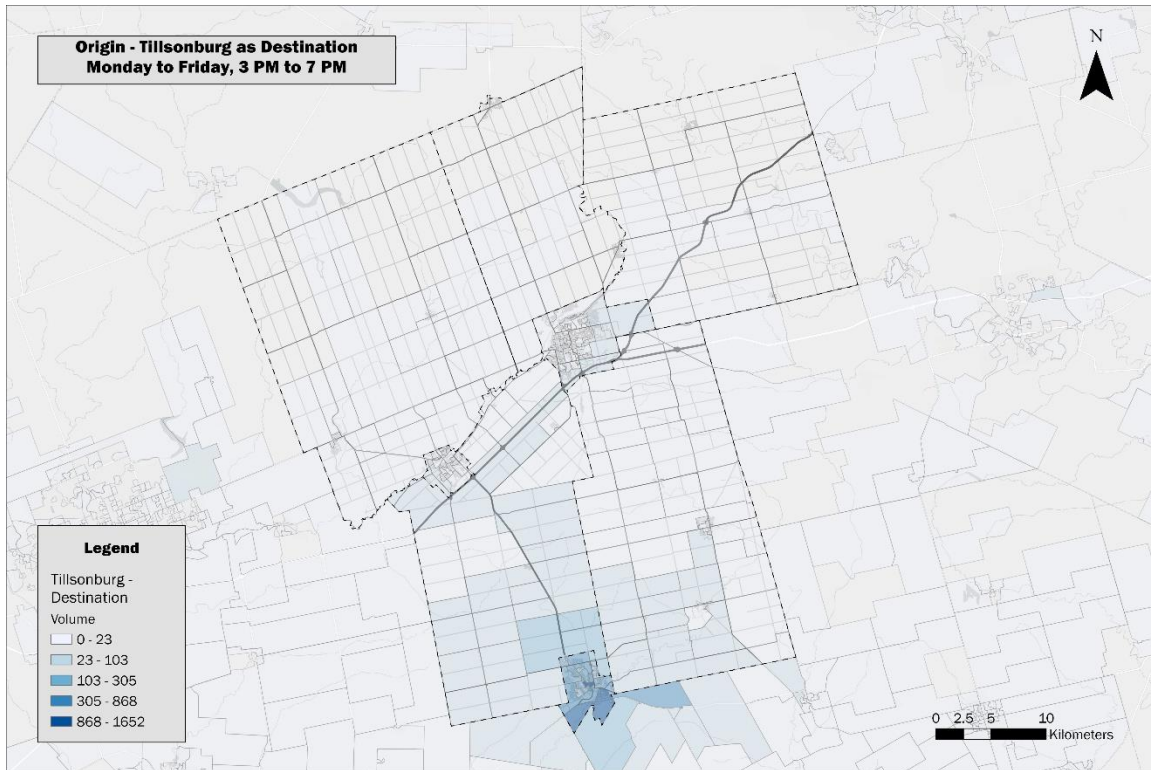




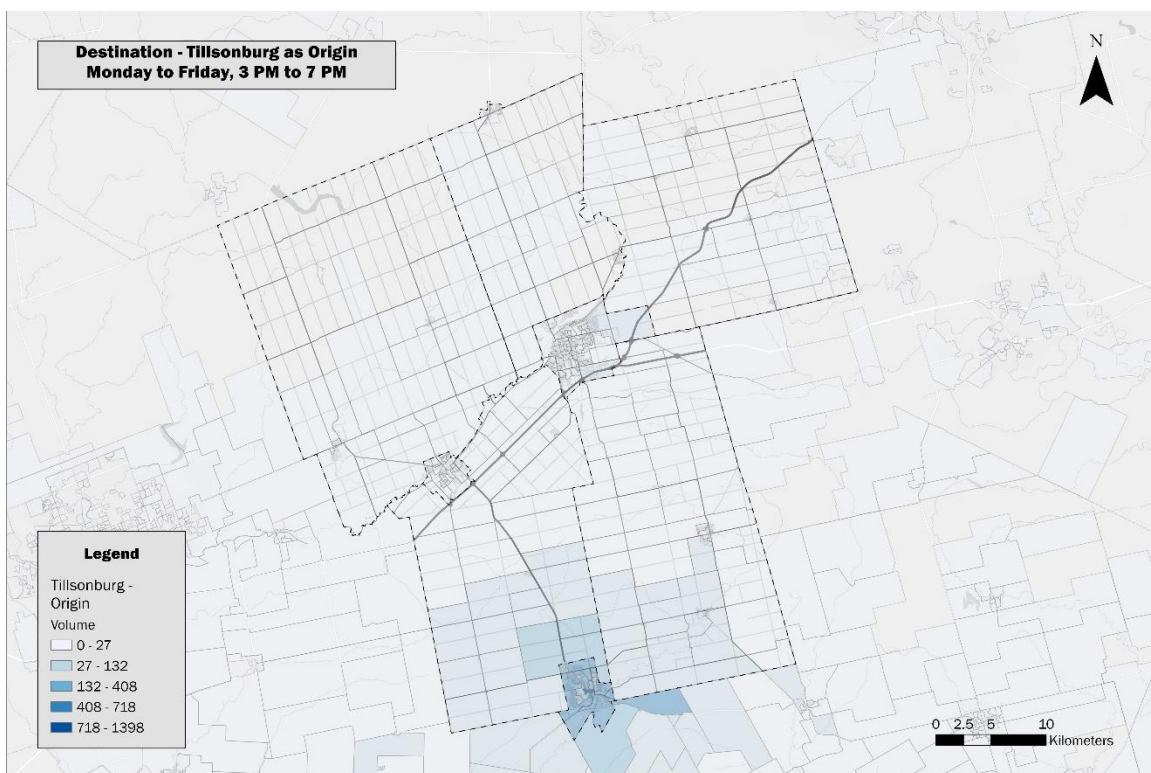
**FIGURE 15: ORIGIN TRIPS – SOUTH-WEST OXFORD AS DESTINATION**



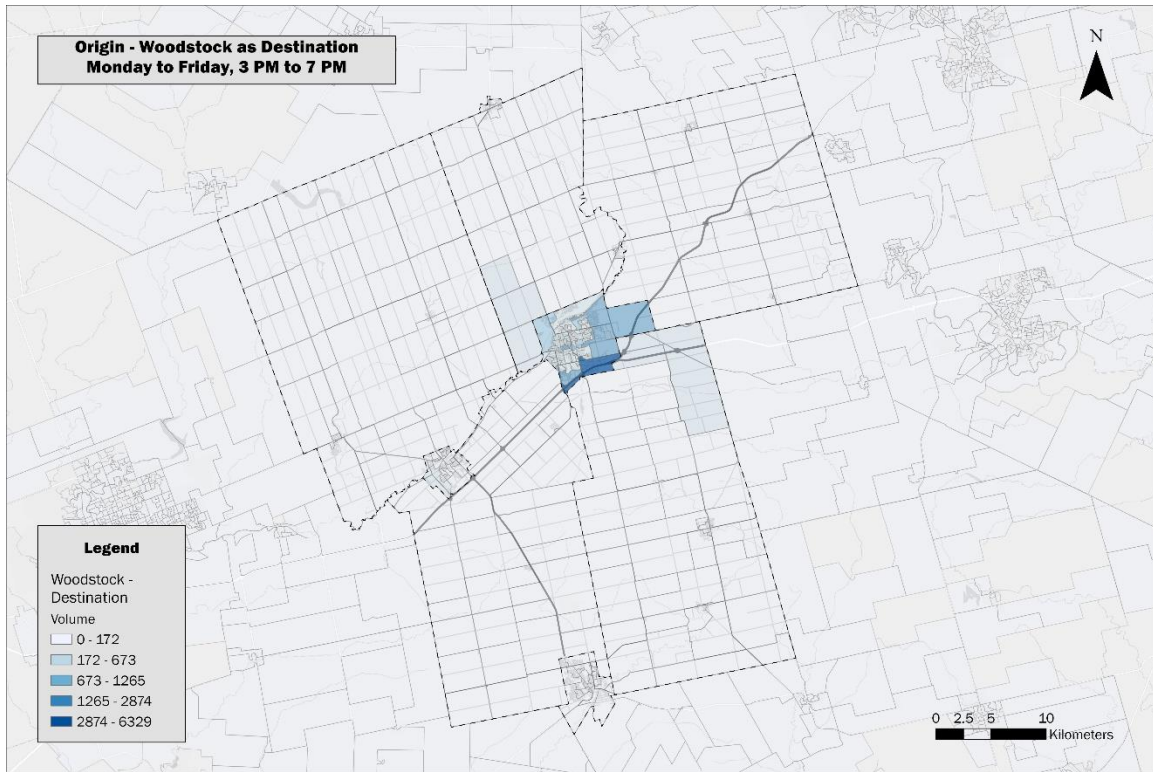
**FIGURE 16: DESTINATION TRIPS – SOUTH-WEST OXFORD AS ORIGIN**



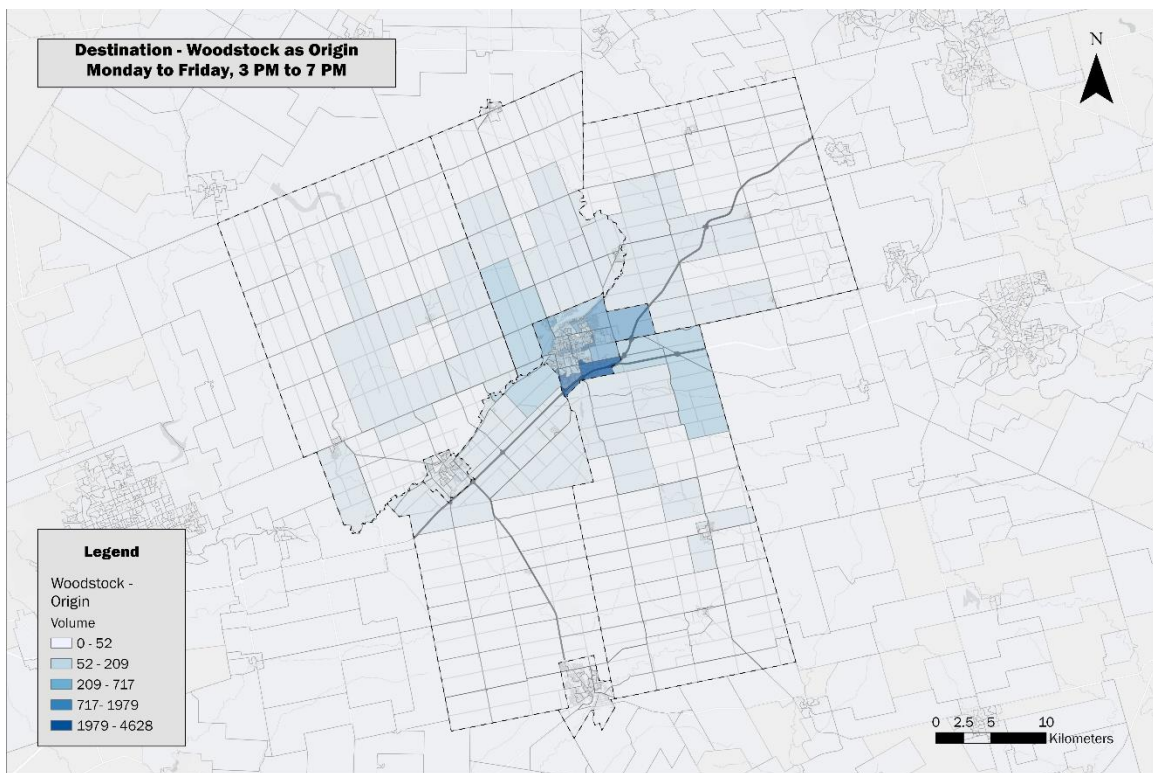
**FIGURE 17: ORIGIN TRIPS – TILLSONBURG AS DESTINATION**



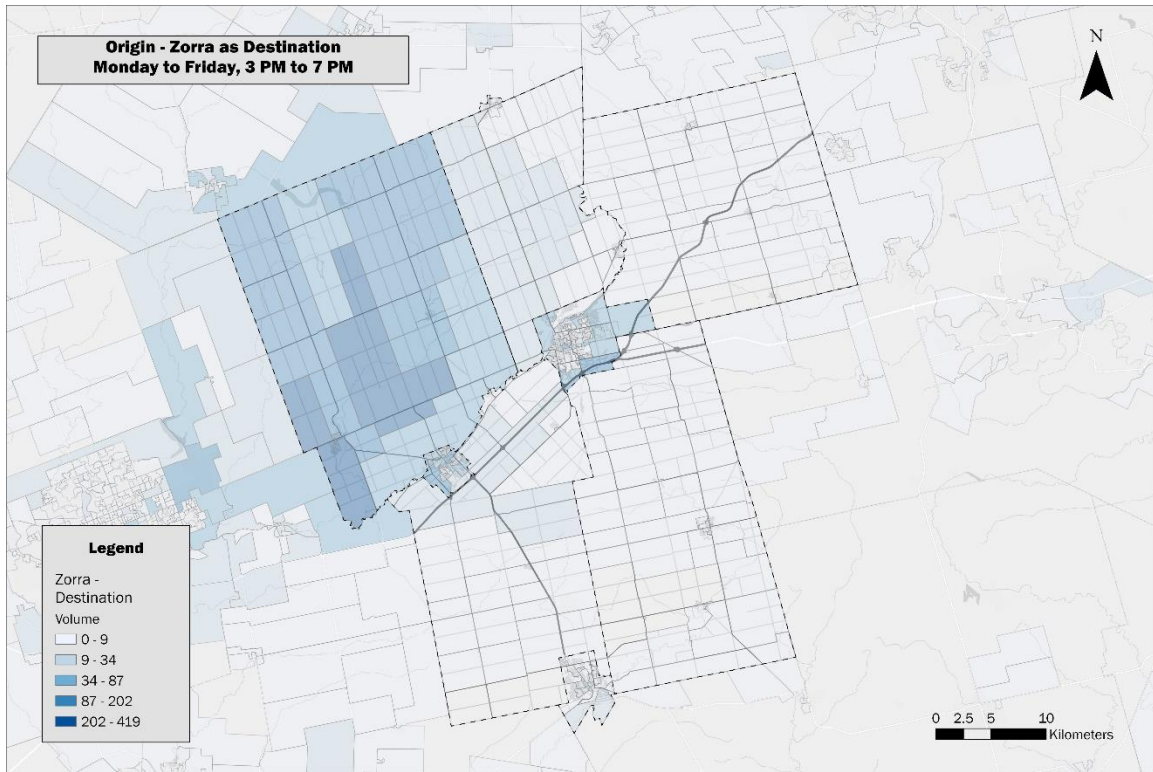
**FIGURE 18: DESTINATION TRIPS – TILLSONBURG AS ORIGIN**



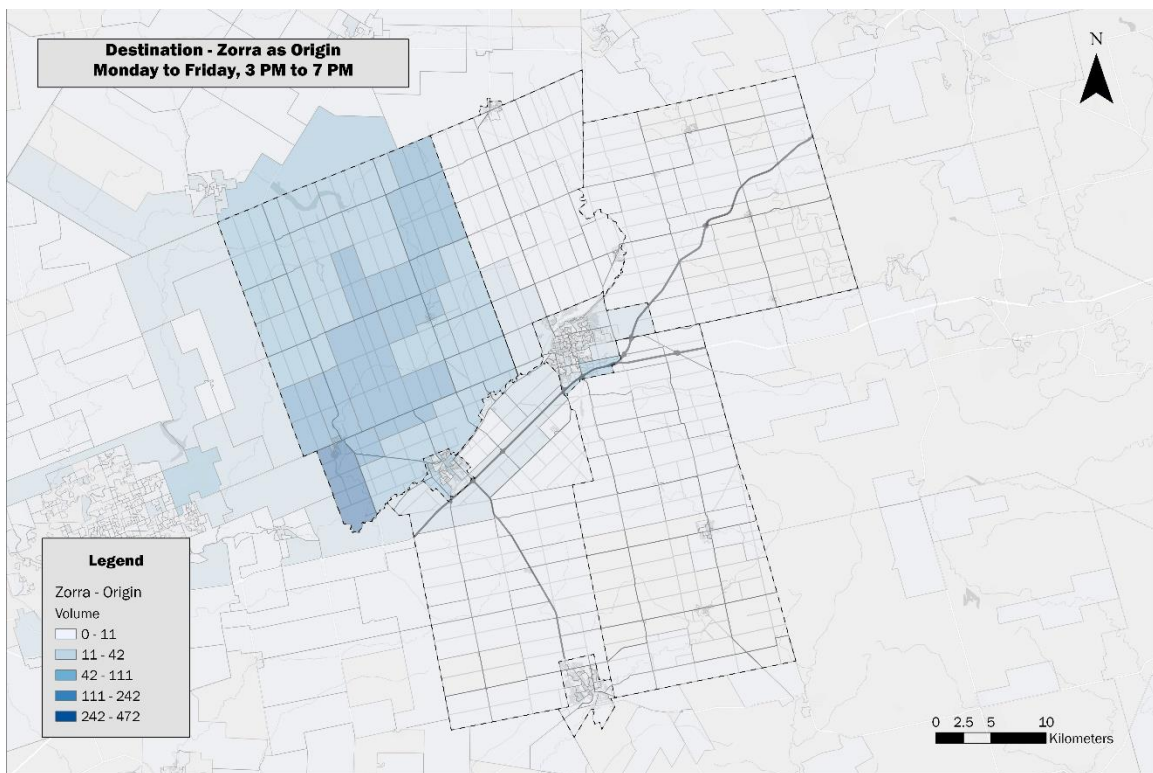
**FIGURE 19: ORIGIN TRIPS – WOODSTOCK AS DESTINATION**



**FIGURE 20: DESTINATION TRIPS – WOODSTOCK AS ORIGIN**



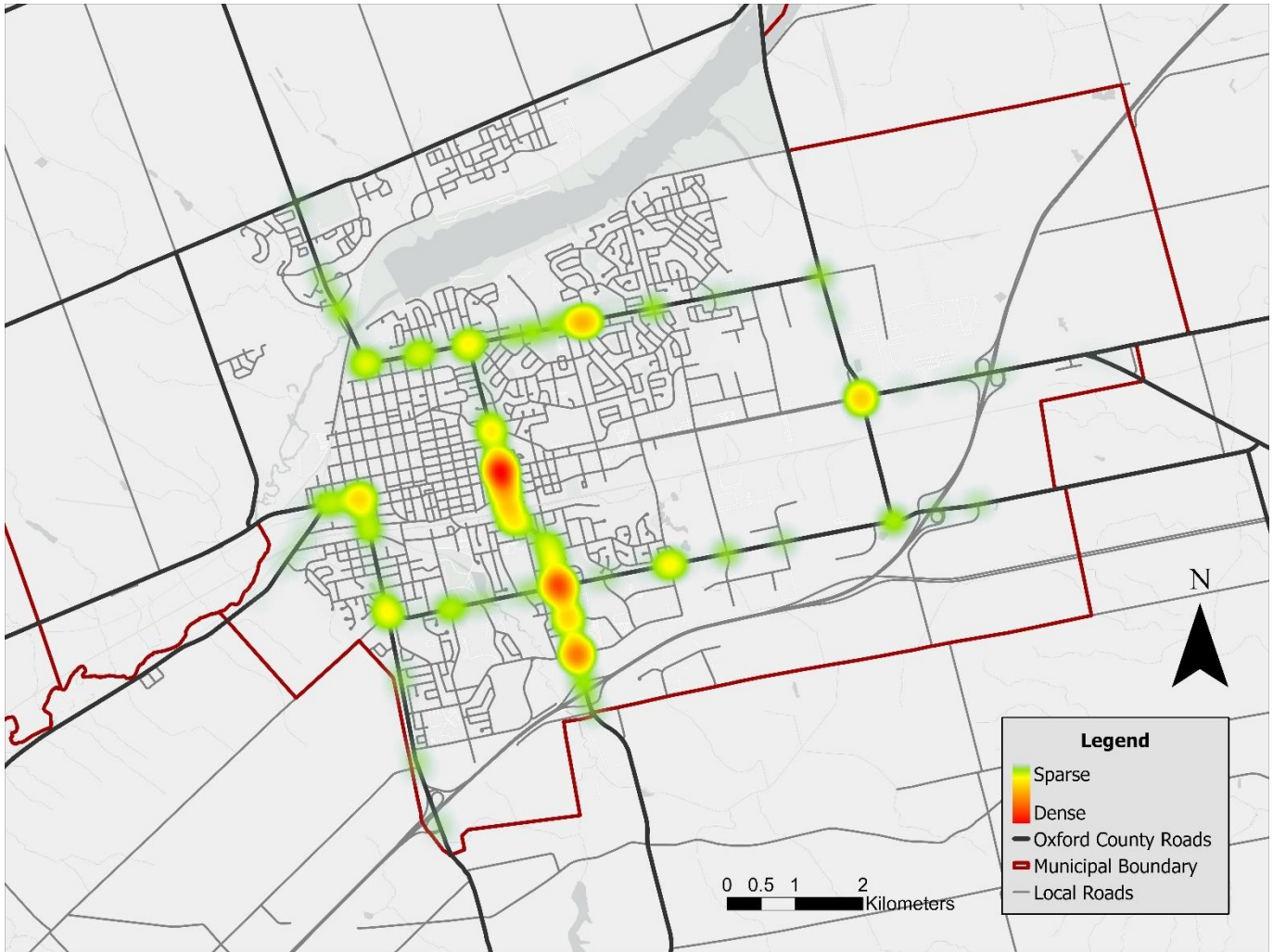
**FIGURE 21: ORIGIN TRIPS – ZORRA AS DESTINATION**



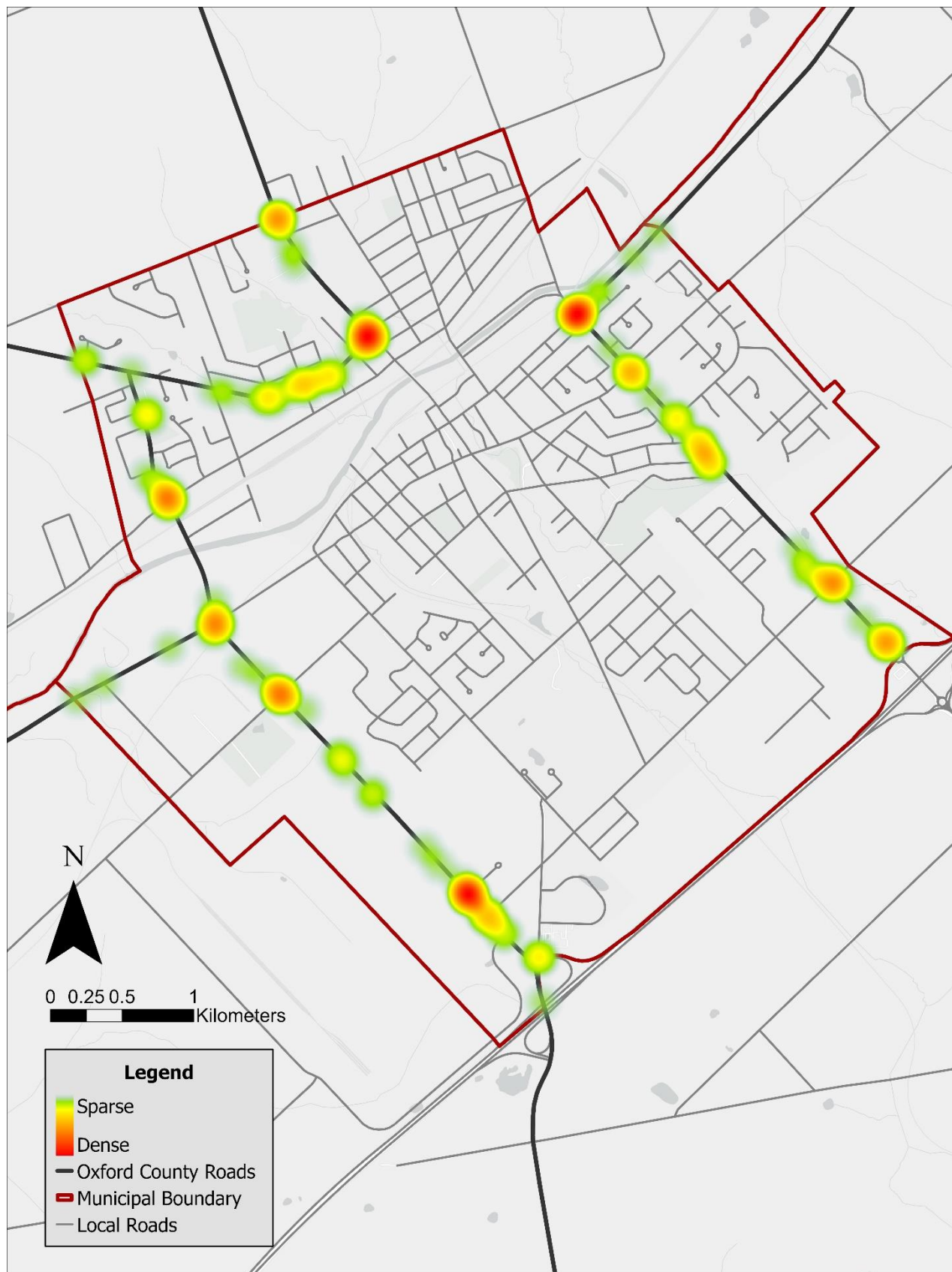
**FIGURE 22: DESTINATION TRIPS – ZORRA AS ORIGIN**

# **APPENDIX C**

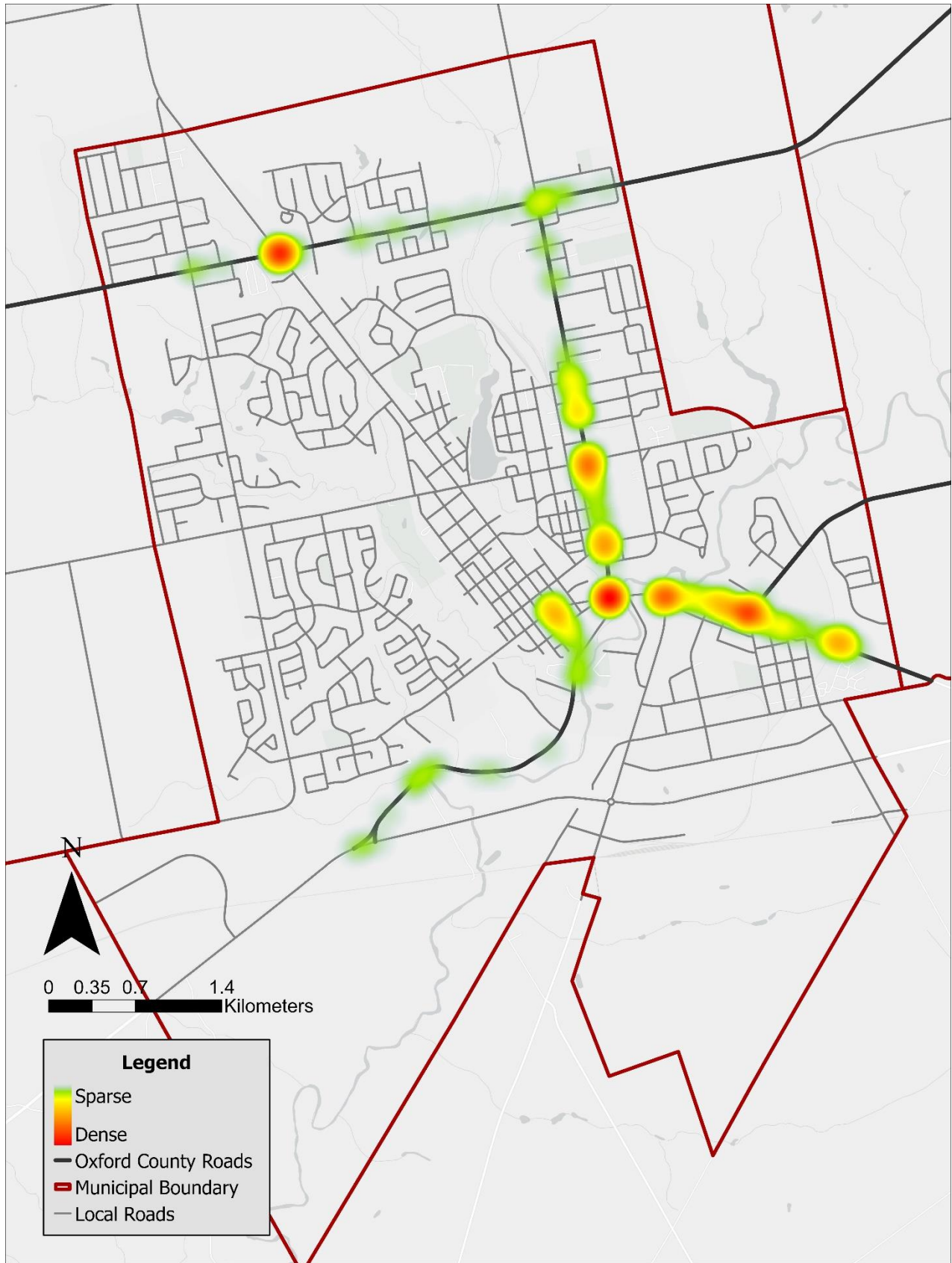
## **Collision Heat Maps and Patterns**



**FIGURE 23: WOODSTOCK COLLISION HEAT MAP**

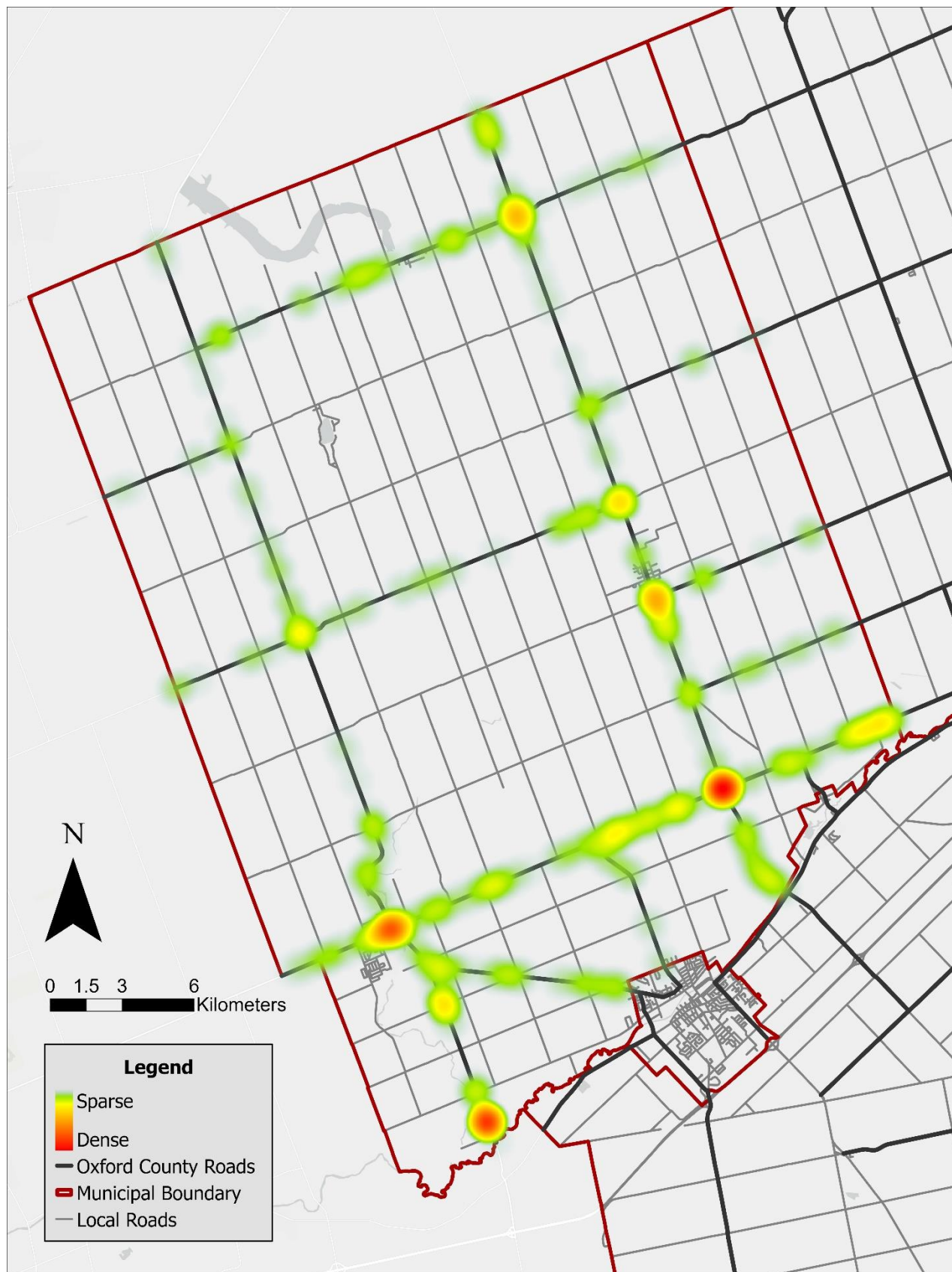


**FIGURE 24: INGERSOLL COLLISION HEAT MAP**



**FIGURE 25: TILLSONBURG COLLISION HEAT MAP**

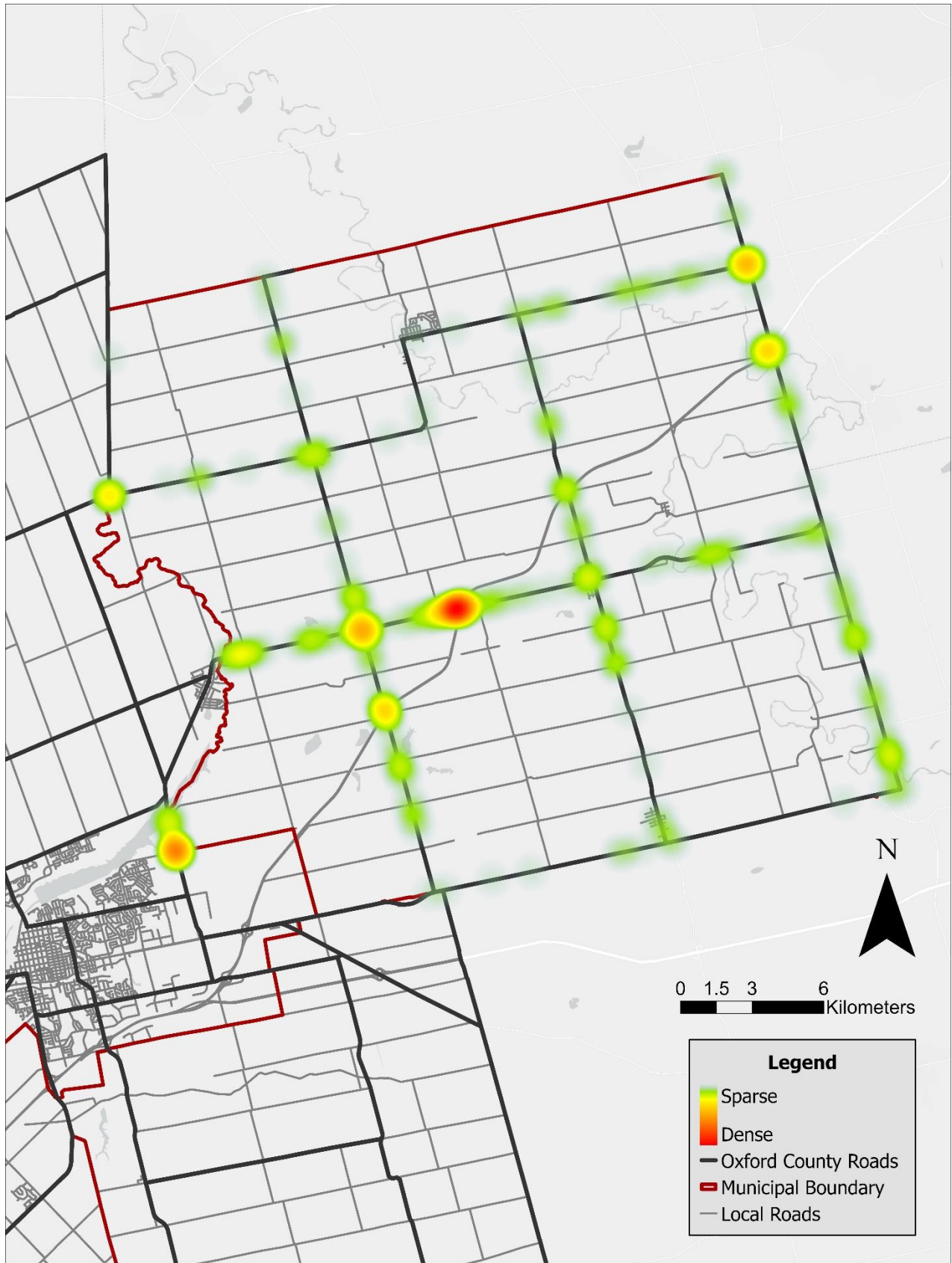




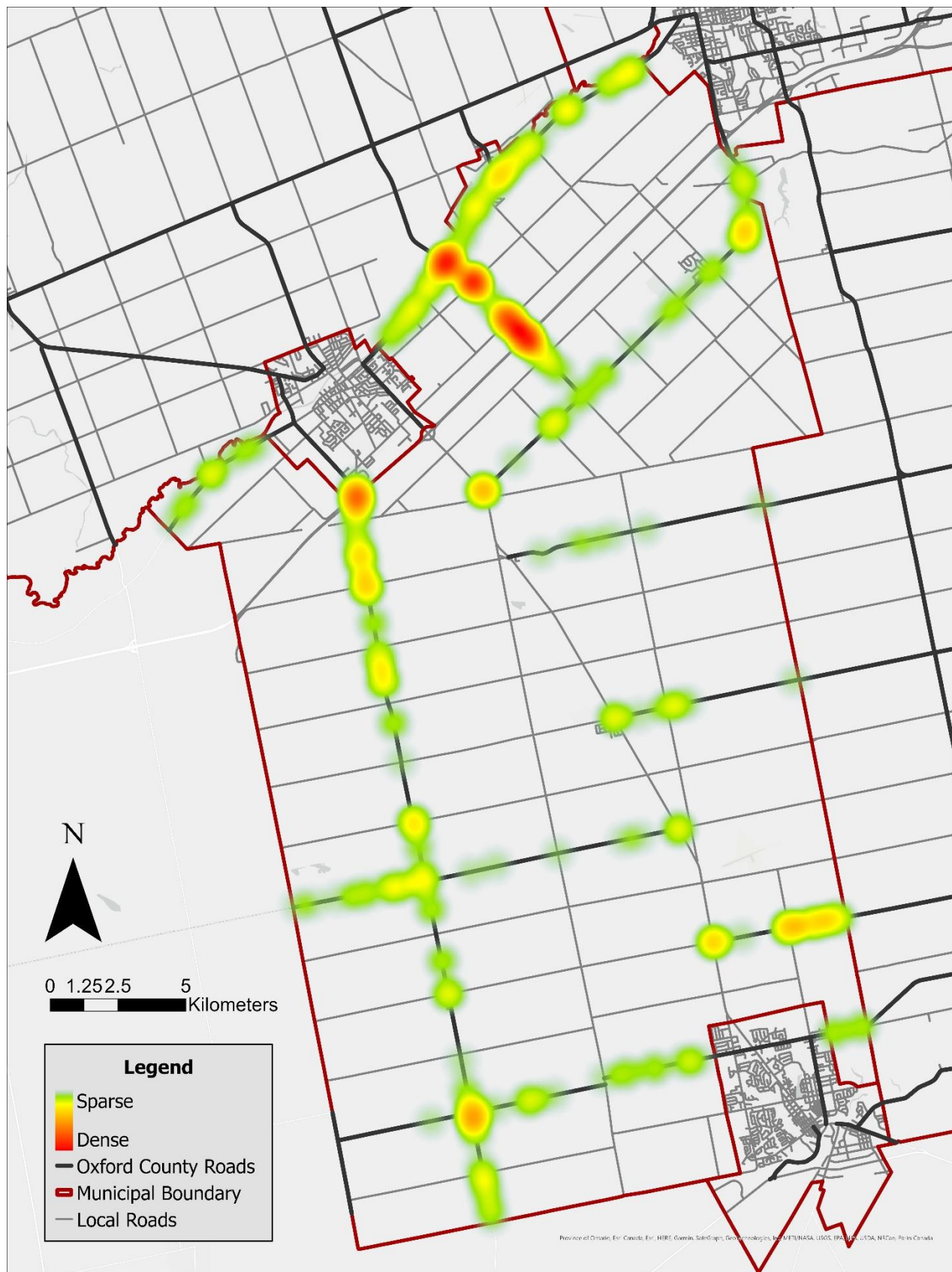
**FIGURE 26: ZORRA COLLISION HEAT MAP**



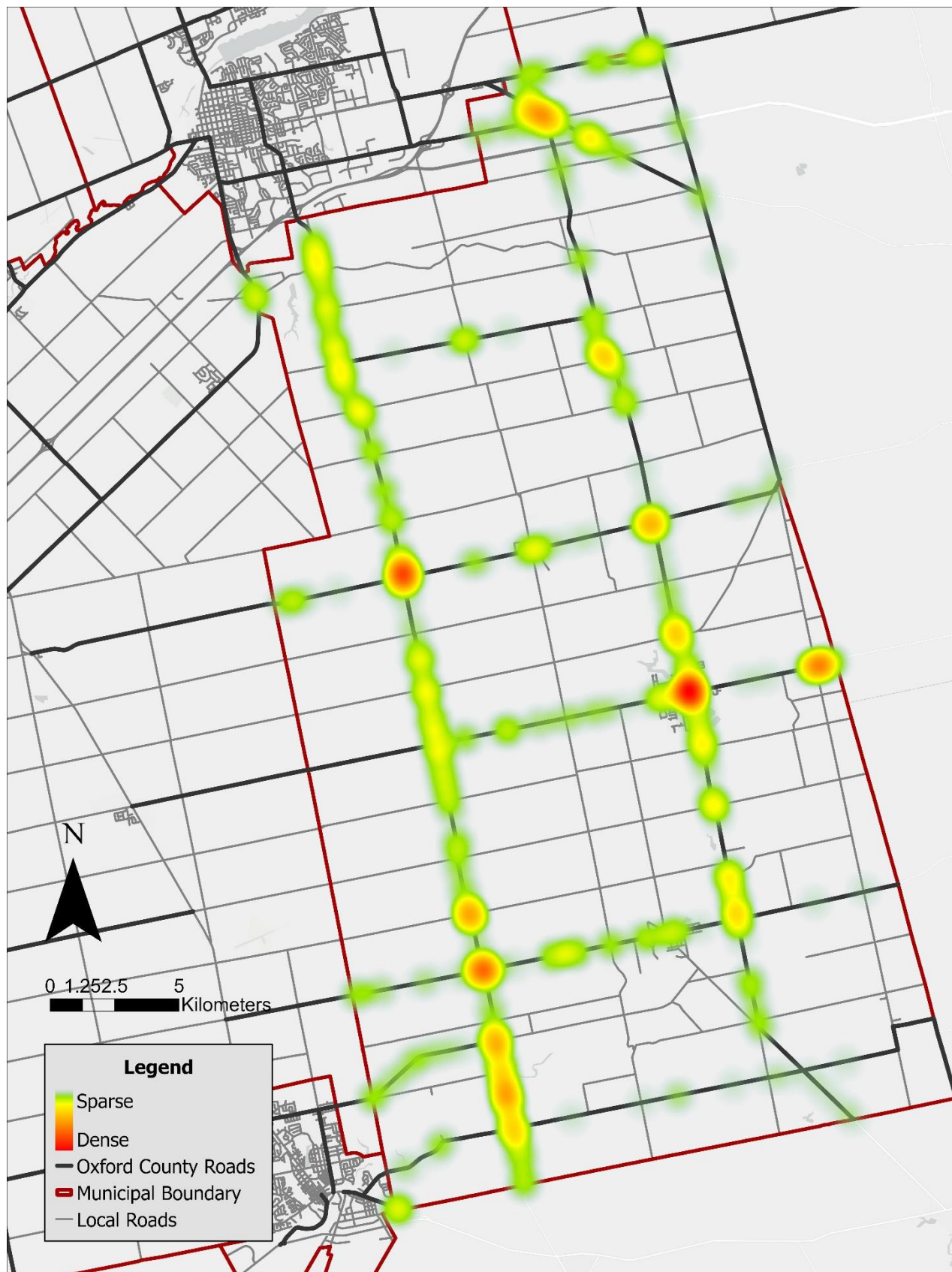
**FIGURE 27: EAST ZORRA-TAVISTOCK COLLISION HEAT MAP**



**FIGURE 28: BLANDFORD-BLENHEIM COLLISION HEAT MAP**



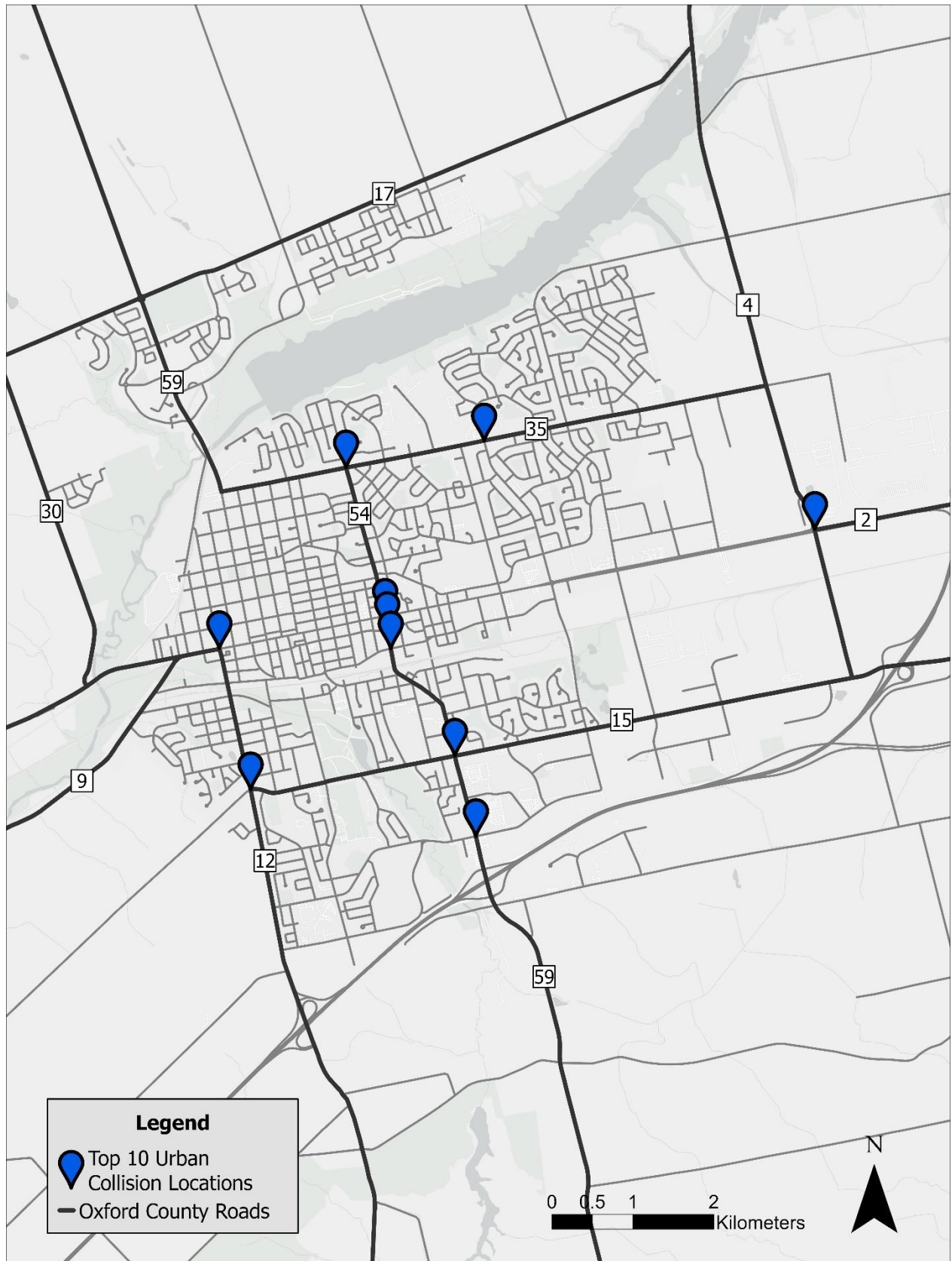
**FIGURE 29: SOUTH-WEST OXFORD COLLISION HEAT MAP**



**FIGURE 30: NORWICH COLLISION HEAT MAP**



**FIGURE 31: TOP 10 RURAL COLLISION LOCATIONS**



**FIGURE 32: TOP 10 URBAN COLLISION LOCATIONS**

# APPENDIX D

## Future Network Assessment





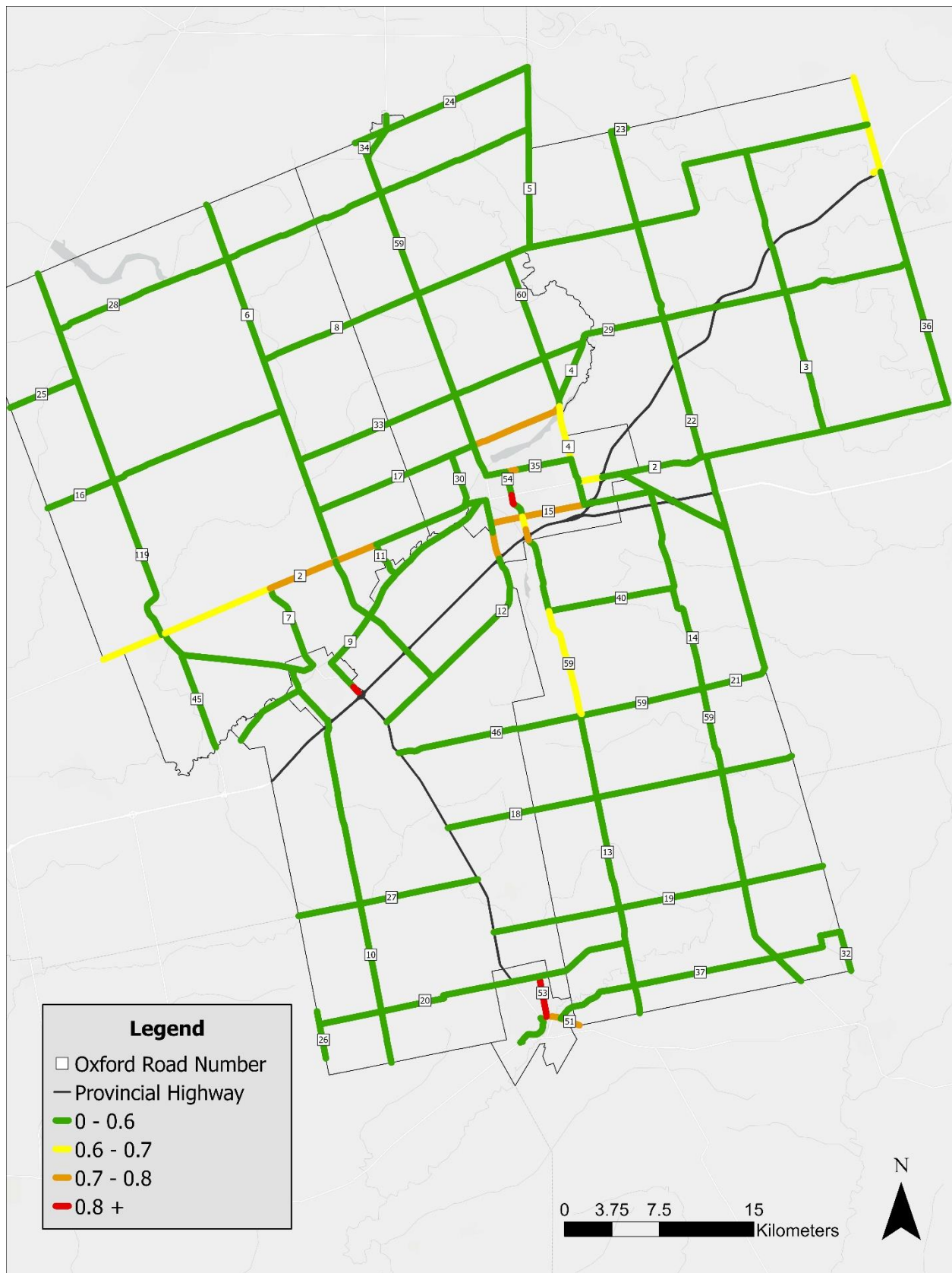
**FIGURE 33: 2024 V/C ROAD NETWORK MODEL**



**FIGURE 34: 2028 V/C ROAD NETWORK MODEL**



**FIGURE 35: 2033 V/C ROAD NETWORK MODEL**



**FIGURE 36: 2046 V/C ROAD NETWORK MODEL**

# **APPENDIX E**

## **Road Rationalization Criteria**

The road rationalization criteria were prepared by Paradigm Transportation Solutions Ltd. for the County's 2019 TMP and were based on the criteria developed by AECOM for the County's 2009 TMP. The eleven criteria are described below.

### **Criterion 1 Urban Centre Connector**

Urban Centre Connectors are designed to connect urban centres to one another or to provide a connection to a Provincial Highway. Urban centres are not limited to those found exclusively in Oxford County, but rather, include any roadways that connect Oxford County urban centres to urban centres in Oxford County and external municipalities.

Criterion 1 is considered to be the most important criterion, as County and Regional roadways should serve as inter-municipal corridors to connect the urban centres within the County. The criterion is intended to identify roads which provide service to and from centres having commercial and, possibly, industrial land uses.

For this criterion, urban centres are defined as areas of concentrated development, rather than ribbon development. The criterion is also not intended to be applied to rural areas in which residential subdivisions are being developed. When, and if, the residential subdivision grows to a significant size, upper tier road criteria service may be considered through the application of all the criteria.

### **Criterion 2 Provincial Highway/Regional Connector**

Provincial Highways and Regional Connectors are designed to connect major commercial and industrial areas, universities, hospitals, international border crossings and provincial boundaries to a Provincial Highway or County/Regional Road. This criterion is intended to extend the Provincial Highway or regional road to connect the mentioned facilities and is not meant to provide for lateral connections between highways/County roads. Where a municipal road appears as a connector but parallels an existing County/Regional or Provincial connector, no points have been applied.

For this criterion, major institutional/commercial/industrial complexes are classified as those generating more than 1,000 vehicle trips per day.

### **Criterion 3 Heavy Industry Service**

Heavy Industry Service roadways are designed to provide service within four (4) kilometres of consistent major attractors or generators of heavy vehicles. It is not intended that upper tier roadways provide service directly to the entrance of every attractor or generator but rather provide service close to the industry and that the distribution within the area of the industry be a lower tier responsibility. For this criterion, a consistent major attractor or generator is defined as an operation, such as a gravel pit, that operates for nine (9) months or more per year.

### **Criterion 4 Barrier Service**

These roadways are designed to provide service parallel to and across major barriers to free traffic movement such as freeways, railways, water bodies or congested areas. This criterion is intended to reduce traffic on local roads by providing service parallel to, or across, barriers to traffic movement where upper tier service is justified.

### **Criterion 5 Resort Service**

These roadways are designed to provide service to major resorts and/or recreational areas. Major resorts and/or recreational areas are defined as an area generating a minimum of 700 vehicle trips per

day during the normal season of operation. This criterion is intended to provide upper tier service close to resort and/or recreational areas or to a lower tier road system that distributes the traffic.

### **Criterion 6 Urban Arterial Extension**

These roadways are designed to provide service as extensions of urban arterial streets, from the urban limits to the first intersection where the average annual daily traffic (AADT) is 700 vehicles per day, then connect to an upper tier road or a Kings Highway by the shortest route. This criterion is intended to provide for the extension of urban arterial streets into the rural areas to connect with an upper tier road or Kings Highway. The urban arterial designation should be extended through intersections where the AADT equals or exceeds 700 vehicles per day on both sides of the intersection.

### **Criterion 7 Traffic Speed**

Provide service on roads where the maximum speed limit is generally 80 km/h. This criterion is intended to identify roads which have a maximum speed limit of 80 km/h over the majority of their length.

### **Criterion 8 Road Surface**

Provide service on roads with asphalt or hard surface. This criterion is intended to identify roads with asphalt or hard surface and good vertical and horizontal geometrics. These roadways are considered to be more appropriate to serve as upper tier roads as these conditions permit the roadway to better accommodate greater traffic volumes, heavier vehicles and higher speeds.

### **Criterion 9 Traffic Volume**

Provide service on roads with traffic volumes greater than 1,500 vehicles per day. This criterion is intended to identify roadways with traffic volumes greater than 1,500 vehicles per hour.

### **Criterion 10 Road Right-of-Way**

Provide service on roadways with at least a 20 meter (66 foot) right-of-way. This criterion intends to identify roadways with a right-of-way equal to 20 meters (66 feet).

### **Criterion 11 Annual Load Restrictions**

Provide service on roadways without annual load restrictions. This criterion intends to ensure goods movement within the County is permitted on roadways will full load connectivity.

# **APPENDIX F**

## **Roundabout Feasibility and Screening Tool**



## Roundabout Feasibility Initial Screening Tool

The purpose of the Roundabout Feasibility Initial Screening Tool is to provide a relatively quick assessment of the feasibility of a modern roundabout at a particular intersection compared to other forms of traffic control or road improvements. The intended outcome of this tool is to provide enough information to assist staff in evaluating the feasibility of a roundabout at an intersection.

	<b>Basic Info</b>	<b>Roundabout Supportive?</b>
<b>1)</b>	Project name	
<b>2)</b>	Intersection location (Street/Road names, distance from a major intersection, etc.)	
<b>3)</b>	Is it a new intersection or a retrofit of an existing intersection? If existing, what is the existing traffic control?	YES <input type="checkbox"/> NO <input type="checkbox"/> NEUTRAL <input type="checkbox"/>
<b>Existing Intersection Operational and Physical Characteristics</b>		
<b>4)</b>	Description of the existing intersection. (Number of Legs, Lanes on each leg, total AADT, AADT on each road, posted speed etc. Attach or sketch a diagram showing existing and horizon-year turning movements.)	YES <input type="checkbox"/> NO <input type="checkbox"/> NEUTRAL <input type="checkbox"/>
<b>5)</b>	What, if any, operational problems are currently being experienced at this location (Large queues, Level of Service issues)?	YES <input type="checkbox"/> NO <input type="checkbox"/> NEUTRAL <input type="checkbox"/>

6)	Is the intersection near a major intersection or a railroad crossing? If so, how close and what type of traffic control exists at the adjacent intersection(s)? Will queues be a problem? Describe the corridor (ie: average intersection spacing).	<p>YES <input type="checkbox"/></p> <p>NO <input type="checkbox"/></p> <p>NEUTRAL <input type="checkbox"/></p>
7)	What is the adjacent land use and access?	<p>YES <input type="checkbox"/></p> <p>NO <input type="checkbox"/></p> <p>NEUTRAL <input type="checkbox"/></p>
8)	Is the intersection located within a coordinated signal network?	<p>YES <input type="checkbox"/></p> <p>NO <input type="checkbox"/></p> <p>NEUTRAL <input type="checkbox"/></p>
<b>Safety Considerations</b>		
9)	What is the collision history of the intersection over the past five years? Is there a collision problem that needs to be addressed?	<p>YES <input type="checkbox"/></p> <p>NO <input type="checkbox"/></p> <p>NEUTRAL <input type="checkbox"/></p>
10)	Are there expected to be special users at this intersection shortly (ie: a person with a disability, pedestrians, cyclists, large agricultural machinery, horses, etc.)? If yes, what special considerations would be required?	<p>YES <input type="checkbox"/></p> <p>NO <input type="checkbox"/></p> <p>NEUTRAL <input type="checkbox"/></p>

<b>Design Considerations</b>		
<b>11)</b>	Would the intersection be located on a preferred roundabout corridor? If yes, why?	YES <input type="checkbox"/> NO <input type="checkbox"/> NEUTRAL <input type="checkbox"/>
<b>12)</b>	Is the intersection located within a corridor that is scheduled for improvements in the future?	YES <input type="checkbox"/> NO <input type="checkbox"/> NEUTRAL <input type="checkbox"/>
<b>13)</b>	What traditional improvements are proposed for this intersection (traffic signals, all-way stop, auxiliary lanes, off-set re-alignment, etc.)?	YES <input type="checkbox"/> NO <input type="checkbox"/> NEUTRAL <input type="checkbox"/>
<b>14)</b>	If traffic signals are considered, does it meet the warrant for the horizon year?	YES <input type="checkbox"/> NO <input type="checkbox"/> NEUTRAL <input type="checkbox"/>
<b>15)</b>	What size of roundabout is being considered for this intersection (ie: single, two, three lane entry)? Please attach a Traffic Flow Worksheet, a lane configuration diagram, and a sketch of how a roundabout would fit into the right-of-way (ROW).	YES <input type="checkbox"/> NO <input type="checkbox"/> NEUTRAL <input type="checkbox"/>

<b>16)</b>	Are there property constraints at/near the intersection or is it restricted by a watercourse/parks/cemeteries/etc.? If yes, what are they?	YES <input type="checkbox"/> NO <input type="checkbox"/> NEUTRAL <input type="checkbox"/>	
<b>17)</b>	Terrain – Is the area on a grade/flat/rolling?	YES <input type="checkbox"/> NO <input type="checkbox"/> NEUTRAL <input type="checkbox"/>	
<b>Cost Estimation</b>			
<b>18)</b>	20 Year Life Cycle Cost Estimate  Injury Collision Cost (ICC): _____  Discount Rate (i): _____	YES <input type="checkbox"/> NO <input type="checkbox"/> NEUTRAL <input type="checkbox"/>	
<b>20 YEAR LIFE- CYCLE COST COMPARISON</b>			
	<b>Cost Item</b>	<b>Other Traffic Control</b>	<b>Roundabout</b>
	Implementation Cost	\$	\$
	Injury Collision Cost (Present Value)	\$	\$
	<b>Total Life Cycle Cost</b>	\$	\$

	<p>Notes:</p> <ul style="list-style-type: none"> <li>• Implementation Cost = sum of costs for construction, property, utility relocation, illumination, engineering (20%), contingency (20%) and maintenance (5%)</li> <li>• Present Value of 20 Year Injury Collision Cost = expected annual collision frequency x ICC <math>((1+i)^{20}-1)/i(1+i)^{20}</math></li> <li>• Monte Carlo Analysis may be required. If so, a range for the implementation cost (i.e. 10%, 50%, 90% probability) is required</li> </ul>	
	<p><b>Conclusion and Recommendations</b></p>	<p><b>Roundabout Feasibility?</b></p>
		<p>YES <input type="checkbox"/></p> <p>NO <input type="checkbox"/></p> <p>Further Consideration Needed <input type="checkbox"/></p>

# APPENDIX G

Cultural Heritage Report



July 14, 2023

**TO:** Cooper Howieson, Parsons Inc

**FROM:** John Sleath, MA, Archaeological Services Inc

**RE:** Desktop Baseline Conditions Cultural Heritage Report as part of the 2024 Transportation Master Plan and Oxford Road 4 Corridor Study

**ASI File: 21CH-199**

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Archaeological Services Inc. was contracted by Parsons Inc., on behalf of the County of Oxford, to conduct a Desktop Baseline Conditions Cultural Heritage Report as part of the 2024 Transportation Master Plan (T.M.P.) and Oxford Road 4 Corridor Study. The project aims to identify the path forward to comprehensively develop, evaluate and select preferred long-term transportation strategies to support current and future levels of population and employment, and to identify the possible alternatives to most efficiently move people and goods from the Highway 401 and Highway 403 corridors to the northern part of the County. The project study area includes four road segments:

- Oxford Road 4– from Oxford Road 33 to Parkinson Road, Woodstock
- Oxford Road 59 – from Dundas Street to Wilson Street, Woodstock
- Oxford Road 119 – from Clarke Road to Highway 401, Ingersoll
- Oxford Road 53 – from Highway 19 to Brock Street East, Tillsonburg

Memorandum

**This memo has been prepared to assist in evaluating project alternatives, and includes an inventory of known built heritage resources (B.H.R.s) and cultural heritage landscapes (C.H.L.s) that are previously-identified within a 50 metre buffer of these four road segments. As additional road segments may be added in the future, this memo is considered preliminary and is intended to be used for internal planning purposes only. It does not constitute a deliverable intended to fulfil regulatory requirements.**

## Community Information Gathering

The following individuals, groups, and/or organizations were contacted to gather information on known and potential B.H.R.s and C.H.L.s, active and inactive cemeteries, and areas of identified Indigenous interest within the study area:

- Ron Versteegen, Senior Planner, County of Oxford (email communication 14 and 17 April 2023). Email correspondence acknowledged receipt, but no additional information had been received at the time of internal memo preparation.
- Dustin Robson, Development Planner, County of Oxford (email communication 14 April 2023). A response provided information on Oxford Road 4– from Oxford Road 33 to Parkinson Road, Woodstock.
- Eric Gilbert, Senior Planner, County of Oxford (email communication 17 and 18 April 2023). A response provided information on Oxford Road 59 – from Dundas Street to Wilson Street, Woodstock
- At project start-up in March 2023, A.S.I. made a request to the proponent that any engagement with Indigenous communities undertaken as part of this project include a discussion about known or potential built heritage resources or cultural heritage landscapes that are of interest to the respective communities (email communications with Parsons, 8 March 2023). No feedback or concerns were received by the time of internal memo preparation in July 2023.





Once all road segments that will be assessed as part of the 2024 Transportation Master Plan (T.M.P.) and Oxford Road 4 Corridor Study have been selected, additional consultation with the Ministry of Citizenship and Multiculturalism and the Ontario Heritage Trust will be completed.

## Preliminary Desktop Results

Based on the results of the preliminary background research and consultation, a total of 44 B.H.R.s, C.H.L.s, and commemorative features were identified within the study areas for the four road segments, including:

- 41 previously identified BHRs and CHL in the Oxford Road 59 – from Dundas Street to Wilson Street, Woodstock study area. NOTE- these individual properties will be combined into one CHL for the purposes of the Desktop Baseline Conditions Cultural Heritage Report.
- One potential BHR in the Oxford Road 4 – from Oxford Road 33 to Parkinson Road, City of Woodstock study area.
- One commemorative feature in the Oxford Road 119 – Clarke Road to Highway 401, Town of Ingersoll study area.
- One known BHR in the Oxford Road 53 – from Highway 19 to Brock Street East, Town of Tillsonburg study area.

A preliminary inventory and discussion of B.H.R.s and C.H.L.s within the study areas is presented below.

### **Oxford Road 59 (Wilson Street) – from Dundas Street to Henry Street, City of Woodstock**

This road segment is part of the historical downtown core of Woodstock, and contains 41 previously identified properties (33 residential properties, one institutional property, and seven commercial properties). For the purposes of our assessments, these properties will be combined into one C.H.L., the ‘Downtown Woodstock Cultural Heritage Landscape’, which will contain each of these individual properties.



Residential properties:

The residential properties on Wilson Street, Peel Street, and Main Street range in scale and massing, architectural style, and date of construction. The area features simple one-storey vernacular cottages as well as two-and-a-half storey grand Second Empire and Italianate style residences.

116 Wilson Street	74 Wilson Street	44 Wilson Street
110 – 112 Wilson Street	73 Wilson Street	42 Wilson Street
108 Wilson Street	72 Wilson Street	41 Wilson Street
106 Wilson Street	69 Wilson Street	40 Wilson Street
90 Wilson Street	64 Wilson Street	30 – 32 Wilson Street
89 Wilson Street	63 Wilson Street	686 Peel Street
83 Wilson Street	59 Wilson Street	682 Peel Street
82 Wilson Street	58 Wilson Street	690 Peel Street
81 Wilson Street	57 Wilson Street	671 Main Street
78 Wilson Street	50 -52 Wilson Street	669 Main Street
76 Wilson Street	51 Wilson Street	668 Main Street
68 Wilson Street		



Institutional Properties:

- 22 Wilson Street - College Avenue United Church

Commercial Properties

101 Wilson Street	692 Dundas Street	700 Dundas Street
100 Wilson Street	694 Dundas Street	
97 Wilson Street	696 Dundas Street	

### **Oxford Road 4 – from Oxford Road 33 to Parkinson Road, City of Woodstock**

No known B.H.R.s or C.H.L.s were identified within a 50 metre buffer of this study area corridor.

NOTE: County of Oxford Planner identified Innerkip Presbyterian Church at 153 Blandford St as a potential B.H.R., however it is not believed to be listed or designated.

### **Oxford Road 119 – Clarke Road to Highway 401, Town of Ingersoll**

- The Big Cheese 1866 Plaque - 415 Harris Street
  - The plaque is located on the grounds of the Elm Hurst Inn and Spa
  - “The Big Cheese” created here which helped establish Oxford County as the birthplace of Canada’s commercial cheese industry.



## Oxford Road 53 – from Highway 19 to Brock Street East, Town of Tillsonburg

- 28 – 30 Tillson Avenue - Annandale House
- Heritage Status and Recognition:
  - Listed on the Municipal Heritage Register
  - [Designated under Part IV of the Ontario Heritage Act \(By-law 2258\)](#) [[heritagetrust.on.ca](http://heritagetrust.on.ca)]
  - Ontario Heritage Trust Easement Agreement (covers both interior and exterior)
  - [National Historic Site of Canada](#) [[historicplaces.ca](http://historicplaces.ca)]

