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June 8, 2017

Mr. Joseph A. Berenis, P.E.
Chief of Infrastructure
Central Florida Expressway Authority
4974 ORL Tower Road
Orlando, FL 32807

RE: Lake/Orange Connector Preliminary Traffic & Revenue Study Report

Dear Mr. Berenis:

CDM Smith is pleased to submit the results from the preliminary traffic and revenue analysis of the potential Lake/Orange Connector Expressway in West Orange County and East Lake County. This letter report contains summaries of the project background, the data collection effort including the StreetLight Data survey, the project specific travel demand model and related changes, preliminary traffic forecasts, screen-line analysis, and revenue estimates. In addition, the report also contains estimates of the net present value of the revenue stream to gain the potential project viability. This letter report is a summary of the information presented at the meeting between CFX staff, Lake County Commissioner Sean Parks, and Orange County Commissioner Betsy VanderLey held on May 3, 2017 at the City of Clermont City Hall.

1.0 BACKGROUND

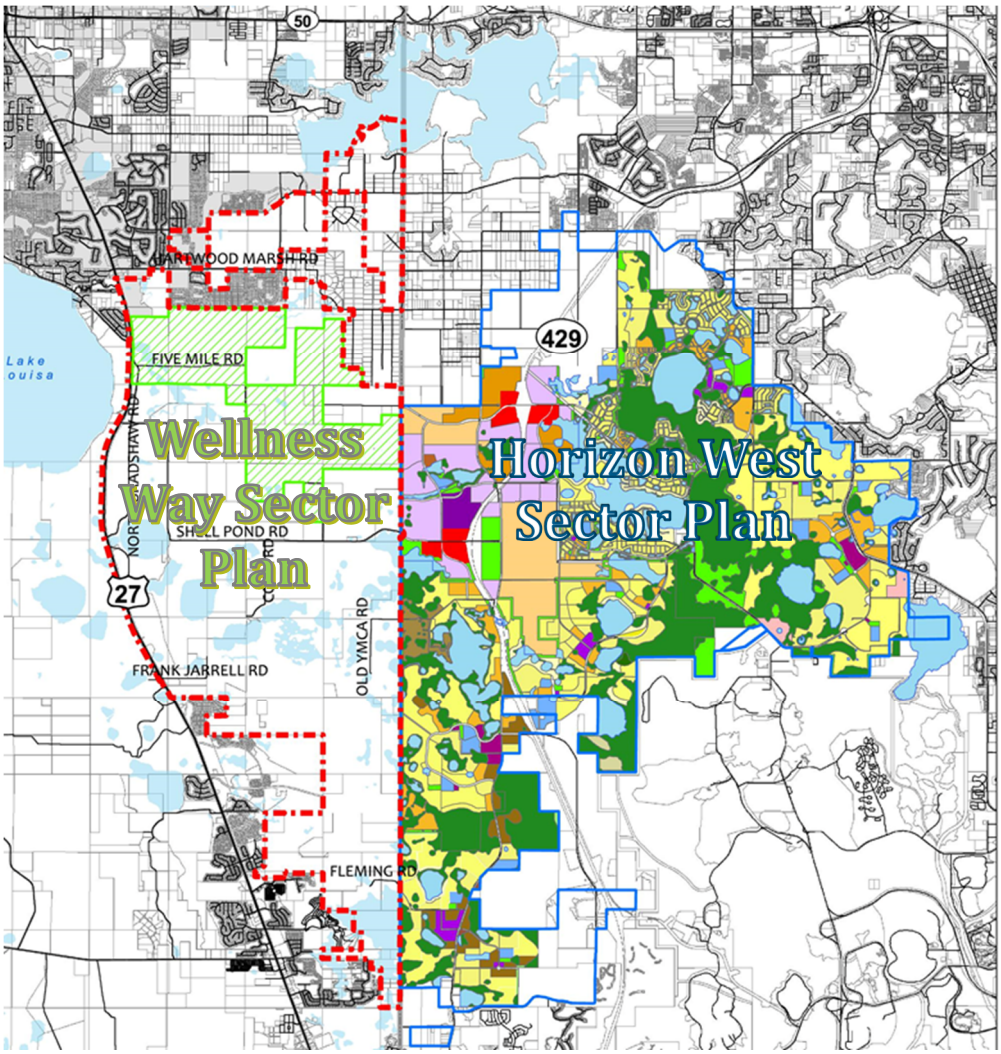
1.1 Study Objectives

The new high-speed connection between U.S. 27 and S.R. 429 has been an identified need in several long-range plans and master plans. The objective of this study is to assess the viability of a new connection as a toll road project under the CFX Master Plan policy for new projects as a system expansion. This study considered and examined corridors that were consistent with local objectives of serving present and future developments in West Orange and South Lake Counties, in particular the Wellness Way Sector Plan communities and Horizon West Villages, as well as provided a new regional connection between U.S. 27 and S.R. 429.

The County Commissioners that represent the districts in South Lake and West Orange Counties requested the Authority consider a new tolled connection between U.S. 27 and S.R. 429. This new regional connector has been studied previously; by the Authority and then by the property owners for a State Infrastructure Bank (SIB) Loan, with a traffic and revenue feasibility study performed by C&M in 2013.

Figure 1 shows the study area for this project with the Wellness Way and Horizon West Sector Plans depicted to show their relationship to each other. Horizon West is a 20,700-acre sector plan consisting of six villages. Two of the villages are nearing build-out: Village of Bridgewater and Lakeside Village, while the Town Center and Hickory Nut Village are in active development and Villages F and I are in permitting stages. Wellness Way sector plan comprises 16,200 acres of Southeast Lake County, with over 78% of the area in agricultural uses and 18% in public uses.

Figure 1 – Study Area



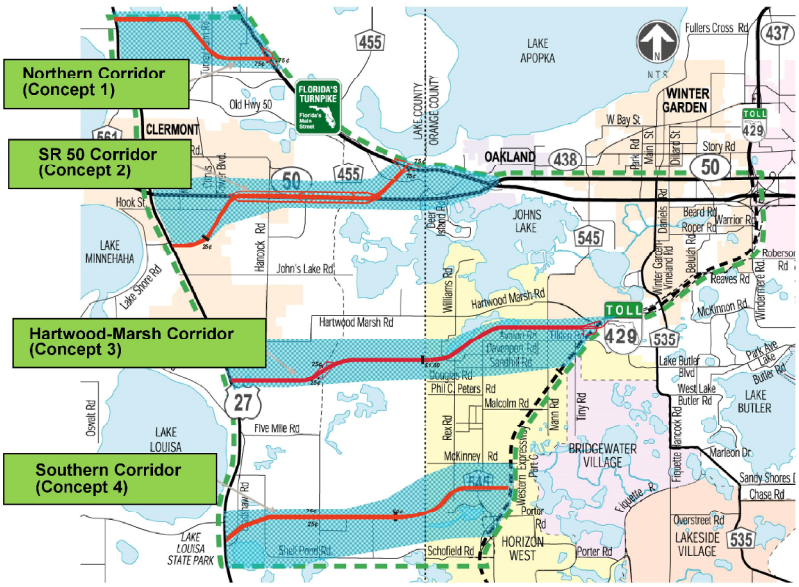
1.2 Prior Studies

The Wellness Way Corridor had been identified as a need in the past three CFX Master Plan, first being identified in the 2025 CFX Master Plan. In response to the identified master plan need, CFX evaluated several corridors with the objective to extend S.R. 408 to the west and to relieve traffic congestion on S.R. 50 for Orange County into Lake County and the City of Clermont.

1.2.1 SR 408 Western Extension Concept Study

The SR 408 Western Extension Concept Study, completed in May of 2002, considered four expressway alignments (Shown in **Figure 2**) that connect US 27 on the west with Florida's Turnpike and the then newly constructed S.R. 429, Western Beltway. Concepts 1 and 2 connected U.S. 27 with Florida's Turnpike and Concepts 3 and 4 connected U.S. 27 with interchanges on S.R. 429. The study concluded that none of the concepts significantly reduced traffic on S.R. 50, but that the Southern Corridor (Concept 4) showed a long-term opportunity for expressway authority participation.

Figure 2: SR 408 Western Extension Study



1.2.2 Wellness Way Sector Plan

Starting in 2008, the West Orange County South Lake Transportation and Economic Development Task Force started a planning process to ensure coordinated transportation and housing development for this area of the region. As a result, Lake County officials commissioned a sector plan process for 16,200 acres of Southeast Lake County. The first draft of the Wellness Way Sector Plan was published in 2013. While it proposed a system of new roadways and roadway improvements, it did not propose a limited-access or expressway facility. The sector plan and associated comprehensive plan map and text amendments were formally adopted by the Lake County Board of County Commissioners in July of 2015 and forwarded to the Florida Department of Economic Opportunity.

1.2.3 Wellness Way Corridor Feasibility Study

Also in 2013, the Wellness Way Corridor Feasibility Study was prepared for the Florida Department of Transportation District 5 and the Federal Highway Administration by the Lake/Orange Parkway Partners, LLC. This study proposed a four-lane controlled access toll road connecting U.S. 27 and S.R. 429, in the vicinity of Concept 4 of the SR 408 Western Extension Concept Study. A Preliminary (Level 1) Traffic & Revenue Study was completed as part of this study, which was used to help secure a State Infrastructure Bank Loan to construct the facility. This SIB loan was approved but was never acted on by the property owners, who let the loan application window lapse.

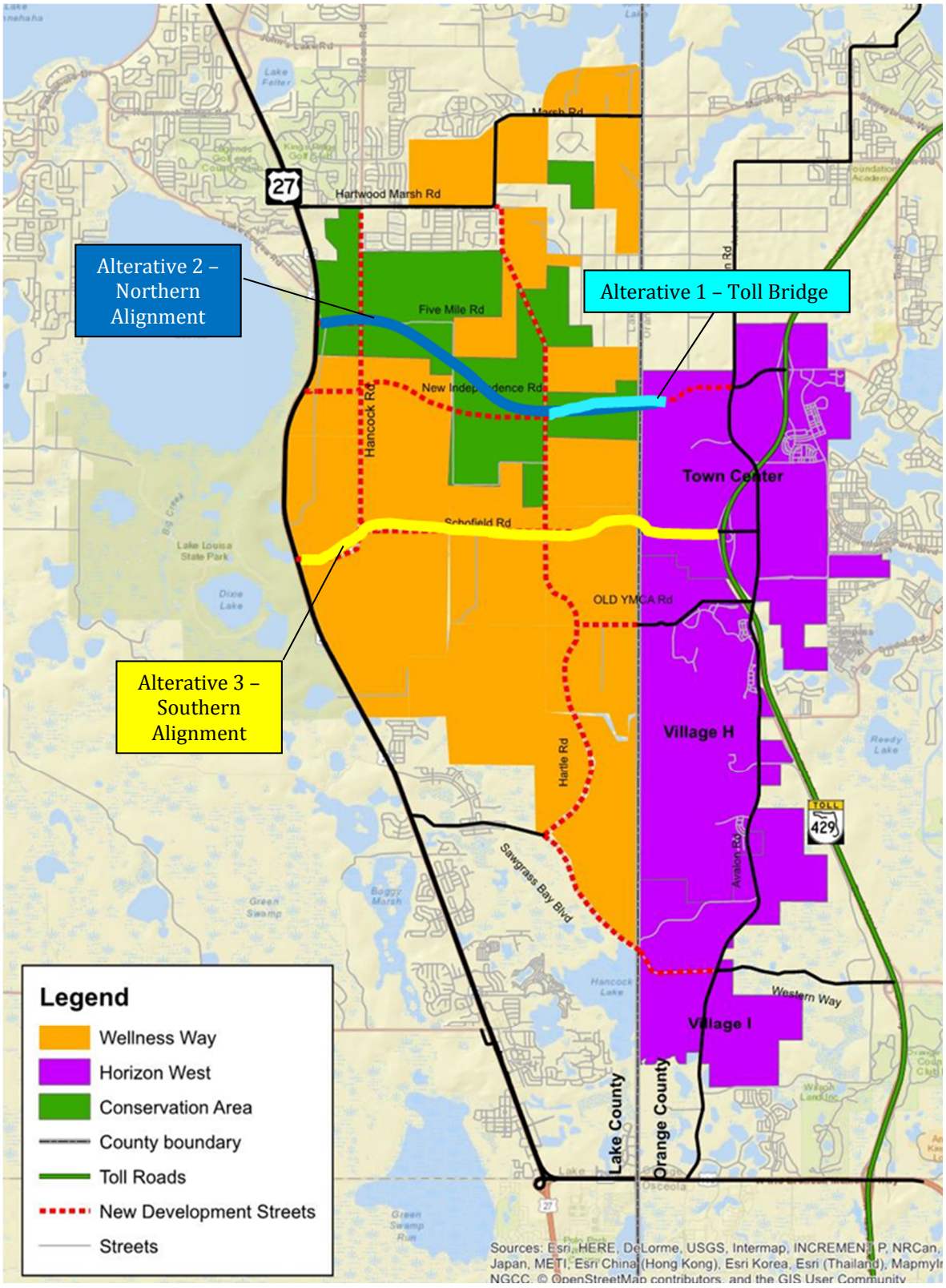
1.3 Project Alternatives

Based on the previous studies and objectives outlined, CDM Smith examined three alternatives for this analysis, which are depicted on **Figure 3**. The first alternative is named the "Toll Bridge," shown in turquoise blue on the map, "bridges the gap" between two developer roadways. This 2.1-mile alternative is assumed to be a four-lane arterial connecting New Independence Parkway on the east with a new developer funded, four-lane arterial on the west. This alterative connects to U.S. 27 at New Independence Parkway and has one tolling point at the County line. The second alternative is the Northern Alternative, depicted in navy blue, and commences at the New Independence Parkway Interchange at S.R. 429. This alternative follows New Independence Parkway westerly and takes a turn to the northwest to intersect with U.S. 27 at 5-Mile Road. The Northern Alignment is approximately 4.9 miles and mainly traverses the CONSERV II site owned by the City of Orlando. The Northern Alignment would be a four-lane expressway starting west of C.R. 545/Avalon Road and heading west, with an interchange at Hartle Road and U.S. 27, and two tolling points. The third alternative is the Southern Alignment, which is depicted in yellow. This alternative commences at the S.R. 429/Schofield Road interchange and ties into U.S. 27 at the southern Bradshaw Road intersection. This 4.9-mile alternative is assumed to be a new four-lane expressway that follows Schofield Road/Shell Pond Road, with interchanges with Hartle Road and U.S. 27 and two tolling locations.

1.4 Overall Approach

The approach to this preliminary T&R Study was to determine the potential future travel demand in the area assuming development of the Wellness Way Sector Plan at current market demand, assuming the build out of the Horizon West Sector plan by 2045, and assuming that the roadway network planned as part of the Wellness Way Sector Plan is built by 2025. These assumptions allow for the travel demand model to estimate the total travel demand in the area and demand on the toll corridors. Using the CFX 2.2 OUATS based model validated to 2015, the analysis includes two forecast years of 2025 and 2045, but included the socioeconomic growth scenario from the CFRPM 6.1 model. Toll rate scenarios were run to determine the sensitivity of the alternatives to toll rates, including no toll, $0.18/mile, and $0.23/mile. Using the travel demand model estimates, a revenue analysis was completed for the project and impacts to the Independence Toll Plaza Group. Annualized transactions and revenues were forecasted by year and a revenue stream for each project developed. A net present value of the revenue streams was calculated to help determine the viability of the project.

Figure 3: Project Alternatives



2.0 Traffic Data

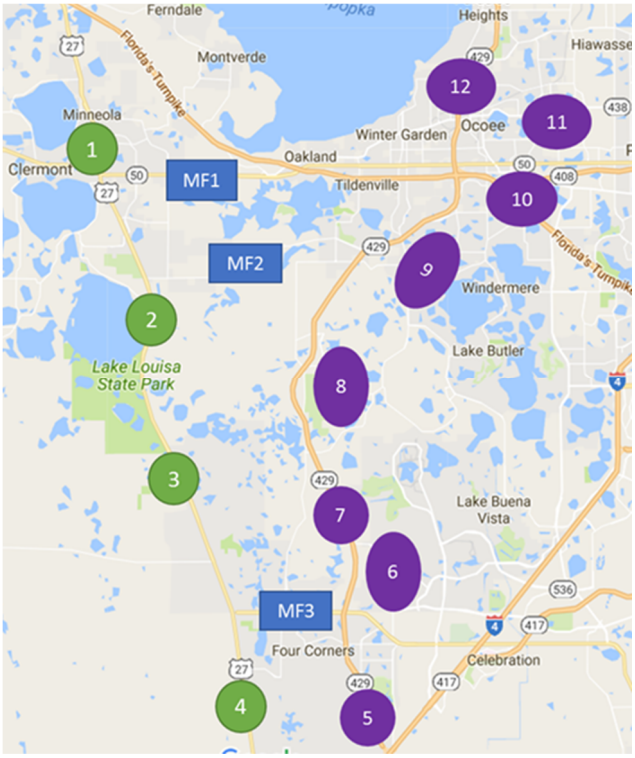
CDM Smith collected data to determine the current pattern of trips in the study area and gathered traffic count data for the existing corridors in the study area. The traffic count data was used to calibrate the project-specific model and for screen-line analysis.

2.1 StreetLight Data Survey

To determine current trip patterns in the study area, an origin-destination (OD) analysis of traffic was completed capturing traffic patterns on U.S. 27, S.R. 429, and the three east-west running roads: S.R. 50, Hartwood Marsh Road, and U.S 192. The purpose of the analysis was to identify regional travel patterns and to determine a significant OD trip patterns along the existing east-west running roadways that could potentially use the proposed toll road.

To complete the OD analysis, StreetLight Data was purchased and analyzed. StreetLight Data is a "big data" analytics vendor that provides travel pattern OD data. StreetLight collects anonymous Global Positioning System (GPS) data points, e.g. car navigation systems, cell phones, and fitness trackers, to measure transportation behavior. GPS devices create records of device locations. StreetLight removes any identifying information from the data records. The data location records are linked through algorithms into a series of trips by identifying their origin, destination and route traveled. The trip data is aggregated and normalized into OD patterns. Reported trip data is aggregated over a period ranging from a few months to a few years, by time period, and by weekday or weekend days.

Figure 4: StreetLight Data Zones and Middle Filters



The OD study was organized by identifying the project study area that includes southwest Orange County and southeast Lake County with the following general boundaries:

- Northern boundary – Florida's Turnpike and S.R. 50
- Southern Boundary – Interstate 4 and S.R. 535
- Eastern boundary – S.R. 429 and local roads just east of S.R. 429
- Western boundary – U.S. 27

As shown in Figure 4, four origin zones were identified on U.S. 27 (Zones 1-4) and eight destination zones either on S.R. 429 or just east of S.R. 429 (Zones 5-12). Middle filter zones are special zones which act as filters through which trips pass through. When used, OD data is reported for trips that pass through the middle filter only. Middle filters identify specific transportation corridors by which an OD trip travels. For this study, three middle filters were identified: SR 50 (MF1), Hartwood Marsh Road (MF2), and U.S. 192 (MF3).

Using the Streetlight data, an OD matrix was developed that compiled the average weekday (Monday – Thursday) trip data report into a trip table. Normalized trips that have either an origin or destination in that zone were identified in the zone. From this OD trip table, further refinement was completed by which twelve separate OD matrices were extracted that utilized the middle filter zones.

The StreetLight data revealed OD patterns along the middle filters consistent with direction of travel of middle filter corridors. There was not a dominate pattern of trips from the northeast section (Clermont) of study area to southwest section (Disney) of study area or vice versa, that might likely use the new toll road. **Table 1,** below, is a summary of the OD trip patterns from zones on U.S. 27 to S.R. 429 zones through the middle filters. Each set of tables represents a middle filter corridor. The red hatching represents the diagonal movement, and the blue hatching represents the opposite diagonal movement. The gold box, highlighted in MF2, represents the east-west movement along Hartwood Marsh Road. On S.R. 50, with over 17,600 samples, 93.5% of the trips are between origin zones 1 and 2 and destination zones 9-12. On Hartwood Marsh Road, with approximately 3,150 samples, 62% of the trips are between origin zones 2 and 3 and destination zones 7,8 and 9. On U.S. 192, with over 19,700 samples, 85.2% of the trips are between origin zones 3 and 4 and destination zones 5, 6 and 7.

Table 1: Summary of OD Trip Patterns

Raw Data (Original plus Transpose)

Through Middle Filter 1 (SR 50)

Name	O/D	1	2	3	4	5	6	7	8	9	10	11	12	Tot
US 27 & SR 50	1	0	0	0	0	7	44	47	11	383	4,782	1,216	691	7,181
US 27 N. of Hartwood	2	0	0	0	0	1	2	2	4	11	711	132	79	942
US 27 S. of Hartwood	3	0	0	0	0	2	1	1	2	7	359	113	179	664
US 27 S. of US 192	4	0	0	0	0	1	0	1	1	3	16	11	10	43
SR 429 S. of US 192	5	7	1	2	1	0	0	0	0	0	0	0	0	11
Disney	6	44	2	1	0	0	0	0	0	0	0	0	0	47
SR 429 N. of US 192	7	47	2	1	1	0	0	0	0	0	0	0	0	51
Horizon West	8	11	4	2	1	0	0	0	0	0	0	0	0	18
CR 535	9	383	11	7	3	0	0	0	0	0	0	0	0	404
SR 408 & TPK	10	4,782	711	359	16	0	0	0	0	0	0	0	0	5,868
SR 50 E	11	1,216	132	113	11	0	0	0	0	0	0	0	0	1,472
SR 429 N. of TPK	12	691	79	179	10	0	0	0	0	0	0	0	0	959
	Tot	7,181	942	664	43	11	47	51	18	404	5,868	1,472	959	17,660

Row Proportion - Proportion of Origin Trips to Destination

O/D	1	2	3	4	5	6	7	8	9	10	11	12	Tot
1					0%	1%	1%	0%	5%	67%	17%	10%	100%
2					0%	0%	0%	0%	1%	75%	14%	8%	100%
3					0%	0%	0%	0%	1%	54%	17%	27%	100%
4					2%	0%	2%	2%	7%	37%	26%	23%	100%
5	64%	9%	18%	9%									100%
6	94%	4%	2%	0%									100%
7	92%	4%	2%	2%									100%
8	61%	22%	11%	6%									100%
9	95%	3%	2%	1%									100%
10	81%	12%	6%	0%									100%
11	83%	9%	8%	1%									100%
12	72%	8%	19%	1%									100%

Origin	Destination		
1, 2	5, 6, 7	458	5.3%
1, 2	7, 8, 9	103	1.2%
1, 2	9, 10, 11, 12	8,005	93.5%

Through Middle Filter 2 (Hartwood Marsh Road)

Name	O/D	1	2	3	4	5	6	7	8	9	10	11	12	Tot
US 27 & SR 50	1	0	0	0	0	3	32	13	34	110	22	3	6	223
US 27 N. of Hartwood	2	0	0	0	0	12	73	52	121	517	85	8	22	890
US 27 S. of Hartwood	3	0	0	0	0	2	9	9	73	120	113	19	99	444
US 27 S. of US 192	4	0	0	0	0	1	0	1	0	8	3	2	1	16
SR 429 S. of US 192	5	3	12	2	1	0	0	0	0	0	0	0	0	18
Disney	6	32	73	9	0	0	0	0	0	0	0	0	0	114
SR 429 N. of US 192	7	13	52	9	1	0	0	0	0	0	0	0	0	75
Horizon West	8	34	121	73	0	0	0	0	0	0	0	0	0	228
CR 535	9	110	517	120	8	0	0	0	0	0	0	0	0	755
SR 408 & TPK	10	22	85	113	3	0	0	0	0	0	0	0	0	223
SR 50 E	11	3	8	19	2	0	0	0	0	0	0	0	0	32
SR 429 N. of TPK	12	6	22	99	1	0	0	0	0	0	0	0	0	128
	Tot	223	890	444	16	18	114	75	228	755	223	32	128	3,146

O/D	1	2	3	4	5	6	7	8	9	10	11	12	Tot
1					1%	14%	6%	15%	49%	10%	1%	3%	100%
2					1%	8%	6%	14%	58%	10%	1%	2%	100%
3					0%	2%	2%	16%	27%	25%	4%	22%	100%
4					6%	0%	6%	0%	50%	19%	13%	6%	100%
5	17%	67%	11%	6%									100%
6	28%	64%	8%	0%									100%
7	17%	69%	12%	1%									100%
8	15%	53%	32%	0%									100%
9	15%	68%	16%	1%									100%
10	10%	38%	51%	1%									100%
11	9%	25%	59%	6%									100%
12	5%	17%	77%	1%									100%

Origin	Destination		
2, 3	5, 6, 7	185	12.8%
2, 3	7, 8, 9	892	61.9%
2, 3	9, 10, 11, 12	365	25.3%

Through Middle Filter 3 (US 192)

Name	O/D	1	2	3	4	5	6	7	8	9	10	11	12	Tot
US 27 & SR 50	1	0	0	0	0	74	809	0	0	0	0	0	0	883
US 27 N. of Hartwood	2	0	0	0	0	242	1,945	0	0	0	0	0	0	2,187
US 27 S. of Hartwood	3	0	0	0	0	280	2,464	0	0	0	0	0	0	2,744
US 27 S. of US 192	4	0	0	0	0	61	2,992	341	299	48	144	45	142	4,072
SR 429 S. of US 192	5	74	242	280	61	0	0	0	0	0	0	0	0	657
Disney	6	809	1,945	2,464	2,992	0	0	0	0	0	0	0	0	8,210
SR 429 N. of US 192	7	0	0	0	341	0	0	0	0	0	0	0	0	341
Horizon West	8	0	0	0	299	0	0	0	0	0	0	0	0	299
CR 535	9	0	0	0	48	0	0	0	0	0	0	0	0	48
SR 408 & TPK	10	0	0	0	144	0	0	0	0	0	0	0	0	144
SR 50 E	11	0	0	0	45	0	0	0	0	0	0	0	0	45
SR 429 N. of TPK	12	0	0	0	142	0	0	0	0	0	0	0	0	142
	Tot	883	2,187	2,744	4,072	657	8,210	341	299	48	144	45	142	19,772

O/D	1	2	3	4	5	6	7	8	9	10	11	12	Tot
1					8%	92%	0%	0%	0%	0%	0%	0%	100%
2					11%	89%	0%	0%	0%	0%	0%	0%	100%
3					10%	90%	0%	0%	0%	0%	0%	0%	100%
4					1%	73%	8%	7%	1%	4%	1%	3%	100%
5	11%	37%	43%	9%									100%
6	10%	24%	30%	36%									100%
7	0%	0%	0%	100%									100%
8	0%	0%	0%	100%									100%
9	0%	0%	0%	100%									100%
10	0%	0%	0%	100%									100%
11	0%	0%	0%	100%									100%
12	0%	0%	0%	100%									100%

Origin	Destination		
3, 4	5, 6, 7	6,138	85.2%
3, 4	7, 8, 9	688	9.5%
3, 4	9, 10, 11, 12	379	5.3%

Relevant trips: East-West movements through the middle, (2 and 3) to (7 through 9), using Middle Filter 2.
Diagonal Movement - northwest (1 and 2) to southeast (5 through 8), using Middle Filters 1, 2 and 3
Diagonal Movement - southwest (3 and 4) to northeast (9 through 12), using Middle Filters 1, 2 and 3

Raw data represents samples of average weekday (Monday through Thursday) for calendar year 2016.

Source: WellnessWay_withMF_1017_mf_personal.xlsx

The travel pattern survey was used to determine how many current trips between U.S 27 and S.R. 429 would be potential customers for a new toll road, as well as to determine the potential of the new toll road to relieve traffic on S.R. 50 and U.S. 192. At present, there is only a relative small volume of trips that are likely to take advantage of the proposed toll road. Most of the potential traffic for a new toll road would be from planned land development. The OD survey does not show potential for a new toll road to relieve traffic on U.S. 192 or S.R. 50.

2.2 Traffic Counts

The latest traffic count data for the major street system in the study area from the CFX, Florida Transportation Information (FTI) DVD, Orange County Traffic Counts webpage, Lake County Traffic Counts webpage and prior studies was collected and reviewed. This information included traffic volume counts, classification counts, transaction data, speed data and turning movement counts. The traffic count data are used in the modeling process to add/update input counts, and screen-line analysis. Traffic counts are also used in the calibration/validation of the project specific model, to ensure volumes produced by the model in the base year match existing count locations.

3.0 Travel Demand Modeling

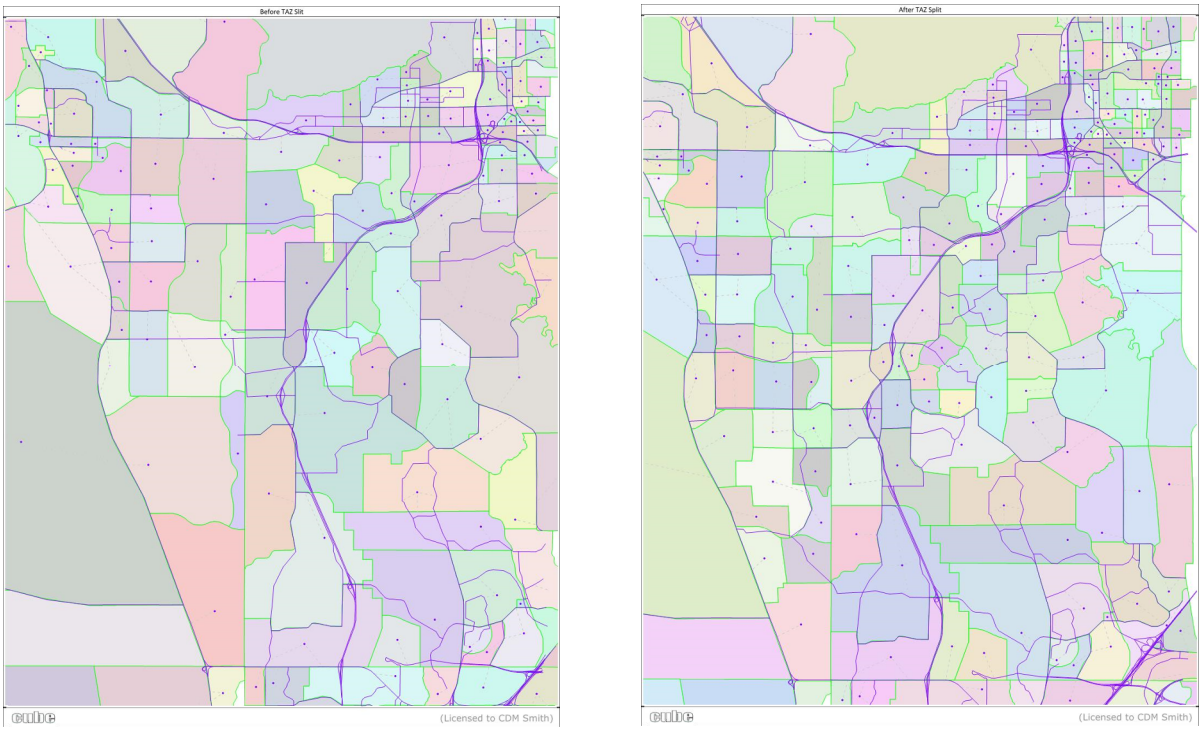
3.1 Project-Specific Model

To analyze the Lake/Orange Connector, a project-specific version of the travel demand model was created from the same model that has been used to develop T&R estimates for the Update to the General Traffic and Earnings Consultant's Annual Report. Known as the CFX Model 2.2, this model is an OUATS based model in Cube Voyager format with a 2015 base year covering five counties (Orange, Osceola, Seminole, Lake, and Brevard) as well as portions of two other counties (Polk and Volusia). The project specific model has two forecast years aligned with the opening year (2025) and the horizon year (2045).

3.2 SE Data Update

For the Lake/Orange Connector project-specific model, CDM Smith adjusted the traffic analysis zones (TAZs) and supporting roadway network for the Wellness Way and Horizon West Sector Plans, in addition to coding the three project alternatives. In the CFX Model 2.2, about 60 zones represented the study area. The minimal internal street network in this area of the model provides uneven traffic loadings to the network. To represent the future development in the study area zone disaggregation was necessary. Many TAZs in the study area were split, creating 40 additional zones, as shown in **Figure 5**. The zone disaggregation allows for a finer level of SE data detail to better represent travel patterns to and from the zones. Centroid connectors (or loading links) were also adjusted to better represent existing traffic patterns, based on information from the StreetLight Data. The SE data was adjusted to correlate with the new zone structure. We created a

Figure 5: Original and New Zonal Structure for Project Specific Model



2015 base year with recent population, household, and employment conditions, which was verified using property appraiser data, planning documents and aerial imagery.

The patterns of growth in future-year SE data was taken from the latest model produced by the Florida Department of Transportation District 5. Known as the Central Florida Regional Planning Model (CFRPM) v6.1, this model was used because it includes the most recent plans on future land uses. The SE data sets in CFRPM were developed by local governments and resolved through Metroplan Orlando to be consistent with Bureau of Economic and Business Research (BEBR) forecasts. These more recent plans include the Horizon West Sector Plan. To account for the Western Way Sector Plan, we assumed development would commence in 2020 and continue through build out in 2045. The assumptions for the Horizon West and Wellness Way Sector Plan development build out were that out of the housing units planned, 80% would be built. For commercial/industrial/office development build out it was assumed that 80% of commercial sq. ft., 50% of industrial sq. ft., and 25% of office sq. ft., of the approved square feet would be completed in 2045. These assumptions are consistent with the market consumption in the current Horizon West Villages. The actual development assumptions are shown in **Table 2**.

Table 2: Socioeconomic Data Assumptions

Socioeconomic Data	Wellness Way		Horizon West	
	Planned	Assumed	Planned	Assumed
Housing Units (DU)	16,500	13,200	40,300	30,200
Commercial (sq. ft.)	12,000,000	5,000,000	9,500,000	4,700,000
Employees	35,999	13,400	27,500	13,600

The SE data sets (ZDATA1 and ZDATA2) were reviewed and updated to reflect the revised zone system in project study area, recent Bureau of Economic and Business Research (BEBR) county population forecast control totals, and the Horizon West and Wellness Way Sector Plans. The Horizon West data was verified from the Horizon West Update to the Orange County Board of County Commission briefing documents, dated July 2016, Orange County Property Appraiser database and aerial imagery.

3.3 Network Updates

CDM Smith adjusted the model networks in the base and future years to match the disaggregated zone system. The major street network proposed in the Wellness Way Sector plan was added to the network in 2025 model year. The additional network will allow appropriate traffic loadings in the future year networks. We reviewed the network coding of those portions of the CFX System with recent improvements. As with any model modifications, a review of network coding was conducted to ensure proper roadway attributes, and a check of the physical and operational features of the roadway network in the study area, specifically the appropriate number of lanes, travel speeds and area type/facility type in the base year and the two forecast years (2025 and 2045). The future-year transportation networks were reviewed to ensure that planned improvements were coded properly in the appropriate year in accordance with the recently adopted CFX 2040 Master Plan and the Metroplan Orlando 2040 LRTP Cost Feasible Network. Traffic volumes at the external stations were reviewed to ensure reasonable growth rates. For the project alternatives, Alternative 1, the "Toll Bridge" was coded as a four-lane arterial roadway with a single mainline toll gantry at the Countyline. Alternatives 2 and 3, the Northern and Southern Alternatives, respectively, were both coded as four-lane expressways with interchanges at Hartle Road and U.S. 27 and two mainline toll gantries on the two segments.

As stated in Section 3.2, the minimal roadway network improvements proposed in the Wellness Way Sector Plan were included in the model networks for years 2025 and 2045. A list of the included improvements is provided in **Table 3**.

Table 3: Roadway Improvements included in 2025 and 2045 Model Networks

US 27	6 lanes
SR 50	6 lanes
SR 429	4/6 lanes
Florida's Turnpike	8 Lanes
Independence Pkwy	4 Lanes
Shell Pond/Schofield	4 Lanes
Hartle Road	4 Lanes
Hancock Road	2 Lanes
Sawgrass Bay Blvd (Western Way Extension)	4 Lanes
Hartwood Marsh	2/4 Lanes
Avalon Road	2/4 Lanes

Toll rates were developed for the future-year networks to reflect the new toll policy adopted by the CFX Board in February of this year. Base toll rates were developed starting in FY 2018 and indexed at 1.5% annually to the model year. No toll, $0.18 per mile, and $0.23 per mile toll rates were developed and coded in the networks for toll sensitivity testing. Tolls were assumed to be collected using all electronic tolling (AET).

3.4 Model Validation

CDM Smith successfully completed validation of the model to 2015 base-year conditions, designating the new model as CFX Model 2.2. Two measures of validation (goodness of fit between base-year model volumes and observed traffic counts) are the root mean square error (RMSE) and the volume/count (V/C) ratio. The RMSE was 36.5 percent for all count locations and 35.1 percent for count locations on CFX facilities. These results are within the allowable range for models of this type. The V/C ratio for all count locations in the model is 92% and for count locations on CFX facilities is 87%. This means that in both instances the model predicted traffic volumes are a lower than the counted volumes, a reasonable position for a model used to produce T&R estimates. **Figures 6 and 7** show the volume to count results for the entire network and for the CFX System. Model predicted volumes match actual traffic counts closely.

Figure 6: CFX Model 2.2 V/C Ratio for all Roadways

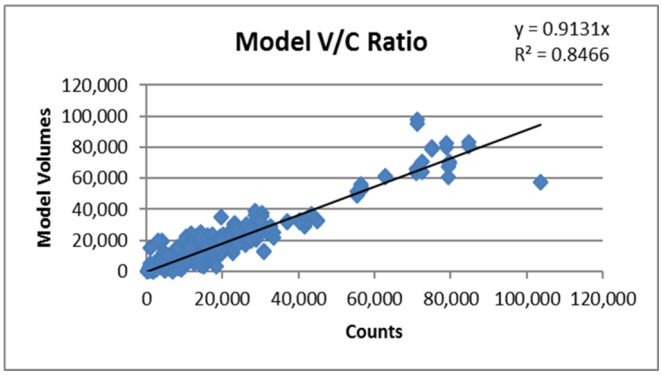
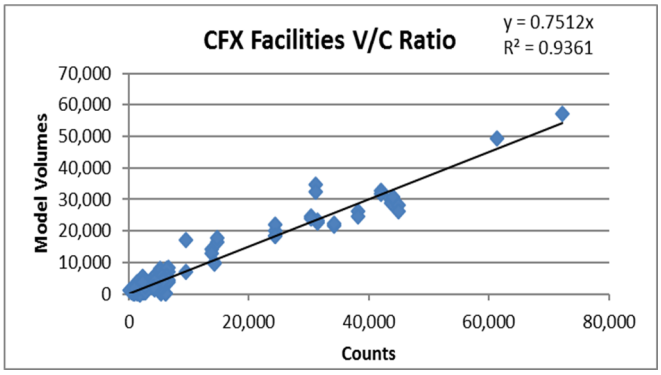


Figure 7: CFX Model 2.2 V/C Ratio for CFX System Facilities



4.0 T&R Estimates

4.1 Traffic Forecasts and Screenline Analysis

Using the project specific model, traffic forecasts were prepared for the 2015 base year and the two forecast years, 2025 and 2045. Separate scenarios were also produced for three toll scenarios on the three alternatives. Traffic forecasts were evaluated for roadways on three screen lines in the study area. Identified in **Figure 8**, the study evaluated two screen lines in the east-west direction and one screen line in the north-south direction. The north-south screen line included the project alternatives to compare No-Build, Build No-Toll, and Toll Scenarios. The results of the $0.18 per mile toll rate are shown in **Table 4**. This table shows the two-way annual average daily traffic for 2015 counts and model volumes. It also shows the 2025 and 2045 model volumes for the three alternatives and the roadways that cross the screenlines. The volumes for the three project alternatives are shown in green shading and the yellow shading represents the new development roads. The results show that the new roads carry new traffic and the traffic on those roads have moderate growth. The $0.18 per mile toll rate provides traffic growth, while the $0.23 per mile toll rate provides declining growth between model years, which indicates the rate is reaching revenue maximization.

Figure 8: Project Specific Model Screen Lines

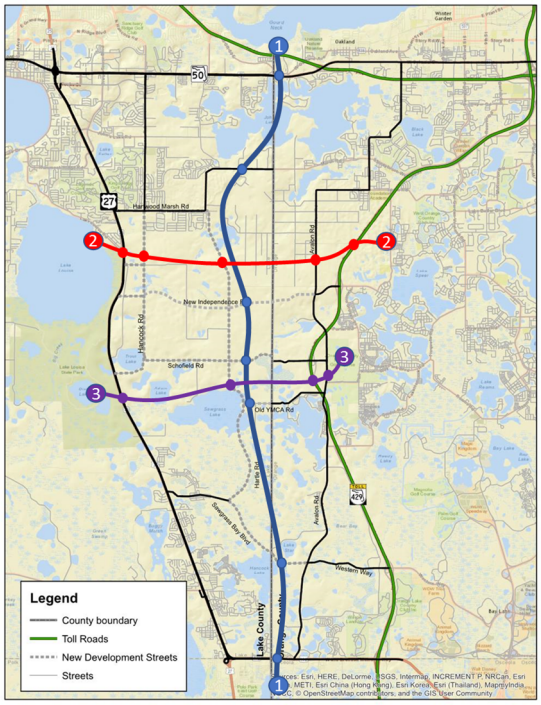


Table 4: Screenline Analysis of Orange Lake Connector

Two-Way AADT with $0.18 per mile toll

		Roadway \ Alternative and Year	2015		2025			2045		
			Count	Model	Toll Bridge	Northern	Southern	Toll Bridge	Northern	Southern
Screen Line 1	North-South along County Line	SR 50	48,500	45,800	47,600	47,700	47,500	52,200	52,100	52,000
		Hartwood Marsh	9,000	5,700	5,300	4,900	5,000	8,400	7,500	8,200
		New Independence Parkway	0	0	5,000	5,700	6,000	12,700	14,100	13,600
		Schofield Road (Arterial)	0	0	7,500	8,000	7,800	16,400	16,800	19,600
		Old YMCA Road	0	0	1,200	1,200	1,600	4,900	4,900	5,600
		Western Way Extension	0	0	7,300	6,500	7,200	12,400	11,800	11,200
		US 192	52,000	39,900	39,700	38,900	39,800	45,700	45,300	44,100
		New Road Total	0	0	21,000	21,400	22,600	46,400	47,600	50,000
		Total	109,500	91,400	113,600	112,900	114,900	152,700	152,500	154,300
		Annual Growth Rate over Model			2.20%	2.14%	2.31%			
		Annual Growth Rate by Alternative						3.00%	3.05%	2.99%
Screen Line 2	East-West, North of New Independence	US 27	23,600	18,400	23,000	23,900	23,300	35,500	38,300	36,400
		Hancock Rd Extension	0	0	400	400	400	1,000	1,000	1,000
		Hartle Road	0	0	3,600	3,300	3,600	8,200	7,200	7,700
		Avalon Road	6,600	800	4,000	4,100	4,300	10,400	10,300	10,800
		Independence Main	25,300	31,100	45,800	45,500	48,500	72,200	71,400	73,600
		Total	55,500	50,300	76,800	77,200	80,100	127,300	128,200	129,500
		Annual Growth Rate over Model			4.32%	4.38%	4.76%			
		Annual Growth Rate by Alternative						5.18%	5.20%	4.92%
Screen Line 3	East-West, South of Scofield Road	US 27	24,500	18,000	20,500	19,300	24,800	29,900	28,800	38,300
		Hartle Road	0	0	6,200	6,000	3,300	17,200	17,500	14,600
		SR 429 S. of Schofield	24,300	25,300	39,800	40,800	41,700	57,100	55,800	56,200
		Avalon Road	6,600	5,900	5,200	5,000	6,000	16,600	18,600	18,600
		Total	55,400	49,200	71,700	71,100	75,800	120,800	120,700	127,700
		Annual Growth Rate over Model			3.84%	3.75%	4.42%			
		Annual Growth Rate by Alternative						5.35%	5.43%	5.35%

4.1 T&R Estimates

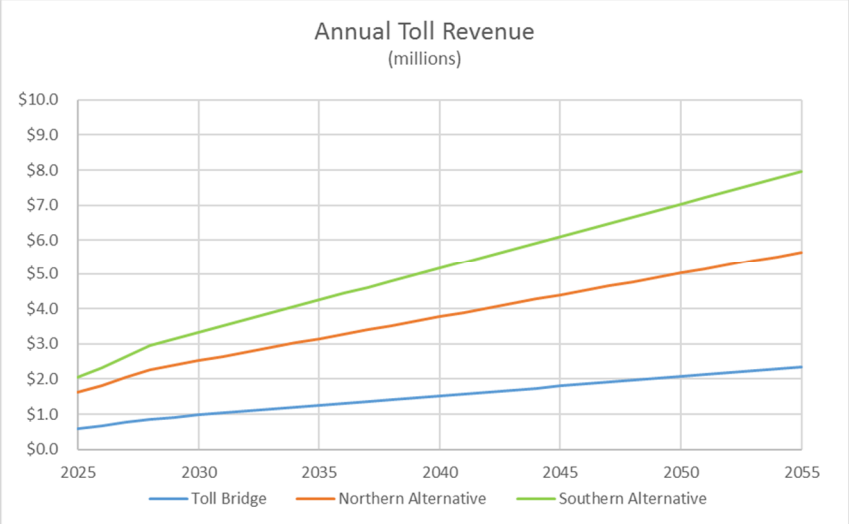
Using the project-specific travel demand model, CDM Smith prepared planning-level estimates of annual transaction and toll revenue attributable to each of the three Lake/Orange Connector alternatives as well as impacts to the Independence Mainline Toll Plaza group. Using the traffic volumes from the model outputs, the traffic volumes were normalized to the published traffic profile for the Independence Mainline Toll Plaza group in the FY 2016 General Traffic and Earnings Consultant's Annual Report. The impacts to the plaza group included the Independence Main Plaza, C.R. 535/Winter Garden Vineland Road Ramps (to/from north), New Independence Parkway Ramps (to/from south) and the Schofield Road Ramps (to/from South). A traffic adjustment factor was developed using the No-Build alternative volumes as compared to the published traffic for these toll plazas and ramp movements. The traffic adjustment factor was applied to the model volumes for each forecast year. The annual average daily traffic for the Lake/Orange Connector Alternatives are shown in **Table 5.**

Table 5: Average Daily Traffic in Forecast Years 2025 and 2045

Locations	Year 2025 Model Results			Year 2045 Model Results		
	Build No Toll	$0.18/mile	$0.23/Mile	Build No Toll	$0.18/mile	$0.23/Mile
Toll Bridge Alternative	6,400	5,000	4,600	15,500	12,700	12,300
Northern Alignment (East Plaza)	10,200	5,700	4,700	17,000	13,000	10,600
Northern Alignment (West Plaza)	10,100	5,700	5,400	18,700	14,100	12,500
Southern Alignment (East Plaza)	20,800	7,200	2,200	31,700	18,200	12,300
Southern Alignment (West Plaza)	21,900	7,800	5,900	34,600	19,600	17,500

Daily revenues were developed using the adjusted traffic volumes and EPass toll rates for the plaza location in specified forecast year. Similarly, revenue adjustment factors were developed based on the annual revenue forecasts for the Independence Mainline Plaza group then applied to the revenues generated by the alterative daily revenues. Development of the traffic and revenue streams over the thirty-year planning horizon involved the interpolation and extrapolation between model years. The revenue streams for the $0.18 per mile base year toll for the three alternatives are shown in **Figure 8**. The revenue stream for the Southern Alternative starts at approximately $2.0M per year in 2025 and grows to approximately $8.0M in 2065 and outperforms the other two alternatives.

Figure 8: Annual Toll Revenue Stream for Each Alternative



4.2 Net Present Value

To determine the general viability of the Lake/Orange Connector, the Net Present Value (NPV) of the 30-year toll revenue stream was calculated. The NPV of 30-Year Revenue Streams for the three alternatives as of July 1, 2017 using a discount rate of 4.827% is shown in **Table 6.** The NPV for $0.18/mile base toll on the Toll Bridge Alternatives is $15.0M, the NPV for the Northern Alternative is $37.6M, and the NPV for the Southern Alternative is $51.0M. Unfortunately, a decline in NPV for the Southern Alternative was observed at a toll rate of $0.23 per mile, which is an indication that $0.18 per mile might be the maximum toll rate for this alternative.

Table 6: Net Present Value

Alternative	$0.18 per mile
Toll Bridge	$15.0
Northern	$37.6
Southern	$51.0

Please let us know if you have any questions or require further information. Respectfully submitted,

CDM Smith

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Disclaimer

CDM Smith used currently-accepted professional practices and procedures in the development of these traffic and revenue estimates. However, as with any forecast, differences between forecasted and actual results may occur, as caused by events and circumstances beyond the control of the forecasters. In formulating the estimates, CDM Smith reasonably relied upon the accuracy and completeness of information provided (both written and oral) by CFX. CDM Smith also relied upon the reasonable assurances of other independent parties and is not aware of any material facts that would make such information misleading.

CDM Smith made qualitative judgments related to several key variables in the development and analysis of the traffic and revenue estimates that must be considered; therefore, selecting portions of any individual result without consideration of the intent of the whole may create a misleading or incomplete view of the results and the underlying methodologies used to obtain the results. CDM Smith gives no opinion as to the value or merit of partial information extracted from this report.

All estimates and projections reported herein are based on CDM Smith's experience and judgment and on a review of information obtained from multiple agencies, including CFX. These estimates and projections may not be indicative of actual or future values, and are therefore subject to substantial uncertainty. Future developments cannot be predicted with certainty, and may affect the estimates or projections expressed in this report, such that CDM Smith does not specifically guarantee or warrant any estimate or projection contained within this report.

While CDM Smith believes that the projections and other forward-looking statements contained within the report are based on reasonable assumptions as of the date of the report, such forward-looking statements involve risks and uncertainties that may cause actual results to differ materially from the results predicted. Therefore, following the date of this report, CDM Smith will take no responsibility or assume any obligation to advise of changes that may affect its assumptions contained within the report, as they pertain to socioeconomic and demographic forecasts, proposed residential or commercial land use development projects and/or potential improvements to the regional transportation network.

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