MOVE 2046

Connecting Communities – Shaping Our Future

Air Quality Conformity Analysis

March 2022

CRPC Capital Region Planning Commission
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ES. Executive Summary

This report explains the results of the air quality analysis for the five (5) Parish maintenance area comprised of Ascension, East Baton Rouge, Iberville, Livingston, and West Baton Rouge parishes. It also describes the methodology used by the Capital Region Planning Commission (CRPC), the Louisiana Department of Transportation and Development (LADOTD), and Neel-Schaffer, Inc. to demonstrate transportation conformity under the air quality standards/goals of the Clean Air Act Amendments of 1990. This process is required for the purpose of adopting a new MTP and Transportation Improvement Program (TIP) since the five (5) Parishes are designated Attainment with a Maintenance Plan.

The conformity analysis uses the MOVES3 model, the most recent planning assumptions from LADOTD and the MPO's Travel Demand Model (TDM), and the incorporation of the projects listed in the MTP (shown in Appendix A). The Motor Vehicles Emissions Budgets (MVEB) established in the MOVE 2042 plan were reaffirmed by the Interagency Consultation (IAC) group and are used to determine the region's air quality conformity.

Tables ES.1 and ES.2 display a summary of the MVEB results for the planning region. The MTP complies with the Clean Air Act Amendments of 1990, the Transportation Conformity Regulation, the Statewide and Metropolitan Planning Regulation, and other applicable federal and state requirements.

Based on the conformity analysis conducted for MOVE 2046, it can be concluded that:

- The MPO finds no factors in the TIP or MTP that would cause or contribute to a new air quality violation or exacerbate an existing violation.

- The MPO finds that no goals, directives, recommendations, or projects within the TIP or MTP contradict any specific requirements or commitments of the Louisiana SIP.

- The MOVE 2046 staged program projects do not interfere with any Transportation Control Measures (TCM) or their timely implementation.

    o The current State Implementation Plan in Louisiana does not contain any TCMs.

    o However, the region does employ TCMs, including travel demand management strategies, public transit improvements (green buses, route optimization etc.), expanding bicycle and pedestrian access (through Regional Bicycle and Pedestrian Plan, City specific Bike/Pedestrian Plan), ridesharing programs (Commuter Krewe), traffic signal coordination programs, bridge/roadway pavement preservation (Pavement and Asset Data Collection), a new HOV lane on I-12, expansion of the existing Intelligent Transportation Systems, expanding

existing incident management efforts, and laying the foundation for TSMO efforts in the immediate future.

- The VOC and NO$_x$, emissions in the planning area do not exceed the established MVEBs.

Table ES.1: Summary of NOx On-Road Mobile Source Emissions by Year in Tons/Day

Parish	Ascension	East Baton Rouge	Iberville	Livingston	West Baton Rouge	Regionwide Total
2022 MVEB	2.6	6.4	1.1	3.1	1.1	14.3
2022 Tons/Day	1.9	5.5	1.0	2.7	1.1	12.3
2027 MVEB*	2.2	4.6	0.7	2.6	0.9	11.0
2027 Tons/Day	1.0	3.0	0.7	1.4	0.6	6.7
2036 Tons/Day	0.7	2.3	0.5	1.0	0.4	4.9
2046 Tons/Day	0.8	2.4	0.6	1.1	0.6	5.4

*2027 MVEB applies to years 2036 and 2046 as well.

Source: NSI, 2022; CRPC, 2022

Table ES.2: Summary of VOC On-Road Mobile Source Emissions by Year in Tons/Day

Parish	Ascension	East Baton Rouge	Iberville	Livingston	West Baton Rouge	Regionwide Total
2022 MVEB	2.6	6.2	0.5	3.2	0.5	13.0
2022 Tons/Day	2.0	5.3	0.5	2.5	0.5	10.6
2027 MVEB*	2.5	5.0	0.4	3.1	0.4	11.4
2027 Tons/Day	1.3	3.0	0.2	1.7	0.3	6.5
2036 Tons/Day	1.1	2.2	0.2	1.4	0.2	5.2
2046 Tons/Day	1.3	2.3	0.2	1.6	0.2	5.6

*2027 MVEB applies to years 2036 and 2046 as well.

Source: NSI, 2022; CRPC, 2022

1.0 Background

The first step in the development of mobile source emissions estimates for the Baton Rouge maintenance area was to identify the boundaries being used in the analysis. There are two (2) boundaries to consider if the Metropolitan Planning Area (MPA) boundary is not same as maintenance area. For the purposes of MOVE 2046, the Travel Demand Model (TDM) area was expanded to cover the entire maintenance area to avoid the need for MPA and donut sub-analyses.

The Baton Rouge maintenance area encompasses the following parishes:

- Ascension
- East Baton Rouge
- Iberville

- Livingston
- West Baton Rouge

To make a positive conformity finding for the MTP and TIP, projected mobile source emissions (VOC and NOx) for each analysis year must be lower than the MVEBs, shown in Table 1.1, agreed upon during the air quality interagency process and deemed adequate by the EPA. The Louisiana Department of Environmental Quality (LDEQ) submitted a formal request for re-designation to attainment for the 2008 8-hour Ozone National Ambient Air Quality Standard (NAAQS) and a maintenance plan for the 5-parish Baton Rouge Nonattainment Area (BRNA). This request is based on the monitoring data for the BRNA that shows a design value of 0.075 ppm or 75 ppb as of December 31, 2013. Because the above mentioned are the latest approved budgets, they can be used to satisfy the budget test requirements of the transportation conformity rule.

Table 1.1: MOVE 2046 Approved MVEBs in Tons/Day

Parish	NOx		VOC	
	2022	2027*	2022	2027*
Ascension	2.6	2.2	2.6	2.5
East Baton Rouge	6.4	4.6	6.2	5.0
Iberville	1.1	0.7	0.5	0.4
Livingston	3.1	2.6	3.2	3.1
West Baton Rouge	1.1	0.9	0.5	0.4

*2027 MVEB applies to years 2036 and 2046 as well.

2.0 Interagency Consultation and Process

As required by 40 CFR 93.105, the MPO formed an Interagency Consultation (IAC) to guide the conformity analysis. This group includes representatives from:

- EPA Region 6

- Federal Highway Administration (FHWA)

- Federal Transit Administration (FTA)

- LADOTD

- Louisiana Department of Environmental Quality (LDEQ)

- CRPC

Another purpose of the IAC was to approve the planning assumptions (40 CFR 93.110) used to develop the conformity analysis. This was conducted through a series of phone conferences. The meeting minutes from the phone conferences are included in Appendix B. In addition to the IAC, as required by 40 CFR 93.105, the conformity analysis must be made available to the general public during the public commenting period as part of the consultation process.

3.0 Analysis Years, Planning Data, and Assumptions

3.1 Analysis Years

The IAC was responsible for selecting the analysis years used to conduct the air quality conformity. During the December 2021 IAC call, it was decided to use the TDM's scenario years (excluding the base year) as the conformity analysis years, in addition to 2022 which was an established MVEB year in MOVE 2042. The emissions calculated for each analysis year were then compared to the established MVEBs to determine if the area can meet the conformity test.

3.2 Planning Data and Assumptions

Regardless of the funding source, all regionally significant projects are included in the regional emissions analysis for their respective analysis year. The projects included in the conformity analysis (listed in Appendix A) are from the MTP's Staged Improvement Program, STIP, or other regionally significant projects provided by LADOTD. These planning assumptions were agreed upon during the IAC Meetings.

Projects identified in the MTP or TIP must be identified as being exempt, non-exempt, or regionally significant. Projects that are exempt are not subject to the transportation conformity rule. Projects that are non-exempt must be shown in the region's conformity analysis. Projects that are regionally significant are non-exempt projects that are on roadways that serve regional needs, such as access to and from the area outside of the region, major activity centers in the region, major planned developments such as new retail malls, sports complexes, etc., or transportation terminals.

4.0 Emissions Projections

The emission estimates obtained in the analysis were calculated using EPA's MOVES3 software. Model runs were conducted for the entirety of each Parish for each of the analysis years. Screenshots that display model inputs and summary outputs are shown in Appendix C and Appendix D, respectively. Due to their size, model input data was not included in this report; however, the model inputs can be obtained from CRPC. The TDM was developed by Neel-Schaffer, Inc. as part of the MOVE 2046 update. The following sections describe the MOVES3 inputs used to calculate the NOx and VOC emissions within each Parish.

4.1 RunSpec Settings

For each MOVES model run, the parameters are contained within the RunSpec. These inputs determine the geographic and temporal scale of the model run, as well as the specific emissions to be calculated. The settings used in the conformity analysis were:

- Scale

    o Onroad (for Model)

    o County (for Domain/Scale)

    o Inventory (for Calculation Type)

- Time Spans

    o Analysis years of 2022, 2027, 2036, and 2046

    o Weekdays (for Days)

    o Month of August

    o All hours

- Geographic Bounds

    o Selected Parish (County)

- Vehicles/Equipment

    o All on-road vehicle and fuel combinations selected

- Road Type

    o All road types selected

- Pollutants and Processes

    o NOx

    o VOC and necessary pre-requisites

4.2 Data Sources

The MOVES model provides many of the necessary inputs through its own internal database or available default data. However, some inputs need to be provided by the MPO and consultant team. Table 4.1 displays the initial data sources used for the MOVES input data. The development of the model inputs is discussed in Appendix E.

Table 4.1: Data Sources for MOVES Input Files

Input	Description	Source
roadTypeDistribution	Distribution of VMT within the modeled area based on MOVES roadway types	Local vehicle classification counts
sourceTypeYear	Total number of vehicles in MOVES vehicle classes	MOVE 2042 inputs and MOVE 2046 housing growth rates
HPMSVTypeDay	Daily VMT of the modeled area by HPMS vehicle classes	LADOTD, TDM
hourVMTFraction	Hourly adjustment factors	MOVES2014a inputs
avgSpeedFraction	Speed distribution by MOVES speed bins, hour, and roadway type	NPMRDS probe data, TDM
ageDistribution	Vehicle age breakdown by source type	MOVES2014a inputs
ZoneMonthHour	Area meteorology data	MOVES3 defaults
FuelSupply	Fuels used in the modeled area	MOVES3 defaults
FuelFormulation	Fuel formulation data within the modeled area	MOVES3 defaults
FuelUsageFraction	Market share of fuels within the modeled area	MOVES3 defaults
AVFT	Alternative Vehicle and Fuels Technologies	MOVES3 defaults

Source: NSI, 2022; CRPC, 2022

4.3 Input Data

ageDistribution

Emission factors vary by the age and type of vehicle (shown in Table 4.2) on the roadway network. The MOVES model requires a vehicle distribution as the fraction of vehicles by age and source type. The age distributions were developed based on the MOVE 2042 age distributions for 2022 and 2027 and adjusted for 2036 and 2046 using extrapolation of the change from 2022 to 2027.

Table 4.2: MOVES Source Types and HPMS Vehicle Types

Source Type ID	Source Type Description	HPMS Vehicle Type ID	HPMS Vehicle Type Description
11	Motorcycle	10	Motorcycles
21	Passenger Car	25	Light Duty Vehicles- Short and Long Wheelbase
31	Passenger Truck		
32	Light Commercial Truck		
41	Intercity Bus	40	Buses
42	Transit Bus		
43	School Bus		
51	Refuse Truck	50	Single Unit Trucks
52	Single Unit Short-haul Truck		
53	Single Unit Long-haul Truck		
54	Motor Home		
61	Combination Short-haul Truck	60	Combination Trucks
62	Combination Long-haul Truck		

Source: EPA

roadTypeDistribution

The MOVES model requires a distribution of VMT as the fraction of vehicles on each road type (shown in Table 3) by source type.

$$VMT\ fraction = \frac{VMT_i\ on\ road\ type}{\Sigma\ VMT_i\ of\ source\ type}$$

Where i = source type

This data was developed using local vehicle classification summaries of the daily VMT data by the functional classification and adjusted using the travel demand model in forecast years. A road type fraction was not assigned to the non-road classification.

Table 4.3: MOVES Road Type

Road Type ID	Road Type Description
1	Off-Network
2	Rural Restricted Access
3	Rural Unrestricted Access
4	Urban Restricted Access
5	Urban Unrestricted Access

Source: EPA

sourceTypeYear

Since each vehicle type has different emission rates, the MOVES model requires the total number of vehicles in each source type. The 2022 and 2027 vehicle data uses the same as the MOVE 2042 analysis and developed forecast values using the housing growth rate as the TDM.

HPMSVTypeDay

A key input in the MOVES model is the daily VMT on the roadway network as increased travel means increased emissions. Base year (2020) VMT data was provided by LADOTD at the Parish level for each Parish within the study area. The TDM total VMTs for the base year and each analysis year were used to develop growth factors that were applied to obtain analysis year VMTs.

monthVMTFraction

Since the MOVE 2046 plan air quality model runs use daily VMT, this model input is not required.

dayVMTFraction

Since the MOVE 2046 plan air quality model runs use daily VMT, this model input is not required.

hourVMTFraction

Vehicle emissions are dependent upon the temperature, humidity, and other meteorological factors which can worsen pollutants from travel. The MOVES model applies a fraction distribution of VMT travelled by a given source type by time of day to determine the total number of vehicles on the road during that hour, as well as the emission rates to be applied.

averageSpeedFraction

The MOVES emission factors also vary by vehicle speed. The MOVES model requires the speeds to be input as a fraction of the VHT on the network based on speed bins (Table 4.4), road type, and hour. The initial speed data was determined using NPMRDS probe analytics.

ZoneMonthHour

The MOVES model requires inputs of minimum and maximum ambient temperature and humidity for the day per hour. This input was provided using the default MOVES3 values for each Parish.

Fuels

Fuel data for each Parish was developed using the MOVES 3 default data. These input files include:

- FuelSupply,

- FuelFormulation,

- FuelUsageFraction, and

- AVFT.

Table 4.4: MOVES Speed Bins

Speed Bin ID	Speed Bin Range
1	speed < 2.5 MPH
2	2.5 MPH <= speed < 7.5 MPH
3	7.5 MPH <= speed < 12.5 MPH
4	12.5 MPH <= speed < 17.5 MPH
5	17.5 MPH <= speed <22.5 MPH
6	22.5 MPH <= speed < 27.5 MPH
7	27.5 MPH <= speed < 32.5 MPH
8	32.5 MPH <= speed < 37.5 MPH
9	37.5 MPH <= speed < 42.5 MPH
10	42.5 MPH <= speed < 47.5 MPH
11	47.5 MPH <= speed < 52.5 MPH
12	52.5 MPH <= speed < 57.5 MPH
13	57.5 MPH <= speed < 62.5 MPH
14	62.5 MPH <= speed < 67.5 MPH
15	67.5 MPH <= speed < 72.5 MPH
16	speed >=72.5 MPH

Source: EPA

5.0 Results and Conclusions

Tables 5.1 and 5.2 summarize the results of the on-road mobile source emissions obtained from the MOVES model by year. Even with the anticipated growth within the region, the analysis indicates that emissions are expected to be less than the established MVEB for each Parish. This is largely due to more stringent emission standards for new cars and trucks, the increasing adoption of alternative fuels vehicles, and the improved performance of travel caused by the MOVE 2046 Staged Improvement P2rogram. Newer vehicles that meet the emission standards will replace the older vehicles with higher emissions, which will help to improve the air quality.

Table 5.1: Summary of NOx On-Road Mobile Source Emissions by Year in Tons/Day

Parish	Ascension	East Baton Rouge	Iberville	Livingston	West Baton Rouge	Regionwide Total
2022 MVEB	2.6	6.4	1.1	3.1	1.1	14.3
2022 Tons/Day	1.9	5.5	1.0	2.7	1.1	12.3
2027 MVEB*	2.2	4.6	0.7	2.6	0.9	11.0
2027 Tons/Day	1.0	3.0	0.7	1.4	0.6	6.7
2036 Tons/Day	0.7	2.3	0.5	1.0	0.4	4.9
2046 Tons/Day	0.8	2.4	0.6	1.1	0.6	5.4

*2027 MVEB applies to years 2036 and 2046 as well.

Source: NSI, 2022; CRPC, 2022

Table 5.2: Summary of VOC On-Road Mobile Source Emissions by Year in Tons/Day

Parish	Ascension	East Baton Rouge	Iberville	Livingston	West Baton Rouge	Regionwide Total
2022 MVEB	2.6	6.2	0.5	3.2	0.5	13.0
2022 Tons/Day	2.0	5.3	0.5	2.5	0.5	10.6
2027 MVEB*	2.5	5.0	0.4	3.1	0.4	11.4
2027 Tons/Day	1.3	3.0	0.2	1.7	0.3	6.5
2036 Tons/Day	1.1	2.2	0.2	1.4	0.2	5.2
2046 Tons/Day	1.3	2.3	0.2	1.6	0.2	5.6

*2027 MVEB applies to years 2036 and 2046 as well.

Source: NSI, 2022; CRPC, 2022

In the established analysis years, NOx and VOC show reductions from baseline conditions and meet the MVEBs. These reductions show that each Parish is in conformity with the US EPA's "Budget Emissions Test" for all analysis years. Since the Parishes and region are within attainment for the NAAQS, and future year emissions are estimated to be less than the MVEB, transportation improvements contained in the MTP should not interfere with future attainment or maintenance of the NAAQS for ozone.

Appendices

Appendix A: Roadway Projects in MOVES Analysis

Table A-1: Roadway Projects in MOVES Analysis

MTP ID	Stage	Roadway	Limits	Improvement	AQ Analysis Year	Conformity Status
1	1	N Sherwood Forest Blvd	Choctaw Blvd to Greenwell Springs Rd	Widen to 5 Lanes	2027	N-E
2	1	Sullivan Rd	Wax Rd to Hooper Rd	Widen to 4 Lanes	2022	N-E
3	1	I-10	@Pecue Ln	New Interchange	2027	N-E
4	1	LA 30 / Nicholson Dr	Brightside Dr to Gourrier Ave	Widen to 4 Lanes Divided	2027	N-E
5	1	Hooper Rd	Blackwater Rd to Joor Rd	Widen to 4 Lanes	2027	N-E
6	1	Hooper Rd	Joor Rd to Sullivan Rd	Widen to 4 Lanes	2027	N-E
7	1	Old Hammond Hwy	Blvd De Province to Millerville Rd	Widen to 4 Lanes	2027	N-E
8	1	Picardy Perkins Connector	Picardy Ave to Perkins Ave	New 4 Lane Roadway	2022	N-E
9	1	Glen Oaks Dr	Plank Rd to McClelland Dr	Center Turn Lane	2022	N-E
10	1	Cook Rd	Pete's Hwy to Juban Rd	New 4 Lane Roadway	2022	N-E
11	1	LA 70	Sunshine Bridge to LA 22	Widen to 4 Lanes	2027	N-E
12	1	Perkins Rd	Siegen Ln to Highland Rd	Widen to 4 Lanes	2027	N-E
13	1	Dijon Dr Phase I (Constantin Blvd)	LA 3064 to Midway	New 2 Lane Roadway	2022	N-E
14	1	Dijon Dr Phase II (Constantin Blvd)	Midway to LA 1248	New 2 Lane Roadway	2027	N-E
15	1	Pecue Ln	Perkins Rd to Airline Hwy	Widen to 4 Lanes	2027	N-E
16	1	Juban Rd	I-12 to US 190	Widen to 4 Lanes	2022	N-E
17	1	I-10	I-110 to Dalrymple Dr Acadian Thwy to Essen Ln	Widen, Add Lanes	2027	N-E
18	1	LA 327 Spur (Staring Extension)	Burbank Dr to Nicholson Dr	New 4 Lane Divided Roadway	2027	N-E
19	1	I-10	@ College Dr	Flyover Ramp	2027	N-E
20	1	N Robert Wilson Rd	LA 30 to Buzzard Roost	New 2 Lane Roadway	2027	N-E
21	1	LA 73 to Bluff Road Connector	LA 73 to Bluff Road	New 2 Lane Roadway	2027	N-E
22	1	I-110	@ Harding Blvd	Interchange Improvement	2027	N-E
23	1	Ben Hur Rd	Nicholson Dr	Intersection Realignment	2022	N-E

MTP ID	Stage	Roadway	Limits	Improvement	AQ Analysis Year	Conformity Status
24	1	LA 30 / Nicholson Dr	Bluebonnet Blvd to Ben Hur Rd	Widen to 4 Lanes	2027	N-E
25	1	Flannery Rd	Old Hammond Hwy to Florida Blvd	Convert to 2 Lanes Divided	2027	N-E
26	1	Sherwood Forest Rd Extension	Greenwell Springs Rd to Joor Rd	New 2 Lane Roadway	2027	N-E
27	1	S Choctaw Rd	Flannery Rd to Central Thwy	Widen to 4 Lanes	2022	N-E
28	1	Mickens Rd	Hooper Rd to Lanier Rd	Center Turn Lane	2027	N-E
29	1	Ardenwood/Lobdell Connector	Ardenwood Dr to Lobdell Blvd	New 2 Lane Roadway	2027	N-E
30	1	Jones Creek Rd	Tiger Bend Rd to Airline Hwy	New 4 Lane Roadway	2027	N-E
31	1	Tiger Bend Rd	Jones Creek Rd to Antioch Rd	Widen to 4 Lanes Divided	2027	N-E
32	1	Bluebonnet Rd	Perkins Rd to Picardy Ave	Widen to 6 Lanes	2027	N-E
33	1	Midway	Picardy Ave to Dijon Phase II	New 4 Lane Roadway	2027	N-E
34	1	Old Hammond Hwy	Millerville Rd to O'Neal Rd	Widen to 4 Lanes Divided	2022	N-E
35	1	Airline Hwy	Florida Blvd to I-110	Widen to 6 Lanes	2027	N-E
36	1	Airline Hwy	Ascension Parish Line to Cedarcrest Ave	Add 2 Lanes	2027	N-E
43	1	LA 44 (N Burnside Ave)-b	I-10 to Loosemoore Rd	Widen to 4 Lanes and Roundabout	2022	N-E
543	1	Wax Rd Extension	Hooper Rd to Wax Rd Existing Terminus	New 2 Lane Roadway	2027	N-E
539	1	I-10 to La 1 Connector	La 415 to La 1	New 4 Lane Roadway & new ICWW bridge	2027	N-E
904	1	La 3127 Ext	La 70 to La 1	New 2 Lane Roadway	2027	R-S
905	1	Hooper Rd	La 3034 to La 37	Widen to 4 Lanes	2027	R-S
903	1	I-12	Drusilla Ln to Satsuma Rd	Create HOV Lanes	2027	R-S
48	2	I-10	Dalrymple Dr to Acadian Thwy	Widen, Add Lanes	2036	N-E
44	2	LA 30 / Nicholson Dr	Ascension Parish Line to Bluebonnet Blvd	Widen to 4 Lanes	2036	N-E
45	2	Wax Rd/Magnolia Bridge Rd	Sullivan Rd to Greenwell Springs Rd	Widen to 4 Lanes	2036	N-E

MTP ID	Stage	Roadway	Limits	Improvement	AQ Analysis Year	Conformity Status
46	2	Old Hammond Hwy	O'Neal Rd to Florida Blvd	Widen to 4 Lanes Divided	2036	N-E
47	2	Highland Rd	Perkins Rd to Old Perkins Rd	Interchange Improvement	2036	N-E
157	2	Airline Hwy	EBR Parish Line to Perkins Rd	Widen to 6 Lanes	2036	N-E
155	2	La 30	La 3251 to La 44	Widen to 5 Lanes	2036	N-E
123	2	LA 44	Hodgeson Rd to La 942	Widen to 4 Lanes	2036	N-E
102	2	La 73	Nicholson Dr to La 74	Center Turn Lane	2036	N-E
200	2	Nicholson Dr	W Lee Dr to Ben Hur Rd	Widen to 4 Lanes	2036	N-E
115	2	College Dr	Corporate Blvd to Jefferson Hwy	Widen to 6 Lanes	2036	N-E
162	2	Florida Blvd	Airline Hwy to Monterey Blvd	Widen to 8 Lanes	2036	N-E
114	2	Sherwood Forest Rd	Airline Hwy to Old Hammond Hwy	Widen to 6 Lanes	2036	N-E
127	2	Bluebonnet Blvd	Highland Rd to Perkins Rd and Picardy Ave to Airline Hwy	Widen to 6 Lanes	2036	N-E
522	2	Ford St Ext	Plank Rd to Howell blvd	New 2 Lane Divided Roadway	2036	N-E
528	2	Gardere Ln	Burbank Dr to Nicholson Dr	Center Turn Lane	2036	N-E
132	2	Florida Blvd/Florida Ave	O'Neal Ln to Pete's Hwy	Widen to 4 Lanes	2036	N-E
174	2	Magnolia Bridge Rd	Thunderbird Beach Rd to La 16	Widen to 4 Lanes	2036	N-E
133	2	Florida Ave	Juban Rd to Walker South Rd	Widen to 4 Lanes	2036	N-E
196	2	Walker South Rd	I-12 to Hood Rd	Widen to 4 Lanes	2036	N-E
172	2	Florida Ave	Pete's Hwy to Juban Rd	Widen to 4 Lanes	2036	N-E
173	2	Juban Rd Ext	Florida Ave to Lockhart Rd	New 4 Lane Roadway	2036	N-E
906	2	I-10	LA 73 to LA 22	Widen to 6 Lanes	2036	R-S
49	3	I-10	LA 415 to I-110 (Excluding Mississippi River Bridge)	Widen, Add Lanes	2046	N-E
901	3	I-10	at La 74	New Interchange	2046	R-S

MTP ID	Stage	Roadway	Limits	Improvement	AQ Analysis Year	Conformity Status
902	3	La 429 Connector	La 30/La73 to US61	New 4 Lane Roadways, New Interchange, Widen to 4 Lanes	2046	R-S
198	3	La 30	La 3115 to La 3251	Widen to 5 Lanes	2046	N-E
153	3	La 73	I-10 to La 74	Widen to 5 Lanes	2046	N-E
194	3	Highland Rd	Siegen Ln to I-10	Widen to 4 Lanes	2046	N-E
161	3	Airline Hwy	Through I-110 and Plank Rd Interchanges	Widen to 6 Lanes	2046	N-E
189	3	Perkins Rd	Highland Rd to Airline Hwy	Widen to 4 Lanes	2046	N-E
542	3	Walker South Rd	I-12 to US 190	Convert to 4 Lane Divided	2046	N-E
181	3	4-H Club Rd	Florida Ave to Vincent Rd	Widen to 4 Lanes	2046	N-E
534	3	New MRB	LA 1 to LA 30	New Mississippi River bridge & Widen to 4 Lanes	2046	N-E

N-E – Non-Exempt

R-S – Regionally Significant

Appendix B: IAC Meeting Minutes

1. **CALL TO ORDER AND INTRODUCTIONS**
   Jamie Setze called the meeting to order at 1:35 pm. Roll was recorded and a quorum was established.

   Committee members present:

Agency	Attendees
FHWA	Carlos McCloud, Mary Stringfellow
FTA	David Bartels
EPA	Jeffrey Riley
DEQ	Yasoob Zia, Jason Meyers
LADOTD	Dawn Sholmire, John Fu, Connie Porter,
CRPC	Jamie Setze, Sooraz Patro, Rachelle Trahan, PK Dang, Rachelle Sanderson
Consultant	Vijay Kunada (Neel Schaffer Inc.)

2. **CURRENT CRPC/BRMPO PLANNING STUDIES**
   Sooraz Patro provided a brief overview of the various planning studies currently underway as below:
   a) Long-Range Transportation Plan (MOVE 2046) – estimated date of completion March 2022; shared: public involvement/input through metro quest surveys, regional coordination, congestion mitigation process etc.
   b) Regional Bicycle and Pedestrian Plan (RBPP) – estimated date of completion December 2021; shared: project timeline, overall vision, policy visioning etc.
   c) Ferry Feasibility Study (FFS) – estimated date of completion May 2022; shared: project schedule, preliminary analysis and background research.

3. **TIMELINE FOR AIR QUALITY CONFORMITY ANALYSIS (MOVE 2046)**
   Sooraz Patro relayed the staff generated timeline established for review as below:

Date	Event
April 29, 2021	Inter-Agency Coordination Committee Kick-off Meeting
August 30, 2021	**Inter Agency Coordination Committee 2nd Meeting**
Sept. 16, 2021	Initiate/Conduct **Air Quality Conformity Analysis** (TPC Selected Projects)
Jan 15, 2022	**Inter Agency Coordination Committee 3rd Meeting**
Feb. 15, 2022	Finalize **Air Quality Conformity Analysis** (TPC Selected Projects)
March 1, 2022	**Inter Agency Coordination Committee 4th Meeting**
March 16, 2022	Transportation Policy Committee Review and **Final Approval of Projects (which meet AQ Conformity)** as well as 10-year TIP.

   The Committee unanimously approved the timeline.

4. **MOVES3 RELATED UPDATE, UPCOMING TRAINING, DATA NEEDS**
   Sooraz Patro provided a brief overview of the new MOVES3 modeling platform as below:
   ➢ MOVES3, a state-of-the-science upgrade to EPA's modeling tools, is EPA's latest model for estimating air pollution emissions from cars, trucks, motorcycles, and buses, as well as many categories of nonroad equipment.

➢ MOVES3 Information for Experienced MOVES Modelers on May 5, 2021; 1-3 pm CST
➢ Overview of EPA's Motor Vehicle Emission Simulator (MOVES3)- Report Available.
➢ Any Data Requirements: Carlos McCloud and Jeffrey Riley further provided information on upcoming training/webinars on new model input parameters and training resources.

5. **FUTURE PROJECTS CONCURRENCE**
Dawn Sholmire introduced the following capacity related projects provided by LADOTD Planning section which will need Air Quality emission modeling and conformity:
   a) H.003771 I-10@LA 74 Interchange
   b) H.012311 LA 429 CONNECTOR (LA 30/LA 73 TO US 61)
   c) I-10 @ LA 429 Interchange plus new extension
   d) I-12 HOV Lanes
   e) LA 3127 Extension LA 70 to LA 1
   f) H.009300 HOOPER ROAD WIDENING (LA 3034 - LA 37)

Sooraz further informed the Committee that the above projects were already included in the Existing + Committed Network for the MOVE 2046 model efforts as well as metropolitan transportation plan.

Vijay Kunada and Sooraz Patro requested LADOTD to provide further information on the above projects viz. project timelines, project staging and collaborative efforts with local jurisdictions. Dawn Sholmire assured to provide the information by next week.

Sooraz Patro briefed the Committee on the Call for Projects STPBG>200K issued by CRPC on December 2020. Further, Sooraz provided a brief overview on: total number of project submissions, associated project costs/funding requests, and shared map showcasing project locations, timeline for final project staging and phasing. Additionally, Sooraz introduced the Committee with the following capacity related projects which were submitted:
   a) Airline Highway, South (Parish Line to Bluebonnet Blvd.) [Capacity]
   b) Airline Highway, North ((Florida Blvd to I-110)) [Capacity]
   c) Juban Road Extension North [New Roadway]
   d) Gonzalez/ASC Parish Airline Hwy Superstreet

Sooraz and Vijay confirmed the inclusivity of the above projects in the Existing + Committed Network for the MOVE 2046 model efforts as well as metropolitan transportation plan.

6. **OTHER BUSINESS**
Jefferey Riley informed the Committee on sharing Air Quality modeling related training resources with CRPC staff. Carlos, also committed to providing training opportunities as available to CRPC staff.

7. **ADJOURNMENT**
There being no further business the meeting was adjourned at 2:45 pm. Jamie Setze thanked everyone for attending the meeting and providing valuable insights.

MEETING MINUTES OF
THE CAPITAL REGION METROPOLITAN PLANNING ORGANIZATION
INTER-AGENCY COORDINATING COMMITTEE (AQ) 2nd MEETING
THURSDAY, DECEMBER 16, 2021 | 2:15 PM – 3:15 PM | VIRTUAL MEETING VIA TEAMS

1. **CALL TO ORDER AND INTRODUCTIONS**

   Jamie Setze called the meeting to order at 2:20 pm. Roll was recorded and a quorum was established.

   Committee members present:

Agency	Attendees
FHWA	Carlos McCloud, Mary Stringfellow
FTA	Lynn Hayes
EPA	Jeffrey Riley
DEQ	Vivian Johnson, Jason Meyers
LADOTD	Dawn Sholmire, Mary Elliot,
CRPC	Jamie Setze, Sooraz Patro, Mishuk Majumder, PK Dang
Consultant	Vijay Kunada, Nicholas Broussard (Neel Schaffer Inc.)

2. **CURRENT CRPC/BRMPO PLANNING STUDIES**

   Sooraz Patro provided a brief overview of the various planning studies currently underway as below:

   a) Long-Range Transportation Plan (MOVE 2046) – shared: updated project timeline, updated on planning process related to public involvement/input, project selection criteria, historical funding/financial analysis including draft staged improvement plan etc.

Phase	2021												2022		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
Visioning / Outreach	👥								👥				👥		
Needs Assessment									①						
Strategies & Projects															
Financial Plan															
Staged Improvement Program															
Air Quality Analysis															
Finalizing the Plan											②				③

   👥 Round of Community Engagement

   ① Needs Analysis Report

   ② Draft Plan

   ③ Plan Adoption

   MetroQuest Survey #2:
   Survey Responses: 1500+
   Survey Link

   ## The Planning Process Update

Project Prioritization Criteria

- Congestion Reduction
- Safety Benefits
- Freight Benefits
- Protect the Environment
- Benefit Cost Ratio
- Bicycle and Pedestrian Benefits
- Supports Existing Plans

Estimated Funding by Draft MOVE 2046 Plan Stages

Stage 1 (2021 – 2027) - $567 million

Stage 2 (2028 – 2036) - $803 million

Stage 3 (2037 – 2046) - $981 million

Total (2021 – 2046) - $2.3 billion
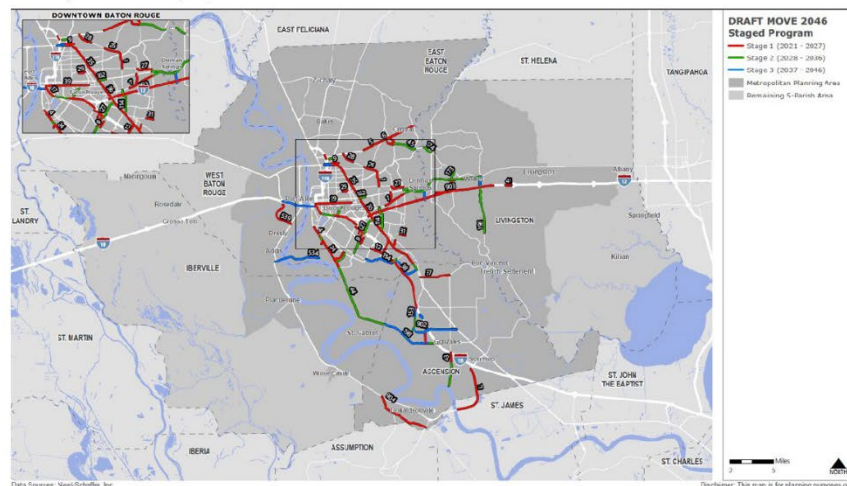
Nicholas Broussard and Vijay Kunada provided a snapshot of the current tasks within MOVE 2046. Further, they informed the Committee on the following next steps:

- Review Draft SIP with LADOTD
- Air Quality Conformity Analysis on January 19, 2022
- Present Final Draft SIP on January 25th TPC Meeting
- 30-day Public Comment Period
- Plan Adoption – March 9, 2022

MEETING MINUTES OF
THE CAPITAL REGION METROPOLITAN PLANNING ORGANIZATION
INTER-AGENCY COORDINATING COMMITTEE (AQ) 2nd MEETING
THURSDAY, DECEMBER 16, 2021 | 2:15 PM – 3:15 PM | VIRTUAL MEETING VIA TEAMS

b) Regional Bicycle and Pedestrian Plan (RBPP) – updated timeline, preliminary analysis, public engagement and stakeholder collaborations, policy visioning etc.

Rachelle Trahan provided a brief synopsis on RBPP and the next steps.

Completed
- Existing Conditions Analysis
- Draft Network Development

In Progress
Public Engagement
- Interactive Public Input Map
- Public Open House December 14th 12-1

Up Next
Project Prioritization Analysis

Individual Parish stakeholder meetings to determine project feasibility

On the horizon
Advisory group meetings to discuss Project Prioritization

Policy and Design Guidelines Development

3. **TIMELINE FOR AIR QUALITY CONFORMITY ANALYSIS (MOVE 2046)**
   Sooraz Patro relayed to the Committee an updated timeline as below:

Date	Event
April 29, 2021	Inter-Agency Coordination Committee Kick-off Meeting
December 16, 2021	**Inter Agency Coordination Committee 2nd Meeting**
December 8, 2021	Initiate/Conduct **Air Quality Conformity Analysis** (TPC Selected Projects) w/ dummy VMT values
Jan 15, 2022	**Inter Agency Coordination Committee 3rd Meeting**
Feb. 15, 2022	Finalize **Air Quality Conformity Analysis** (TPC Selected Projects)
March 1, 2022	**Inter Agency Coordination Committee 4th Meeting**
March 9, 2022	Transportation Policy Committee Review and **Final Approval of Projects (which meet AQ Conformity)** as well as 10-year TIP.

4. **MOVES3 AIR QUALITY MODELING UPDATE**
   Sooraz Patro informed the Committee the key talking points within the agenda item as below:
   a) Identifying Base Year for VMT/model run
      Nicholas Broussard further elaborated on the importance in determining the Base Year for VMT.
      Additionally, Nicholas briefed the Committee on:
      • Travel Demand Model Base Year of MOVES 2046 is 2020 (Pre-COVID Conditions)
      • Required MOVES 3 analysis years
         • 2020
         • 2022
         • 2027
         • 2036
         • 2046
      • Recommend using 2020 as Base Year for MOVES 3 analysis

   Sooraz spearheaded ensuing discussion to determine Base Year VMT by seeking input from each of the IACC member agency's point person. Carlos McCloud (FHWA) suggested using 2018 or 2019 VMT dataset, due to the robust nature of the datasets as well as reflective of real-life conditions prior to COVID-19 which started in 2020. Jeffrey Riley (EPA)and Vivian Johnson (DEQ)was agreeable to using either of 2018 or 2019 dataset. Dawn Sholmire (LADOTD) agreed to use 2018 or 2019 VMT data, but suggested

CRPC/Consultant compare the 2018, 2019, 2020 VMT datasets before taking a concrete decision.

Sooraz requested LADOTD to share VMT data sets for 2018, 2019 and 2020 with staff and/or consultants.

b) MOVES model run input parameters

Nicholas Broussard informed the Committee that MOVES model inputs have been developed using local data, prior MOVES 2014a inputs, MOVE 2046 Travel Demand Model, probe data, and EPA default data. Default data has been used only where local data or prior model inputs could not be obtained. Model runs are at the Parish-level and are conducted for Weekdays in August, consistent with the previous air quality effort.

Motor Vehicle Emissions Budgets

Parish	2022 Emissions Budgets (MVEB) Daily Emissions (tons/day)	
	NOx	VOC
Ascension Parish	2.64	2.59
East Baton Rouge Parish	6.37	6.25
Iberville Parish	1.07	0.55
Livingston Parish	3.14	3.27
West Baton Rouge Parish	1.15	0.53
Total	14.37	13.19

Parish	2042 Emissions Budgets (MVEB2027) Daily Emissions (tons/day)	
	NOx	VOC
Ascension Parish	2.21	2.51
East Baton Rouge Parish	4.62	5.09
Iberville Parish	0.72	0.40
Livingston Parish	2.55	3.12
West Baton Rouge Parish	0.85	0.43
Total	10.95	11.55

Parish	2032 Emissions Budgets (MVEB2027) Daily Emissions (tons/day)	
	NOx	VOC
Ascension Parish	2.21	2.51
East Baton Rouge Parish	4.62	5.09
Iberville Parish	0.72	0.40
Livingston Parish	2.55	3.12
West Baton Rouge Parish	0.85	0.43
Total	10.95	11.55

Parish	2027 Emissions Budgets (MVEB2027) Daily Emissions (tons/day)	
	NOx	VOC
Ascension Parish	2.21	2.51
East Baton Rouge Parish	4.62	5.09
Iberville Parish	0.72	0.40
Livingston Parish	2.55	3.12
West Baton Rouge Parish	0.85	0.43
Total	10.95	11.55

MOVES 3 Inputs

Category	MOVES Input	Source	Comments
Vehicles	sourceTypeYear	Prior MOVES Modeling; TDM	MOVES 2014a inputs for 2022 and 2027 were used for those years. Household growth rates from 2020 to 2022, 2027 to 2036, and 2036 to 2046 were used to grow counts from 2022 to 2020, 2027 to 2036, and 2036 to 2046.
	ageDistribution	Prior MOVES Modeling	Age distributions for Years 2022 and Years 2027 were established in the prior AQ analysis. Growth rates between these years were used to interpolate or extrapolate changes in vehicle ages to the other years.
Roadways	roadTypeDistribution	Local vehicle classification counts	Vehicle classification counts obtained from CRPC were used to develop general distributions.
VMT	HPMSVTypeYear	LADOTD; HPMS	Still awaiting data from LADOTD
	HPMSVTypeDay		
	monthVMTFraction dayVMTFraction hourVMTFraction	Prior MOVES Modeling	Model uses the same values from the MOVES 2014a inputs.

Category	MOVES Input	Source	Comments
Speeds	avgSpeedFraction	NPMRDS/Probe Analytics Suite	The model uses NPMRDS/Probe Analytics Suite probe data based on auto and truck vehicular splits. Similar source types (auto and truck) use the same distribution.
Ramps	rampFraction	Travel Demand Model VHTs	The MOVE 2046 Travel Demand Model produces VHT on each roadway link, allowing the proportion of VHT on ramps to be calculated.
Meteorology	ZoneMonthHour		
Fuel	FuelSupply FuelFormulation FuelUsageFraction AVFT	MOVES default	MOVES default fuel data obtained from MOVES3

c) MTP Staged Improvement Plan - Capacity Projects

Vijay Kunada briefed the Committee of the SIP and assured project inclusion for Air Quality emission modeling.

MTP Staged Improvement Program
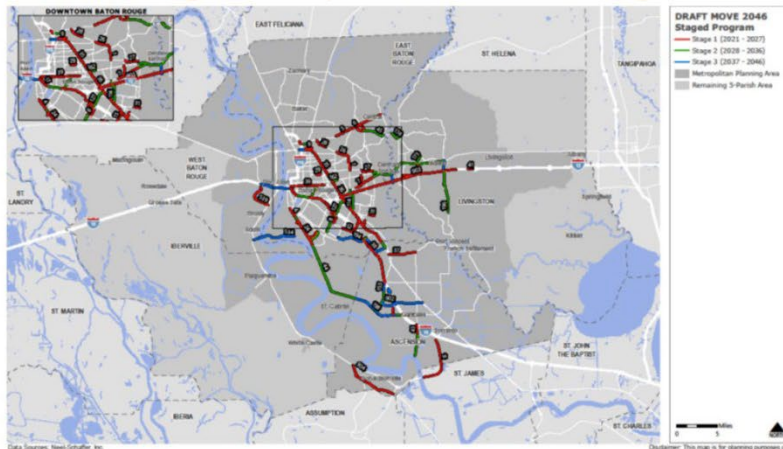
5. **FUTURE PROJECTS CONCURRENCE**

Sooraz confirmed with LADOTD to see if the previous list of projects submitted as below is unchanged. Dawn Sholmire had no further changes to the capacity related project list.
   a) H.003771 I-10@LA 74 Interchange
   b) H.012311 LA 429 CONNECTOR (LA 30/LA 73 TO US 61)
   c) I-10 @ LA 429 Interchange plus new extension
   d) I-12 HOV Lanes
   e) LA 3127 Extension LA 70 to LA 1
   f) H.009300 HOOPER ROAD WIDENING (LA 3034 - LA 37)

Sooraz Patro informed the Committee that following capacity related projects from the CFP STPBG>200K remains unchanged:
   a) Airline Highway, South (Parish Line to Bluebonnet Blvd.) [Capacity]
   b) Airline Highway, North ((Florida Blvd to I-110)) [Capacity]
   c) Juban Road Extension North [New Roadway]
   d) Gonzalez/ASC Parish Airline Hwy Superstreet

6. **OTHER BUSINESS**

Carlos McCloud suggested CRPC staff to establish retrieval of Vehicle Classification data from DMV on an annual basis. This would help in both Air Quality modeling as well as Travel Demand modeling efforts of CRPC. Sooraz concurred and suggested Carlos to help establish contact with DMV.

7. **ADJOURNMENT**

There being no further business the meeting was adjourned at 3:15 pm. Sooraz Patro thanked everyone for attending the meeting and providing valuable insights.

Appendix C: Examples of MOVES Model Inputs

Road Type Distribution

sourceTypeID	roadTypeID	roadTypeVMTFraction
11	1	0.00000
11	2	0.00000
11	3	0.04208
11	4	0.00341
11	5	0.95451
21	1	0.00000
21	2	0.00000
21	3	0.02814
21	4	0.05251
21	5	0.91935
31	1	0.00000
31	2	0.00000
31	3	0.04738
31	4	0.05426
31	5	0.89836
32	1	0.00000
32	2	0.00000
32	3	0.05271
32	4	0.03645
32	5	0.91084
41	1	0.00000
41	2	0.00000
41	3	0.01563
41	4	0.07020
41	5	0.91416
42	1	0.00000
42	2	0.00000
42	3	0.01563
42	4	0.07020
42	5	0.91416
43	1	0.00000
43	2	0.00000
43	3	0.01563
43	4	0.07020
43	5	0.91416
51	1	0.00000
51	2	0.00000
51	3	0.05404
51	4	0.00781
51	5	0.93815
52	1	0.00000
52	2	0.00000
52	3	0.04398

roadTypeDistribution   sourceTypeYear

Source Type Population

	A	B	C
1	yearID	sourceTypeID	sourceTypePopulation
2	2022	11	56,472
3	2022	21	271,505
4	2022	31	130,630
5	2022	32	39,891
6	2022	41	8
7	2022	42	44
8	2022	43	447
9	2022	51	89
10	2022	52	3,105
11	2022	53	218
12	2022	54	643
13	2022	61	2,059
14	2022	62	918
15			
16			

Daily VMT

	A	B	C	D	E
1	HPMSVtyp	yearID	monthID	dayID	VMT
2	10	2022	8	5	132,502
3	25	2022	8	5	11,302,724
4	40	2022	8	5	21,815
5	50	2022	8	5	129,998
6	60	2022	8	5	377,632
7					

Vehicle Age Distribution

	A	B	C	D
1	sourceTypeID	yearID	ageID	ageFraction
2	11	2022	0	0.0702
3	11	2022	1	0.0693
4	11	2022	2	0.0670
5	11	2022	3	0.0619
6	11	2022	4	0.0574
7	11	2022	5	0.0296
8	11	2022	6	0.0256
9	11	2022	7	0.0224
10	11	2022	8	0.0215
11	11	2022	9	0.0195
12	11	2022	10	0.0185
13	11	2022	11	0.0127
14	11	2022	12	0.0068
15	11	2022	13	0.0644
16	11	2022	14	0.0331
17	11	2022	15	0.0546
18	11	2022	16	0.0536
19	11	2022	17	0.0458
20	11	2022	18	0.0273
21	11	2022	19	0.0448
22	11	2022	20	0.0331
23	11	2022	21	0.0292
24	11	2022	22	0.0224
25	11	2022	23	0.0156
26	11	2022	24	0.0176
27	11	2022	25	0.0166
28	11	2022	26	0.0127
29	11	2022	27	0.0087
30	11	2022	28	0.0049
31	11	2022	29	0.0027
32	11	2022	30	0.0306
33	21	2022	0	0.0702
34	21	2022	1	0.0708
35	21	2022	2	0.0720
36	21	2022	3	0.0732
37	21	2022	4	0.0744
38	21	2022	5	0.0573
39	21	2022	6	0.0531
40	21	2022	7	0.0487
41	21	2022	8	0.0442
42	21	2022	9	0.0400
43	21	2022	10	0.0357
44	21	2022	11	0.0303

roadTypeDistribution   sou

Humidity and Temperature

monthID	zoneID	HourID	temperature	relHumidity
8	220330	1	75.7	88.1
8	220330	2	75.1	89.4
8	220330	3	74.5	90.2
8	220330	4	74.0	90.7
8	220330	5	73.6	91.4
8	220330	6	73.2	91.7
8	220330	7	73.2	91.9
8	220330	8	76.6	87.9
8	220330	9	81.1	80.1
8	220330	10	85.1	72.3
8	220330	11	88.0	66.2
8	220330	12	90.1	61.6
8	220330	13	91.4	58.7
8	220330	14	92.1	56.9
8	220330	15	92.0	56.6
8	220330	16	91.4	57.4
8	220330	17	90.4	58.9
8	220330	18	88.6	61.9
8	220330	19	86.1	66.8
8	220330	20	82.2	75.0
8	220330	21	79.9	80.4
8	220330	22	78.5	83.2
8	220330	23	77.4	85.4
8	220330	24	76.5	86.8

Fuel Supply

fuelRegion	fuelYearID	monthGroup	fuelFormul	marketSha	marketShareCV
1E+08	2022	8	90	1	0.5
1E+08	2022	8	9048	1	0.5
1E+08	2022	8	25003	1	0.5
1E+08	2022	8	27002	1	0.5
1E+08	2022	8	28001	1	0.5

Fuel Formulation

fuelFormulationID	fuelSubtypeID	RVP	sulfurLevel	ETOHVolume	MTBEVolume	ETBEVolume	TAMEVolume	aromaticContent	olefinContent	benzeneContent	e200	e300	BioDieselEst	CetaneIndex	PAHCont	T50	T90
10	10	6.9	30	0	0	0	0	26.1	5.6	1	41.09	83.09	0	0	0	218	329
20	20	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0
30	30	0	7.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
50	51	7.7	11	85	0	0	0	0	0	0	999	999	0	0	0	999	999
90	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96	10	8.7	338	0	0	0	0	26.4	11.9	1.64	50	83	0	0	0	199.816	329.409
97	10	6.6	150	0	0	0	0	24	11	0.8	52	84	0	0	0	195.735	324.864
98	12	8.8	30	10	0	0	0	25.77	8.44	0.65	47.61	84.89	0	0	0	212.282	321.719
99	12	8.8	30	10	0	0	0	25.77	8.44	0.65	47.61	84.89	0	0	0	212.282	321.719
9048	12	10	10	10	0	0	0	24.1945	8.90396	0.985782	48.6671	84.7811	0	0	0	206.221	322.178
9348	10	9	10	0	0	0	0	26.3945	7.30396	0.985782	41.6671	84.9811	0	0	0	216.822	320.404
9648	15	9.85	9.5	15	0	0	0	22.9847	8.45876	0.936493	56.5473	85.5748	0	0	0	163.629	319.045
25003	21	0	6	0	0	0	0	0	0	0	0	0	3.4	0	0	0	0
27002	51	7.7	8	74	0	0	0	0	0	0.16	999	999	0	0	0	999	999
28001	30	0	7.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Fuel Usage

countyID	fuelYearID	modelYear	sourceBinf	fuelSupply	usageFraction
22033	2022	0	1	1	1
22033	2022	0	2	2	1
22033	2022	0	3	3	1
22033	2022	0	5	1	0.982134
22033	2022	0	5	5	0.017866
22033	2022	0	9	9	1

Appendix D: MOVES Summary Outputs

Parish	Year	Month	Day	State	County	Run	NMHC	NOx	TotalHC	VOC
Ascension	2022	8	5	22	22005	2	3,684	3,865	3,933	3,926
	2027	8	5	22	22005	2	2,509	1,982	2,712	2,670
	2036	8	5	22	22005	2	2,136	1,406	2,347	2,272
	2046	8	5	22	22005	2	2,399	1,525	2,660	2,552
East Baton Rouge	2022	8	5	22	22033	3	9,908	10,956	10,828	10,524
	2027	8	5	22	22033	2	5,591	5,957	6,341	5,930
	2036	8	5	22	22033	2	4,244	4,539	4,989	4,496
	2046	8	5	22	22033	2	4,413	4,745	5,229	4,675
Iberville	2022	8	5	22	22047	2	875	2,095	1,038	927
	2027	8	5	22	22047	2	465	1,329	629	492
	2036	8	5	22	22047	2	357	1,076	535	376
	2046	8	5	22	22047	2	390	1,263	610	410
Livingston	2022	8	5	22	22063	2	4,652	5,364	5,000	4,957
	2027	8	5	22	22063	2	3,106	2,803	3,401	3,305
	2036	8	5	22	22063	2	2,612	1,983	2,928	2,778
	2046	8	5	22	22063	2	2,915	2,133	3,298	3,100
West Baton Rouge	2022	8	5	22	22121	4	875	2,245	1015	927
	2027	8	5	22	22121	2	478	1,241	612	505
	2036	8	5	22	22121	2	370	876	512	390
	2046	8	5	22	22121	2	423	1,163	627	446

Appendix E: MOVES Model Input Development

This section includes a description of the data and procedures used to develop the inputs for the MOVES3 model to determine air quality conformity for the MOVE 2046 Metropolitan Transportation Plan. It does not include how to operate the model.

Required Model Inputs

The MOVES3 model requires the user to provide the following inputs for the RunSpec:

- Scale
- Time Spans
- Geographic Bounds

- Vehicles/Equipment
- Road Type
- Pollutants and Processes

The MOVES3 model requires the user to provide the following inputs for the County Data Manager:

- Age Distribution
- Average Speed Distribution
- Fuel Data
- Meteorology Data

- Road Type Distribution
- Source Type Population
- Vehicle Type VMT
- I/M Programs

Input Development Methodology

This section describes the methodology used to develop the necessary inputs for each model year.

roadTypeDistribution

The MOVES model requires a distribution of VMT as the fraction of vehicles on each road type by source type.

$$VMT\ fraction = \frac{VMT_i\ on\ road\ type}{\Sigma\ VMT_i\ of\ source\ type}$$

Where i = source type

This data was developed using local vehicle classification summaries of the daily VMT data by the functional classification. A road type fraction was not assigned to the non-road classification. This data was adjusted in future years by analyzing the change in VMT among the

road classifications in the travel demand model and proportionately changing the base year road type distribution to match this shift in traffic.

HPMSVTypeDay

Base year (2020) VMT data was provided by LADOTD at the Parish level for each Parish within the study area. The TDM total VMTs for the base year and each analysis year were used to develop growth factors that were applied to the LADOTD base year VMTs obtain analysis year VMTs.

monthVMTFraction

Since the MOVE 2046 air quality model runs use daily VMT, this model input is not required. However, it is in the input files and uses data from prior air quality modeling efforts.

dayVMTFraction

Since the MOVE 2046 air quality model runs use daily VMT, this model input is not required. However, it is in the input files and uses data from prior air quality modeling efforts.

hourVMTFraction

This input remains the same from the prior air quality modeling efforts.

2020

Parish	ASC	EBR	IBR	LIV	WBR
Total VMT	3,797,973	11,813,376	1,531,818	4,773,867	1,999,338
VMT_10	44,724	130,827	12,966	48,121	13,083
VMT_25	3,532,599	11,159,799	1,345,866	4,387,088	1,802,841
VMT_40	9,071	21,539	6,923	13,630	7,647
VMT_50	53,979	128,354	42,132	82,769	44,651
VMT_60	157,600	372,857	123,931	242,258	131,116

Model VMT

Parish	ASC	EBR	IBR	LIV	WBR
2020	3,956,751	11,258,585	1,592,810	4,887,744	1,941,975
2022	4,090,448	11,402,775	1,639,211	5,028,619	1,993,293
2027	4,469,824	12,223,246	1,773,896	5,532,276	2,159,250
2036	5,139,567	13,205,397	2,094,065	6,356,720	2,453,097
2046	5,975,748	14,414,505	2,501,735	7,280,629	2,808,230

VMT Factor

Parish	ASC	EBR	IBR	LIV	WBR
2020	1.0000	1.0000	1.0000	1.0000	1.0000
2022	1.0338	1.0128	1.0291	1.0288	1.0264
2027	1.1297	1.0857	1.1137	1.1319	1.1119
2036	1.2989	1.1729	1.3147	1.3005	1.2632
2046	1.5103	1.2803	1.5706	1.4896	1.4461

2022

Parish	ASC	EBR	IBR	LIV	WBR
Total VMT	3,926,305	11,964,671	1,576,443	4,911,460	2,052,171
VMT_10	46,235	132,502	13,344	49,508	13,429
VMT_25	3,651,964	11,302,724	1,385,073	4,513,534	1,850,481
VMT_40	9,377	21,815	7,125	14,023	7,849
VMT_50	55,803	129,998	43,359	85,155	45,831
VMT_60	162,926	377,632	127,541	249,240	134,581

2036

Parish	ASC	EBR	IBR	LIV	WBR
Total VMT	4,933,325	13,856,121	2,013,879	6,208,618	2,525,558
VMT_10	58,094	153,449	17,046	62,583	16,527
VMT_25	4,588,621	13,089,530	1,769,408	5,705,596	2,277,343
VMT_40	11,782	25,263	9,102	17,727	9,659
VMT_50	70,115	150,549	55,391	107,645	56,403
VMT_60	204,713	437,331	162,932	315,067	165,625

2027

Parish	ASC	EBR	IBR	LIV	WBR
Total VMT	4,290,457	12,825,572	1,705,971	5,403,382	2,223,031
VMT_10	50,523	142,036	14,440	54,466	14,547
VMT_25	3,990,672	12,115,996	1,498,877	4,965,600	2,004,549
VMT_40	10,247	23,384	7,710	15,428	8,502
VMT_50	60,978	139,352	46,922	93,684	49,647
VMT_60	178,036	404,804	138,021	274,204	145,785

2046

Parish	ASC	EBR	IBR	LIV	WBR
Total VMT	5,735,951	15,124,810	2,405,939	7,111,001	2,891,180
VMT_10	67,545	167,499	20,365	71,679	18,919
VMT_25	5,335,165	14,288,028	2,113,874	6,534,868	2,607,032
VMT_40	13,699	27,576	10,874	20,303	11,058
VMT_50	81,522	164,333	66,174	123,291	64,568
VMT_60	238,018	477,374	194,651	360,860	189,602

averageSpeedFraction

For the purposes of this air quality modeling effort new speed distributions were developed. NPMRDS probe analytics data was used to develop distributions for classes 21 and 61, representing autos and trucks. Data for source types 11, 31, 32, 41, 42, and 43 use the same distribution as source type 21 since they are the closest equivalent (cars), while data for source types 51, 52, 53, 54, and 62 use the same distribution as source type 61 (trucks).

The speed distributions were updated by:

1. Using the RITIS Probe Data to obtain the average hourly speeds (by link) for the base year, 2020.

2. Assigning each link in the data to a MOVES speed bin and MOVES roadway type.

3. Summing the total VHT by Parish for each speed bin and roadway type.

4. Using the calculated VHT to develop the relative percent of the total for each combination of vehicle class, hour, and bin.

5. Using the TDM to obtain the average daily hourly speeds (by link) for each model year and calculating adjustment factors between the base year and an analysis year that are then applied to the base year RITIS Probe Data speeds to estimate future average hourly speeds.

6. Creating an adjustment factor based on the relative percent of change to be applied to the base year distribution to create an adjusted distribution for the analysis year.

7. Normalizing the analysis year distribution so that the percentages for all speed bins add up to 1.0.

ageDistribution

The MOVES model requires a vehicle distribution as the fraction of vehicles by age and source type. The age distributions were developed based on the MOVE 2042 age distributions for 2022 and 2027 and adjusted for 2036 and 2046 using extrapolation of the change from 2022 to 2027.

rampFraction

The TDM provides outputs on the daily VHT on each roadway link. The percent of the ramp VHT to the total interstate VHT is the rampFraction input. This input was calculated for each individual analysis year even though MOVES 3 does not make use of it; however, it has been developed in case it is used in future years.

$$Ramp\ fraction = \frac{VHT\ on\ Interstate\ Ramps}{Total\ VHT\ on\ Interstate}$$

ZoneMonthHour

This model input used the default MOVES data.

FuelSupply

This model input used the default MOVES data.

FuelFormulation

This model input used the default MOVES data.

FuelUsageFraction

This model input used the default MOVES data.

AVFT

This model input used the default MOVES data.