



Southeast Florida FSUTMS Users Group Meeting

Lihe Wang

lihe.wang@aecom.com

11/04/2022

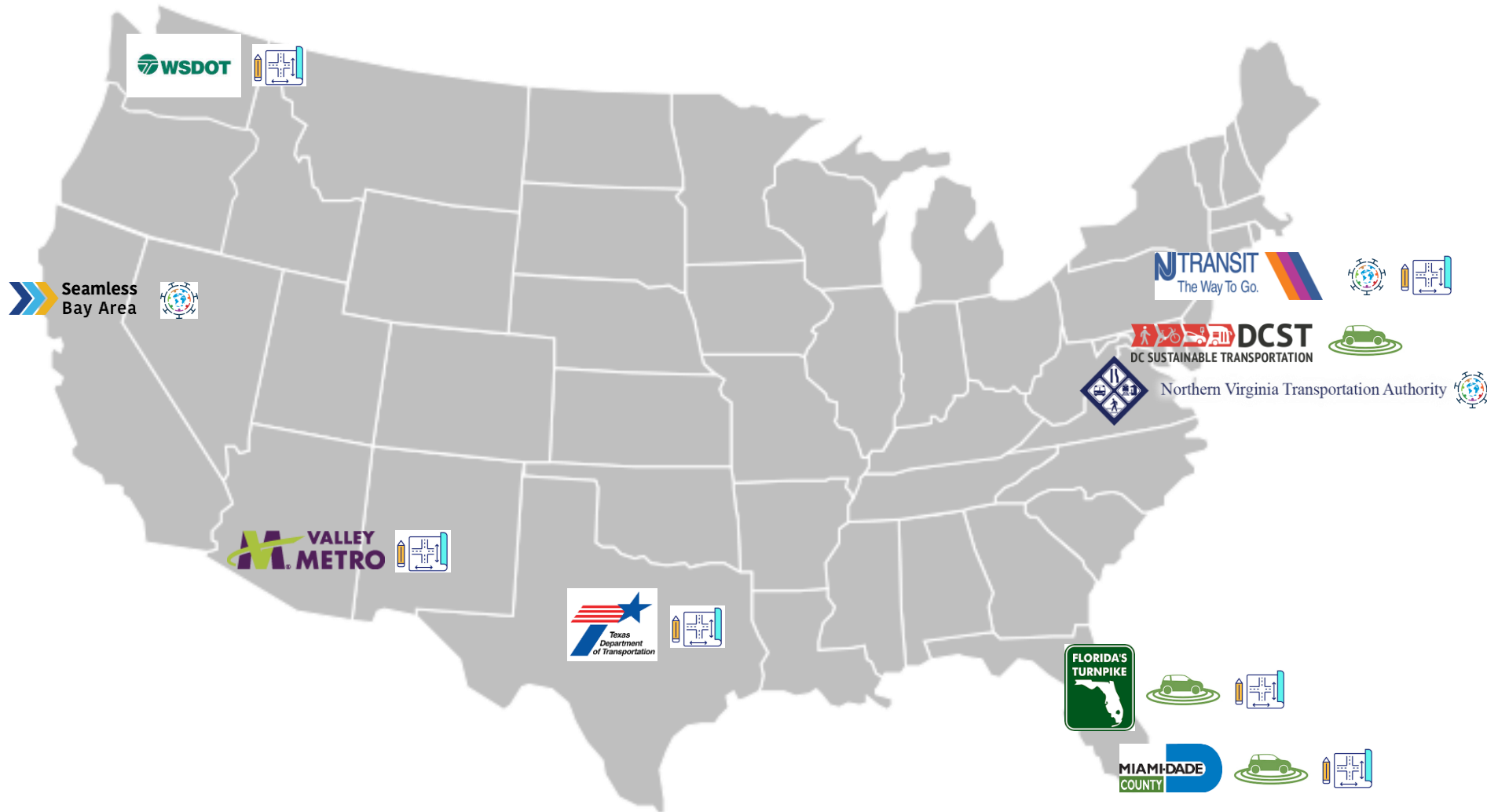
What is Mobilitics



- A scenario planning tool for quick response high-level system and project studies
- Evaluates impacts of new trends not considered in TDM, such as CAVs, EVs, COVID-19, etc.
- Highly flexible to customize
- Consistent with TDM result
- Easy to use and share with interactive dashboard



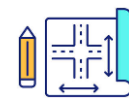
Mobilitics Projects



**COVID-19
Recovery**



**Autonomous
Vehicles**



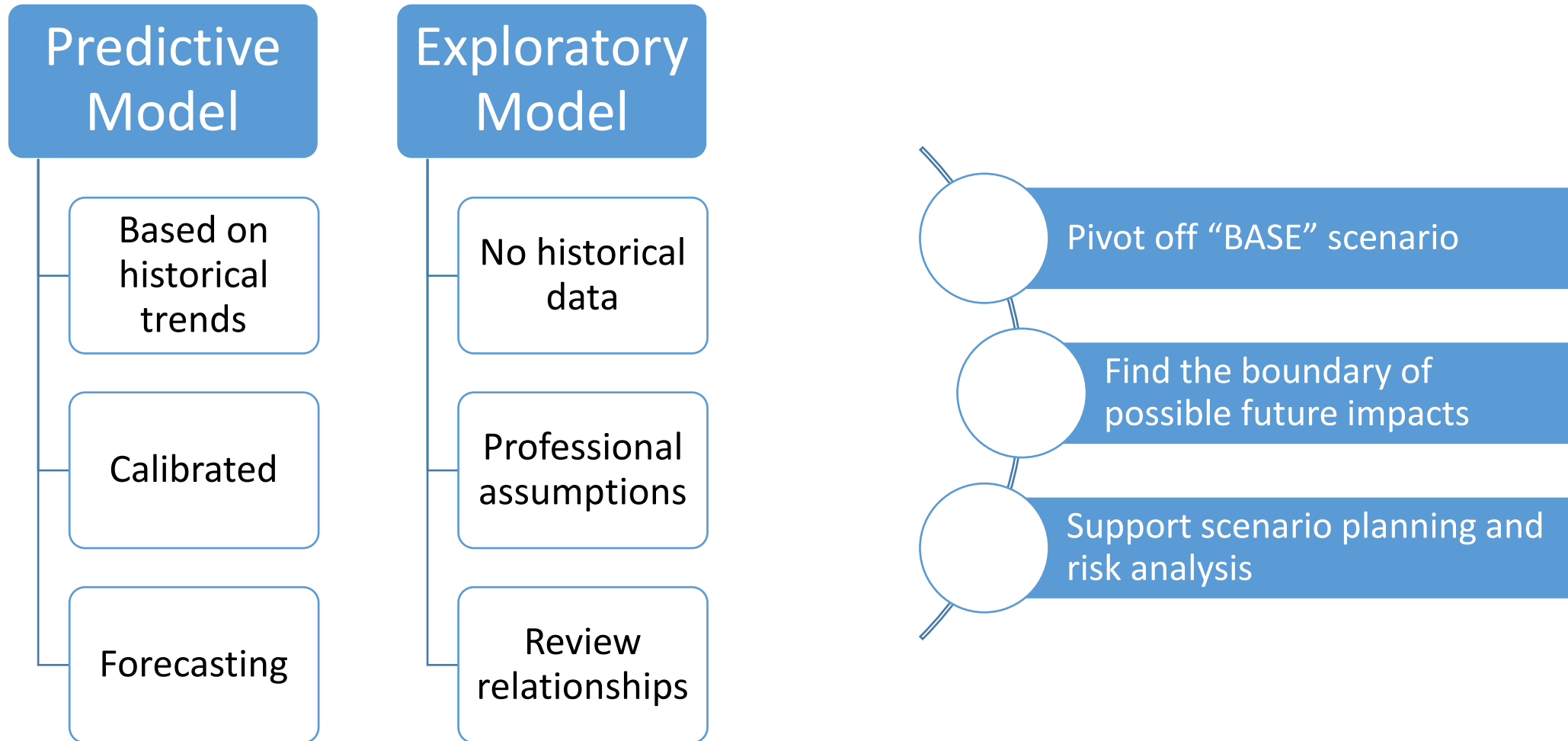
**Scenario
Planning**

What Can Mobilitics Evaluate

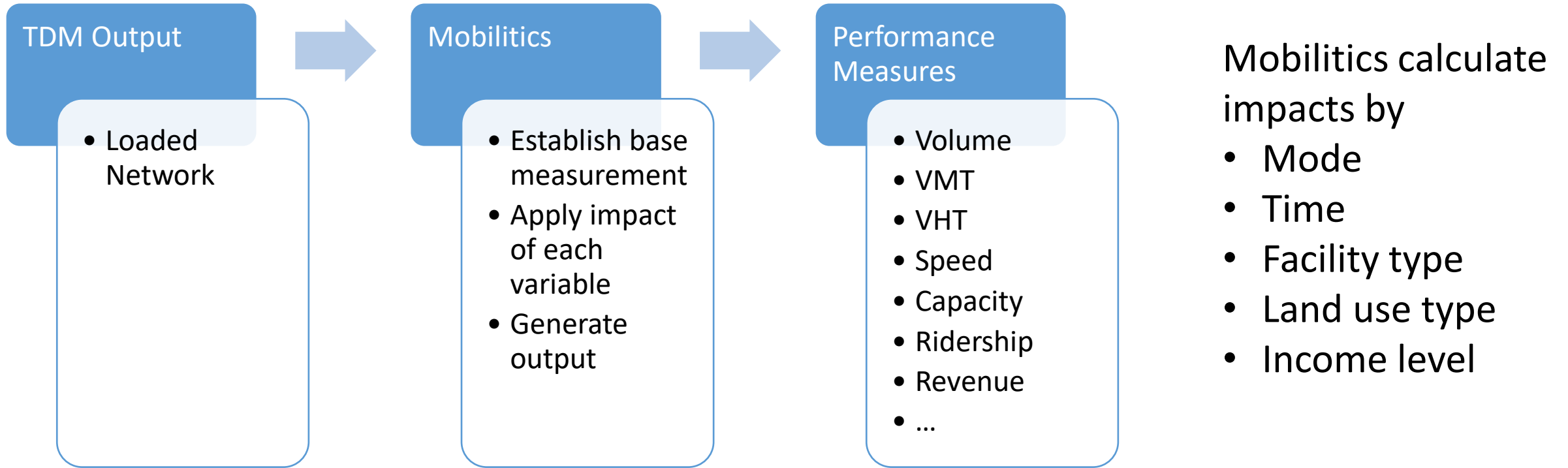


**... And
anything
else
your
TDM
can't**

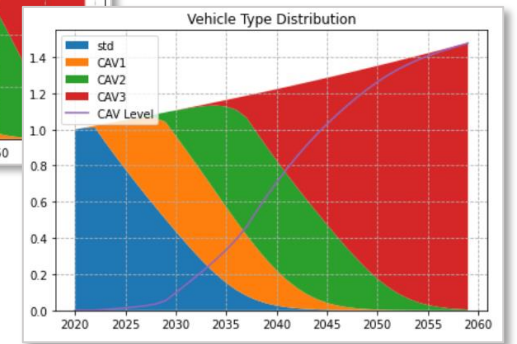
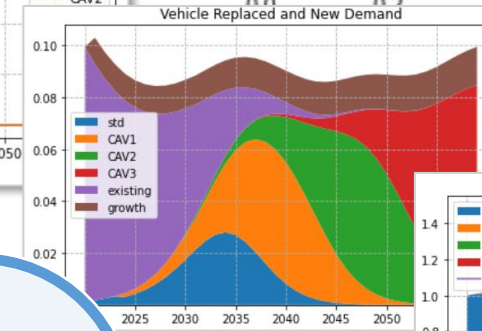
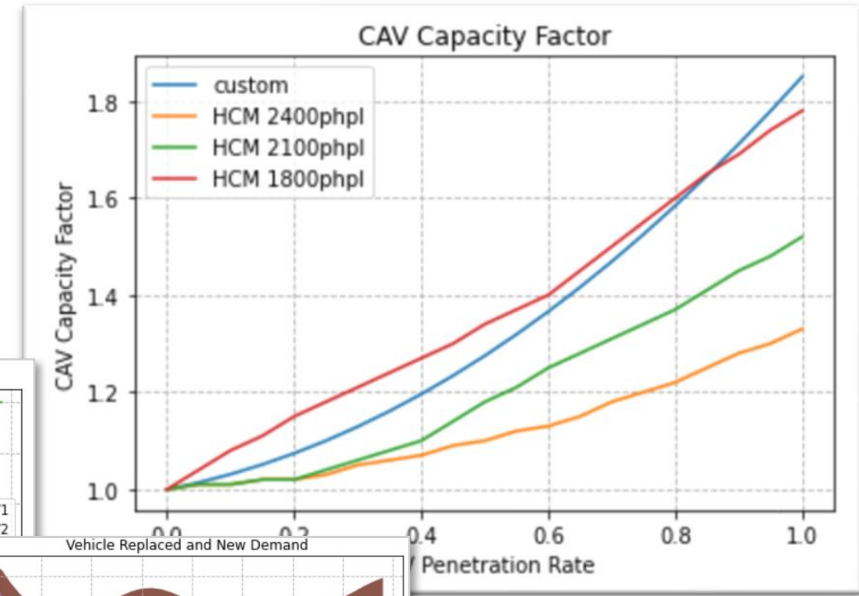
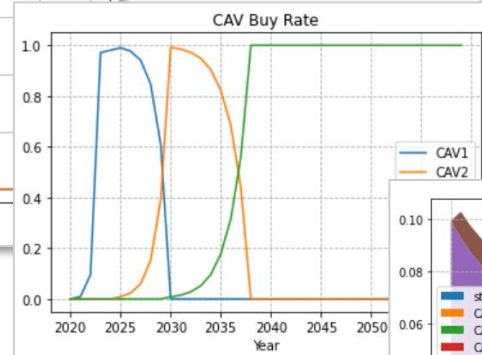
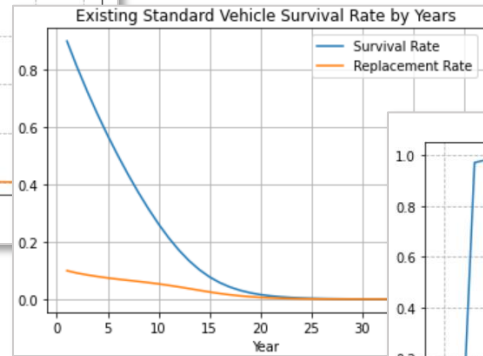
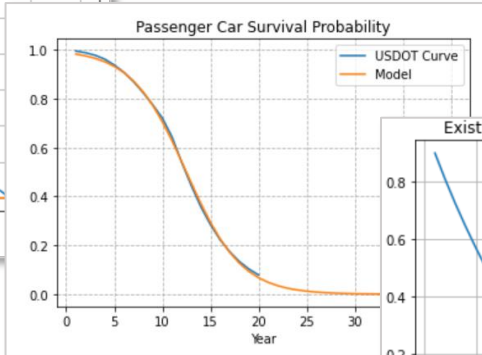
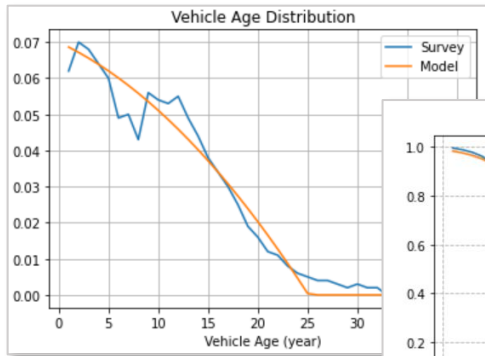
Mobilitics is an Exploratory Model



Mobilitics Flow Chart



Mobilitics CAV Model



Current
fleet by
age

Survival
vehicles
in future

Replaced
vehicles

CAV buy
rate

Future
vehicle
fleet

Mobilitics for Scenario Planning

Mobilitics - Florida's Turnpike Enterprise

Scenario Name: Run Number:

Model Directory: C:\Users\lihe.wang\OneDrive - AECOM\FTE\Mobilitics\Software

Control Subfolder: Control_Trend

Output Subfolder: Results_Trend

Population Growth

☒ Base

☐ Lower

☐ Less Urban

☐ Higher

Employment Growth

☒ Base

☐ Lower

☐ Less Urban

☐ Higher

Capacity

☐ None

☐ Low

☒ Medium

☐ High

CAV Technology

☐ Min

☐ Low

☐ Medium

☒ High

VMT Pricing

☐ None

☐ Limited

☐ Targeted

☒ Extensive

Telework

☐ Ignore

☐ Limited

☐ Moderate

☒ Significant

E-Commerce

☐ Ignore

☐ Limited

☐ Moderate

☒ Significant

Electric Vehicles

☒ Ignore

☐ Slow

☐ Moderate

☐ Rapid

Ride Sourcing

☐ Minimal

☐ Promoted

☐ Expanding

☒ Extensive

Zero VMT Fee

☐ None

☐ Targeted

☐ Limited

☒ Extensive

Ready Player One

Life is a Highway

Create Delete

Run View Result

Input	Scenario	Scenario Name	Option	Facility	Variable	Result	Readme

Excel User Interface

User defined parameters

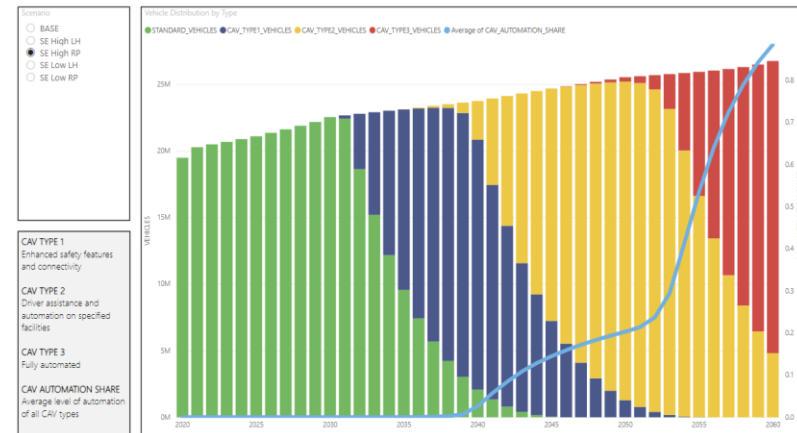
Python Jupyter Notebook for documentation

W_TYPE_MARKET_YEAR_1_2	2030	2035	2047	W_TYPE_MARKET_YEAR_1_3	2030	2035	2047	W_TYPE_MARKET_YEAR_2_1	2030	2035	2047	W_TYPE_MARKET_YEAR_2_2	2030	2035	2047	W_TYPE_MARKET_YEAR_2_3	2030	2035	2047	W_TYPE_MARKET_YEAR_3_1	2030	2035	2047	W_TYPE_MARKET_YEAR_3_2	2030	2035	2047	W_TYPE_MARKET_YEAR_3_3	2030	2035	2047				
W_TYPE_AUTOMATION_RATE_1_1	0	20	100	W_TYPE_AUTOMATION_RATE_1_2	0	20	100	W_TYPE_AUTOMATION_RATE_1_3	0	20	100	W_TYPE_AUTOMATION_RATE_2_1	0	20	100	W_TYPE_AUTOMATION_RATE_2_2	0	20	100	W_TYPE_AUTOMATION_RATE_2_3	0	20	100	W_TYPE_AUTOMATION_RATE_3_1	0	20	100	W_TYPE_AUTOMATION_RATE_3_2	0	20	100	W_TYPE_AUTOMATION_RATE_3_3	0	20	100
W_TYPE_YEARS_TO_ACCEPTANCE_1_1	1	5	8	W_TYPE_YEARS_TO_ACCEPTANCE_1_2	1	7	10	W_TYPE_YEARS_TO_ACCEPTANCE_1_3	1	4	7	W_TYPE_YEARS_TO_ACCEPTANCE_2_1	1	5	8	W_TYPE_YEARS_TO_ACCEPTANCE_2_2	1	5	7	W_TYPE_YEARS_TO_ACCEPTANCE_2_3	1	5	8	W_TYPE_YEARS_TO_ACCEPTANCE_3_1	1	5	8	W_TYPE_YEARS_TO_ACCEPTANCE_3_2	1	5	9	W_TYPE_YEARS_TO_ACCEPTANCE_3_3	1	6	10
IE_ACCEPTANCE_BUY_RATE_1_1	15	10	10	IE_ACCEPTANCE_BUY_RATE_1_2	15	10	10	IE_ACCEPTANCE_BUY_RATE_1_3	15	10	10	IE_ACCEPTANCE_BUY_RATE_2_1	15	10	10	IE_ACCEPTANCE_BUY_RATE_2_2	15	10	10	IE_ACCEPTANCE_BUY_RATE_2_3	15	10	10	IE_ACCEPTANCE_BUY_RATE_3_1	15	10	10	IE_ACCEPTANCE_BUY_RATE_3_2	15	10	10	IE_ACCEPTANCE_BUY_RATE_3_3	15	10	10
W_PRICE_DIFFERENCE_1_1	5	20	40	W_PRICE_DIFFERENCE_1_2	5	20	40	W_PRICE_DIFFERENCE_1_3	5	20	40	W_PRICE_DIFFERENCE_2_1	5	20	40	W_PRICE_DIFFERENCE_2_2	5	20	40	W_PRICE_DIFFERENCE_2_3	5	20	40	W_PRICE_DIFFERENCE_3_1	5	20	40	W_PRICE_DIFFERENCE_3_2	5	20	40	W_PRICE_DIFFERENCE_3_3	5	20	40
IARS_OF_HIGHER_PRICE_1_1	2	5	8	IARS_OF_HIGHER_PRICE_1_2	2	5	8	IARS_OF_HIGHER_PRICE_1_3	2	5	8	IARS_OF_HIGHER_PRICE_2_1	2	5	8	IARS_OF_HIGHER_PRICE_2_2	2	5	8	IARS_OF_HIGHER_PRICE_2_3	2	5	8	IARS_OF_HIGHER_PRICE_3_1	2	5	8	IARS_OF_HIGHER_PRICE_3_2	2	5	8	IARS_OF_HIGHER_PRICE_3_3	2	5	8

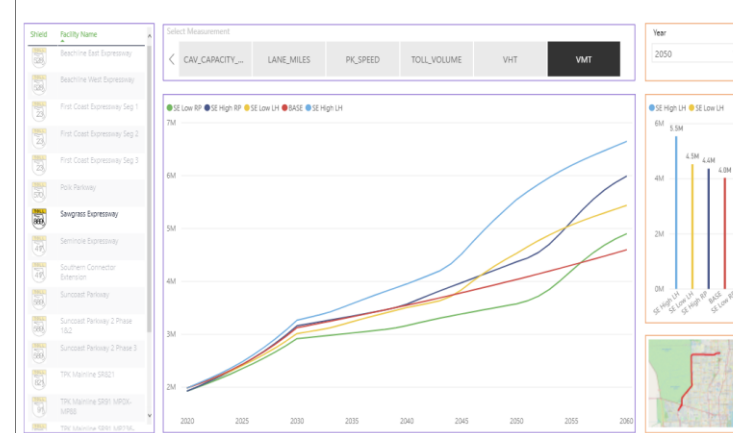


Mobilitics Output Dashboard

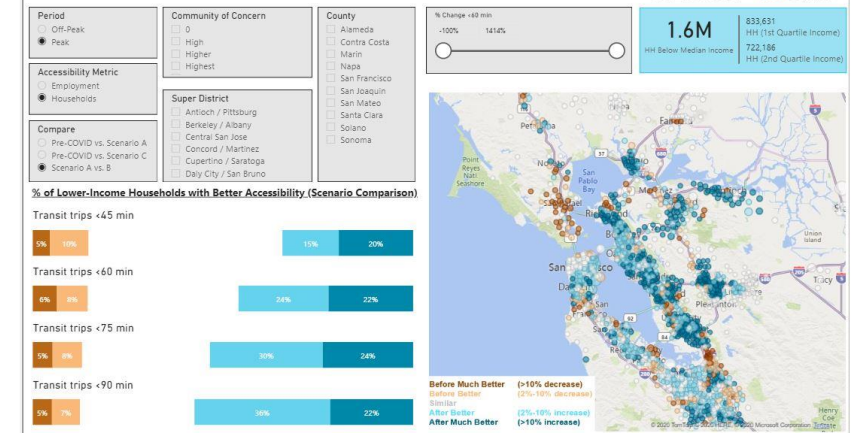
Mobilitics - Florida's Turnpike Enterprise



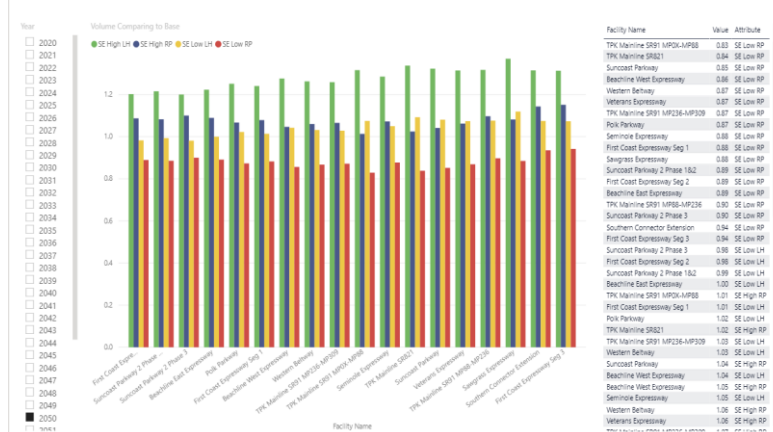
Mobilitics - Florida's Turnpike Enterprise



Accessibility Comparison by TAZ (Lower-Income Households)



Mobilitics - Florida's Turnpike Enterprise



Mobilitics - Florida's Turnpike Enterprise

Select Year and Facility Name to export. Use "Ctrl" for multiple selections.

Year	2020	2030	2040	2050	2060
2021	2031	2041	2051		
2022	2032	2042	2052		
2023	2033	2043	2053		
2024	2034	2044	2054		
2025	2035	2045	2055		
2026	2036	2046	2056		
2027	2037	2047	2057		
2028	2038	2048	2058		
2029	2039	2049	2059		

Facility Name	Value	Base_Alt
TPK Mainline SR821	0.03	SE Low RP
TPK Mainline SR821	0.04	SE Low RP
TPK Mainline SR821	0.05	SE Low RP
TPK Mainline SR821	0.06	SE Low RP
TPK Mainline SR821	0.07	SE Low RP
TPK Mainline SR821	0.08	SE Low RP
TPK Mainline SR821	0.09	SE Low RP
TPK Mainline SR821	0.10	SE Low RP
TPK Mainline SR821	0.11	SE Low RP
TPK Mainline SR821	0.12	SE Low RP
TPK Mainline SR821	0.13	SE Low RP
TPK Mainline SR821	0.14	SE Low RP
TPK Mainline SR821	0.15	SE Low RP
TPK Mainline SR821	0.16	SE Low RP
TPK Mainline SR821	0.17	SE Low RP
TPK Mainline SR821	0.18	SE Low RP
TPK Mainline SR821	0.19	SE Low RP
TPK Mainline SR821	0.20	SE Low RP
TPK Mainline SR821	0.21	SE Low RP
TPK Mainline SR821	0.22	SE Low RP
TPK Mainline SR821	0.23	SE Low RP
TPK Mainline SR821	0.24	SE Low RP
TPK Mainline SR821	0.25	SE Low RP
TPK Mainline SR821	0.26	SE Low RP
TPK Mainline SR821	0.27	SE Low RP
TPK Mainline SR821	0.28	SE Low RP
TPK Mainline SR821	0.29	SE Low RP
TPK Mainline SR821	0.30	SE Low RP
TPK Mainline SR821	0.31	SE Low RP
TPK Mainline SR821	0.32	SE Low RP
TPK Mainline SR821	0.33	SE Low RP
TPK Mainline SR821	0.34	SE Low RP
TPK Mainline SR821	0.35	SE Low RP
TPK Mainline SR821	0.36	SE Low RP
TPK Mainline SR821	0.37	SE Low RP
TPK Mainline SR821	0.38	SE Low RP
TPK Mainline SR821	0.39	SE Low RP
TPK Mainline SR821	0.40	SE Low RP
TPK Mainline SR821	0.41	SE Low RP
TPK Mainline SR821	0.42	SE Low RP
TPK Mainline SR821	0.43	SE Low RP
TPK Mainline SR821	0.44	SE Low RP
TPK Mainline SR821	0.45	SE Low RP
TPK Mainline SR821	0.46	SE Low RP
TPK Mainline SR821	0.47	SE Low RP
TPK Mainline SR821	0.48	SE Low RP
TPK Mainline SR821	0.49	SE Low RP
TPK Mainline SR821	0.50	SE Low RP
TPK Mainline SR821	0.51	SE Low RP
TPK Mainline SR821	0.52	SE Low RP
TPK Mainline SR821	0.53	SE Low RP
TPK Mainline SR821	0.54	SE Low RP
TPK Mainline SR821	0.55	SE Low RP
TPK Mainline SR821	0.56	SE Low RP
TPK Mainline SR821	0.57	SE Low RP
TPK Mainline SR821	0.58	SE Low RP
TPK Mainline SR821	0.59	SE Low RP
TPK Mainline SR821	0.60	SE Low RP
TPK Mainline SR821	0.61	SE Low RP
TPK Mainline SR821	0.62	SE Low RP
TPK Mainline SR821	0.63	SE Low RP
TPK Mainline SR821	0.64	SE Low RP
TPK Mainline SR821	0.65	SE Low RP
TPK Mainline SR821	0.66	SE Low RP
TPK Mainline SR821	0.67	SE Low RP
TPK Mainline SR821	0.68	SE Low RP
TPK Mainline SR821	0.69	SE Low RP
TPK Mainline SR821	0.70	SE Low RP
TPK Mainline SR821	0.71	SE Low RP
TPK Mainline SR821	0.72	SE Low RP
TPK Mainline SR821	0.73	SE Low RP
TPK Mainline SR821	0.74	SE Low RP
TPK Mainline SR821	0.75	SE Low RP
TPK Mainline SR821	0.76	SE Low RP
TPK Mainline SR821	0.77	SE Low RP
TPK Mainline SR821	0.78	SE Low RP
TPK Mainline SR821	0.79	SE Low RP
TPK Mainline SR821	0.80	SE Low RP
TPK Mainline SR821	0.81	SE Low RP
TPK Mainline SR821	0.82	SE Low RP
TPK Mainline SR821	0.83	SE Low RP
TPK Mainline SR821	0.84	SE Low RP
TPK Mainline SR821	0.85	SE Low RP
TPK Mainline SR821	0.86	SE Low RP
TPK Mainline SR821	0.87	SE Low RP
TPK Mainline SR821	0.88	SE Low RP
TPK Mainline SR821	0.89	SE Low RP
TPK Mainline SR821	0.90	SE Low RP
TPK Mainline SR821	0.91	SE Low RP
TPK Mainline SR821	0.92	SE Low RP
TPK Mainline SR821	0.93	SE Low RP
TPK Mainline SR821	0.94	SE Low RP
TPK Mainline SR821	0.95	SE Low RP
TPK Mainline SR821	0.96	SE Low RP
TPK Mainline SR821	0.97	SE Low RP
TPK Mainline SR821	0.98	SE Low RP
TPK Mainline SR821	0.99	SE Low RP
TPK Mainline SR821	1.00	SE Low RP
TPK Mainline SR821	1.01	SE Low RP
TPK Mainline SR821	1.02	SE Low RP
TPK Mainline SR821	1.03	SE Low RP
TPK Mainline SR821	1.04	SE Low RP
TPK Mainline SR821	1.05	SE Low RP
TPK Mainline SR821	1.06	SE Low RP
TPK Mainline SR821	1.07	SE Low RP
TPK Mainline SR821	1.08	SE Low RP
TPK Mainline SR821	1.09	SE Low RP
TPK Mainline SR821	1.10	SE Low RP
TPK Mainline SR821	1.11	SE Low RP
TPK Mainline SR821	1.12	SE Low RP
TPK Mainline SR821	1.13	SE Low RP
TPK Mainline SR821	1.14	SE Low RP
TPK Mainline SR821	1.15	SE Low RP
TPK Mainline SR821	1.16	SE Low RP
TPK Mainline SR821	1.17	SE Low RP
TPK Mainline SR821	1.18	SE Low RP
TPK Mainline SR821	1.19	SE Low RP
TPK Mainline SR821	1.20	SE Low RP
TPK Mainline SR821	1.21	SE Low RP
TPK Mainline SR821	1.22	SE Low RP
TPK Mainline SR821	1.23	SE Low RP
TPK Mainline SR821	1.24	SE Low RP
TPK Mainline SR821	1.25	SE Low RP
TPK Mainline SR821	1.26	SE Low RP
TPK Mainline SR821	1.27	SE Low RP
TPK Mainline SR821	1.28	SE Low RP
TPK Mainline SR821	1.29	SE Low RP
TPK Mainline SR821	1.30	SE Low RP
TPK Mainline SR821	1.31	SE Low RP
TPK Mainline SR821	1.32	SE Low RP
TPK Mainline SR821	1.33	SE Low RP
TPK Mainline SR821	1.34	SE Low RP
TPK Mainline SR821	1.35	SE Low RP
TPK Mainline SR821	1.36	SE Low RP
TPK Mainline SR821	1.37	SE Low RP
TPK Mainline SR821	1.38	SE Low RP
TPK Mainline SR821	1.39	SE Low RP
TPK Mainline SR821	1.40	SE Low RP
TPK Mainline SR821	1.41	SE Low RP
TPK Mainline SR821	1.42	SE Low RP
TPK Mainline SR821	1.43	SE Low RP
TPK Mainline SR821	1.44	SE Low RP
TPK Mainline SR821	1.45	SE Low RP
TPK Mainline SR821	1.46	SE Low RP
TPK Mainline SR821	1.47	SE Low RP
TPK Mainline SR821	1.48	SE Low RP
TPK Mainline SR821	1.49	SE Low RP
TPK Mainline SR821	1.50	SE Low RP
TPK Mainline SR821	1.51	SE Low RP
TPK Mainline SR821	1.52	SE Low RP
TPK Mainline SR821	1.53	SE Low RP
TPK Mainline SR821	1.54	SE Low RP
TPK Mainline SR821	1.55	SE Low RP
TPK Mainline SR821	1.56	SE Low RP
TPK Mainline SR821	1.57	SE Low RP
TPK Mainline SR821	1.58	SE Low RP
TPK Mainline SR821	1.59	SE Low RP
TPK Mainline SR821	1.60	SE Low RP
TPK Mainline SR821	1.61	SE Low RP
TPK Mainline SR821	1.62	SE Low RP
TPK Mainline SR821	1.63	SE Low RP
TPK Mainline SR821	1.64	SE Low RP
TPK Mainline SR821	1.65	SE Low RP
TPK Mainline SR821	1.66	SE Low RP
TPK Mainline SR821	1.67	SE Low RP
TPK Mainline SR821	1.68	SE Low RP
TPK Mainline SR821	1.69	SE Low RP
TPK Mainline SR821	1.70	SE Low RP
TPK Mainline SR821	1.71	SE Low RP
TPK Mainline SR821	1.72	SE Low RP
TPK Mainline SR821	1.73	SE Low RP
TPK Mainline SR821	1.74	SE Low RP
TPK Mainline SR821	1.75	SE Low RP
TPK Mainline SR821	1.76	SE Low RP
TPK Mainline SR821	1.77	SE Low RP
TPK Mainline SR821	1.78	SE Low RP
TPK Mainline SR821	1.79	SE Low RP
TPK Mainline SR821	1.80	SE Low RP
TPK Mainline SR821	1.81	SE Low RP
TPK Mainline SR821	1.82	SE Low RP
TPK Mainline SR821	1.83	SE Low RP
TPK Mainline SR821	1.84	SE Low RP
TPK Mainline SR821	1.85	SE Low RP
TPK Mainline SR821	1.86	SE Low RP
TPK Mainline SR821	1.87	SE Low RP
TPK Mainline SR821	1.88	SE Low RP
TPK Mainline SR821	1.89	SE Low RP
TPK Mainline SR821	1.90	SE Low RP
TPK Mainline SR821	1.91	SE Low RP
TPK Mainline SR821	1.92	SE Low RP
TPK Mainline SR821	1.93	SE Low RP
TPK Mainline SR821	1.94	SE Low RP
TPK Mainline SR821	1.95	SE Low RP
TPK Mainline SR821	1.96	SE Low RP
TPK Mainline SR821	1.97	SE Low RP
TPK Mainline SR821	1.98	SE Low RP
TPK Mainline SR821	1.99	SE Low RP
TPK Mainline SR821	2.00	SE Low RP

Transit Travel Time Comparison by TAZ in Communities of Concern (CoC)

