



FORWARD PINELLAS

Integrating Land Use & Transportation

2023 Annual Level of Service Report 2022 Data Year





Forward Pinellas

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Welcome to the 2022 Edition of the Forward Pinellas Annual Level of Service Report, data compilation completed August 2023

Forward Pinellas staff prepares a Level of Service Report each year. Roadways included in the inventory are defined by their facility type (e.g., freeway, signalized arterial, signalized collector, signalized major collector, non-signalized arterial, non-signalized collector and non-signalized major collector). These roadways are categorized by characteristics used to measure their performance, such as freeways (exclusive use of uninterrupted traffic), arterials (primarily serves through traffic & secondarily serves abutting property) and collector roads (providing land access & traffic circulation from local roads to arterial roads).

The Forward Pinellas Technical Coordinating Committee (TCC) reviews this report through a process that includes verifying the accuracy of roadway geometry assumptions and an evaluation of traffic count data as provided by Forward Pinellas, the Florida Department of Transportation and various local government agencies.

After review and approval of the roadway performance data, the report is available for distribution to local governments for planning purposes and land development review processes. The report is also utilized by agencies, organizations and citizens interested in roadway performance data.



Section 1: Roadway Trend Analysis

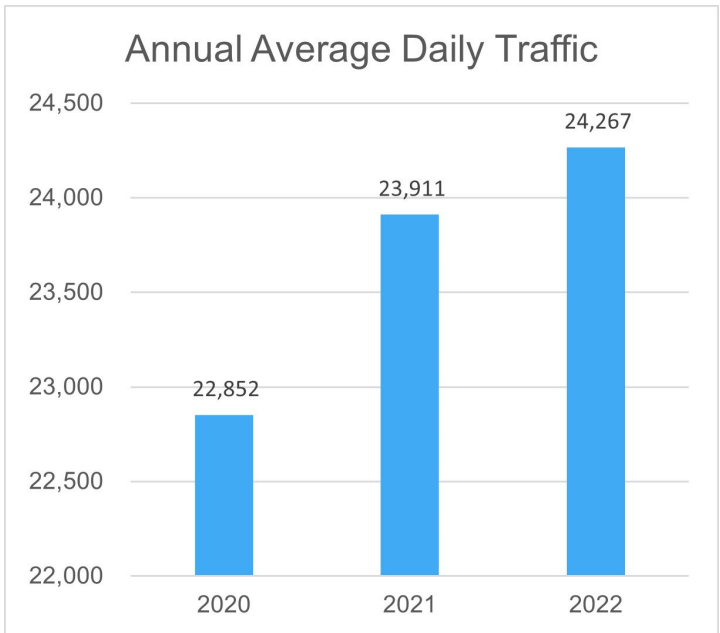
Roadway Trend Analysis (Reported 2020-2022)

One of the goals of Forward Pinellas is to continually improve the performance of the Pinellas County roadway network. The level of service indicators utilized in this report provide a gauge of whether and/or to what extent this goal is being met.

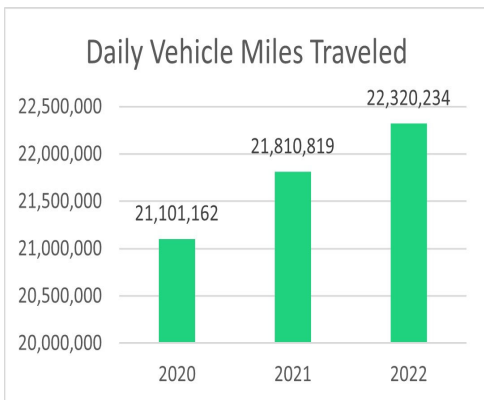
Forward Pinellas uses key performance factors to identify roadways that are failing or about to fail. A key factor is the roadway's volume to capacity ratio (V/C). The V/C ratio shows how close travel demand is to reaching the roadway's physical capacity. A V/C ratio of 1 indicates that the roadway is operating at 100% capacity.

NOTE: For consistency in showing annual trends, only data that is available for the same roads monitored during the past three years is being reported in this section. Shown below is information that demonstrates operating

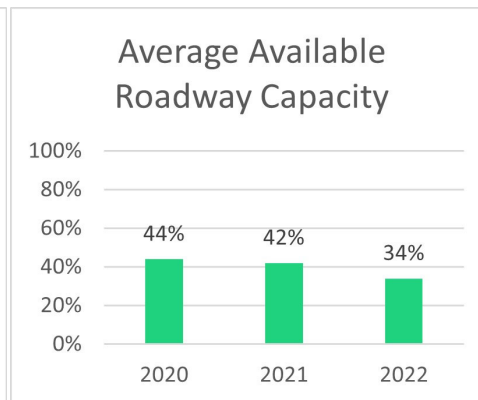
conditions on 588 center-line miles of major roads. The information includes analysis on annual average daily traffic (AADT), vehicle miles traveled (VMT), and average available roadway capacity, and miles of roadway over capacity.



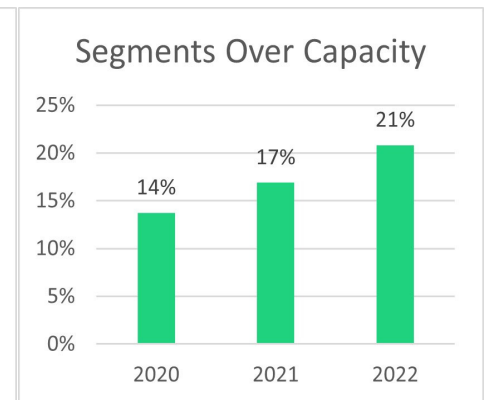
1.49% increase in average daily traffic shown from 2021 to 2022



2.34% increase in roadway travel reported from 2021 to 2022



7.71% decrease in average available capacity reported from 2021 to 2022



3.93% increase in segments over capacity reported from 2021 to 2022

*Roadways over capacity are defined as any facility with a volume to capacity ratio of 0.9 or greater



Volume to Capacity Ratio (V/C Ratio) and Level of Service (LOS)

Volume to Capacity Ratio (V/C Ratio)

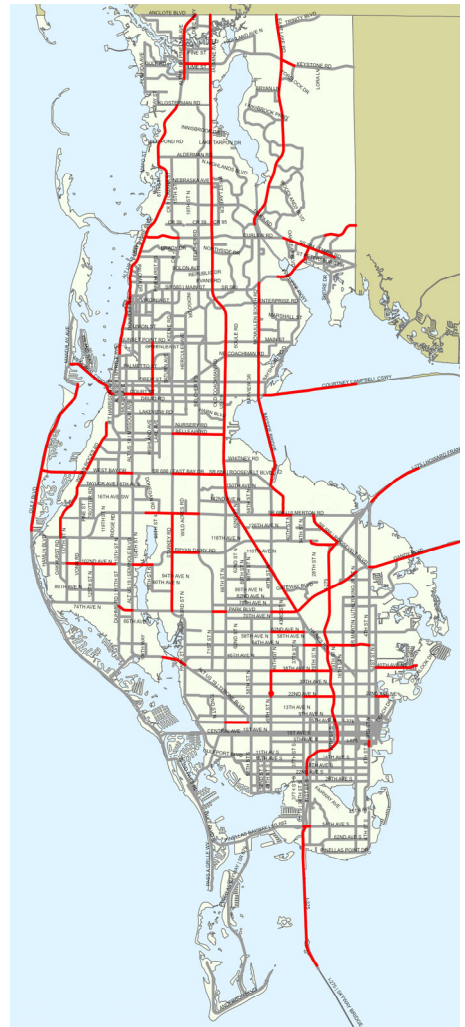
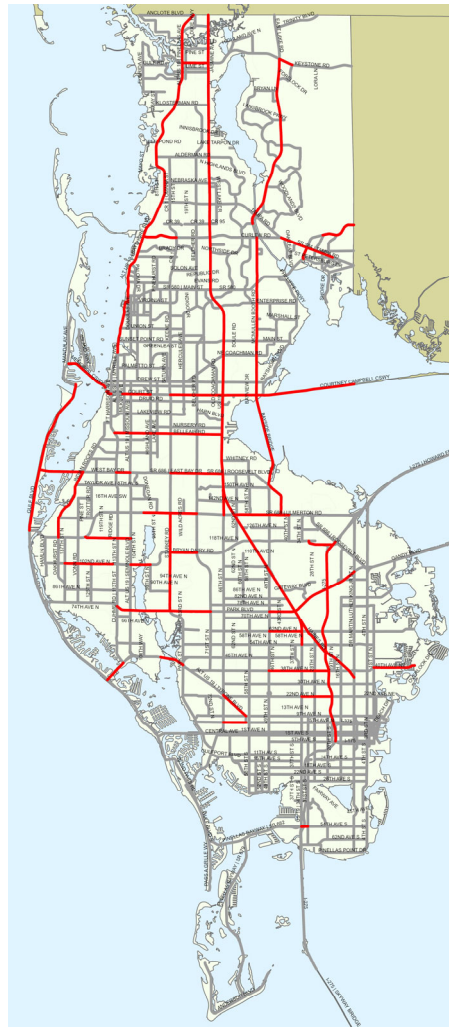
Volume to capacity ratio (V/C ratio) is a very useful indicator of the roadway system's operating characteristics. Forward Pinellas uses a facility V/C ratio as well as a road's level of service letter grade when evaluating its performance level.

The maps below depict major roadways that have been operating under deficient LOS conditions over the three past years. A more detailed explanation of the analysis method used to identify deficient roadways and a map illustrating deficient LOS and V/C ratios can be found on pages 10-12.

2020 Deficient Roadways

2021 Deficient Roadways

2022 Deficient Roadways



493 deficient lane miles in 2020

576 deficient lane miles in 2021

615 deficient lane miles in 2022



Section 2: Methodology

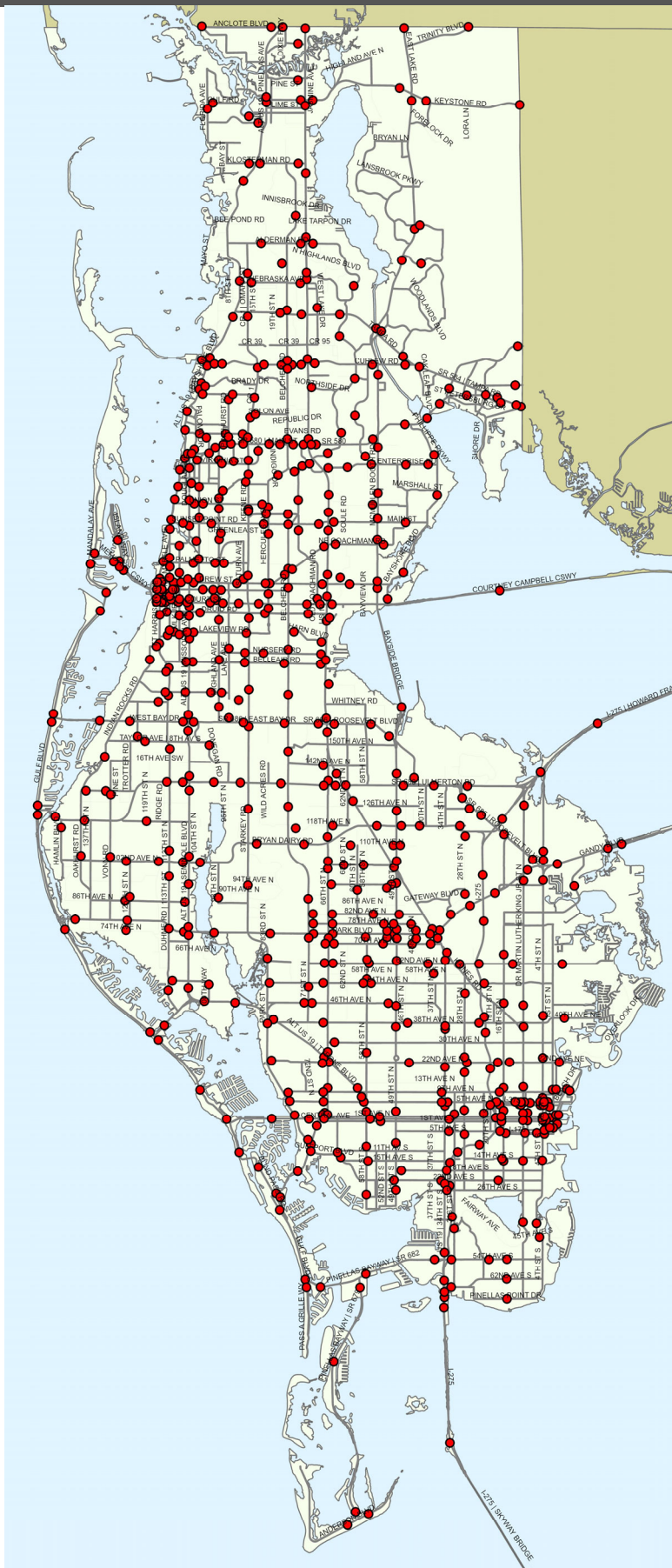
Roadway Traffic Volume Estimation of Traffic Count Station Data

Roadway traffic volume is monitored in Pinellas County on a regular basis. Traffic counters are used to count the number of vehicles that travel the roadway network. These counters are positioned across Pinellas County to collect data that is used for roadway performance evaluation.

Each year, average daily traffic (ADT) volume data is collected from counters by the Florida Department of Transportation (FDOT) and local governments. Forward Pinellas coordinates and manages the countywide count data collected. There are 691 locations on the major road network that are monitored using these counters.

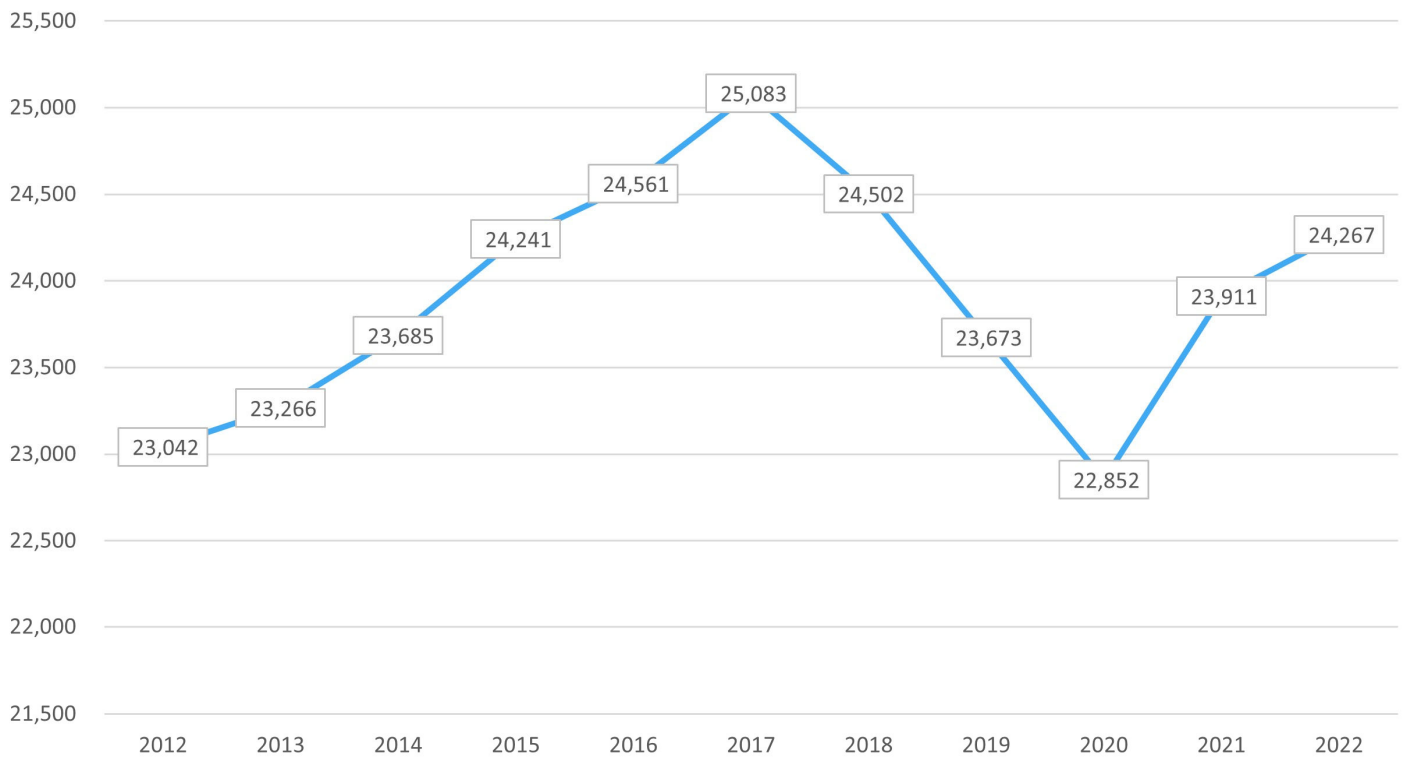
Typically, the traffic counters are programmed for a two or three day study during normal mid-week business days. Once collected, ADT data is assembled by the Forward Pinellas staff. Adjustments are made to convert the count data to annualized average daily traffic (AADT) estimates using FDOT seasonal adjustment factors. Finally, the AADT values are applied to the corresponding roadway segments.

Due to circumstances such as construction on some roadways, it is not always feasible to collect traffic volumes in a specific year. When this happens, and if count data from a recent year is not available, the roadway's AADT is extrapolated using regression trend analysis of historical traffic count data from the same count location.





Ten-Year Annual Average Daily Traffic Comparison



Countywide traffic from 2021 to 2022 increased approximately 1.49%





Understanding the Data |

Understanding the Data |

Forward Pinellas previously used a database management software application known as “vTIMAS” to maintain its roadway inventory of over 2,200 individual roadway segments. The vTIMAS database, however, is now functionally obsolete, and a new traffic data management database has been developed to handle traffic count data and roadway level of service information.

In the database, roadway geometry, volumes, and descriptions for each roadway segment are carefully identified so that an accurate evaluation of performance can be produced by the software. Level of service data contained in the report table is sorted by facility. Most of the facilities contain two or more segments. Some points regarding the methodology employed in compiling the table are listed below.

- ◆ Roadway performance measures were evaluated for the monitored major roadway network as it existed in 2022.
- ◆ Roadway level of service grades were evaluated using PM peak-hour / peak-direction conditions. A roadway’s peak-hour condition is defined as the estimated 100th highest hour (K₁₀₀) of yearly traffic.
- ◆ Level of service for roadway segments can be calculated using one of two methodologies (conceptual or generalized) described in this section.

◇ **Conceptual** - This is a more detailed analysis than a generalized method. It takes into account enhanced roadway geometry conditions and allows for bi-directional performance evaluation. Basic conceptual analysis can be used for non-signalized arterials and signalized collector roads. *ArtPlan* is a conceptual analysis software program developed by the Florida Department of Transportation specifically for use with signalized roadways. ArtPlan can be utilized for signalized arterial roads.

◇ **Generalized** – This analysis method incorporates standardized default roadway values (assumptions) established by FDOT. It provides LOS analysis based on generalized capacity tables. As an example all traffic signals are analyzed with the same green-time and cycle lengths even though actual input values vary at each location. Generalized is the method used for analysis for this report on all the roadways.

Also the database allows Forward Pinellas to monitor roadway changes from one year to the next. Data for current and previous years is derived from physical observation.

Additional information for Conceptual and Generalized calculation methodologies can be obtained from:

Florida Department of Transportation Q/LOS Handbook:

<https://www.fdot.gov/planning/systems/systems-management/systems-management-documents>

Highway Capacity Manual (HCM):

<http://www.http://hcm.trb.org/?qr=1>



2022 Roadway Performance Report

2022 Roadway Performance Report

Critical 2022 roadway data was collected throughout the year and then compiled into this report. The conditions reported here represent physical roadway conditions as they existed during 2022. Roadway volumes represent annualized count data from collections that were performed throughout the county.

There are 2,279 lane miles of major road facilities monitored by Forward Pinellas.

- ◆ 84% of the monitored network performs at or better than LOS D.
- ◆ 16% of the monitored network performs poorly at LOS E or F.
- ◆ LOS B, & C – 1,373 lane miles
- ◆ LOS D – 488 lane miles
- ◆ LOS E – 40 lane miles
- ◆ LOS F – 378 lane miles

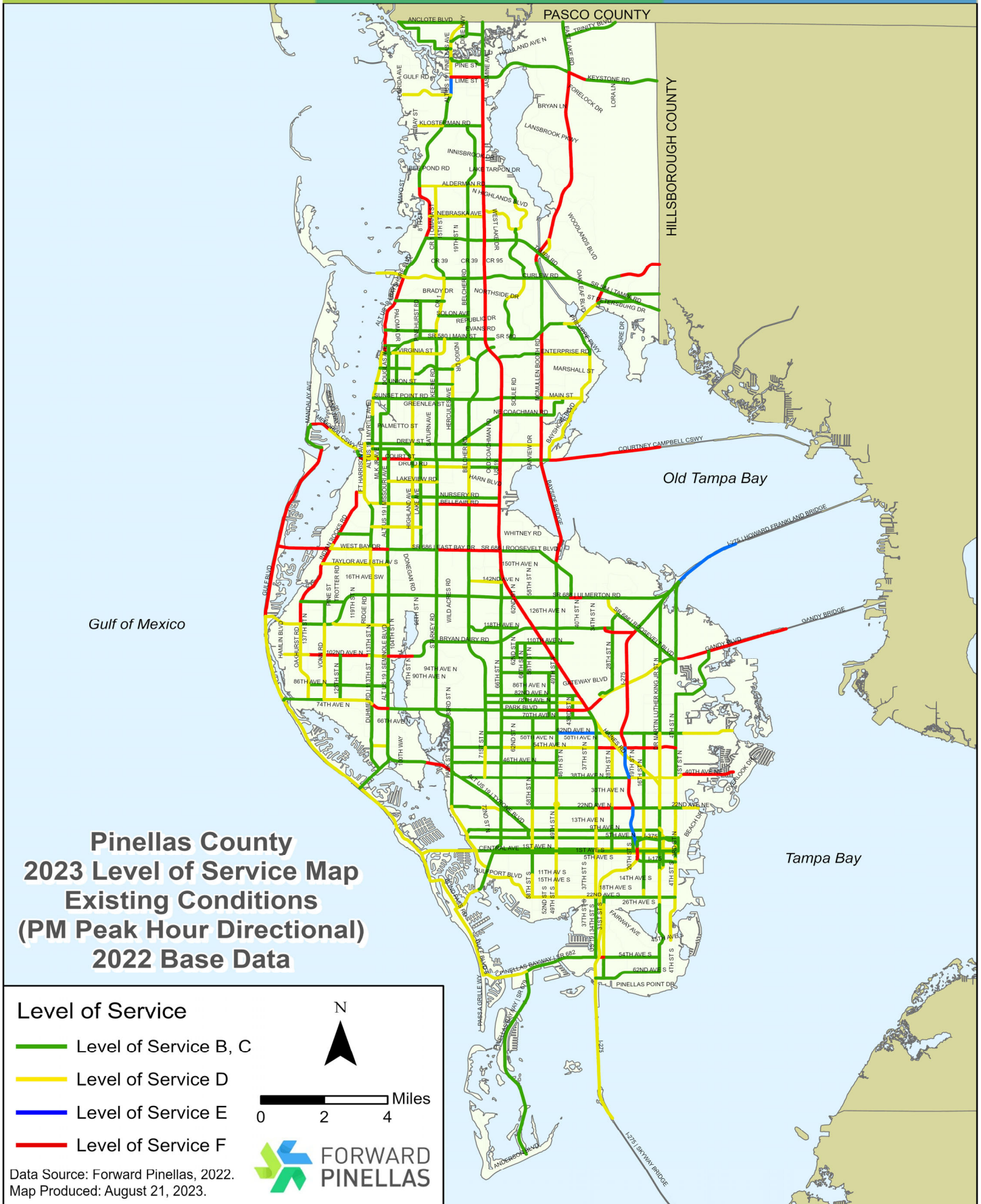
State, County and municipal jurisdictions are responsible for maintaining the major roadways in Pinellas County. Monitored lane miles corresponding with each jurisdiction are shown below.

- ◆ State – 1,008 lane miles
- ◆ County – 876 lane miles
- ◆ Cities – 395 lane miles

Below are the lane miles of roadways operating at LOS E or F corresponding with State, County and municipal jurisdiction.

- ◆ State – 275 lane miles
- ◆ County – 124 lane miles
- ◆ Cities – 20 lane miles







Volume to Capacity Ratio

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Forward Pinellas uses a “deficient roadway” indicator to identify roadways operating below local and state standards.

This page indicates lane miles of roadways operating at 0.9 V/C ratio along with their letter grade. According to Pinellas County’s LOS standard, a facility operating at peak hour LOS E, F, or a V/C ratio of 0.9 or higher is also considered deficient.

The 2023 report shows there were 474 lane miles of the Pinellas County major road network operating with a V/C ratio greater than 0.9 in 2022.

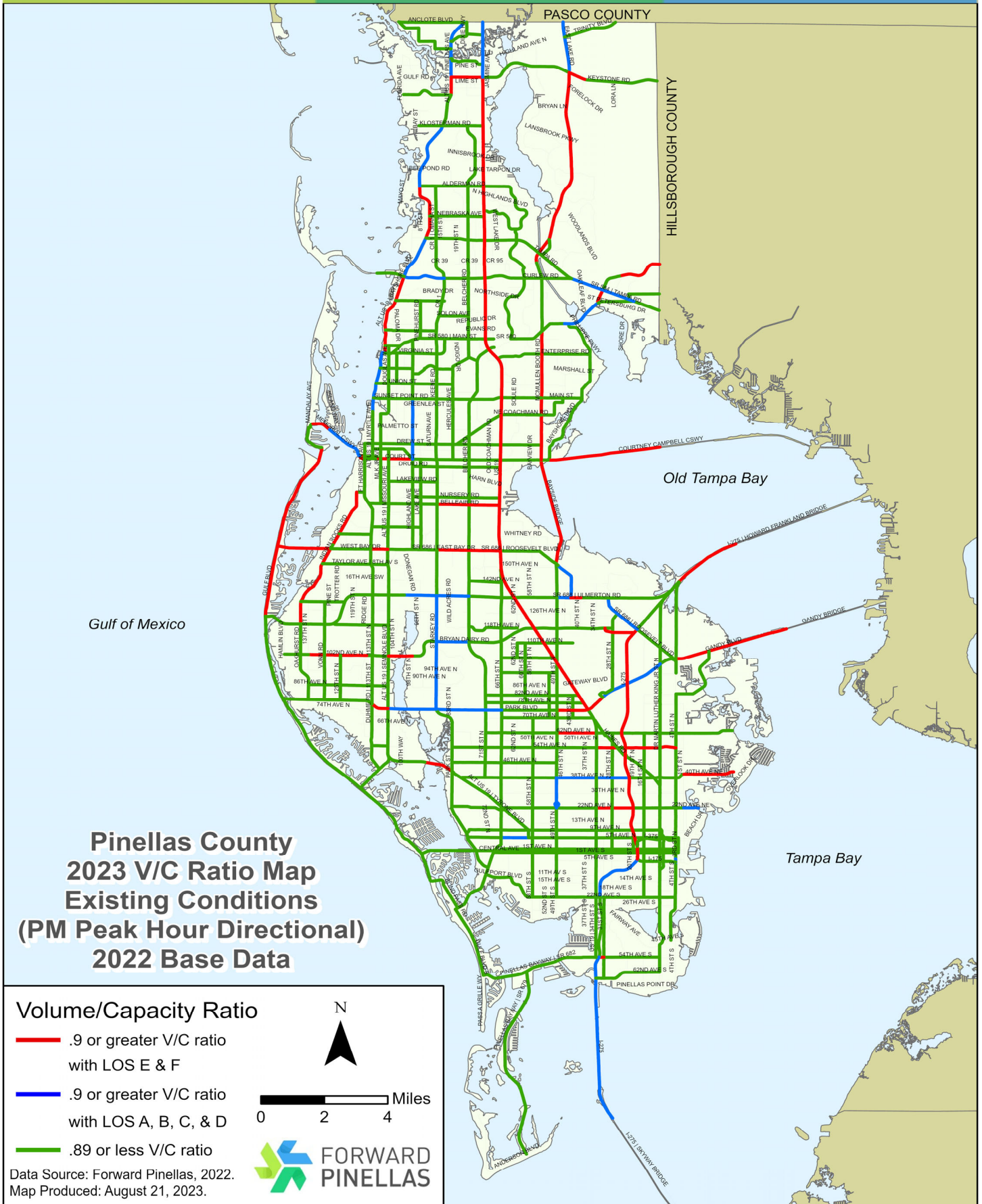
- ◆ Volume to Capacity Ratio < .9
 - ◇ LOS A-D - 1,664 lane miles
 - ◇ LOS E-F - 0 lane miles
- ◆ Volume to Capacity Ratio >= .9
 - ◇ LOS A-D - 197 lane miles
 - ◇ LOS E, F - 418 lane miles

Below are the lane miles of major roadways operating with a V/C ratio greater than 0.9 and corresponding jurisdiction.

- ◆ State – 399 lane miles
- ◆ County – 187 lane miles
- ◆ Cities – 29 lane miles

NOTE: Both the LOS letter grade and V/C ratio are derived from the calculation of PM peak hour peak directional volumes are based upon the AADT and *FDOT 2020 Generalized Tables*.





**Pinellas County
2023 V/C Ratio Map
Existing Conditions
(PM Peak Hour Directional)
2022 Base Data**

Volume/Capacity Ratio

- .9 or greater V/C ratio with LOS E & F
- .9 or greater V/C ratio with LOS A, B, C, & D
- .89 or less V/C ratio



0 2 4 Miles



Data Source: Forward Pinellas, 2022.
Map Produced: August 21, 2023.



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The following pages contain the Forward Pinellas 2023 Level of Service / Existing Conditions Analysis Report table. The table in the report was produced using 2022 base year data. Also the next page contains a map depicting the PM peak hour travel direction of the traffic volumes used for analysis.

Roadways included in this inventory are arterials and collectors as defined in the Highway Capacity Manual and published by the Transportation Research Board. Level of Service (LOS) has been calculated using guidelines as identified by the *FDOT Quality Level of Service (Q/LOS) Handbook, FDOT 2020 Generalized Tables, FDOT ArtPlan, and the Highway Capacity Manual (HCM)*.

The LOS conditions included in this report are based on the operating conditions of individual road facilities. These facilities are separated by intersections or by a point where there is a change in the lane configuration.

NOTE: The analysis method of roadway performance measures is based upon *FDOT 2020 Generalized Tables* and using the statewide K and D factors. Also any specific road projects submitted to FDOT would need to adhere to the *Q/LOS Handbook* which can be found on the website as shown on page 8. The results of performance measures utilizing Q/LOS for a specific project may be different from this report.

Generalized Tables is the primary analysis method of roadway performance measures used for this report. *Generalized Tables* is the most cost effective tool for LOS analysis when batch processing, it simplifies the reporting. A more detail analysis method may be needed for specific projects.

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Fac Type:

- ◆ “F” = Freeway
- ◆ “SA” = Signalized Arterial
- ◆ “SC” = Signalized Collector
- ◆ “SMC” = Signalized Collector (Major)
- ◆ “NA” = Non-Signalized Arterial
- ◆ “NMC” Non-Signalized Collector (Major)

LOS Method:

- ◆ “H” = Conceptual - Basic (only used for Memorial Causeway bridge)
- ◆ “T” = Generalized Tables

Abbreviations:

- ◆ “Fac” = Facility
- ◆ “V:Cap” = Volume to Physical Capacity

Def Flag (or Deficiency Identifier)

- ◆ “1” = Volume to Capacity Ratio $\geq .9$ and LOS=A, LOS=B, LOS=C, or LOS=D



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Since the first edition of this Level of Service Report in 1994, it has been utilized by local governments in Pinellas County as a data source to identify roads within their jurisdictions operating under substandard level of service conditions. Local concurrency systems applied by local governments require development projects impacting these roads to address their impacts as part of their site plan approval.

The 2011 Community Planning Act eliminated State mandated transportation concurrency in Florida. In response to this legislation, the MPO endorsed the Pinellas County Mobility Plan in 2013. The Mobility Plan provides a framework for a coordinated multi-modal approach to managing the traffic impacts of development projects as a replacement for local transportation concurrency systems.

The Plan calls for establishing a tiered development review approach requiring larger scale projects adding new trips to the surrounding road network to implement transportation management plans (TMPs) as credit toward their impact fee assessment. Transportation management plans include strategies such as trail, sidewalk, bus stop and intersection improvements or trip reduction programs such as vanpooling or telecommuting. Smaller scale projects with limited impact on the transportation system only require payment of an impact fee commensurate with the number of new trips they generate. The Plan is also intended to ensure consistency between County and municipal site plan review processes as they pertain to reviewing and managing the traffic impacts of development projects while increasing mobility for all users of the transportation system.

Transportation management plan requirements apply to development projects that impact major roads identified as deficient. They also apply to projects causing level of service conditions to degrade on roads that are not identified as deficient. The Mobility Plan identifies “deficient roads” as facilities operating at peak hour level of service E or F and/or volume to capacity ratios of 0.9 or greater. In order to identify deficient facilities, the Mobility Plan will rely on the Level of Service Report for its implementation. Implementation of the Mobility Plan in Pinellas County requires the amendment of the countywide Transportation Impact Fee Ordinance as well as local comprehensive plans and land development codes. It is anticipated that these amendments will occur soon. Until the necessary amendments are adopted, local governments will continue to implement transportation concurrency in accordance with their comprehensive plans.



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LIST of SCHEDULED ROAD IMPROVEMENTS for 2022 LOS REPORT

Current & Future Capacity Projects through FY 2024/25

Project ID	Roadway and Limits	Phase	Description	Est. Start of Construction	Est. Completion
424501-2	I-275 (SR-93) from S of Gandy Blvd (SR-694) to N of 4th St N	Construction	Interstate Express Lanes	Underway	2023
422904-9	I-275 (SR-93) NB Howard Frankland Bridge	Construction	Bridge Replacement and Add Lanes	Underway	2025
256774-3	US-19 N (SR-55) from Northside Dr to North of CR-95 (Phase II including Curlew Rd interchange)	Construction	Add lanes, Reconstruction, Resurfacing, New interchange	Underway	2027
433880-1	CR 296 (Future SR 690)/East-West CST 2017/18 Underway 118th Avenue Expressway/Gateway Express	Construction	Construction of grade separated toll facility linking US 19 and the Bayside Bridge with I-275	Underway	2023

NOTE: The above listed items are transportation projects that are expected to improve the level of service for monitored roadway facilities. Only transportation projects scheduled for construction within the next three years that are anticipated to increase roadway capacity are listed. Also, due to utilizing generalized tables and GIS for LOS analysis some projects such as intersection improvements, auxiliary lanes, add-on/drop-off lanes, frontage roads, ramps, and ITS devices are not included.

Prepared by Forward Pinellas





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