

Town of Windermere Traffic Pattern Plan

September 2018

Kimley»»Horn



TRAFFIC PATTERN PLAN

Town of Windermere

Prepared by:

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Data Collection

Origin, destination, and cut-through data was obtained using the software platform *StreetLight Data*. *StreetLight Data* combines Big Data resources and processing software to give transportation professionals on-demand access analytics. The following are *StreetLight Data* geospatial data partners that create metrics:

- Current, powered by GE
- PTV Group
- FORUM Analytics
- INRIX
- Cuebiq

StreetLight Data allows users to select a specific route between an origin point and a destination point. The software uses global positioning system (GPS) data to determine the percentage split of motorists that followed the selected routes. Data was collected for the year 2016 for the months when school was in session, from September to May, during the AM Peak Period (7-9 am) and PM Peak Period (5-7pm).

Initial data was collected to better understand patterns of drivers in Town who do not stop. These drivers are not residents or visitors of Windermere, they are just using Windermere roads to go somewhere else. These drivers enter or exit via Lake Butler Boulevard, Chase Road, Conroy Windermere Road, Maguire Road, or Windermere Road. The origin and destination points are shown in **Figure 2**. Several iterations of data collection were conducted to identify traffic patterns and destinations.

A scenario was developed to better understand the longer-range origin / destination of trips that use Windermere roads, primarily focusing on areas to the southwest. These locations are shown in **Figure 3**. This scenario is intended to show where vehicles are coming from or going to after leaving town on Chase Road.

Several different cut-through routes and multiple origin/destination combinations within the downtown area were analyzed. These scenarios are highlighted in

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Figure 4. The star symbol in the figures represents an origin or destination and the diamond symbols represent the potential routes.

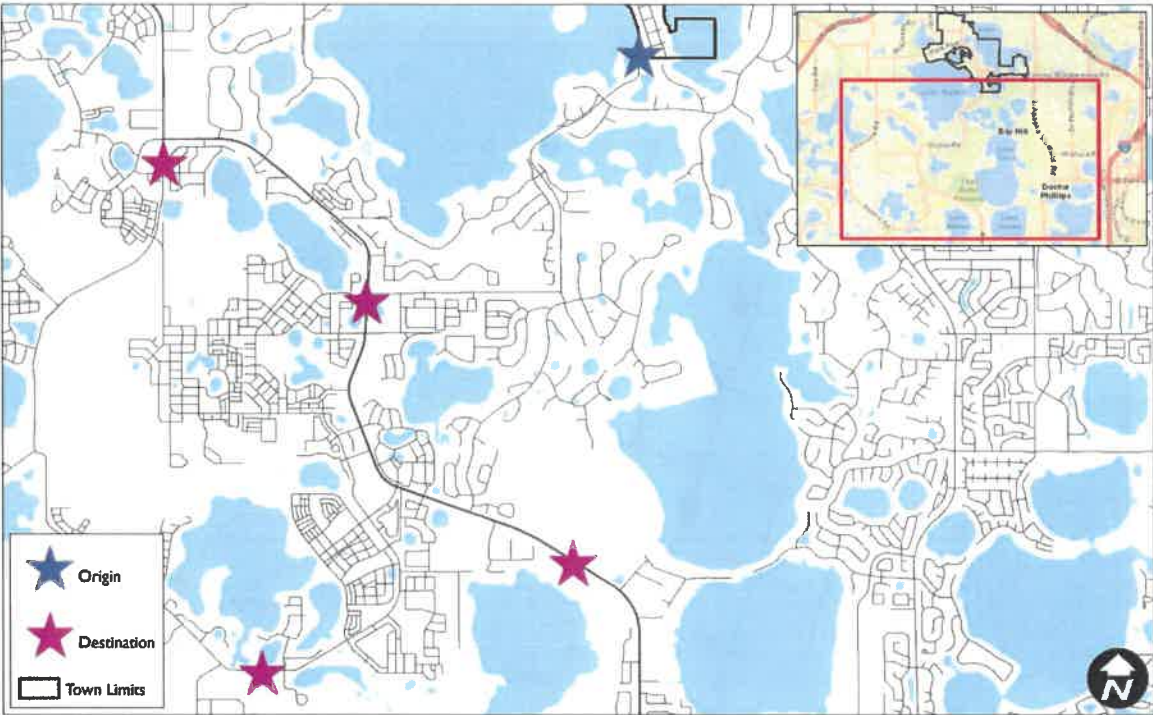
Intersection turning movement counts were collected at the intersection of Oakdale Street & 7th Avenue on June 27, 2018 and August 23rd, 2018 to calibrate the data. Orange County counts and speed survey data from the Town Police Department were likewise used to calibrate the data.

Figure 2. Origin and Destination Points Outside of Town



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Figure 3. Destinations Southwest of Town



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Figure 4. Local Cut-Through – Northeast Quadrant



Note: The diamond shaped icons represent potential routes between the origin and destination

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Figure 6. Local Cut-Through – West of Main Street



Note: The diamond shaped icons represent potential routes between the origin and destination

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Traffic Data Analysis

Results of the data collection from the various scenarios were summarized and evaluated. Understanding the traffic patterns will assist in developing a feasible cut-through reduction plan.

The initial analysis considers overall cut-through travel through town, based on four origin points – the primary entry points into town:

- E 6th Avenue (Conroy-Windermere Road) – most traffic to and from the east enters/exits at this point, which connects to Apopka Vineland Road, Kirkman Road, and I-4. Apopka Vineland Road provides a route to SR 408 (East-West Expressway).
- Maguire Road – this is the primary entry/exit point to and from the north. Maguire Road also serves as a route to SR 408 via Colonial Drive or Park Ridge Gotha Road.
- Park Avenue – this is the primary route to the west, connecting to Winter Garden Vineland Road, which connects to SR 429 and Winter Garden Village.
- Chase Road is the only route to the south, connecting to Keene’s Point and Winter Garden Vineland Road, which connects to Horizon West and to Disney.

As shown in **Table I** below, most of the traffic driving on arterial roads in Windermere is cut-through traffic, with over 75% of trips on Park Avenue and Chase Road going to and from other places. Maps showing cut-through patterns in more detail are provided in **Appendix A**.

Table I. Total Cut-Through Analysis

Time Period	Origin	Local Trips (%)	Pass-Through Trips (%)
PM Peak Hour (5-7 PM)	E 6th Avenue	36%	64%
	Maguire Road	45%	55%
	Park Avenue	24%	76%
	Chase Road	24%	76%

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The following patterns were observed through Town:

- Most traffic on Chase Road (76%) is traveling through without stopping, with most of it headed to 6th Avenue.
- In terms of peak-hour volume, the number of vehicles cutting-through is approximately 550 of the 720 peak-hour vehicles from Chase Road.
- Of the 800 vehicles entering Town from 6th Avenue, approximately 290 are headed to Windermere, and approximately 510 are cutting through. Most of the cut-through trips are on their way to Chase Road.
- Most traffic on Park Avenue (76%) is traveling through without stopping.
 - Much of it (56%) headed to 6th Avenue, and another 17% headed to Maguire Road north of Town.
 - The overall magnitude is much less since the total peak-hour traffic entering town from Park Avenue is approximately 350 vehicles.
- Just over half (55%) of the traffic entering Town from Maguire Road is cutting through.

Southwest of Town, the following patterns were observed:

- During the morning peak, most traffic disperses to residential areas along Chase Road and Winter Garden Vineland Road, with approximately 32% continuing beyond Tibet Butler Drive and approximately 5% traveling towards Disney.
- During the afternoon peak, the majority of the trips, almost 80%, disperse in the area near the intersection of Chase Road and Winter Garden Vineland Road, with only 7% continuing past Tibet Butler Drive, 2.5% to Disney, and 5% to Ficquette Road.

Traffic patterns within downtown indicate that the vast majority of vehicles are staying on the arterial road system. The worst-case route is in the northeast quadrant, where up to 4% of the trips will use neighborhood roads to travel between 6th Avenue and Main Street.

Table 2 and **Table 13** summarize the data output in terms of the percentage of overall traffic using the direct route versus cutting through. The “direct route” is along Main Street and 6th Avenue (which is the preferred route where vehicles should be driving). The percentages of motorists that deviated from the direct route are shown in maps provided in **Appendix B**. The total number of peak-hour vehicles is also shown to illustrate the magnitude of cut-through.

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Table 2. Northeast/Southeast Quadrant Analysis

Quadrant	Time Period	Origin/ Destination	Direct Route (%)	Cut- Through (%)	Hourly Cut- Through Volume (#)	Roads With Highest Cut- Through (%)
Northeast	AM Peak Hour (7-9 AM)	6 th Avenue to Main Street	98%	2%	13	E 2 nd Avenue Oakdale Street
		Main Street to 6 th Avenue	96%	4%	10	E 2 nd Avenue Oakdale Street
	PM Peak Hour (5-7 PM)	6 th Avenue to Main Street	97.5%	2.5%	5	E 2 nd Avenue
		Main Street to 6 th Avenue	96%	4%	3	E 2 nd Avenue Oakdale Street
Southeast	AM Peak Hour (7-9 AM)	6 th Avenue to Chase Road	97%	3%	13	Oakdale Street E 7 th Avenue E 12 th Avenue
		Chase Road to 6 th Avenue	98%	2%	8	E 9 th Avenue Oakdale Street
	PM Peak Hour (5-7 PM)	6 th Avenue to Chase Road	98%	2%	5	Oakdale Street E 7 th Avenue
		Chase Road to 6 th Avenue	99.5%	0.5%	2	None

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Table 3. Old Main Street/Main Street Cut-Through Analysis

Time Period	Origin/Destination	Direct Route (%)	Cut-Through (%)	Hourly Cut-Through Volume (#)	Roads With Highest Cut-Through
AM Peak Hour (7-9 AM)	Main Street Heading Northbound	100%	0%	0	None
	Main Street Heading Southbound	99%	1%	1	None
PM Peak Hour (5-7 PM)	Main Street Heading Northbound	98%	2%	4	W 5 th Avenue W 6 th Avenue
	Main Street Heading Southbound	99.2%	0.8%	1	None

As shown in the tables, the local roads with the highest percentages of cut-through travel are Oakdale Avenue, 7th Avenue, and 12th Avenue. The total amount of cut-through travel on local roads is very low, indicating that most vehicles on local roads are residents. For example, a total of 13 vehicles typically cut-through various roads in the southeast quadrant during the peak-hour.

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Conceptual Cut-Through Reduction Plan

As shown in the previous tables, most traffic that cuts through Windermere stays on the main roads (6th Avenue and Main Street), while a small portion utilizes the local roadway grid network of dirt roads to avoid congestion.

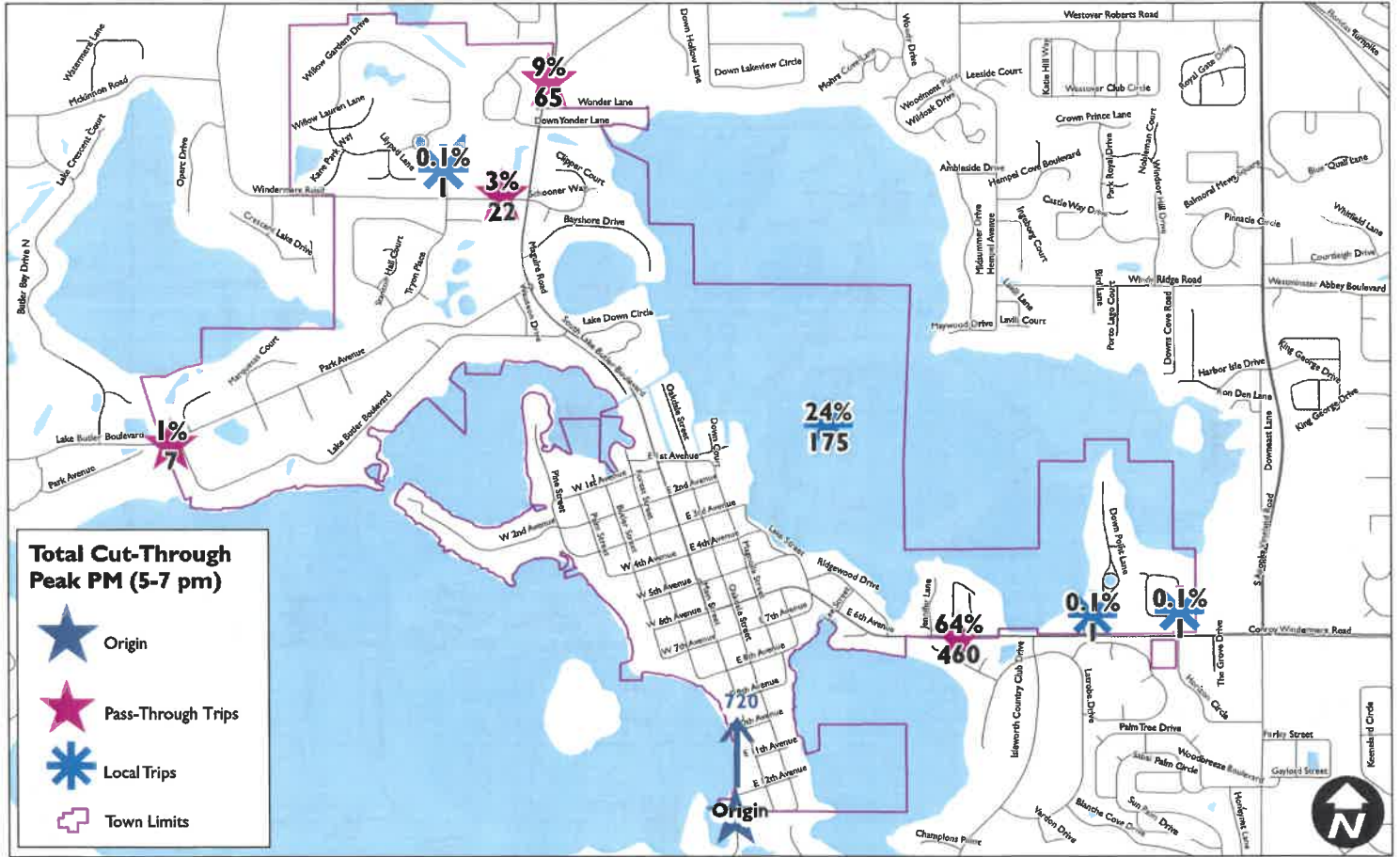
The local roads with the highest amounts of cut-through traffic are Oakdale Street (in the northeast and southeast quadrants), 2nd Avenue (in the northeast quadrant), and 7th Avenue (in the southeast quadrant). The maximum number of peak-hour vehicles cutting through on these roads is 13 vehicles. Assuming random arrival, this corresponds approximately to one vehicle every five minutes. The low cut-through percentages and volumes do not demonstrate a need to restrict movements. Any changes to the roadway network will have a negative effect on residents without providing a significant benefit.

No roadway changes are recommended to mitigate neighborhood cut-through traffic.

Appendix A:
Maps of Town-Wide Cut-Through

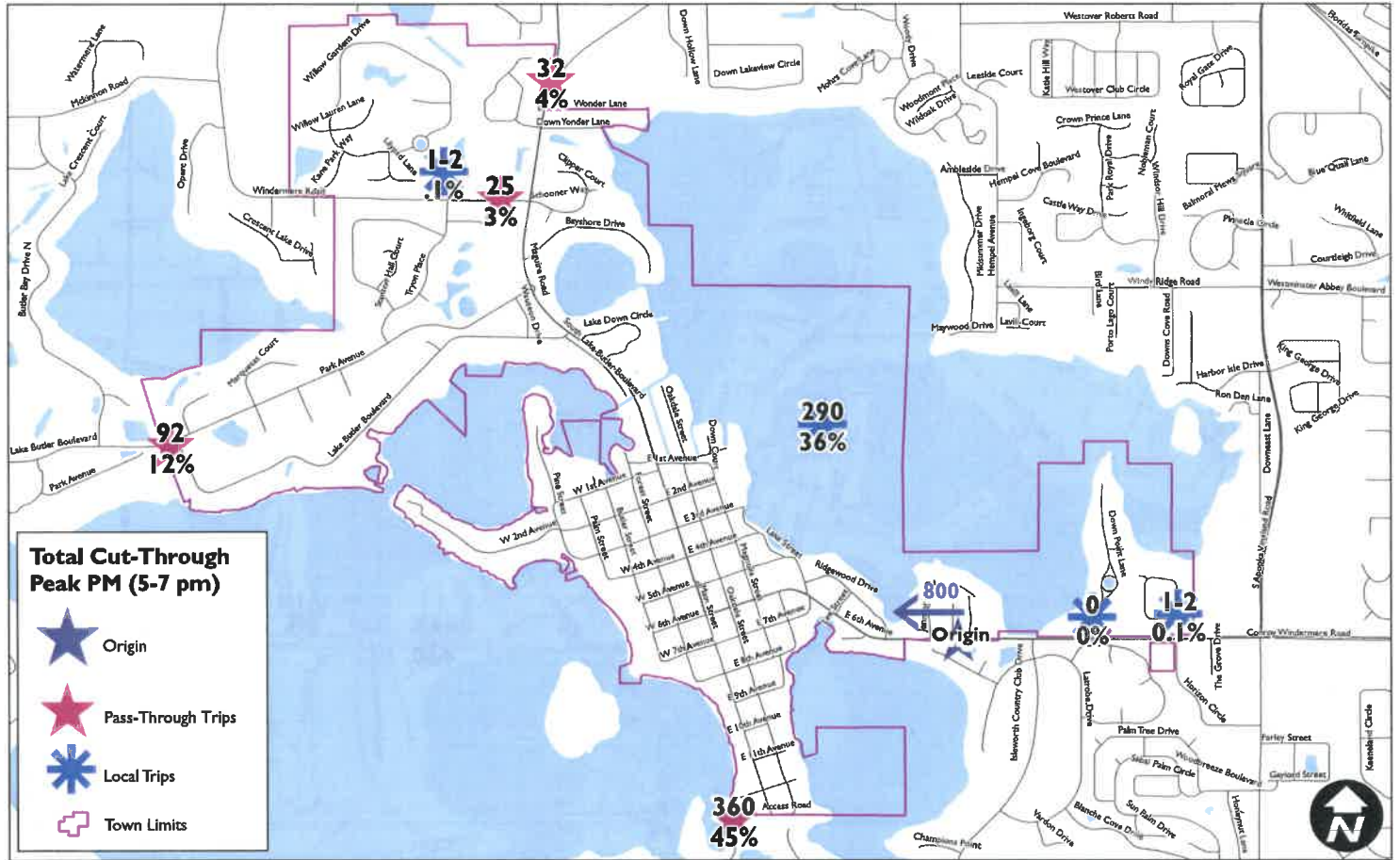
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% - Route Distribution for Cut-Through Traffic
 # - Peak Hour Cut-Through Volume



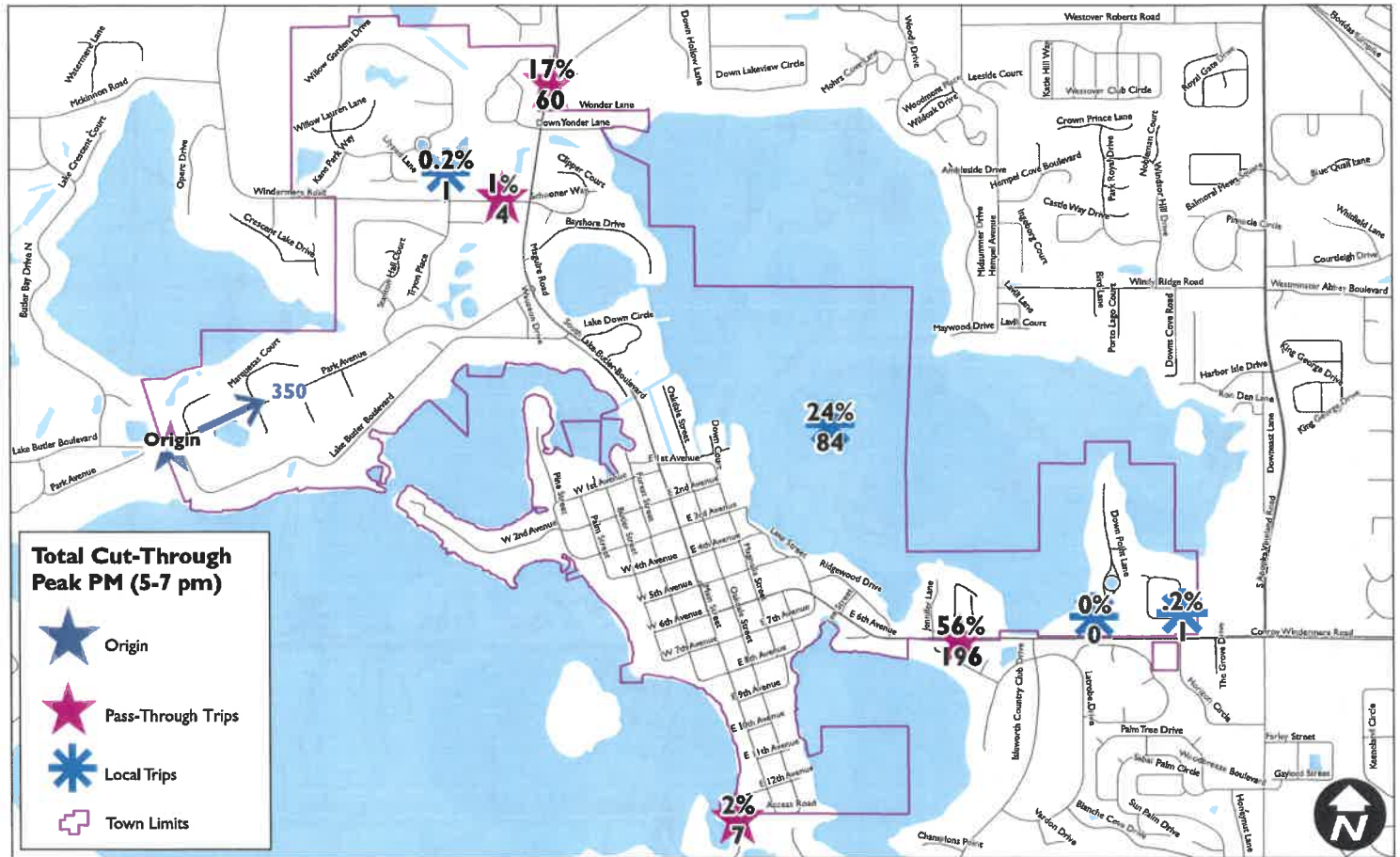
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% - Route Distribution for Cut-Through Traffic
- Peak Hour Cut-Through Volume



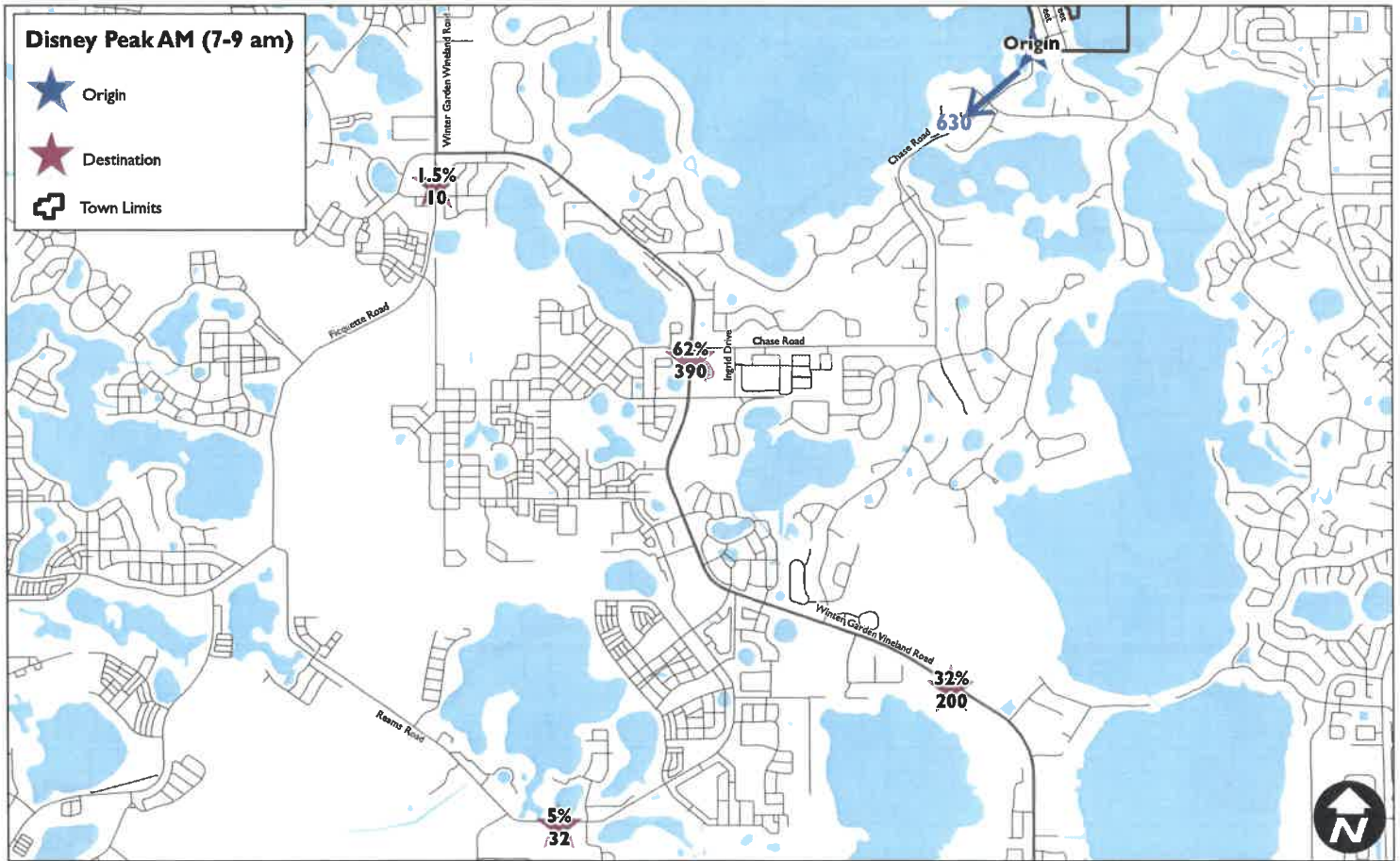
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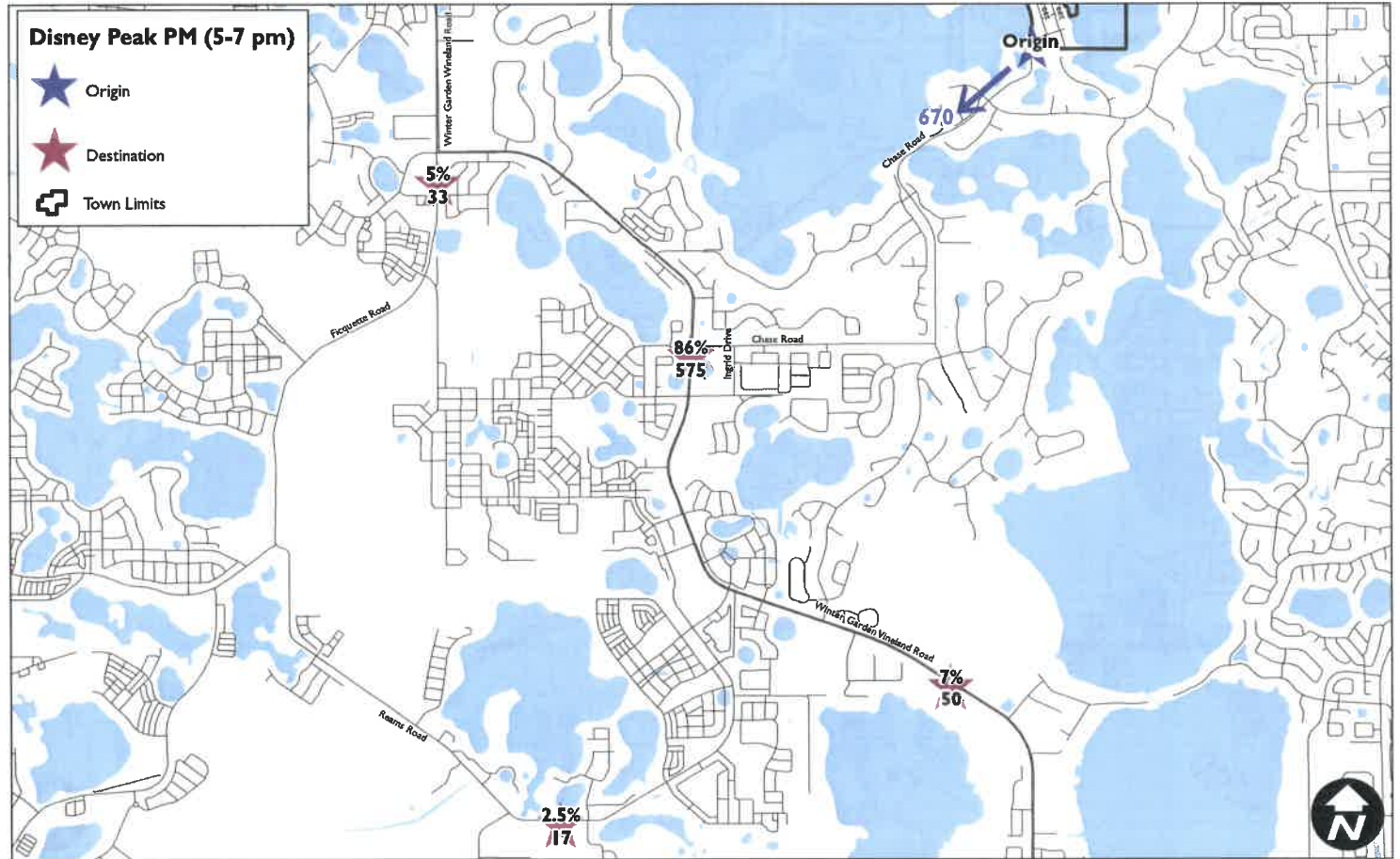
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% - Route Distribution for Cut-Through Traffic
 # - Peak Hour Cut-Through Volume



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% - Route Distribution for Cut-Through Traffic
 # - Peak Hour Cut-Through Volume



**Appendix B:
Maps of Local Cut-Through**

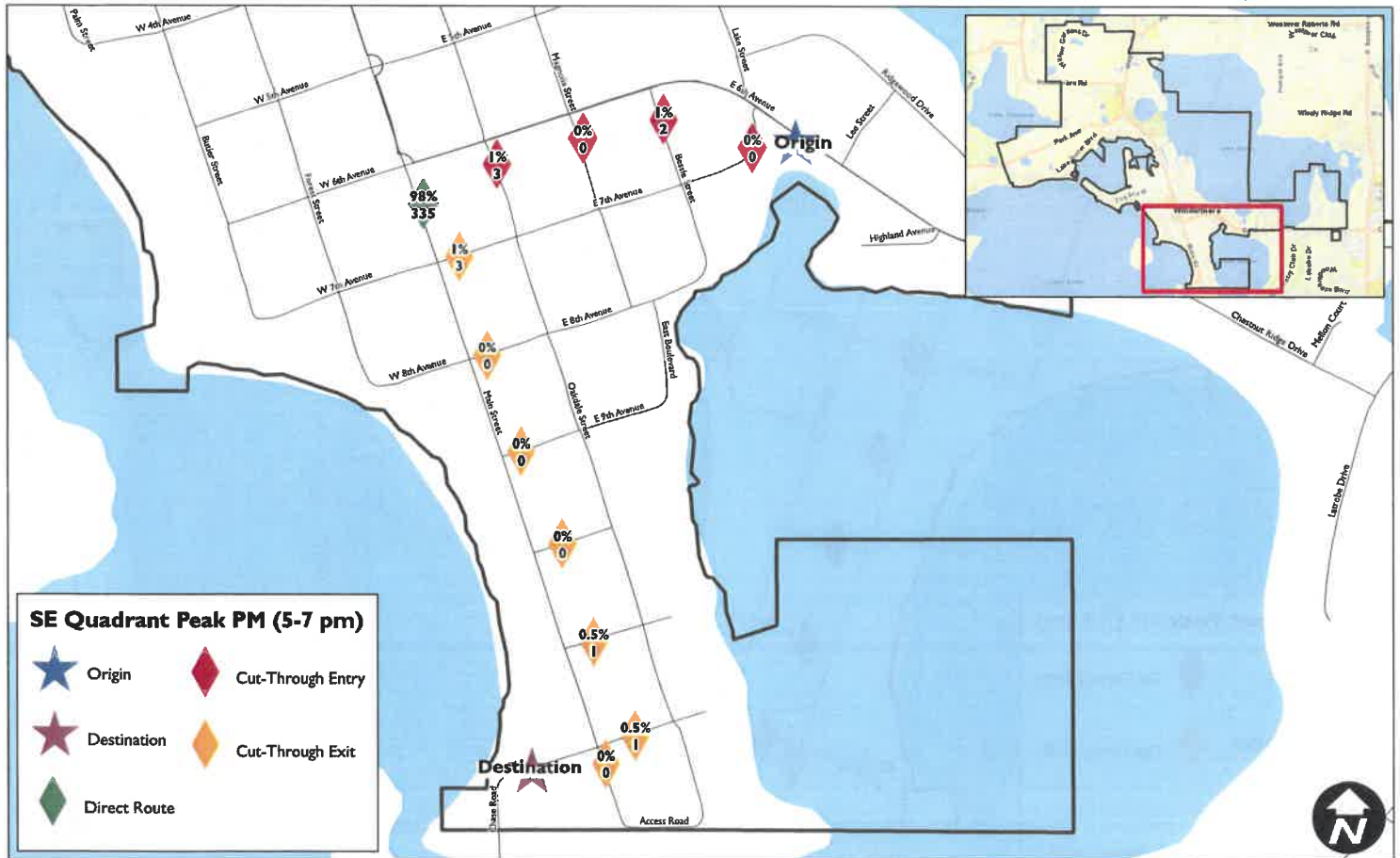
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% - Route Distribution for Cut-Through Traffic
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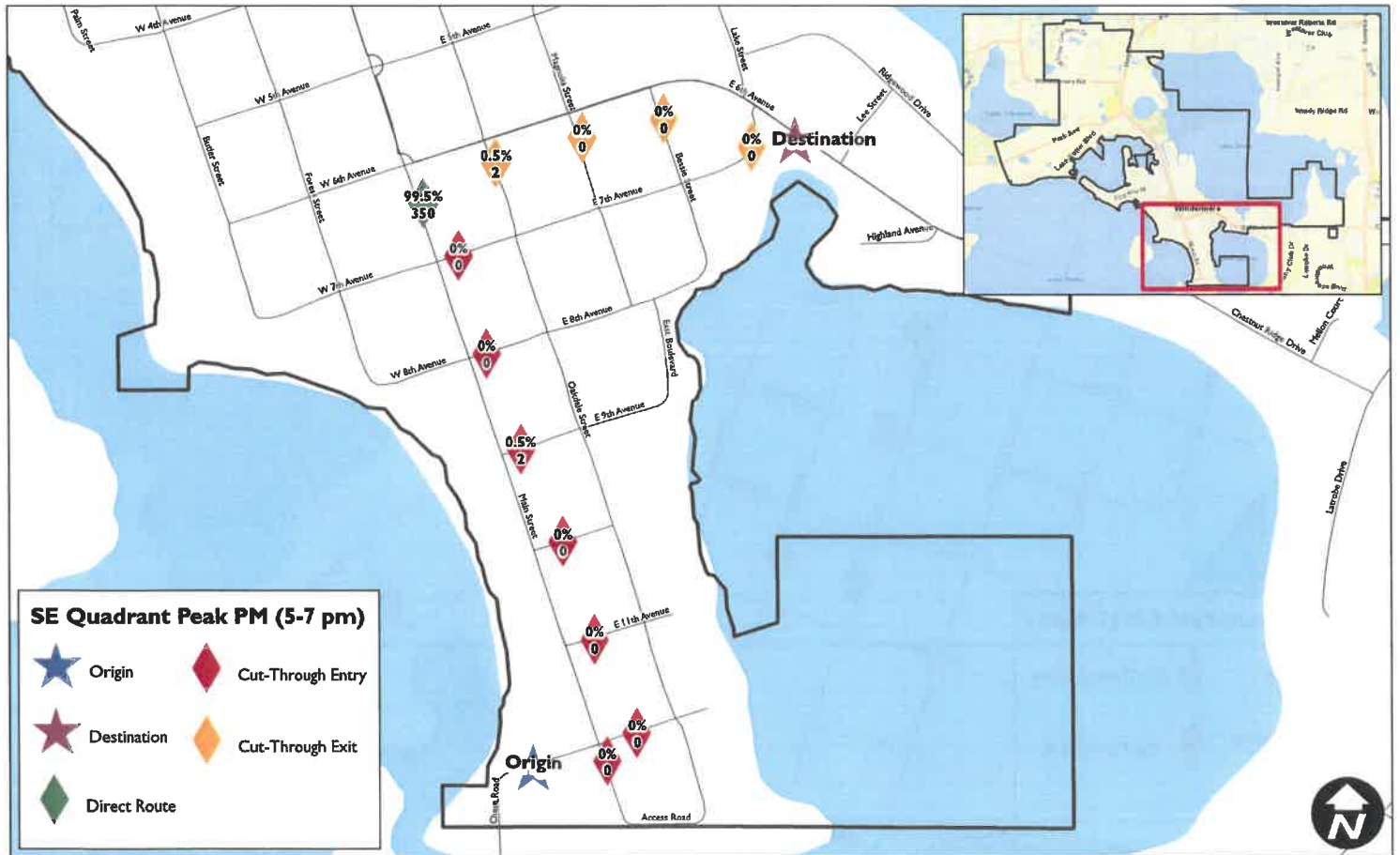
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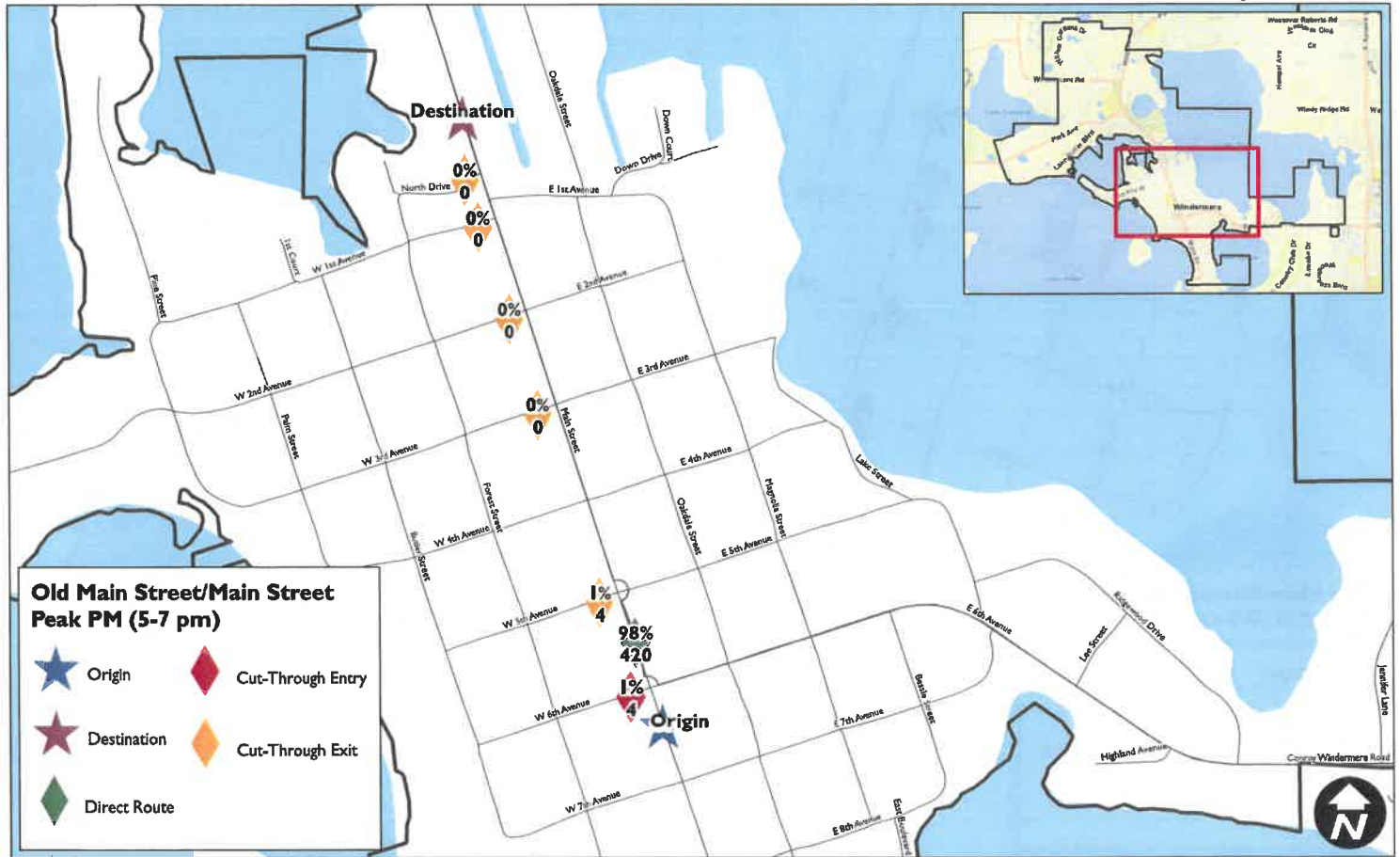


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% - Route Distribution for Cut-Through Traffic
 # - Peak Hour Cut-Through Volume



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