

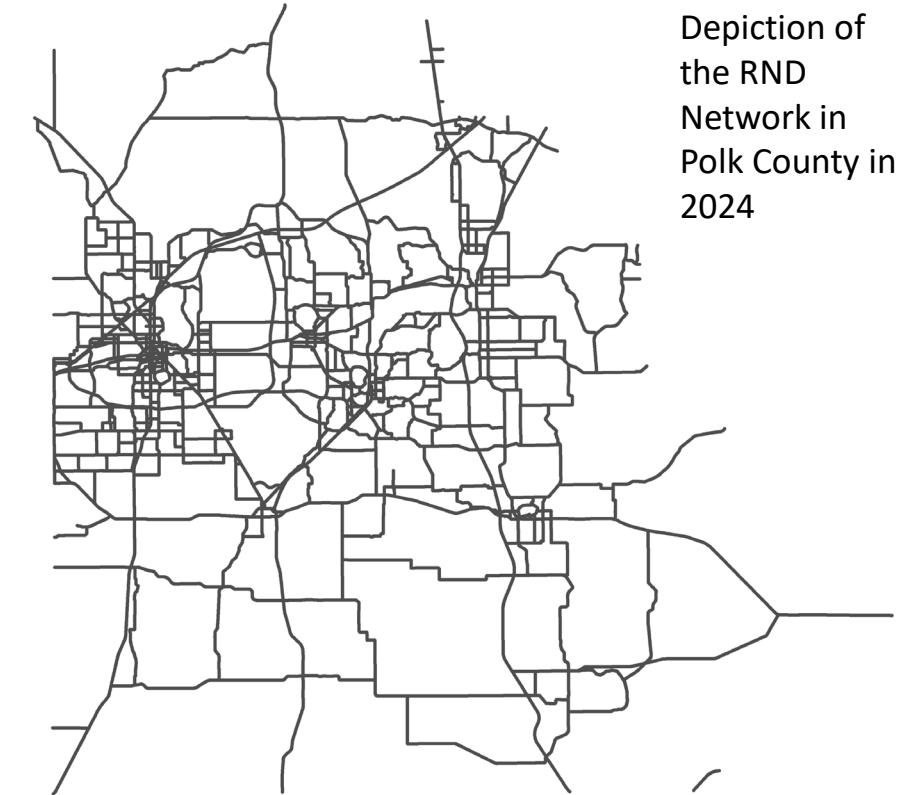
# Roadway Network Database 2025 Update

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February 2025

# Roadway Network Database

The RND contains over 30 pieces of transportation data for **1,344 miles** of state, county and city roads in Polk County – one of the largest county road networks in the State of Florida.



The updated RND is based on traffic counts taken recently by the TPO and Florida Department of Transportation (FDOT) and tells us which roads currently have a failing level of service and how much capacity is available based on the road's level-of-service (LOS) standard.



# Roadway Network Database

The RND includes several safety and multi-modal indicators that help us track the TPO's adopted performance measures and targets. This includes a calculation of crash rates, as well as the presence of transit services, sidewalks and bicycle facilities for each road segment.

The RND is an important component of the TPO's Congestion Management Process and helps us to monitor travel conditions on the transportation network



# System Performance

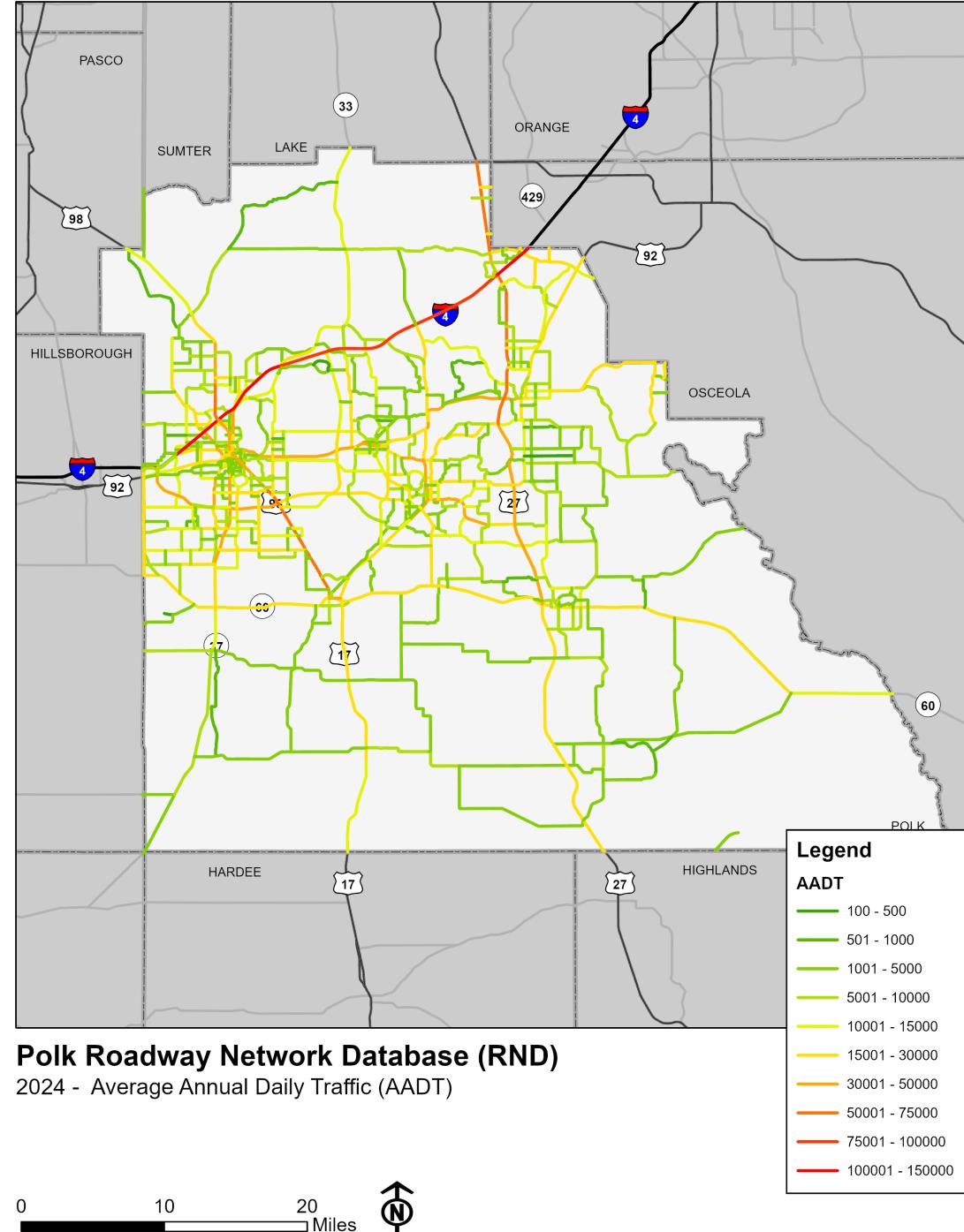
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Vehicle Miles Traveled  
Level of Service

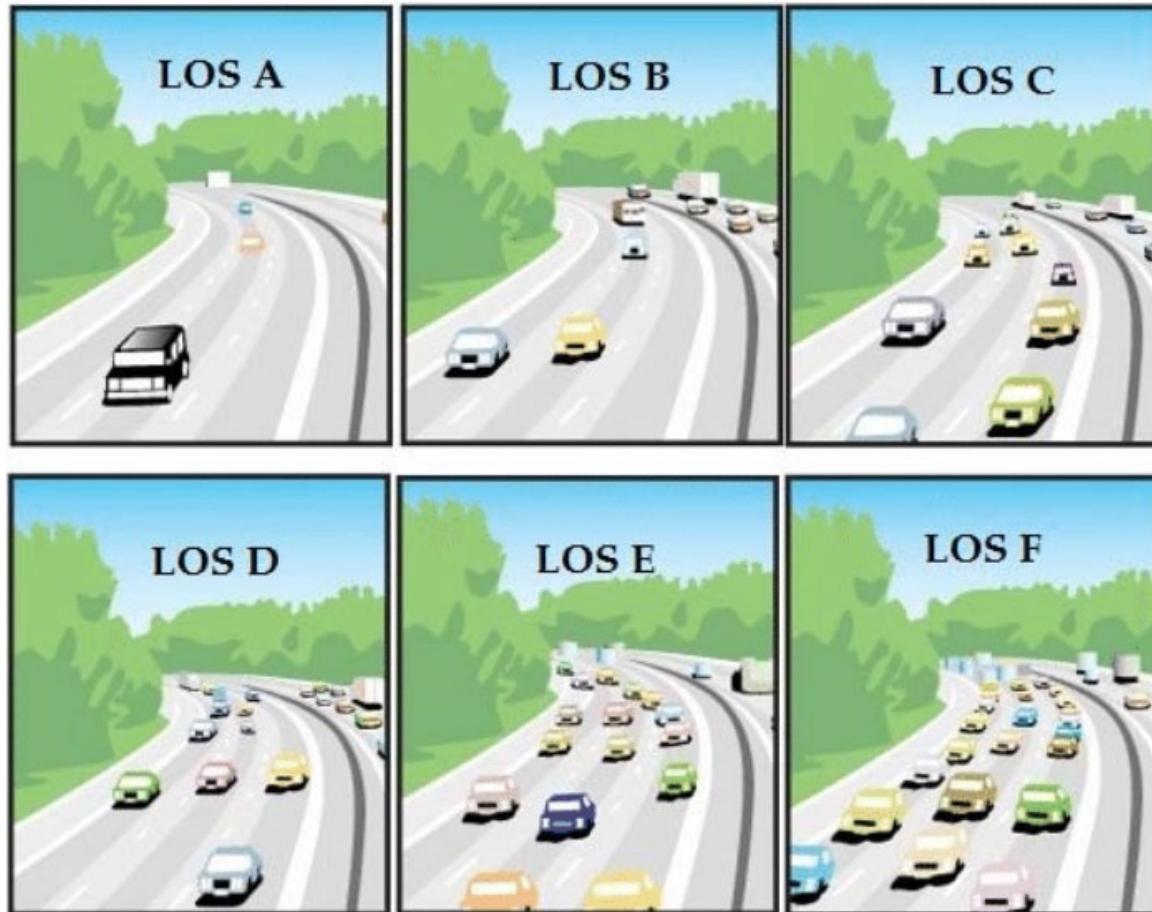


# Vehicle Miles Traveled (VMT) on the Network

- On average 19,448,442 vehicle miles are driven on RND network roads in Polk County each day.
- Daily volumes on a selection of major roadways includes:
  - I-4 = 3,582,545 (Daily VMT)
  - US 27 = 2,108,535 (Daily VMT)
  - US 98 = 1,679,673 (Daily VMT)
  - SR 60 = 1,214,663 (Daily VMT)
  - SR 570 = 652,204 (Daily VMT)

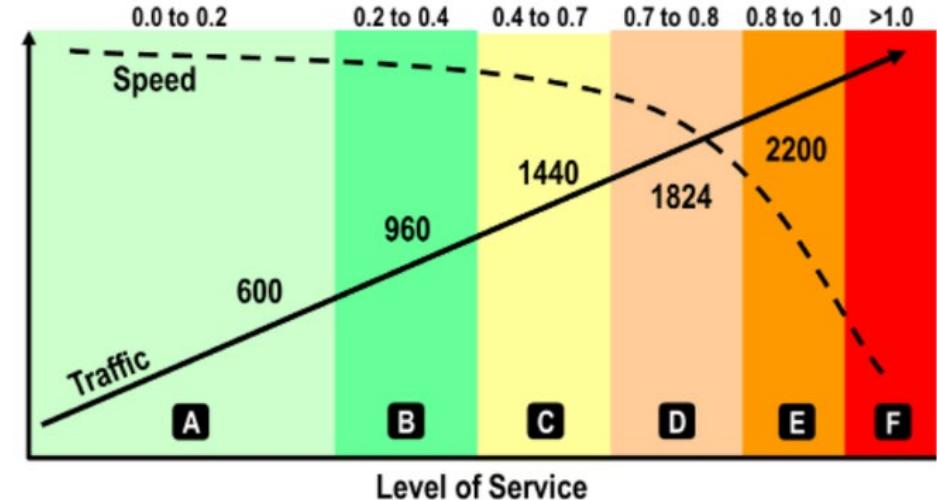


# Measures of Roadway Performance



## Levels of Service for Road Transportation

Volume to Capacity Ratio  $S = sf / (1 + a(v/c)^b)$



Levels of Service for Road Transportation

Source: Transportation Research Board (1994) Highway Capacity Manual, 3rd Edition.  $sf$  = free flow speed,  $v$  = volume,  $c$  = capacity,  $a = 0.15$  and  $b = 4$ .



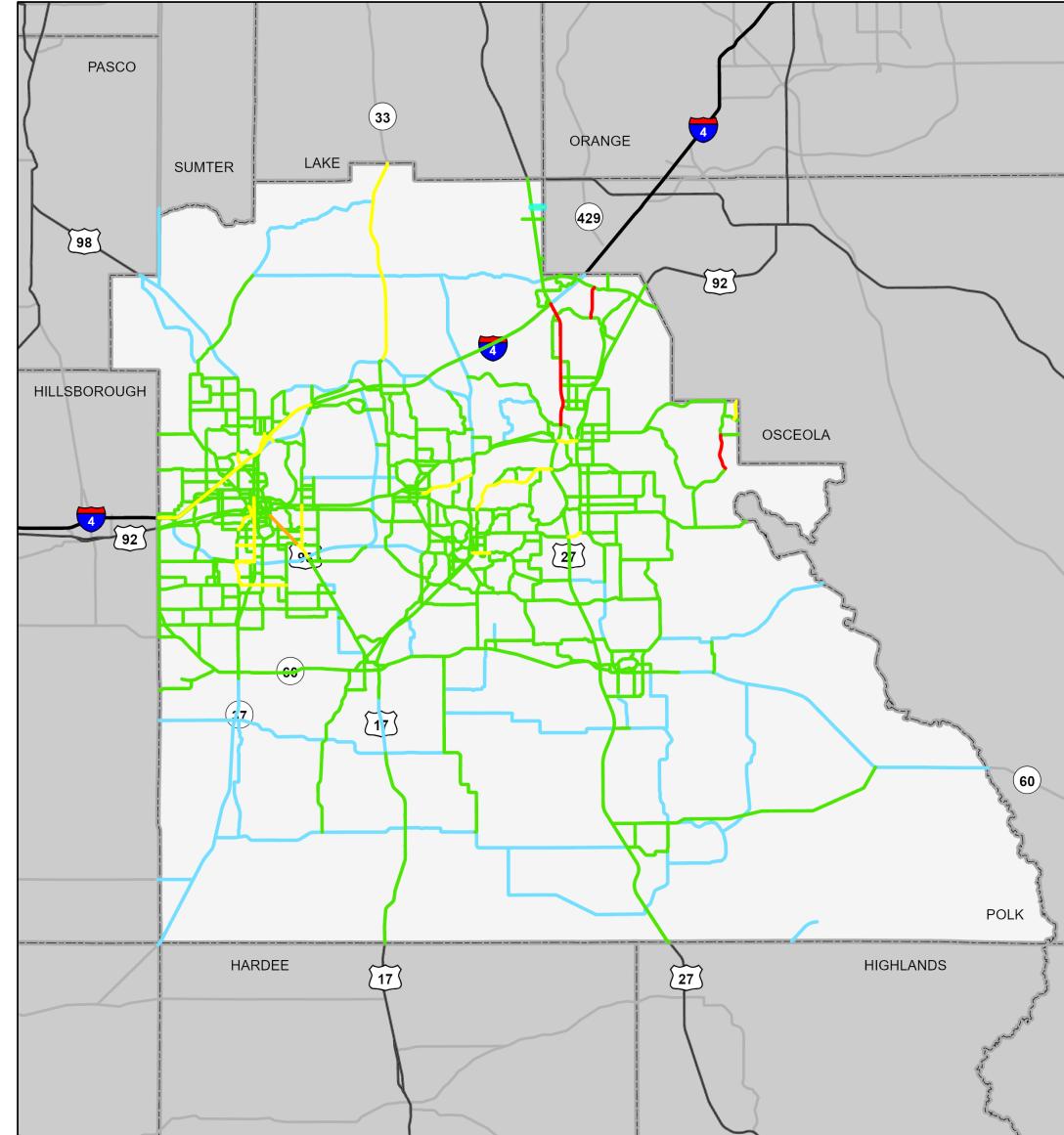
# Network Performance

## 2024 RND Network - Summary by LOS

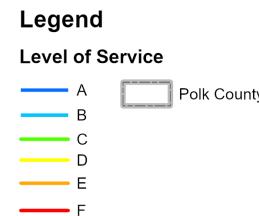
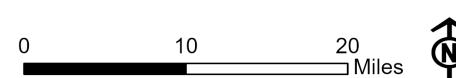
Level of Service	Miles	Percent
B	324	24.1%
C	946	70.4%
D	59	4.4%
E	2	0.2%
F	12	0.9%
<b>RND Total</b>	<b>1344</b>	<b>100%</b>

## RND Roadway Segments Designated as LOS "E" or "F"

Level of Service	Roadway	Segment Extent
E	US 98	Edgewood to Lake Parker
F	US 27	CR 17 to Bates Rd
F	US 27	Bates Rd to CR 547
F	US 27	CR 547 to I-4
F	Marigold Ave	Poinciana Pkwy to Palmetto
F	Pine Tree Trail	Ernie Caldwell to CR 54



**Polk Roadway Network Database (RND)**  
2024 - Level of Service (LOS)



# Observed and Projected Change

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Comparison - 2023-2024

Current, 5 Year, 10 Year Performance

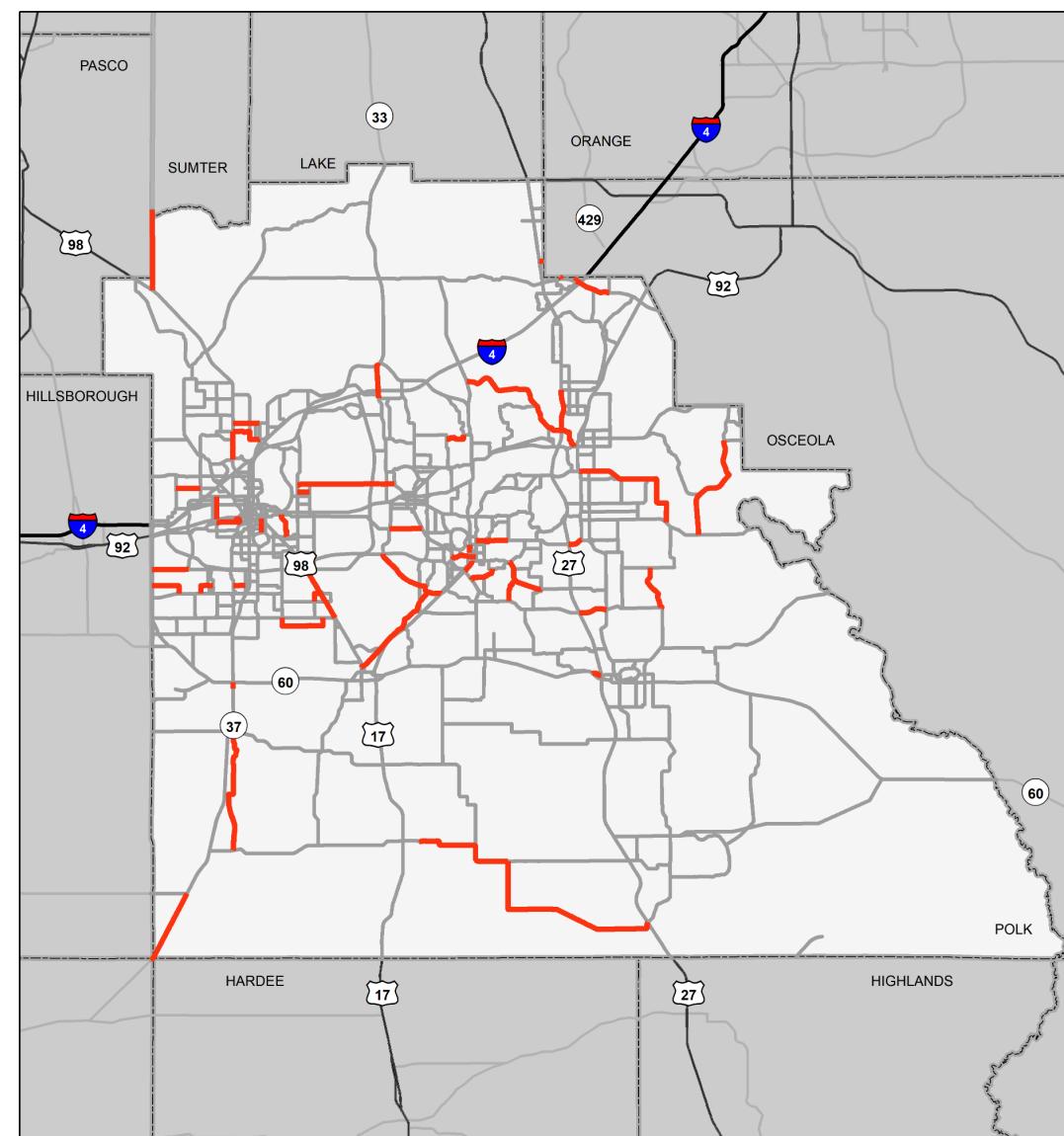


# 2023 – 2024 RND Comparison

- Total daily Vehicle Miles Traveled (VMT) on the network increased by 3.2% from 18,837,913 in 2023 to 19,448,442 in 2024.
- A total of 54 RND roadway segments had an increase in VMT greater than 10% in the same period

## VMT Difference Comparison on Major Roadways

Roadway	2023 Daily VMT	2024 Daily VMT	Number Difference	Percent Difference
I-4	3,594,750	3,582,545	-12,205	-0.3
US 27	2,012,347	2,108,535	96,188	4.8
US 98	1,502,258	1,679,673	177,415	11.8
SR 60	1,168,822	1,214,663	45,841	3.9
SR 570	603,986	652,204	48,218	8.0



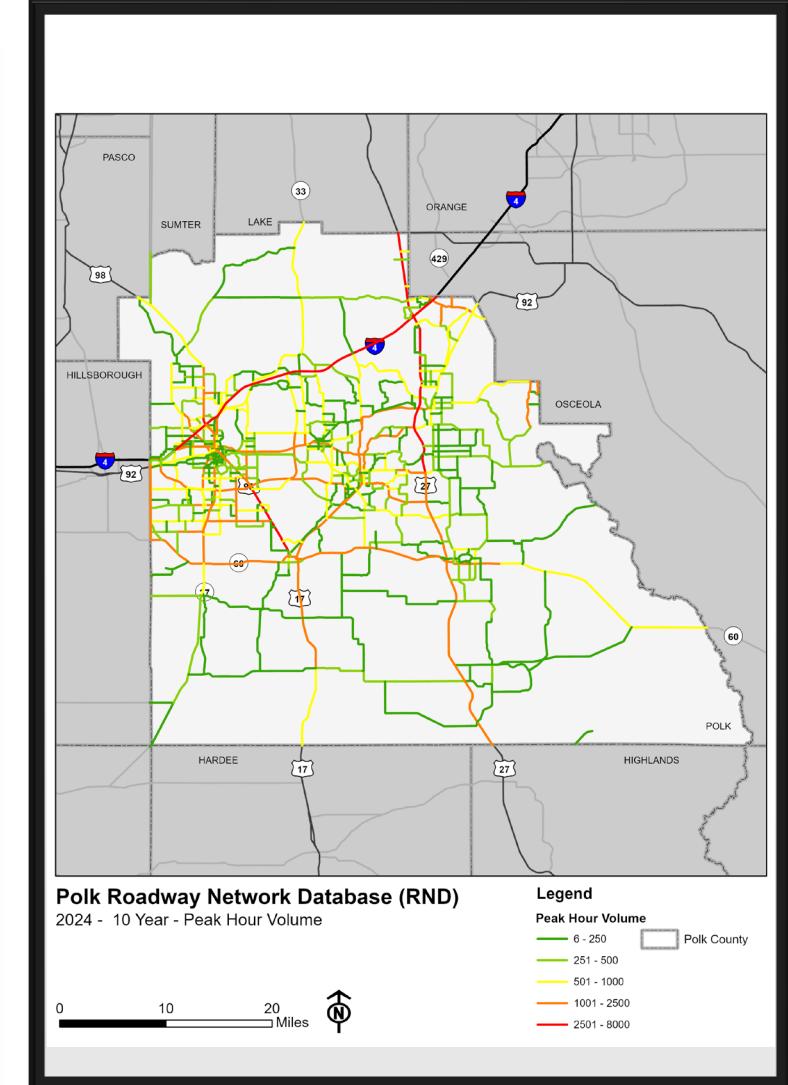
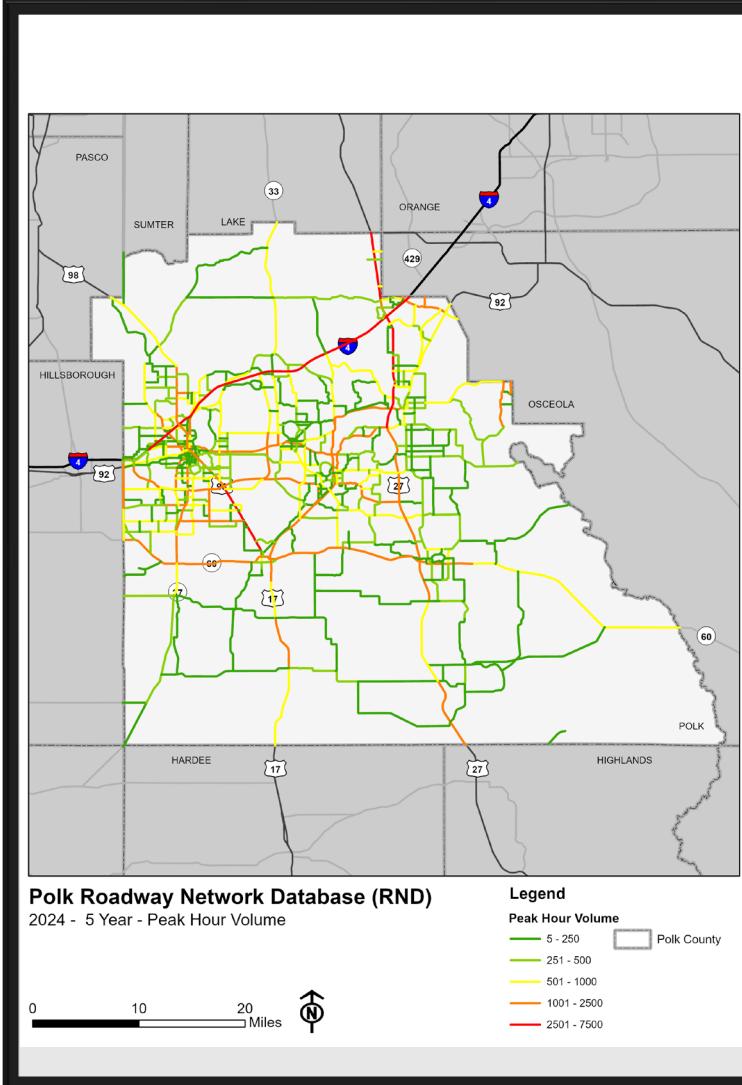
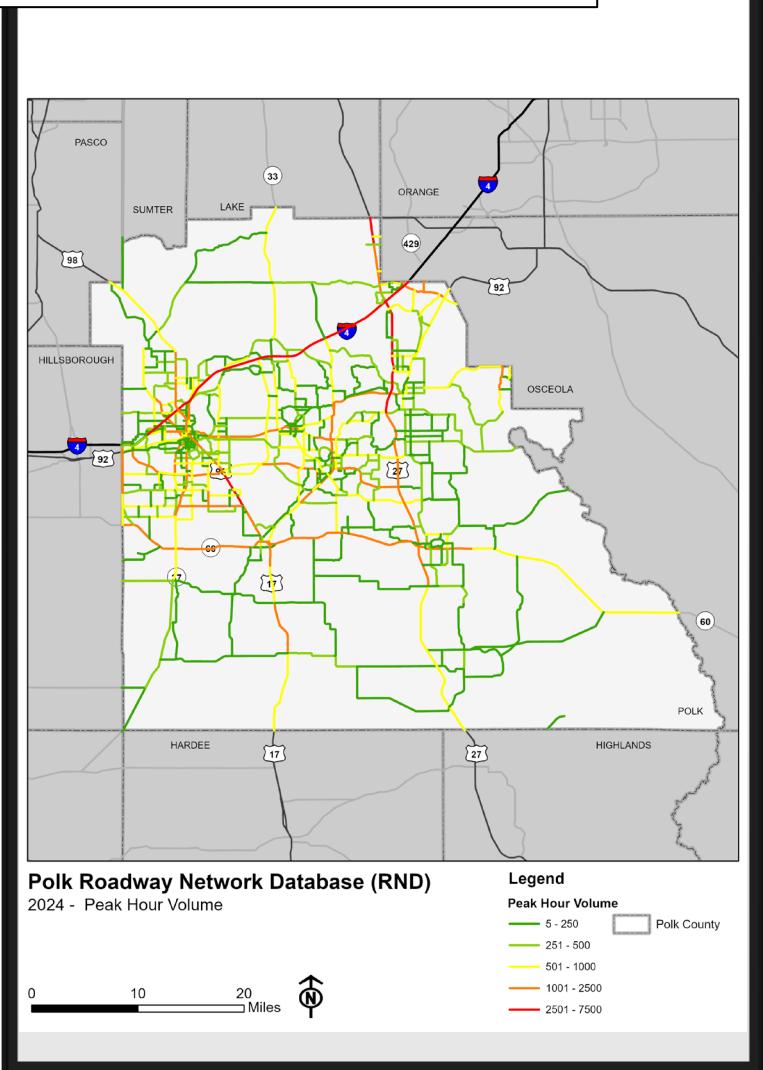
**Polk Roadway Network Database (RND)**  
2023 - 2024 VMT Increase of Greater Than 10%

**Legend**

- Red line: Greater Than 10% Increase in VMT
- Gray line: Polk RND Network
- Gray box: Polk County

0 10 20 Miles 

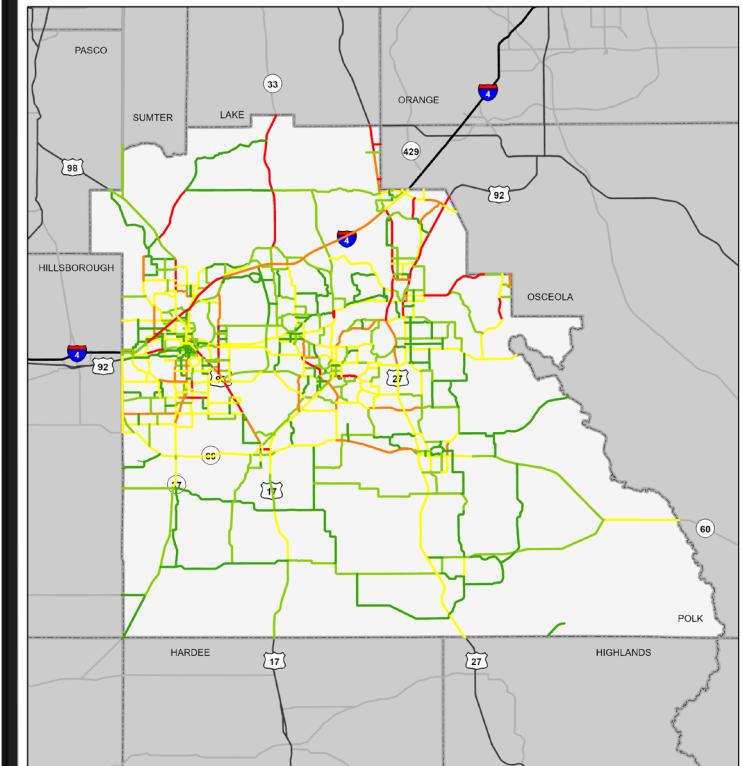
# Peak Hour Volume



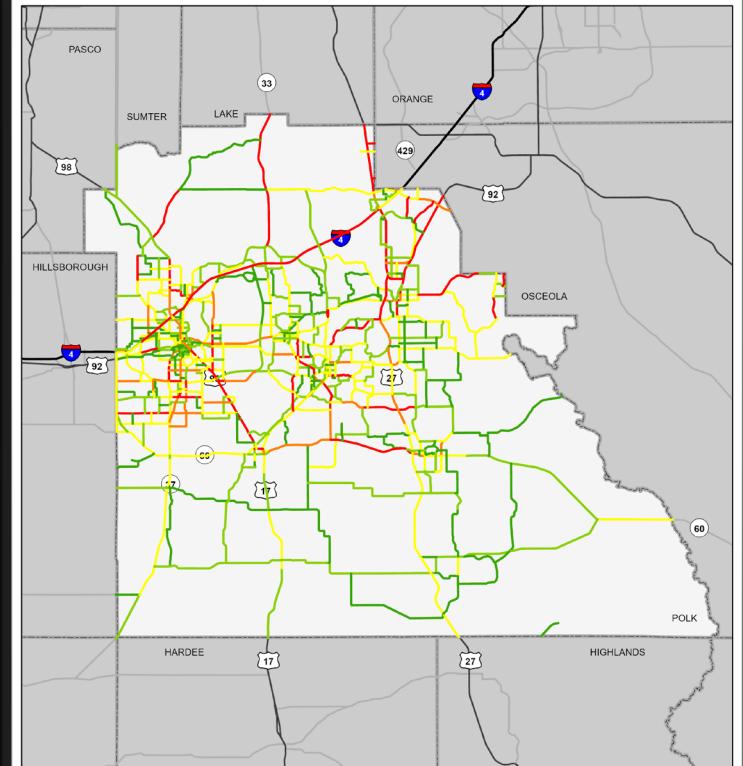
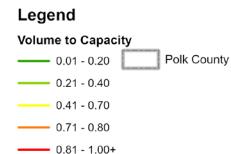
In the Next 10 Years, peak hour peak direction volume on the network is projected to increase from 309,659 to 371,591 vehicles.



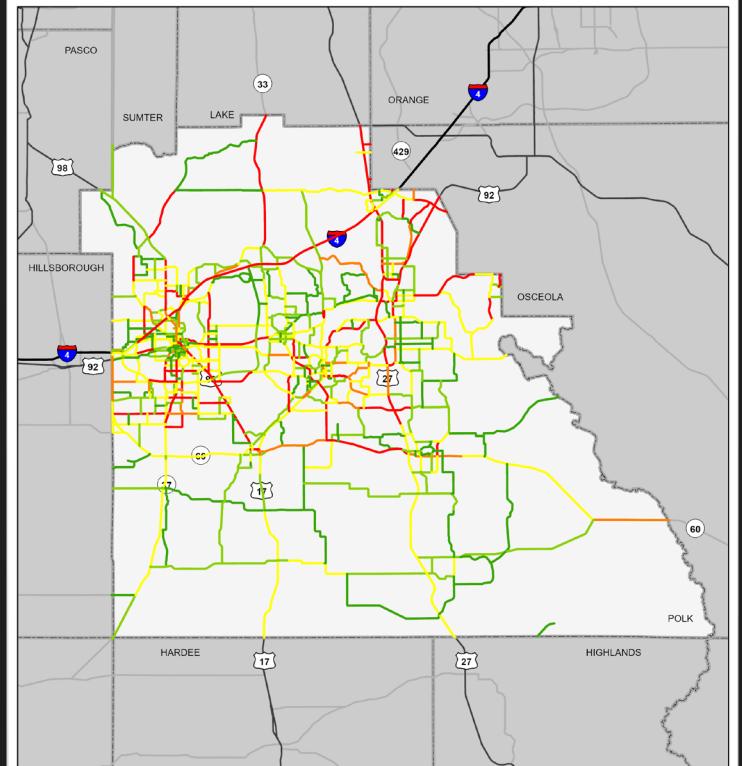
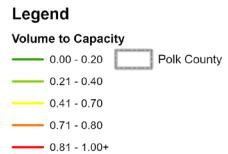
# Volume-to-Capacity



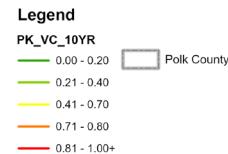
Polk Roadway Network Database (RND)  
2024 - Volume-To-Capacity Ratio



Polk Roadway Network Database (RND)  
2024 - 5 Year - Volume-To-Capacity Ratio



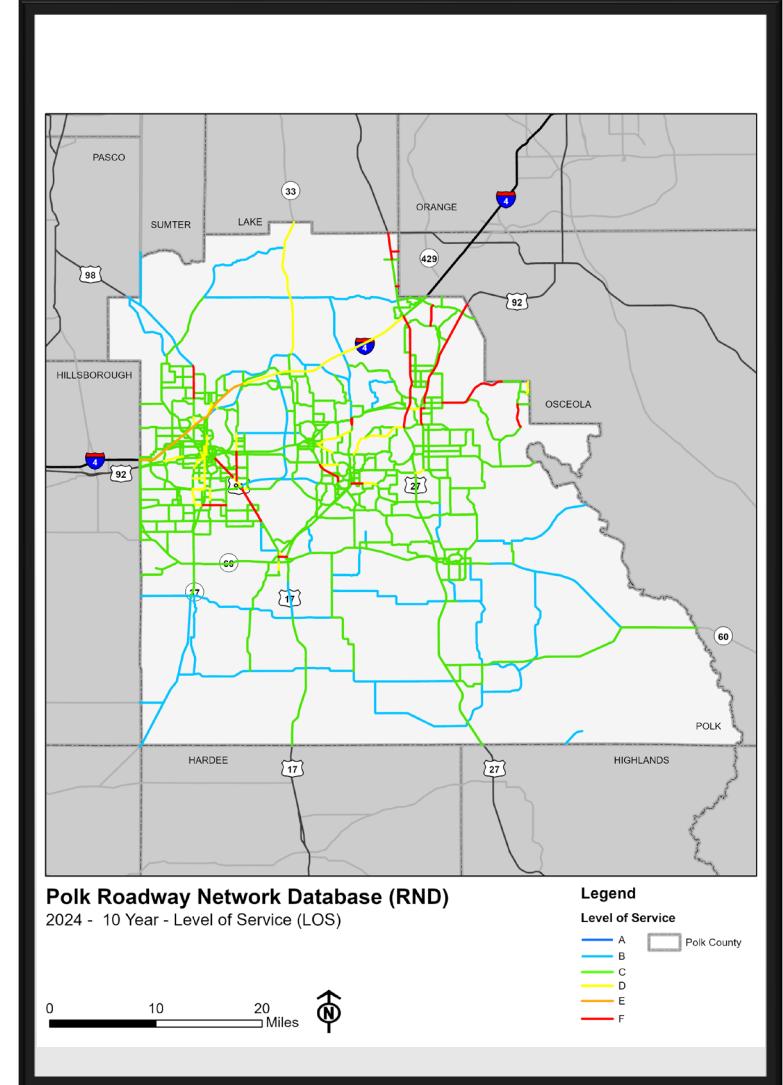
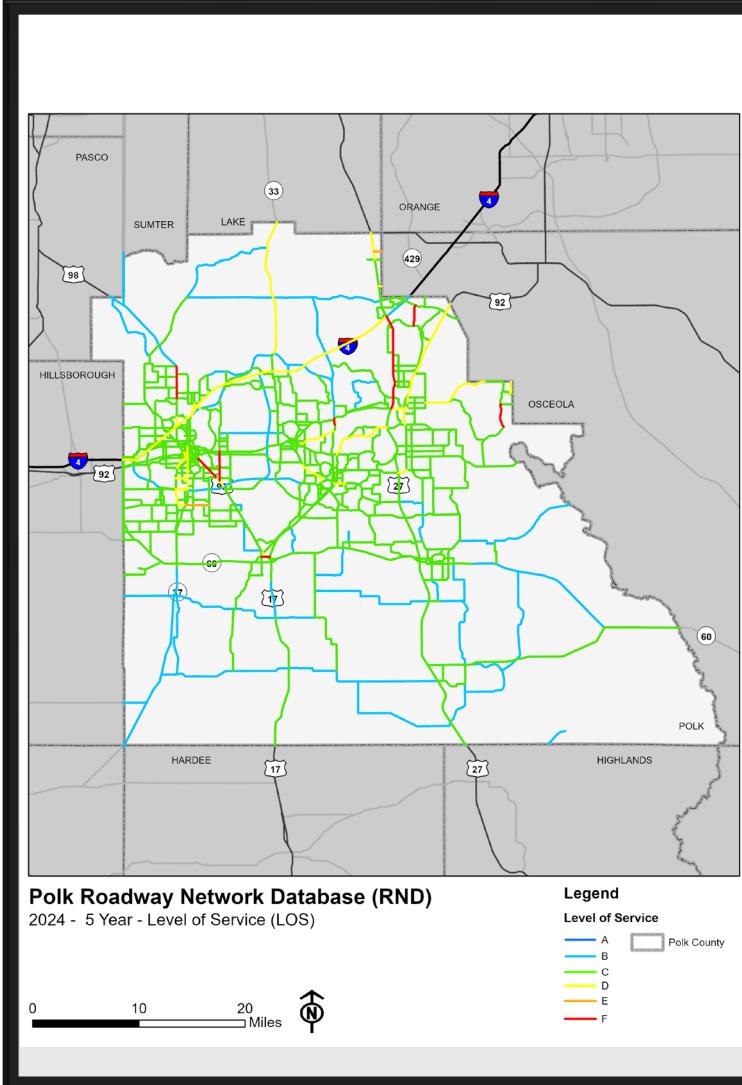
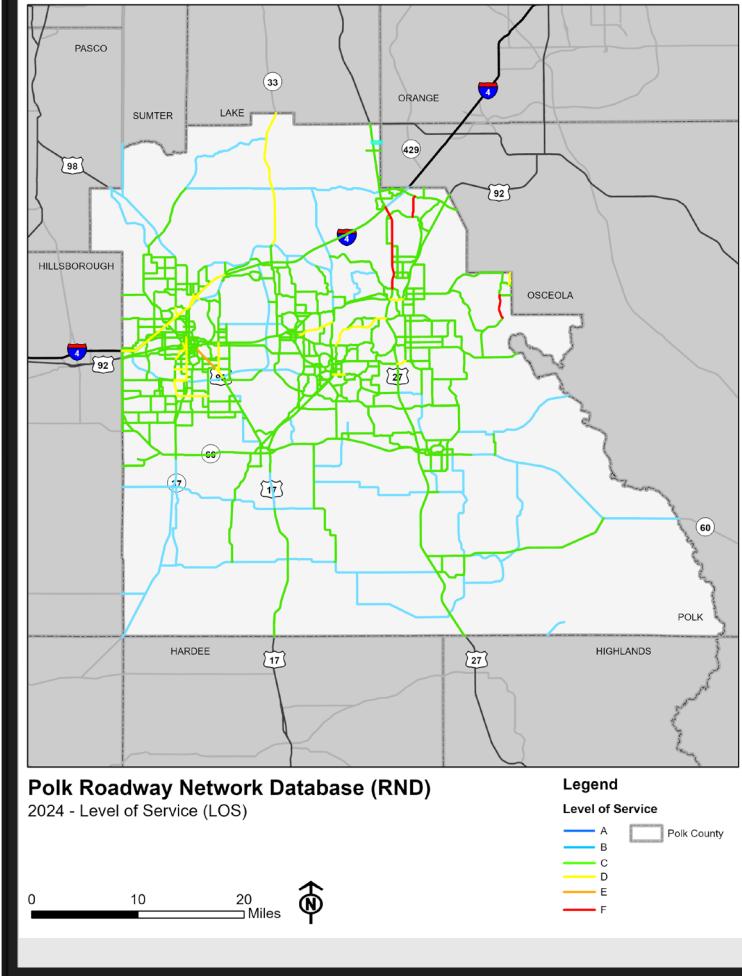
Polk Roadway Network Database (RND)  
2024 - 10 Year - Volume-To-Capacity Ratio



In the Next 10 Years, with only existing and committed projects implemented, 190 miles of roadway on the RND will operate at a VC Ratio above .85



# Level of Service



In the Next 10 Years, with only existing and committed projects implemented, conditions on nearly 69 miles of roadway in Polk are projected to degrade to a failing Level of Service.



# Regional Comparison

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Traffic Volumes  
System Congestion and Delay



# State of Florida Commuter Trends

**Polk County residents  
spend more time in their  
cars commuting than most  
other residents in Florida.**

**Residents and well above  
that of state and national  
averages.**

Table 4 - Florida Counties Ranked by Travel Time to Work, 2023

Rank	County	Minutes
1	Osceola County	36.3
2	Polk County	32.4
2	Walton County	32.4
4	Pasco County	31.9
5	Lake County	31.7
6	Hernando County	31.6
7	Charlotte County	31.5
8	Clay County	31.3
9	Miami-Dade County	30.9
10	St. Lucie County	30.2
11	Nassau County	29.8
12	Putnam County	29.7
13	Lee County	29.6
14	Broward County	29.5
14	Hillsborough County	29.5
14	Santa Rosa County	29.5
17	Manatee County	28.8
18	Volusia County	28.4
19	Citrus County	28.2
20	Orange County	27.8
21	Martin County	27.6
22	Flagler County	27.3

Rank	State	Minutes
22	Okaloosa County	27.3
22	St. Johns County	27.3
25	Pinellas County	27.2
26	Palm Beach County	26.7
27	Marion County	26.5
28	Sumter County	26.1
29	Seminole County	25.6
30	Collier County	25.3
31	Columbia County	25.1
31	Sarasota County	25.1
33	Highlands County	24.9
34	Duval County	24.5
35	Escambia County	24.4
36	Brevard County	24.3
37	Bay County	23.8
38	Indian River County	22.0
39	Leon County	21.7
40	Alachua County	21.6
41	Monroe County	19.7
	<b>Florida</b>	<b>28.5</b>
	<b>United States</b>	<b>26.8</b>