TECHNICAL MEMORANDUM
FUTURE64 EXISTING CONDITIONS

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Project:	Future64: Communities » Transportation » Together *Kingshighway Blvd. to Jefferson Ave.*
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INTRODUCTION

This Future64 Existing Conditions Assessment Memorandum documents existing conditions along the I-64 corridor from the western limit of Kingshighway Blvd. to the eastern limit of Jefferson Ave., a distance of 2.7 miles. This summary will inform the development of the Future64 project's Purpose and Need and the development of alternatives for the Future64 Planning and Environmental Linkages (PEL) study process.

PROJECT BACKGROUND

I-64 through St. Louis originally was a local route known as the "Red Feather Expressway," which began at the intersection of Skinker Blvd. and Clayton Ave. and continued east to the intersection of Market St. and Vandeventer Ave. Construction of the expressway began in the early 1930s, and was completed in 1937. After its opening, a series of projects expanded the highway farther east to the current interchange with Market St. During this same period, a western expansion of the expressway was constructed through St. Louis County known as the Daniel Boone Highway. In 1959, the western terminus of the "Red Feather Expressway" was connected to the Daniel Boone section, and was known as Route 40.

Construction continued into the 1980s as traffic volume increased with the completion of the westbound viaduct. In 1987, the Federal Highway Administration designated the portion of Route 40 between I-270 and I-44 as I-64.

No major projects occurred on I-64 between the late 1980s and mid-2000s. In the mid-2000s, MoDOT began updating I64 between I-270 and Kingshighway Blvd. to accommodate higher speeds and larger traffic volumes. East of Kingshighway Blvd., Compton Bridge was replaced in 2005. In the decade that followed, MoDOT upgraded I-64 at the Poplar Street Bridge, 6th St., and Jefferson Ave. interchanges. There was major growth in what is known as the Cortex Innovation District necessitating bridge replacements at Taylor Ave., Newstead Ave., Tower Grove Ave., and Boyle Ave. starting in 2012. Concurrent with the bridge replacement projects, an eastbound I-64 off ramp to Tower Grove Ave. and westbound I-64 on-ramp from Boyle Ave. was added to the corridor. Other than the improvements mentioned, most of I-64 from Kingshighway

Blvd. to Jefferson Ave. is the original infrastructure that was constructed between the 1930s and 1980s.

FUTURE64 EXISTING CONDITIONS STUDY AREA

The Future64 study area is focused on I-64 from Kingshighway Blvd. to the west and Jefferson Ave. to the east. The study area is broken into two tiers. The Tier 1 limits are defined as the area between Kingshighway Blvd. and Jefferson Ave. specific to the interstate system and contained within MoDOT right-of-way. The existing conditions assessment focuses on the MoDOT-owned roadway elements within the Tier 1 limits. Tier 2 limits extend north and south of the Tier 1 limits to include the cross streets and multimodal facilities that are part of the transportation system between Forest Park Ave. to the north and Route 100 (Chouteau Ave./Manchester Ave.) to the south. The elements assessed within the Tier 2 limits include the bike and pedestrian facilities on major routes such as, Forest Park Ave., and Route 100, as well as minor routes that cross the interstate.

Tier 1 and Tier 2 limits are shown in Figure 1.

Figure 1. Study Limits for Existing Conditions Assessment

METHODOLOGY

As-built plans from recent and historical projects were supplied by MoDOT, and a review was conducted to compare the plans with the current aerial imagery. A list of as-builts and reports used to compile information for this memorandum are provided in Attachment A. Using as-built plans, an inventory of the existing corridor characteristics within the study area was created. While as-built plan data was utilized, there is no guarantee the data from the as-built plans cited in this memorandum matches current field conditions. A full topographic survey of the Tier 1 limits would be needed to confirm the accuracy of the as-built plans. Using the as-built plans and aerial imagery, the general design characteristics of the study area and their deviations from current standards were identified. These are described in the following subsections. Attachment A has more detailed information on the existing conditions of the design elements within the study area.

TIER 1 HORIZONTAL AND VERTICAL GEOMETRY

Roadway geometrics consists of the horizontal and vertical alignments for the corridor, as well as other design features, such as superelevation and cross slope transitions. Because of constraints or evolving standards, some elements of the existing roadway system do not meet the design criteria described in the MoDOT Engineering Policy Guide (EPG) or AASHTO publication "A Policy on Geometric Design of Highways and Streets" (Green Book).

A review of the horizontal and vertical geometry was conducted on the ramps and mainline of I-64 within the Tier 1 limits. The elements of the horizontal geometry review included curve length, radius, and superelevation. Once these elements were determined, an operational speed was developed from the alignments using the most restrictive element. The operational speed was then compared to the posted speed of the corridor to see if it met current Green Book standards. The review of the vertical geometry included vertical curve lengths, stopping sight distance, and K-value to determine the operational speed of each segment.

In addition to the geometry review, the corridor was examined to determine lane balance, route continuity, number of through lanes, typical section elements, existing shoulder and travel lane widths, ramp spacing, ramp acceleration and deceleration lengths, horizontal stopping sight distance, clear zone, barrier types, and vertical clearances. In this memorandum, only values and areas that did not meet current design criteria and resulted in an operating speed less than the posted or advisory speed are noted on Figure 2.

LANE BALANCE,ROUTE CONTINUITY, AND NUMBER OF THROUGH LANES

As stated in Chapter 10.9.5.9 of the Green Book, "To realize efficient traffic operation through and beyond an interchange, there should be balance in the number of traffic lanes on the freeway and ramps. Design traffic volumes and a capacity analysis determine the basic number of lanes to be used on the highway and the minimum number of lanes on the ramps. The basic number of lanes should be established for a substantial length of freeway and should not be changed through pairs of interchanges, simply because there are substantial volumes of traffic entering and leaving the freeway. In other words, there should be continuity in the basic number

of lanes. As described later in this section, variations in traffic demand should be accommodated by auxiliary lanes where needed."

To achieve efficient interstate operations, route and interchange designs need to take lane balance, route continuity, and number of through lanes into account. The number of through lanes can be defined as the minimum number of lanes needed based on a capacity analysis that uses design traffic volumes. Lane balance is a design concept used to minimize the number of lane shifts needed to travel through an interchange to maintain efficient route operations. Route continuity in the context of this assessment is defined as maintaining a consistent number of through lanes, minimizing a driver's need to change lanes to travel a direct path through the corridor.

The corridor generally follows this principle. However, there are two locations in the study area that are inconsistent with the other interchanges on the corridor. The first is the left entrance ramp from Vandeventer Ave. to westbound I-64. The second is located at the Forest Park Ave. entrance ramp to eastbound I-64. At this location, I-64 maintains three mainline through lanes. One lane is developed from the left entrance ramp from Forest Park Ave., adding a lane to the section in this configuration. Lane 1 then becomes an exit-only lane that is dropped at the Jefferson Ave. exit. This is not desirable because it requires users to change lanes if they want to remain on I-64 through the Jefferson Ave. interchange.

TYPICAL SECTIONS

The mainline I-64 corridor has two distinct typical sections shown in Table 1. A four-lane section in each direction begins outside of the Tier 1 limits west of Kingshighway Blvd. and ends at the Boyle Ave. interchange. At the Boyle Ave. interchange, one lane is dropped eastbound at the exit to Vandeventer Ave. In the westbound direction, one lane is added with the entrance ramp from Vandeventer Ave. and continues to the west outside of the study limits. A three-lane section extends from east of these ramp connections through the study area ending at Jefferson Ave.

Table 1. Lane Configuration along I-64 (from West to East)

From	To	Distance (miles)	Number of Through Lanes Westbound	Number of Through Lanes Eastbound	Total Number of Through Lanes
Kingshighway Blvd.	Vandeventer Ave. Ramp	0.7 Mile	4 12-Foot Lanes	4 12-Foot Lanes	8 Lanes
Vandeventer Ave. Ramp	Jefferson Ave.	2.0 Miles	3 12-Foot Lanes	3 12-Foot Lanes	6 Lanes

Through Lanes

All existing through lanes within the mainline I-64 corridor are 12 feet in width, which satisfies MoDOT's lane width criteria per EPG 231.3. Table 1 summarizes the study area lane configurations.

Auxiliary Lanes

There are continuous auxiliary lanes at the west end of the corridor. On westbound I-64, a continuous auxiliary lane begins at the Boyle Ave. interchange and ends at the Kingshighway Blvd. interchange. In the eastbound direction, a continuous auxiliary lane begins at Kingshighway Blvd. and ends at Tower Grove Ave.

Ramps

The lane widths for the ramps range from 12 feet to 20 feet. The largest width occurring at the loop ramp at Grand Blvd. See Attachment A for a detailed breakdown of lane width by ramp.

Mainline and Auxiliary Lane Shoulders

The mainline and auxiliary lanes have continuous inside and outside shoulders the length of the Tier 1 limits. The inside shoulders range from 4 feet to 12 feet wide, but for much of the corridor they are 6 to 8 feet wide. The outside shoulders are consistently 10 feet wide. MoDOT requires 10-foot shoulders on major six-lane roadways per EPG 231.4. The outside shoulders meet this requirement. Most of the inside shoulders are less than 10 feet wide, which does not meet the MoDOT or AASHTO requirements of 10-foot-wide minimum shoulders. The one exception to this is the 12-foot-wide inside shoulders on the eastbound I-64 viaduct bridge from approximately Clayton Ave. to 275 feet east of Vandeventer Ave.

Ramp Shoulders

The shoulder widths of the ramps are not consistent, ranging from a curb and gutter section at the Market St./Forest Park Ave. interchange to 8 feet at the westbound I-64 entrance ramp at Boyle Ave. Attachment A has a detailed description of ramp widths.

HORIZONTAL ALIGNMENT

The horizontal alignment criterion that was used to evaluate the as-built horizontal geometry can be found in Chapter 230.1 Horizontal Alignment of the MoDOT EPG and Chapter 3 of the AASHTO publication “A Policy on Geometric Design of Highways and Streets.” Existing superelevations were evaluated using as-built information. There were deficiencies found on the ramps and the mainline, as illustrated in Figure 2a-c.

Horizontal Stopping Sight Distance

The Green Book defines sight distance as the length of roadway ahead that is visible to the driver. The available sight distance on a roadway should be sufficiently long to enable a vehicle traveling at or near the design speed to stop before reaching a stationary object in its path. For the purposes of this assessment, horizontal sight distance was measured graphically at the center of the inside lane of the horizontal curve tangent to the sight obstruction using Microstation design software and an aerial, as shown in Figure 3-13 of the Green Book. Because of the lack of survey information, the only available vertical information for the roadway and obstructions were scanned as-builts with unverifiable scales, this horizontal graphical measurement is the only evaluation completed. More accurate survey and vertical information would be needed to evaluate each curve to determine if the vertical alignment and height of the obstruction affects the stopping sight distance. The graphically measured horizontal stopping sight distance for each curve was then compared to the recommended stopping sight distance in the Green Book.

The posted speed of mainline I-64 is 55 miles per hour (mph). For this speed, Green Book Table 3-1 recommends a sight distance of 495 feet. Figure 2a-c in this memo illustrates the measured horizontal stopping sight distances that do not meet the recommended sight distance. Since the data used to evaluate the horizontal sight distance was not complete, the points illustrated in the figure represent locations with potential issues and not necessarily a substandard stopping distance. Further study with surveyed heights of the obstructions and the vertical alignment of the roadway would be needed to thoroughly determine if there is a substandard sight distance at these documented locations.

VERTICAL ALIGNMENT

The vertical alignment criterion that was used to evaluate the as-built vertical geometry can be found in Chapter 230.2 Vertical Alignment of the MoDOT EPG and Chapter 3 of the AASHTO publication "A Policy on Geometric Design of Highways and Streets." Existing stopping sight distances were evaluated for crest vertical curves, and K-values were evaluated for sag curves on existing ramps and the mainline. Where there is continuous lighting, the sag curves were also evaluated comparing the comfort criteria length to the length of the vertical curve.

The curves deficient in either stopping sight distance or comfort criteria are shown in Figure 2a-c. A more detailed evaluation of each curve can be found in Attachment A.

RAMP SPACING AND ACCELERATION-DECELERATION LANE LENGTHS

Ramp spacing is an important design element that contributes to the overall safety of the corridor. Proper ramp spacing allows enough space for vehicles entering the roadway to accelerate properly and merge with the traffic flow. It allows vehicles departing the roadway the proper space to change lanes and decelerate as they leave the mainline. This proper spacing also applies to continuous auxiliary lanes ensuring there is adequate distance for the weaving traffic to complete the intended operation smoothly. Adequate ramp spacing accommodates needed spacing intervals for guide signs at the ramps. There is a more detailed discussion on interchange spacing requirements in the Interchange section.

The ramp lengths were evaluated to determine if the design accommodates proper acceleration and deceleration of vehicles entering and exiting the mainline travel way. Using a combination of Google Earth and as-built plans, the length and grade for each ramp was determined. After applying the grade factors found in Green Book Table 10-5, the existing length was then compared to the recommended lengths given in Green Book Tables 10-4 & 10-6. Ramp length deficiencies are noted in Figure 2a-c. Ramp and interchange spacings are described in the Interchange section.

Figure 2a. I-64 Roadway Deficiencies (West to East)

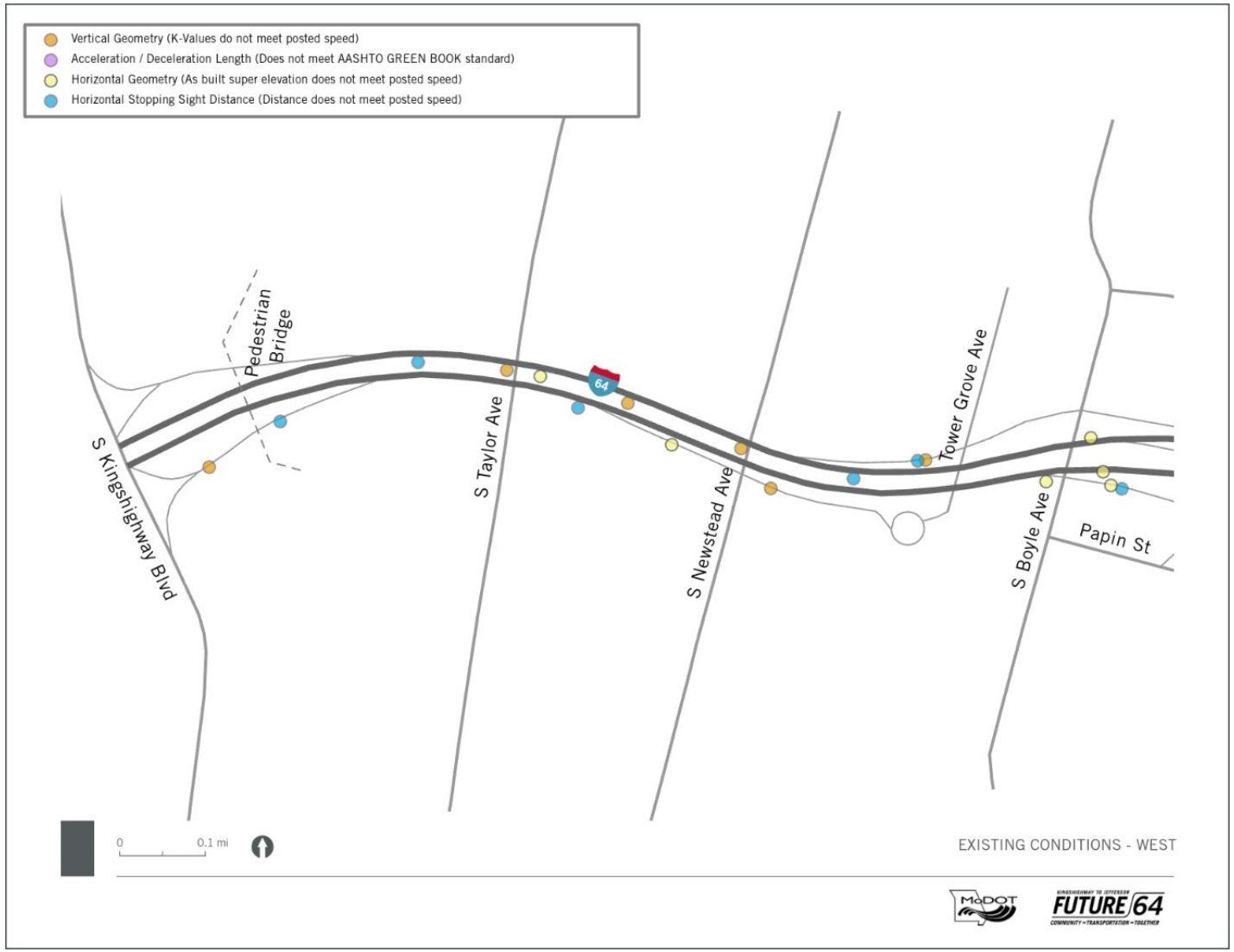


Figure 2b. I-64 Roadway Deficiencies (West to East)

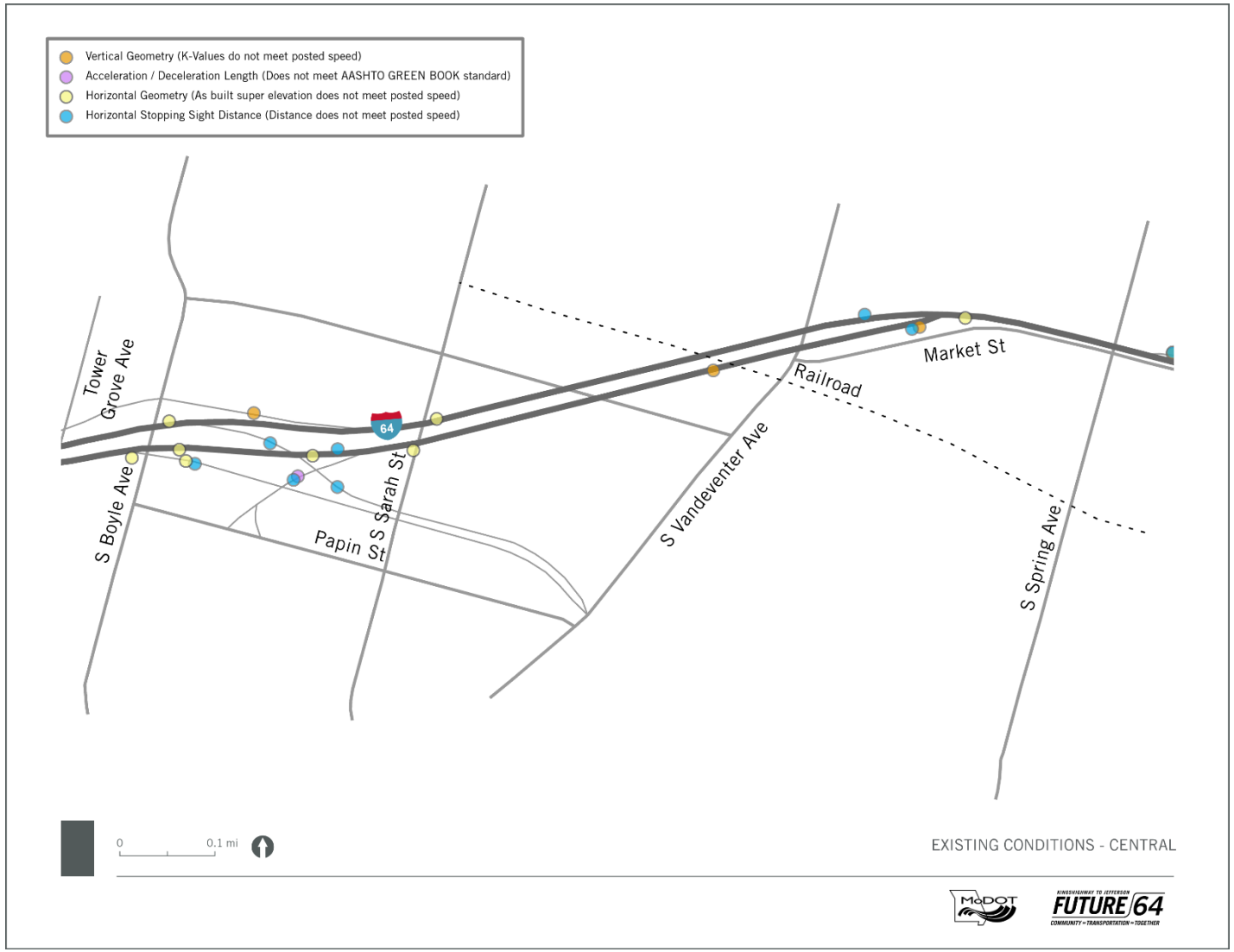
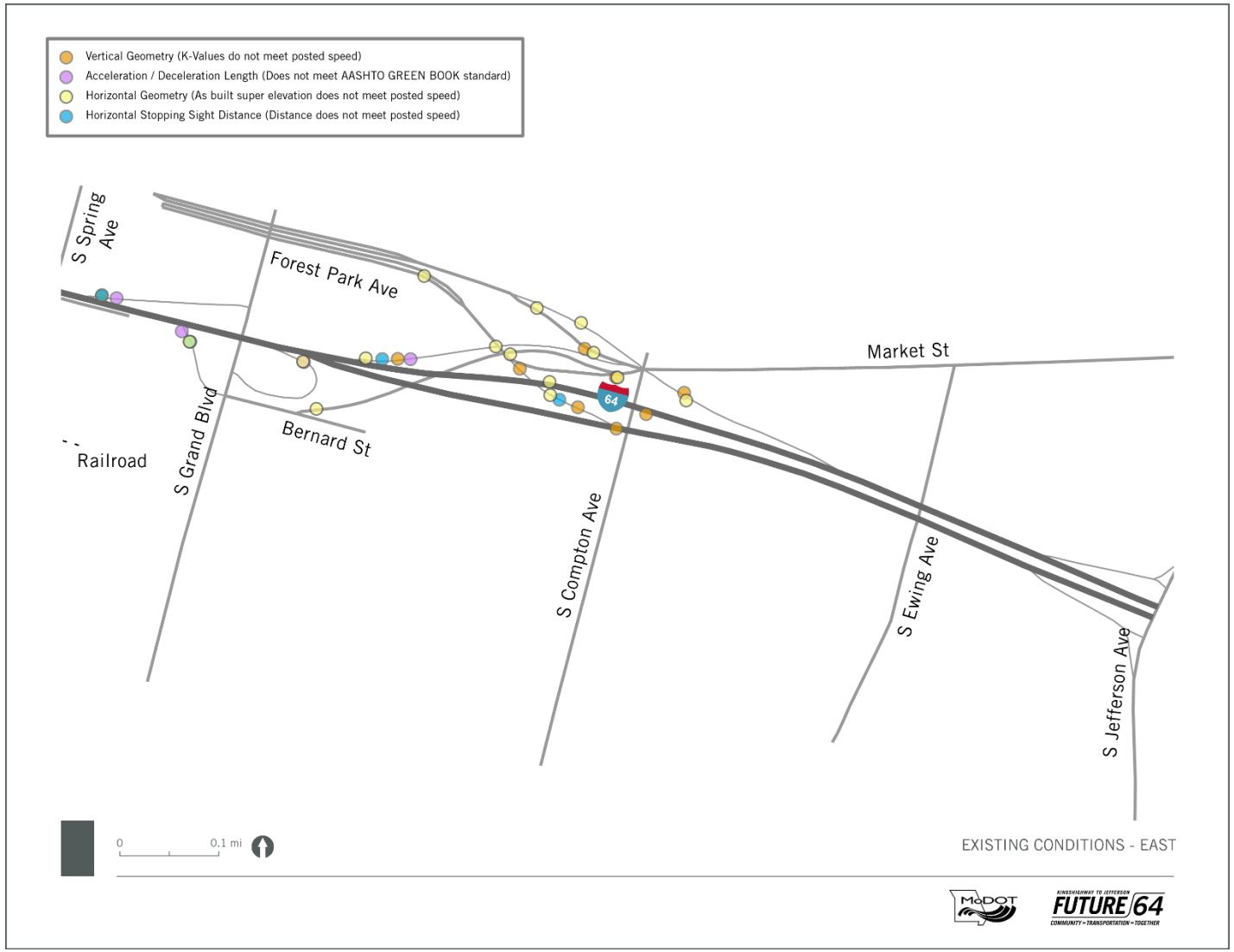


Figure 2c. I-64 Roadway Deficiencies (West to East)



TIER 1 CORRIDOR CHARACTERISTICS

CLEAR ZONE

Clear zone is defined as the unobstructed, transversable area provided beyond the edge of the through traveled way for the recovery of errant vehicles. The clear zone distance is measured from the edge of travel way to the nearest obstacle. Obstacles are defined as either a natural or man-made object that would cause injury if struck. The obstacles along the corridor appear to be adequately protected. In general, the corridor has limited available right-of-way, which leads to the clear zone requirement being rarely achieved. The corridor has been lined with either guardrail or permanent concrete traffic barrier. In recent years, while performing resurfacing jobs and other maintenance projects, MoDOT has upgraded the guardrail to meet current MASH standards and has replaced the Type A and Type B barrier with Type C and D, a single sloped face permanent concrete barrier.

Through most of the corridor, the Type A and Type B barriers have been upgraded to Type C and D barriers with the exception of a few locations. These locations include the existing bridges and a section of the mainline center barrier that begins 200 feet east of Ewing Ave. and ends nearly 1,000 feet west of Ewing Ave. There is a short section of Type A barrier east and west of the Jefferson Ave. median bridge piers.

SPEED LIMIT

There were not many instances of the design speed listed in the as-built plans. For this assessment, the posted speed of the mainline or the advisory speed posted on the ramps was assumed as the design speed.

The posted speed limit along the corridor is 55 mph. Ramp speeds range from 55 mph to match the mainline to the lowest posted speed located at the loop ramp exit for Grand Blvd., which has an advisory speed of 20 mph. Attachment A has a more detailed breakdown of the posted speed and the operating speed that was determined from the as-built geometry.

ROADWAY LIGHTING

There is continuous roadway lighting the full length of the Tier 1 limits. The style and type of lighting varies. Most of the corridor is lit using high mast lighting. The exception to this begins east of Grand Blvd. near the end of the westbound bridge and continues east to approximately Ewing Ave. The lighting through this section uses what appear to be 30-foot poles mounted along the outside shoulders. Through discussion with MoDOT's St. Louis district staff the lighting levels meet the requirement of an average maintained intensity of 0.6 fc (6.5 lux) and a minimum intensity of 0.2 fc (2.2 lux). These varying fixture types generate different light levels along the corridor. Further study with more accurate information on the lighting types would be needed to evaluate the uniformity of the lighting. This evaluation is not part of this assessment.

PAVEMENT CONDITION

Information provided by Phil Ruffus, a member of the MoDOT staff, indicated the current pavement rating of the mainline pavement in the study area is a 7 out of 10. A project constructed in 2015 included the full-depth replacement of mainline pavement from Kingshighway Blvd. to Newstead Ave. During this same project, the existing mainline pavement

from Newstead Ave. to Sarah St. was milled and resurfaced. The remaining portion of the study area was last resurfaced in 2018. There is a resurfacing project planned for 2025 as part of the regular maintenance cycle and not due to the current overall pavement condition.

RAILROAD FACILITIES

Through the study area, multiple rail lines run parallel to I-64 before diverging south just west of Grand Blvd. The railroad tracks are owned by four different entities: BNSF Railway (BNSF), Union Pacific Railroad (UPRR), Terminal Railroad Association (TRRA) and Bi-State Development Agency (Metro). The Metro line continues west under the I-64 viaduct at Vandeventer Ave., and includes the only at-grade crossings in the study area. At-grade crossings are located at Taylor Ave., Newstead Ave., Boyle Ave., and Sarah St. All at-grade crossings are equipped with railroad safety gates.

INTERCHANGE ACCESS AND SPACING

There are six interchanges located within the 2.7-mile Tier 1 limits. According to MoDOT EPG 940.2 - Spacing between Interchanges, spacing between major interchanges should range between two to three miles. Spacing less than two miles in urban areas may be considered, when the analysis indicates the shorter spacing is acceptable. However, all other options should be considered before spacing is reduced. Furthermore, the Federal Highway Administration (FHWA) Interstate System Access Informational Guide recommends a minimum spacing of one mile on major roadways in urban areas.

Currently, spacing at only one location meets either MoDOT's guidelines or FHWA guidelines. This is between Vandeventer Ave. and the Grand Blvd./Forest Park Ave. interchange. To determine existing interchange spacing, the interchange at Tower Grove Ave., Boyle Ave., and Papin St. are considered as one interchange. A similar configuration occurs at Grand Ave. and Forest Park Ave. At these locations, the entrances and exits are paired to provide full access to I-64 and generally serve the same users. The interchanges at Vandeventer Ave. and Bernard St./Compton Ave./Market St. provides partial access and are considered independent for the purposes of this assessment.

The interchanges on I-64 are described in Table 2.

Table 2. I-64 Study Area Interchange Descriptions

Interchange	Description
Kingshighway Blvd.	Single Point Urban Interchange. Beginning of Tier 1 limits. Full access. (0.6 mile to Boyle Ave./Papin St./Tower Grove Ave. interchange)
Tower Grove Ave./Boyle Ave./Papin St.	Tower Grove Ave. provides a single eastbound (EB) Exit. Boyle Ave. provides a Westbound (WB) I-64 exit ramp to Boyle Ave. and WB I-64 entrance ramp from Boyle Ave. Papin St. Provides an entrance ramp to EB _64. When combined these three routes within .15 miles of each other provide full access to I-64. (1.0 mile to Grand Blvd. interchange)

Interchange	Description
Vandeventer Ave.	Partial Interchange. EB I-64 exit ramp to Vandeventer Ave., and WB I-64 entrance ramp from Vandeventer Ave., Entrance ramp is a left entrance. This exit/entrance was one of the original beginnings of the expressway. Ramps are located within the Tower Grove Ave./Boyle Ave./Papin St. interchanges. Exit ramp for Vandeventer Ave. is 0.25 mile from end of Kingshighway Blvd. merge from continuous auxiliary lane. (1.0 mile to Grand Blvd. interchange)
Grand Blvd./Forest Park Ave.	Directly from Grand Blvd. there is a WB I-64 entrance ramp and EB I-64 Exit ramp. Forest Park Ave. provides access through a WB I-64 exit ramp and EB I-64 entrance ramp. Forest Park Ave. has a direct connection to Grand Blvd and when combined provides full access to I-64. (0.4 mile to Market St./Compton Ave. interchange)
Bernard St./Compton Ave./Market St.	Partial Interchange. Ramps grade separated from mainline I-64 and ramps servicing Forest Park Ave. EB I-64 exit ramp to Bernard St./Market St. located West of Grand Blvd. I-64 entrance ramp from Market St. (0.6 mile to Jefferson Ave. interchange)
Jefferson Ave.	Split Diamond Interchange with 22nd St. to provide full access to I-64. Slip ramps. End of the Tier 1 limits.

UTILITIES

Utilities within the study area were identified through Missouri One Call and coordination with the utility companies. Table 3 describes the utilities in the study area. Attachment B has more detailed information on each utility crossing and those that run parallel within MoDOT right-of-way. For the purpose of this assessment, all utilities are considered minor unless they meet one of the following requirements:

- Utility has reimbursement rights with MoDOT Right-of Way
- Water mains of 6 inches diameter or larger
- Gas mains of 4 inches diameter or larger
- Long haul fiber optic utilities whose relocations typically require longer design and/or construction durations
- Communication system that has 300 pair copper cable or larger
- Power system of 34kv or higher
- Any system within a multi duct bank package

Table 3. Utility Information

Utility Company	Utility Type	Minor Utilities	Major Utilities*
ADB	Communications	Yes	Unknown
Ameren	Power	Yes	Yes
AT&T-D	Communications	Yes	Yes
AT&T-T	Communications	No	Yes
BJC Health Care	Communications	Yes	No
Bluebird	Communications	Yes	No
CenturyLink - National/Lumen	Communications	No	Yes
Everstream	Communications	Yes	No
Verizon (MCI)	Communications	Yes	Unknown
MetroLink	Rail Transit Power	No	Yes
MilliporeSigma	Communications	Yes	No
MoDOT ITS	Communications	Yes	Yes
MSD	Storm/Sewer	Yes	Yes
SLU	Communications	Yes	Yes
Spire	Gas	Yes	Yes
Sprint	Communications	Yes	No
St. Louis City Lights	Power	Yes	No
St. Louis City Signal	Power	Yes	No
St. Louis City Water	Water	Yes	Yes
Wells Fargo	Communications	Yes	No
Windstream	Communications	Yes	No
Zayo	Communications	Yes	No

* Some facility sizes are unknown.

STRUCTURES

MoDOT inspection reports, as-builts, and Structural Inventory & Appraisal (SI&A) sheets were reviewed to evaluate the existing conditions of the structures in the study area. There are 22 bridges, including overpasses, I-64 mainline structures, ramp structures, and one pedestrian overpass within the Tier 1 limits. Existing structure types include concrete I-girder, steel girder, concrete slab, concrete box girder, and steel thru-truss.

MoDOT regularly inspects bridges in its inventory to review current conditions. Upon inspection, each major component on the bridge (deck, superstructure, substructure) is rated on the

National Bridge Inventory (NBI) 0-9 scale. A component is considered in "good" condition if it resides in the 7-9 range, "fair" condition if it falls in the 5-6 range, and "poor" if it is 4 or less. Bridges may also be considered candidates for improvements based on other factors, such as substandard vertical or horizontal clearance, age of structure or outdated roadway geometrics based on current standards.

A full list of the 22 bridges throughout the Tier 1 limits, with year built and NBI condition ratings, is included in Attachment C. Condition ratings were obtained from the most recent SI&A sheets dated January 13, 2022, provided by MoDOT. An additional seven bridges owned by St. Louis City are located within the Tier 2 limits; their NBI condition ratings are presented in Attachment D.

Two bridges are considered to be in "poor" overall condition; and an additional six bridges are in fair condition but also have various components that do not meet current standards. These eight bridges have been identified as areas of opportunity for improvement within the corridor. Figure 3 shows the locations of these bridges, and detailed information is presented in Table 4.

Figure 3. Locations of Tier 1 Bridges with Areas of Opportunity

Table 4. Descriptions of Tier 1 Bridges with Areas of Opportunity

Bridge ID	Facility Carried	Feature Crossed	NBI Overall Condition Rating	Notes
A3735	EB I-64 on-ramp	EB I-64 Off-ramp; WB I-64 on-Ramp	5 (Fair)	Moderate to heavy deck saturation; <16 feet existing vertical clearance
L0667	EB I-64	Vandeventer Ave., Clayton Ave.; Metrolink	4 (Poor)	Posted for load; nearly 70-year-old bridge; Major Bridge (more than 1,000 ft); NBI Rating = 4 (Deck)
A3594	WB I-64	Various streets, Grand Blvd. & EB I-64	6 (Fair)	End treatments do not meet current standards; Major Bridge
L0638	Grand Blvd.	EB I-64	6 (Fair)	Nearly 70-year-old bridge
A0549	EB I-64 off-ramp	Federal Sign Company Entrance	4 (Poor)	Heavy saturation in slab; NBI Rating = 4 (Deck); <15 feet existing vertical clearance
A0832	EB I-64	Market St.	6 (Fair)	Curb and parapet rail on north edge; <15 feet existing vertical clearance;
A3636	Market St. to WB I-64	Forest Park Ave.	6 (Fair)	<8 feet horizontal clear to pier face
A0835	EB Market St.	Ramp to Forest Park Pkwy	5 (Fair)	Curb and parapet rail along both edges; no guardrail on SE corner

CROSSROAD FACILITIES

Crossroad facilities are, include roadways, railroad, and pedestrian facilities that cross I-64. The crossroad facilities within MoDOT right-of-way are owned and maintained by MoDOT; however, the streets outside of right-of-way are owned by the City of St. Louis. The exception is the railroad crossing owned by Metro.

The study area is located within a designated “commercial zone.” Missouri Statute 304.190 defines a “commercial zone” as the area within the city together with the territory extending one mile beyond the corporate limits of the city and one mile additional for each 50,000 population or portion thereof provided. Because the study area is located within a designated “commercial zone,” a motor vehicle, unladen or with load, is not to exceed 15 feet in height. MoDOT specifies the minimum design clearances for structures located on Interstate and Principal Arterial Routes to be 16 feet 6 inches. Design exceptions have been given to the crossroad facilities in the study area that do not meet the 16-foot-6-inch requirement. The lowest clearance within the corridor is 15 feet 6 inches, which occurs at Kingshighway Blvd., Taylor Ave., Newstead Ave., and Sarah St.

Table 5 summarizes each crossroad, including its functional classification and vertical clearance to I-64.

Table 5. Crossroad Facilities to I-64 (from West to East)

Crossroad	Crossing Description	Functional Classification	Vertical Clearance
Kingshighway Blvd.	Service Interchange Overpass	Principal Arterial	15'-6"
Chouteau Ave./Clayton Ave.	Pedestrian Overpass	Pedestrian Only	17'-7"
Taylor Ave.	Overpass	Major Collector	15'-6"
Newstead Ave.	Overpass	Minor Collector	15'-6"
Tower Grove Ave.	Service Interchange Overpass	Major Collector	15'-11" Minimum clearance on ramp
Boyle Ave.	Service Interchange Overpass	Major Collector	15'-9"
Sarah St.	Underpass	Minor Collector	15'-6"
Clayton Ave.	Underpass	Major Collector	26'-6"
Metro Tracks	Underpass	Railroad	22'-1"
Vandeventer Ave.	Underpass	Minor Arterial	19'-0"
Grand Blvd.	Underpass	Principal Arterial	18'-10"
Market St. EB	Underpass	Principal Arterial	18'-0"
Market St.	Service Interchange Overpass	Principal Arterial	21'-3"
Compton Ave.	Service Interchange Overpass	Minor Arterial	15'-11"
Ewing Ave.	Overpass	Major Collector	16'-5"
Jefferson Ave.	Service Interchange Overpass	Principal Arterial	16'-7"

TIER 2 Bicycle and Pedestrian Facilities

BICYCLE FACILITIES

Bicycle accommodations are currently available on many of the primary surface streets within the Tier 2 limits, either as dedicated striped bicycle lanes as on eastbound Manchester Ave. in the Grove neighborhood or indicated by "Share the Road" signage or shared lane pavement markings. Great Rivers Greenway (GRG) is in the planning stages for the Brickline Greenway, which will provide an east-west alignment through the study area. The Brickline Greenway will ultimately connect Gateway Arch National Park with Forest Park and connect Tower Grove Park

to Fairgrounds Park. The Brickline Greenway will also include a north-south crossing of I-64 at a non-surface street location, potentially located near Spring St.

PEDESTRIAN FACILITIES

Concrete sidewalks exist on practically all city surface streets within the Tier 2 limits and provide connectivity on nearly all the surface streets, overpasses, and underpasses crossing I-64. All the I-64 north-south overpass bridges from Kingshighway Blvd. to Jefferson Ave. have been recently reconstructed and include a sidewalk on both sides of the street either behind a 6-inch curb or with concrete barrier separation. Surface street crossings underneath I-64 have sidewalks.

An assessment of the current condition and accessibility of the existing pedestrian facilities was conducted by visual inspection using Google Earth aerial mapping and Google Earth Streetview. Table 6 shows the locations in the study area that do not have sidewalks.

Table 7 shows the locations of sidewalk and pedestrian facilities that do not appear to be in compliance with current accessibility guidelines. The most common elements that are not ADA compliant are the cross slopes of the sidewalks at the driveway entrances and exits and the locations of the push buttons at intersection crossings. Further inspection would be needed to make a full determination about compliance.

Table 6. Streets Without Sidewalk Connectivity

Street and Owner	From	To	Location
Chouteau Ave. - City of St. Louis Maintained	Vandeventer Ave.	39th St.	No sidewalk north side of roadway on bridge over railroad
Forest Park Ave. - City of St. Louis Maintained	Grand Blvd.	Compton Ave.	No direct east-west connection along Forest Park Ave.

Source: Google Earth visual inspection March 2022.

Table 7. Potentially Non-ADA Compliant Facilities

Street or Intersection	From	To	Location	Reason
Chouteau Ave. - MoDOT Maintained	39th St.	Grand Blvd.	North side of road	– Sidewalks in poor condition
Market St. & Beaumont St. - City of St. Louis Maintained			All corners	– Missing truncated domes – Diagonal curb ramps
Market St. & Ewing Ave. - City of St. Louis Maintained			North side	– Missing truncated domes – Diagonal curb ramps

Street or Intersection	From	To	Location	Reason
Market St. & Ewing Ave. - City of St. Louis Maintained			South side	– Missing truncated domes – Diagonal curb ramps – Missing curb ramp
Market St. & Garrison Ave. - City of St. Louis Maintained			All corners	– No curb ramps
Forest Park Ave. & Boyle Ave. - City of St. Louis Maintained			3 corners	– Missing truncated domes – Diagonal curb ramps
Forest Park Ave. & Taylor Ave. - City of St. Louis Maintained			3 corners	– Missing truncated domes – Diagonal curb ramps
Manchester Ave. & Kingshighway - MoDOT Maintained			All corners	– Diagonal curb ramps – Missing push buttons for each movement – Sidewalks & curb ramps in poor condition
Manchester Ave. & Cadet Ave. - MoDOT Maintained			North side	– Missing truncated domes – Diagonal curb ramps – No crosswalk striping
Manchester Ave. & Tower Grove Ave. - MoDOT Maintained			West side	– Diagonal curb ramps
Manchester Ave. & Sarah St. - MoDOT Maintained			Northeast quadrant	– Pushbutton out of reach range
Manchester Ave./Chouteau Ave. & Hemp Ave. - MoDOT Maintained			South side	– Diagonal curb ramp – Missing curb ramp
Chouteau Ave. & Vandeventer Ave. - MoDOT Maintained			All corners	– Sidewalks in poor condition (SW corner) – Missing connection across west leg

Street or Intersection	From	To	Location	Reason
Chouteau Ave. & Central Industrial Dr - MoDOT Maintained			South side	– Curb ramps do not have level landings
Chouteau Ave. & 39th St. - MoDOT Maintained			All corners	– Diagonal curb ramp – Curb ramps do not have level landings – Pushbuttons out of reach range
Chouteau Ave. & Spring Ave. - MoDOT Maintained			All corners	– Missing pushbuttons – Pushbuttons out of reach range
Chouteau Ave. & Grand Blvd. - MoDOT Maintained			All corners	– Curb ramps do not have level landings – Missing pushbuttons
Chouteau Ave. & Carr Ln - MoDOT Maintained			South side	– diagonal curb ramp
Chouteau Ave. & Theresa Ave. - MoDOT Maintained			South side	– Curb ramps in poor condition – ponding in curb ramps
2752 Chouteau Ave. - MoDOT Maintained				– Driveway has no curb ramps or level path across
Kingshighway Blvd. & Manchester Ave. - City of St. Louis Maintained			Northwest curb ramp	– No truncated domes – Cross slope – Grade breaks not flush
Kingshighway Blvd. - City of St. Louis Maintained	Manchester	Oakland Ave.	(Southwest) both directions	– Changes in level not flush
Kingshighway Blvd. & Oakland Ave. - City of St. Louis Maintained			Southwest curb ramp	– Blended transition needs to extend around corner
Kingshighway Blvd. & Forest Park Ave. - City of St. Louis Maintained			Southwest curb ramp	– Changes in level not flush at existing storm drain
Kingshighway Blvd. - City of St. Louis Maintained	Hospital Dr/Barnes Jewish	Parkview Place	West side (left) sidewalk	– Changes in level not flush for all slabs with streetlights

Street or Intersection	From	To	Location	Reason
	Hospital Plaza			
Taylor Ave. & Clayton Ave. - City of St. Louis Maintained			All four curb ramps	– Diagonal curb ramps
Taylor Ave. - City of St. Louis Maintained	Chouteau Ave.	Arco Ave.	East sidewalk	– Changes in level not flush around large trees – Cross slope
Newstead Ave. & Arco Ave. - City of St. Louis Maintained			Northeast curb ramp	– Changes in level not flush at transition of ramp/roadway
Boyle Ave. - City of St. Louis Maintained	Sarpy Ave.	I-64 on/off ramps	West sidewalk	– Sidewalk cracking
Boyle Ave. & I-64 off ramp - MoDOT Maintained			Northeast corner	– Changes in level not flush – Cross slope
Tower Grove Ave. & Gibson Ave. - City of St. Louis Maintained			Northeast curb ramp	– Diagonal curb ramps
Sarah St. & Seoul Taco north parking entrance - City of St. Louis Maintained			East sidewalk	– Unobstructed clear width at approach ramp
Sarah St. & Clayton Ave. - City of St. Louis Maintained			Northeast curb ramp	– Diagonal curb ramp
Sarah St. - City of St. Louis Maintained	Ray Carroll St. Louis	Duncan Ave.	Right sidewalk	– Changes in level not flush – Cross slope
Vandeventer Ave. - City of St. Louis Maintained	Market St.	Sarpy Ave.	East Sidewalk	– Changes in level not flush – Cross slope – Sidewalk cracking
Vandeventer Ave. & Gratiot St.			Northwest & Southwest curb ramps	– Diagonal curb ramp

Street or Intersection	From	To	Location	Reason
- City of St. Louis Maintained				
Vandeventer Ave. & I-64 on/off ramps - City of St. Louis Maintained			Northeast curb ramp	– Diagonal curb ramp
S Vandeventer Ave. & I-64 on/off ramps - MoDOT Maintained			Northwest curb ramp	– Changes in level not flush – Cross slope – Sidewalk cracking – Truncated dome/push button damage
Compton Ave. & Spruce St. - MoDOT Maintained			All four curb ramps	– Diagonal curb ramps
Compton Ave. - City of St. Louis Maintained	Spruce St.	Chouteau Ave.	Both sidewalks	– Changes in level not flush – Sidewalk cracking – Obstructed clear width
Jefferson Ave. & Scott Ave. - City of St. Louis Maintained			Southwest quadrant	– Obstructed clear width between barrier & signal post
Jefferson Ave. & Clark Ave. - City of St. Louis Maintained			All four curb ramps	– Diagonal curb ramps
Jefferson Ave. & Walnut Pl - City of St. Louis Maintained			Western curb ramps	– Diagonal curb ramps

Source: Google Earth visual inspection March 2022.

CURRENT AND FUTURE MAINTENANCE NEEDS

An interview was conducted on April 28, 2022, with Rick Schneider, maintenance superintendent with MoDOT, whose responsibilities include the MoDOT facilities located within the study area. Through this interview, the following current maintenance issues were identified:

- I-64 EB bridge (L0667) over Vandeventer Ave. is a half-concrete-filled steel grid deck, and the thin construction has led to freezing issues in the winter. Frequent deck and overlay rehabilitations have been needed to maintain the driving surface.

- There are many structures through this corridor located within tight right-of-way. On the longer structures, the drainage systems are more intricate than on the typical ones, and due to right-of-way constraints, it is difficult to access for maintenance operations without shutting down lanes. This has led to more frequent clogging issues in the systems.
    - One of the most common locations that clogs is at the I-64 WB bridge (A3594) over Grand Blvd., which causes water to cascade onto the I-64 EB lanes.
- The lack of shoulder width coupled with the roadway being lined with guardrail or concrete barrier is an ongoing maintenance issue in the corridor. Lack of space leads to problems with tasks as simple as parking to offload a mower or having space to repair a damaged guardrail or barrier without a lane closure.
- Through this corridor and especially in the area of the Forest Park/Market/I-64 interchange, some of the side streets are owned and maintained by MoDOT. Many of these routes are part of the original city grid and contain the original drainage and utility infrastructure.
    - A good example of one of these locations is Spruce St. between Grand Blvd. and Compton Ave.
- EB I-64 under Grand Blvd. is a low point that has had minor drainage issues in the past.
- There are several spots along this corridor where the aging MoDOT system ties into an even older MSD combined sewer system. When these systems are combined, MoDOT has to use traps on their upstream inlets from the system connection.
    - There are also instances of old pipe collars failing and needing replacement.
    - Due to widening and other projects, there are drainage structures that now lie under pavement, making them inaccessible to maintenance.
- The unhoused are a safety and security concern along this corridor. With the number of elevated structures, there are many encampments utilizing these spaces.
- Within the Tier 2 limits, MoDOT is responsible for the maintenance on Chouteau Ave. MoDOT does not own the right-of-way, so utilities and private companies modify the pavement through utility cuts and driveway construction without having to get a permit through MoDOT. There have been issues with this construction not meeting the same requirements as MoDOT would specify. This leads to more frequent maintenance tasks.

SUMMARY OF STUDY AREA DEFICIENCIES

Following the review of the study area existing conditions and comparing them with the recommended standards in the MoDOT EPG and Green Book, this assessment identifies multiple locations within the study area that could be improved to increase safety. Even with these improvements, congestion would continue to occur on I-64 because it begins outside the study area westbound, just west of Kingshighway Blvd. and eastbound, east of Jefferson Ave.

Therefore, there would be greater benefit to prioritizing improvements that increase safety over those related to operations. Changes that could be made to the corridor to increase safety include providing a 10-foot inside shoulder, increasing the radii of horizontal curves to meet the design speed, creating additional distance between ramps, modifying vertical curves to meet k-value and stopping sight distance requirements, and increasing the length of acceleration and deceleration lanes for the interchange ramps. The biggest hinderances to making these improvements are the lack of right-of-way the current system has and the cost to acquire the needed real estate to make these improvements.

The area of the corridor that where lack of right-of-way is most evident occurs with the stacked alignment from approximately Vandeventer Ave. to approximately 1,000 feet east of Grand Ave. There are two areas that are an exception and there may be enough existing right-of-way to provide some opportunity to make improvements—the Vandeventer Ave. interchange on the east and the Grand Blvd./Market St./Forest Park Ave. interchange on the west end.

The opportunities to improve this corridor lie in the areas where the spacing for interchanges and signage can be improved or ramps reconfigured. Currently, the lack of spacing between interchanges affects the traffic's ability to enter and exit I-64 safely and does not accommodate the recommended spacing of the guide signs. Also, traffic movements between the partial access interchanges are not intuitive, making the spacing for the signage even more important for users.

Additional areas of opportunity include:

- Further evaluation of the lighting system to confirm not only that the lighting fall within recommended average intensity range but also meet the recommended thresholds for uniformity.
- Upgrade remaining sections of Type A and Type B permanent concrete barrier to current MoDOT standard Type C and Type D.
- Increase inside shoulder widths where right-of-way allows.
- Replace sidewalks and driveways on the crossroad facilities that do not meet current ADA standards.
- Reduce bridge maintenance cost by reducing total number or structures or total square footage by possible reconfigurations of interchange ramps.

Attachment A

I-64 Existing Conditions Matrix

ATTACHMENT A

LIST OF AS-BUILTS USED TO COMPLE DATA

As_Built_Plans_Bridge-(L0667)_1955
As_Built_Plans_Roadway_1957---I-40(64)_Grand
As_Built_Plans_Roadway_U-611(2)_1958---Tower-Grover_to_Spring
As_Built_Plans_Roadway_1961---(U-611(9))_Grand_Loop_Ramp
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson
As_Built_Plans_Bridge-(A3594)_1977---Viaduct
As_Built_Plans_Bridge-(A3740)_1977---Grand
As_Built_Plans_Bridge-(A3651)_1978---Sarah
As_Built_Plans_Bridge-(A3893)_1979---TowerGrove_to_Compton
As_Built_Plans_Roadway_1981---F-BRF-40-5(47)---Sarah_to_Compton
As_Built_Plans_Roadway_J6I0978-2010---I-64_Bellevue_to_Kingshighway
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah

ATTACHMENT A

J6I3585: I-64 FREEWAY EXISTING CONDITION MATRIX - TYPICAL SECTION AND SPACING									
CORRIDOR INFORMATION									
As-Built Plan Number	Sheet Number	Location	DIRECTION	From	To	Inside Shoulder Widths	Outside Shoulder Widths	Number of lanes -Lane Widths	Ramp Spacing
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	37 & 38	KINGSHIGHWAY INTERCHANGE	I-64 WB	KINGSHIGHWAY BLVD	S TAYLOR AVENUE	7'	10'	5-12'	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	38 & 39	I64 MAINLINE	I-64 WB	S TAYLOR AVENUE	S NEWSTEAD AVENUE	7'	10'	5-12'	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	I64 MAINLINE	I-64 WB	S NEWSTEAD AVENUE	TOWER GROVE AVENUE	7'	10'	5-12'	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39 & 40	I64 MAINLINE	I-64 WB	TOWER GROVE AVENUE	S BOYLE AVENUE	5.5'	10'	4-12'	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	I64 MAINLINE	I-64 WB	S BOYLE AVENUE	S SARAH ST	5.25'	10'	3-12'	
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	162	I64 MAINLINE	I-64 WB	SARAH AVENUE	CLAYTON AVENUE	5.5'	10'	3-12'	
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	162	I64 MAINLINE	I-64 WB	CLAYTON AVENUE	VANDEVENTER	5.5'	10'	3-12'	
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	162	I64 MAINLINE	I-64 WB	VANDEVENTER	S SPRING AVE	5.5'	10'	3-12'	
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	162	I64 MAINLINE	I-64 WB	S SPRING AVE	GRAND BLVD	5.5'	10'	3-12'	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	2	I64 MAINLINE	I-64 WB	GRAND BLVD	EB MARKET ST CROSSING	4'	10'	3-12'	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	2	I64 MAINLINE	I-64 WB	EB MARKET ST CROSSING	S COMPTON AVENUE	4'	10'	3-12'	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	2	I64 MAINLINE	I-64 WB	EB MARKET ST CROSSING	S COMPTON AVENUE	4'	10'	3-12'	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	2	I64 MAINLINE	I-64 WB	S COMPTON AVENUE	S EWING AVENUE	4'	10'	4-12'	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	2	I64 MAINLINE	I-64 WB	S COMPTON AVENUE	S EWING AVENUE	4'	10'	4-12'	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	37 & 38	KINGSHIGHWAY INTERCHANGE	I-64 EB	KINGSHIGHWAY BLVD	S TAYLOR AVENUE	7'	VARIES	5-12'	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	38 & 39	I64 MAINLINE	I-64 EB	S TAYLOR AVENUE	S NEWSTEAD AVENUE	7'	NONE	5-12'	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	I64 MAINLINE	I-64 EB	S NEWSTEAD AVENUE	TOWER GROVE AVENUE	7'	10'	4-12'	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39 & 40	I64 MAINLINE	I-64 EB	TOWER GROVE AVENUE	S BOYLE AVENUE	5.5'	VARIES	4-12'	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	I64 MAINLINE	I-64 EB	S BOYLE AVENUE	S SARAH ST	5.25'-5.5'	9.25'-9.5'	3-12'	
As_Built_Plans_Bridge-(A3893)_1979---TowerGrove_to_Compton	137	I64 MAINLINE	I-64 EB	SARAH AVENUE	CLAYTON AVENUE	12'	10'	3-12'	
As_Built_Plans_Bridge-(L0667)_1955	NA	I64 MAINLINE	I-64 EB	CLAYTON AVENUE	VANDEVENTER	12'	10'	3-12'	
As_Built_Plans_Bridge-(L0667)_1955	NA	I64 MAINLINE	I-64 EB	VANDEVENTER	S SPRING AVE	12'	10'	3-12'	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	2	I64 MAINLINE	I-64 EB	GRAND BLVD	EB MARKET ST CROSSING	4'	10'	3-12'	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	2	I64 MAINLINE	I-64 EB	EB MARKET ST CROSSING	S COMPTON AVENUE	4'	10'	3-12'	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	2	I64 MAINLINE	I-64 EB	S COMPTON AVENUE	S EWING AVENUE	4'	10'	4-12'	
As_Built_Plans_Roadway_J6I0978-2010---I-64_Bellevue_to_Kingshighway.pdf	37	RAMP K3 (OFF RAMP TO KINGSHIGHWAY)	I-64 WB	I-64 WB	KINGSHIGHWAY	8'	4'	3-12'	2670'
As_Built_Plans_Roadway_J6I0978-2010---I-64_Bellevue_to_Kingshighway.pdf	37	RAMP K4 (ON RAMP FROM KINGSHIGHWAY)	I-64 EB	KINGSHIGHWAY BLVD	I-64 EB	8'	4'	2-12'	1677'
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	38 & 39	RAMP 2 (OFF RAMP TO TOWER GROVE AVENUE)	I-64 EB	I-64 EB	TOWER GROVE AVENUE	8'	4'	1-16'	1677'
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39 & 40	RAMP 1 (ON RAMP FROM BOYLE AVENUE)	I-64 WB	I-64 WB	BOYLE AVENUE	8'	4'	1-14'	2670'
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39 & 40	VANDEVENTER (OFF RAMP TO VANDEVENTER)	I-64 EB	I-64 EB	VANDEVENTER	5.5'	5.5'	1-18'	1330'
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	RAMP 3 (I-64 WB OFF RAMP TO BOYLE AVE)	I-64 WB	I-64 WB	BOYLE AVE	4'	4'	1-14'	1045'
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	VANDEVENTER (ON RAMP TO I-64)	I-64 WB	VANDEVENTER	I-64 WB	3.5' TO 5.5'	5.5' MAX	1-18'	916'
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	VANDEVENTER (ON RAMP TO I-64)	I-64 WB	VANDEVENTER	I-64 WB	3.5' TO 5.5'	5.5' MAX	1-18'	916'
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	RAMP 4 (I-64 EB ON RAMP FROM PAPIN ST)	I-64 EB	PAPIN ST	I-64 EB	4'	4'	1-18'	867'
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	163	ON RAMP FROM GRAND BLVD TO I-64 WB	I-64 WB	GRAND BLVD	I-64 WB	4'	4'	1-18'	4224'
As_Built_Plans_Roadway_1981---F-BRF-40-5(47)---Sarah_to_Compton	7	EB RP TO BERNARD (I-64 EB OFF RAMP MARKET/BERNARD)	I-64 EB	I-64 EB	MARKET STREET/BERNARD AVE	2	2	1-20'	
As_Built_Plans_Roadway_1961---(U-611(9))_Grand_Loop_Ramp	4	LOOP RAMP AT GRAND (I-64 EB OFF RAMP TO GRAND BLVD)	I-64 EB	I-64 EB	GRAND BLVD	2'	2'	1-26'	630'
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4 & 6	Grand Blvd over I-64	I-64 EB	I-64 EB	MARKET STREET	2'	3'	2-12'	4110'
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	6	RAMP B-1 (ON RAMP TO I-64 EB FROM EB FOREST PARK)	I-64 EB	FOREST PARK	I-64 EB	NA	NA	2-12'	1885'
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4	RAMP B-2 (OFF RAMP FROM FOREST PARK TO MARKET ST)	MARKET ST	FOREST PARK	MARKET STREET	6'	VARIES	1-20'	625'
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4 & 6	MARKET ST. W.B. (MARKET STREET WB ON RAMP TO I 64 WEST BOUND)	I-64 WB	MARKET STREET	I-64 WB	VARIES	4'	2-12'	1540'
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	3 & 6	RAMP M (RAMP FROM MARKET STREET AND I-64 WB TO FOREST PARK AVE)	I-64 WB	I-64 WB	FOREST PARK	2'	1'	20'	1667'
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	3 & 6	WEST BOUND FOREST PARK (OFF RAMP FROM WB I-64 TO FOREST PARK)	I-64 WB	I-64 WB	FOREST PARK	4'	8'	2-12'	2080'

ATTACHMENT A

J6I3585: I-64 FREEWAY EXISTING CONDITION MATRIX - HORIZONTAL GEOMETRY																	
Corridor Information											Horizontal Geometrics			Horizontal Design Criteria		
As-Built Plan Number	Sheet Number	PDF Page Number	Location	Station	Posted Speed (MPH)	Operational Speed (MPH)	Speed Difference (MPH)	Δ	Horizontal Stopping Sight Distance		Curve Length	Radius	SE	Curve Length 15 x Speed if 60 or less 30 x Speed if greater than 60	Radius	SE
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	37	112	I-64 ML (CURVE 6400-1)	1230+13.42	55	45	10	17.33	429.00		577.61	1909.86	5.0%	825	2470	5.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	38	113	I-64 ML (CURVE 6400-2)	1235+58.71	55	45	10	25.11	302.00		836.86	1909.86	5.0%	825	2470	5.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	I-64 ML (CURVE 6401)	1249+90.71	55	35	20	31.04	373.00		576.27	1432.69	3.9%	825	3375	3.9%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	I-64 WB (CURVE WBI6401)	07+38.57	55	55	0	5.00			123.18	1412.69	7.2%	825	1400	7.2%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	I-64 WB (CURVE WBI6402)	08+76.85	55	55	0	3.44			153.41	2558.59	5.0%	825	2470	5.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	I-64 WB (CURVE WBI6403)	10+30.98	55	55	0	3.44			154.85	2582.59	5.0%	825	2470	5.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	I-64 WB (CURVE WBI6404)	13+62.38	55	50	5	17.67			503.97	1634.45	6.0%	825	1920	6.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	I-64 WB (CURVE WBI6405)	21+85.03	55	50	5	20.18			627.53	1909.86	6.0%	825	1920	6.0%
As_Built_Plans_Bridge-(A3651)_1978---Sarah	63	1	I-64 ML WB (AT SARAH AVE)	21+85.04	55	50	5	20.18			672.53	1909.86	6.0%	825	1920	6.0%
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	162	6	I-64 ML WB CURVE NO.11 (RIGHT SIDE OF SARAH AVE)	47+45.51	55	50	5	28.27	427.00		939.80	1909.86	6.0%	825	1920	6.0%
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	163	7	I-64 ML WB CURVE NO.19 (ON THE RIGHT TO GRAND BLVD)	71+72.71	55	55	0	10.23			1180.94	6611.05	2.2%	825	6450	2.2%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4	23	I-64 ML WEST BOUND DB	06+35.50	55	55	0	10.62			1225.57	6611.12	2.2%	825	6450	2.2%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	6	25	I-64 ML WEST BOUND DB	16+57.38	55	40	15	12.32			616.19	2864.93	3.0%	825	4580	3.0%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	6	25	I-64 ML WEST BOUND DB	30+14.91	55	40	15	6.74			674.34	5729.65	1.6%	825	7793	1.6%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	I-64 EB (CURVE EBI6401)	07+04.41	55	55	0	2.19			55.09	1440.69	7.2%	825	1400	7.2%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	I-64 EB (CURVE EBI6402)	07+90.10	55	45	10	0.84			116.30	7917.41	2.0%	825	7150	2.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	I-64 EB (CURVE EBI6403)	09+06.40	55	45	10	0.84			116.30	7917.41	2.0%	825	7150	2.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	I-64 EB (CURVE EBI6404)	12+09.53	55	40	15	13.33			487.76	2096.18	4.0%	825	3270	4.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	I-64 EB (CURVE EBI6405)	20+30.44	55	45	10	18.65			745.85	2291.83	4.0%	825	3270	4.0%
As_Built_Plans_Bridge-(A3893)_1979---TowerGrove_to_Compton	137	6	I-64 ML EB (AT SARAH AVE)	20+30.40	55	45	10	18.56	434.00		745.85	2291.83	4.0%	825	3270	4.0%
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	162	6	I-64 ML EB CURVE NO.12 (RIGHT SIDE OF SARAH AVE)	49+22.46	55	45	10	28.29	385.00		704.84	1432.39	6.0%	825	1920	6.0%
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	163	7	I-64 ML EB CURVE NO.13 (RIGHT SIDE OF SARAH AVE)	55+88.46	55	35	20	3.07			306.76	5729.58	1.6%	825	7793	1.6%
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	163	7	I-64 ML EB CURVE NO.14 (LEFT SIDE OF GRAND BLVD)	58+95.22	55	35	20	3.07			306.76	5729.58	1.6%	825	7793	1.6%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4	23	I-64 ML EAST BOUND DB	08+06.46	55	55	0	2.73			545.45	11459.20	1.6%	825	7793	1.6%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	6	25	I-64 ML EAST BOUND DB	30+05.12	55	35	20	11.17			1117.28	5729.65	1.6%	825	7793	1.6%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	37	112	RAMP K3 (CURVE RAMP K3-1) (I-64 WB OFF RAMP TO KINGSHIGHWAY)	12+17.18	50	25	0	62.20			390.83	360.00	5.9%	750	1605	5.9%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	37	112	RAMP K3 (CURVE RAMP K3-2) (I-64 WB OFF RAMP TO KINGSHIGHWAY)	15+02.43	50	20	0	46.46			210.84	260.00	5.9%	750	1605	5.9%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	37	112	RAMP K4 (CURVE RAMP K4-1) (I-64 EB ON RAMP FROM KINGSHIGHWAY)	11+63.11	55	25	30	44.37			309.75	400.00	4.7%	825	2680	4.7%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	37	112	RAMP K4 CURVE RAMP K4-2 (I-64 EB ON RAMP FROM KINGSHIGHWAY)	14+09.78	55	15	40	53.15			185.51	200.00	4.7%	825	2680	4.7%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	37	112	RAMP K4 CURVE RAMP K4-3 (I-64 EB ON RAMP FROM KINGSHIGHWAY)	19+76.62	55	40	15	24.12	234.00		507.74	1206.23	5.6%	825	2120	5.6%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	38	113	CURVE RAMP2-01 (I-64 EB OFF RAMP TO TOWER GROVE AVENUE)	00+84.07	50	25	25	3.31			168.09	2910.36	2.0%	750	5990	2.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	CURVE RAMP2-02 (I-64 EB OFF RAMP TO TOWER GROVE AVENUE)	06+38.03	50	20	30	19.14			283.96	850.00	3.8%	750	2890	3.8%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	CURVE RAMP2-03 (I-64 EB OFF RAMP TO TOWER GROVE AVENUE)	09+97.56	50	15	35	86.91			91.01	60.00	2.0%	750	5990	2.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	CURVE RAMP1-01 (I-64 WB ON RAMP FROM BOYLE AVENUE)	02+55.53	55	25	30	32.33	309.00		497.43	881.47	3.6%	825	3710	3.6%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	CURVE RAMP1-02 (I-64 WB ON RAMP FROM BOYLE AVENUE)	06+67.34	55	20	35	27.64			279.39	579.25	4.0%	825	3270	4.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	CURVE VNDVTR2-01 (I-64 EB OFF RAMP TO VANDEVENTER)	00+98.87	40	15	25	11.87	383.00		196.93	951.37	2.0%	600	3970	2.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	CURVE VNDVTR2-02 (I-64 EB OFF RAMP TO VANDEVENTER)	03+37.08	40	35	5	11.72	383.00		279.32	1365.62	4.4%	600	1560	4.4%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	CURVE RAMP3-01 (I-64 WB OFF RAMP TO BOYLE AVE)	07+91.32	50	20	30	9.84			159.64	930.00	2.9%	750	3975	2.9%
As_Built_Plans_Roadway_U-611(2)_1958---Tower-Grover_to_Spring	11	20	CURVE VNDVTR1-01 (I-64 WB ON RAMP FROM VANDEVENTER)	00+99.69	55	50	5	13.88	282.00		198.27	819.02	8.0%	825	960	8.0%
As_Built_Plans_Roadway_U-611(2)_1958---Tower-Grover_to_Spring	11	22	CURVE VNDVTR1-02 (I-64 WB ON RAMP FROM VANDEVENTER)	04+23.51	55	50	5	29.77	282.00		396.93	763.94	8.0%	825	960	8.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	CURVE VNDVTR1-03 (I-64 WB ON RAMP FROM VANDEVENTER)	08+10.02	55	35	20	25.68	321.00		346.55	773.13	8.0%	825	960	8.0%
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	CURVE RAMP4-01 (I-64 EB ON RAMP FROM PAPIN ST)	04+83.33	55	25	30	28.85	308.00		480.82	954.93	4.0%	825	3270	4.0%
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	163	7	CURVE NO 15 (ON RAMP FROM GRAND BLVD TO I-64 WB)	01+00.08	55	25	30	11.97	287.00		199.42	954.93	4.0%	825	3270	4.0%
As_Built_Plans_Roadway_1981---F-BRF-40-5(47)---Sarah_to_Compton	22	27	EB RP TO BERNARD (I-64 EB OFF RAMP MARKET/BERNARD)	01+60.97	30	20	10	63.53	136.00		288.27	260.00	6.0%	450	506	6.0%
As_Built_Plans_Roadway_1957---I-40(64)_Grand		17	EB RP TO BERNARD (I-64 EB OFF RAMP MARKET/BERNARD)	12+53.40	30	15	15	73.00			197.30	157.58	6.0%	450	506	6.0%
As_Built_Plans_Roadway_1961---(U-611(9))_Grand_Loop_Ramp	4	23	LOOP RAMP AT GRAND (I-64 EB OFF RAMP TO GRAND BLVD)	00+00.00	20	15	5	31.47			90.08	164.19	3.0%	300	730	3.0%
As_Built_Plans_Roadway_1961---(U-611(9))_Grand_Loop_Ramp	4	23	LOOP RAMP AT GRAND (I-64 EB OFF RAMP TO GRAND BLVD)	00+90.08	20	15	5	133.51			209.71	90.00	8.0%	300	76	8.0%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4	23	MARKET ST EB (I-64 EB OFF RAMP TO MARKET STREET)	05+07.46	30	25	5	34.90			581.59	955.36	4.0%	450	1030	4.0%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4	23	MARKET ST EB (I-64 EB OFF RAMP TO MARKET STREET)	14+81.45	30	35	-5	15.43			308.64	1146.28	4.0%	450	1030	4.0%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	6	25	MARKET ST EB (I-64 EB OFF RAMP TO MARKET STREET)	17+90.12	30	20	10	30.30			302.99	573.69	4.0%	450	1030	4.0%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	6	25	MARKET ST EB (I-64 EB OFF RAMP TO MARKET STREET)	20+92.39	30	15	15	26.18			303.50	664.88	2.0%	450	2370	2.0%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	3	22	EB FOREST PARK (ON RAMP TO I64- EB FROM FOREST PARK AVENUE)	04+43.69	35	25	10	36.82			409.07	637.28	5.0%	525	991	5.0%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	3	22	SOUTH ACCESS RD TO RAMP B-1 (ON RAMP TO I64- EB FROM FOREST PARK AVENUE)	04+56.42	55	25	30	36.82			368.16	573.69	5.0%	825	2470	5.0%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	6	25	RAMP B-1 (ON RAMP TO I64- EB FROM FOREST PARK AVENUE)	11+35.08	35	35	0	38.00	382.00		760.00	1146.28	4.0%	525	1370	4.0%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4	23	RAMP B-2 (OFF RAMP FROM FOREST PARK TO MARKET ST)	08+44.95	40	15	25	44.23			231.58	300.00	5.0%	600	1310	5.0%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4	23	RAMP B-2 (OFF RAMP FROM FOREST PARK TO MARKET ST)	14+13.53	40	25	15	6.60			78.83	683.88	5.0%	600	1310	5.0%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4	23	MARKET ST. W.B. (ON RAMP TO I-64 WB)	03+44.10	55	30	25	20.42	275.00		680.57	1910.08	3.0%	825	4580	3.0%
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4	23	MARKET ST. W.B. (ON RAMP TO I-64 WB)	09+70.67	55	25	30	8.41			210.14	1432.69	3.0%	825	4580	3.0%

ATTACHMENT A

J6I3585: I-64 FREEWAY EXISTING CONDITION MATRIX - HORIZONTAL GEOMETRY																	
Corridor Information											Horizontal Geometrics			Horizontal Design Criteria			
As-Built Plan Number	Sheet Number	PDF Page Number	Location	Station	Posted Speed (MPH)	Operational Speed (MPH)	Speed Difference (MPH)	Δ	Horizontal Stopping Sight Distance		Curve Length	Radius	SE	Curve Length 15 x Speed if 60 or less 30 x Speed if greater than 60	Radius	SE	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	6	25	MARKET ST. W.B. (ON RAMP TO I-64 WB)	12+70.58	55	25	30	23.08			384.62	955.37	4.0%	825	3270	4.0%	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	6	25	MARKET ST. W.B. (ON RAMP TO I-64 WB)	16+09.03	55	15	40	23.01			293.51	731.47	2.0%	825	7150	2.0%	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	6	25	RAMP M (RAMP FROM MARKET STREET AND I-64 WB TO FOREST PARK AVE)	02+36.12	40	20	20	40.66			451.79	637.28	4.0%	600	1770	4.0%	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	3	22	RAMP M (RAMP FROM MARKET STREET AND I-64 WB TO FOREST PARK AVE)	07+36.52	40	30	10	20.34			338.93	955.37	5.0%	600	1310	5.0%	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	6	25	WEST BOUND FOREST PARK (OFF RAMP FROM WB I-64 TO FOREST PARK)	09+12.57	40	30	10	12.74			424.61	1910.08	3.0%	600	2510	3.0%	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	3	22	WEST BOUND FOREST PARK (OFF RAMP FROM WB I-64 TO FOREST PARK)	17+42.33	40	35	5	16.42			656.74	2292.00	3.0%	600	2510	3.0%	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	3	22	WEST BOUND FOREST PARK (OFF RAMP FROM WB I-64 TO FOREST PARK)	26+38.91	40	25	15	6.31			122.73	1115.08	3.0%	600	2510	3.0%	
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	3	22	WEST BOUND FOREST PARK (OFF RAMP FROM WB I-64 TO FOREST PARK)	28+09.26	35	35	0	6.31			252.34	2292.01	3.0%	525	1960	3.0%	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	CURVE TGSOUTH 01 (TOWER GROVE AVE.)	15+67.80	25	15	10	37.35			130.76	200.60	2.0%	375	1720	2.0%	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	CURVE TGNORTH-01 (TOWER GROVE AVE.)	11+66.58	25	15	10	71.62			130.65	104.52	2.0%	375	1720	2.0%	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	CURVE RABOUT -01 (TOWER GROVE AND PAPIN)	01+12.58	25	15	10	120.00			136.14	65.00	2.0%	375	1720	2.0%	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	CURVE PAPIN -02 (W. PAPIN ST)	00+94.83	25	15	10	57.24			173.62	173.80	2.0%	375	1720	2.0%	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	CURVE RABOUT -02 (TOWER GROVE AND PAPIN)	02+48.72	25	15	10	120.00			136.14	65.00	2.0%	375	1720	2.0%	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	CURVE RABOUT -03 (TOWER GROVE AND PAPIN)	03+84.85	25	15	10	120.00			136.14	65.00	2.0%	375	1720	2.0%	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	41	116	CURVE BN500 (BOYLE NORTH NB LANE)	01+74.78	25	15	10	29.48			164.62	320.00	2.0%	375	1720	2.0%	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	41	116	CURVE BN501 (BOYLE NORTH NB LANE)	03+16.33	25	15	10	17.81			121.21	390.00	2.0%	375	1720	2.0%	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	41	116	CURVE BN502 (BOYLE NORTH NB LANE)	04+34.69	25	15	10	45.18			110.40	140.00	2.0%	375	1720	2.0%	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	41	116	CURVE BN505 (BOYLE NORTH SB RT TURN LANE)	04+43.02	25	15	10	46.08			32.17	40.00	2.0%	375	1720	2.0%	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	41	116	CURVE BN509 (BOYLE NORTH SB RT TURN LANE)	03+62.12	25	15	10	57.73			141.06	140.00	2.0%	375	1720	2.0%	
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	41	116	CURVE BN510 (BOYLE NORTH SB RT TURN LANE)	02+03.00	25	15	10	27.86			167.28	344.00	2.0%	375	1720	2.0%	
	Indicates Advisory Speed			Does Not Meet Design Criteria For Posted Speed													
	Indicates Posted Speed																

ATTACHMENT A

J6I3585: I-64 FREEWAY EXISTING CONDITION MATRIX - VERTICAL GEOMETRY

Corridor Information							Vertical Geometrics						Vertical Design Criteria						
As-Built Plan Number	Sheet Number	PDF Page Number	Location	Station	Posted Speed (MPH)	Operational Speed (MPH)	Speed Difference (MPH)	Type (Sag, Crest)	Curve Length	Entrance Grade %	Exit Grade %	SSD	K	Calc'd A (Abs Ent. G-Ext G)	Req K (Tbl 3-34/36 Green book)	Req Length (3*Posted Speed Limit)	Calc'd K (Plan Length/A)	Req SSD - (Tbl 3-34/36 Green Book)	Calc'd SSD	Sag Comfort Length
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	15	90	I- 64 ML	1236+10.00	55	40	15	S	350	-2.15	3.30		64	5.45	114.90	165.00	64.22	495	N/A	354.54
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	15	90	I- 64 ML	1241+15.00	55	50	5	C	655	3.30	-4.46	427	84	7.76	113.50	165.00	84.41	495	426.79	0.00
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	15	90	I- 64 ML	1245+70.00	55	40	15	S	255	-4.46	-0.58		66	3.88	114.90	165.00	65.72	495	N/A	252.41
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	158	2	I-64 ML WB (AT SARAH AVE)	25+61.00	55	60	-5	C	900	4.00	-0.88	631	184	4.88	113.50	165.00	184.43	495	630.87	0.00
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	158	2	I-64 ML WB CURVE (EAST OF CLAYTON AVE)	39+01.00	55	80	-25	C	600	-0.88	-1.99	1080	541	1.11	113.50	165.00	540.54	495	1272.07	0.00
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	159	3	I-64 ML WB CURVE (EAST OF VANDEVENTER AVE)	47+19.00	55	60	-5	S	600	-1.99	2.00		150	3.99	114.90	165.00	150.38	495	N/A	259.56
As_Built_Plans_Bridge-(A3594)_1977---Viaduct	160	4	I-64 ML WB CURVE (NEAR SPRING AVE)	53+50.00	55	70	-15	C	400	2.00	0.50	759	267	1.50	113.50	165.00	266.67	495	919.33	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	5	24	I-64 ML WEST BOUND DB	09+25.00	55	60	0	C	1400	5.35	-3.50	470	158	8.85	113.50	165.00	158.19	495	584.28	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	7	26	I-64 ML WEST BOUND DB	22+00.00	55	45	0	S	580	-3.50	3.22		86	6.72	114.90	165.00	86.31	495	N/A	437.16
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	9	28	I-64 ML WEST BOUND DB	36+00.00	55	75	-20	C	2050	3.22	-2.50	700	358	5.72	113.50	165.00	358.39	495	879.44	0.00
As_Built_Plans_Bridge-(A3893)_1979---TowerGrove_to_Compton	137	6	I-64 ML EB (AT SARAH AVE)	24+50.00	55	60	-5	C	340	2.24	0.17	596	165	2.07	113.50	165.00	164.57	495	692.27	0.00
As_Built_Plans_Bridge-(L0667)_1955	1 of 39	1	I-64 ML EB CURVE (EAST OF CLAYTON AVE)	37+33.69	55	45	10	C	480	0.17	-6.15	405	76	6.32	113.50	165.00	75.95	495	404.84	0.00
As_Built_Plans_Bridge-(L0667)_1955	1 of 39	1	I-64 ML EB CURVE (EAST OF VANDEVENTER AVE)	46+11.76	55	20	35	S	150	-6.15	0.23		24	6.38	114.90	165.00	23.51	495	N/A	415.04
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	5	24	I-64 ML EAST BOUND DB	04+65.00	55	60	-5	C	580	5.35	1.50	460	151	3.85	113.50	165.00	150.65	495	570.18	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	5	24	I-64 ML EAST BOUND DB	12+79.19	55	65	-10	C	1048.38	1.50	-3.50	540	210	5.00	113.50	165.00	209.68	495	672.67	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	7	26	I-64 ML EAST BOUND DB	21+94.97	55	45	0	S	600	-3.50	3.22		89	6.72	114.90	165.00	89.29	495	N/A	437.16
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	9	28	I-64 ML EAST BOUND DB	36+00.00	55	75	-20	C	2050	3.22	-2.50	700	358	5.72	113.50	165.00	358.39	495	879.44	0.00
As_Built_Plans_Roadway_J6I0978-2010---I-64_Bellevue_to_Kingshighway	RDPR103	126	RAMP 3 (I-64 WB OFF RAMP TO KINGSHIGHWAY)	13+72.47	50	55	-5	C	75.58	-2.12	-2.77	1702	116	0.65	83.70	150.00	116.28	425	1697.79	0.00
As_Built_Plans_Roadway_J6I0978-2010---I-64_Bellevue_to_Kingshighway	RDPR103	126	RAMP 3 (I-64 WB OFF RAMP TO KINGSHIGHWAY)	19+13.72	50	50	0	S	200	-2.77	-0.70		97	2.07	95.70	150.00	96.62	425	N/A	111.29
As_Built_Plans_Roadway_J6I0978-2010---I-64_Bellevue_to_Kingshighway	RDPR104	127	RAMP 4 (I-64 EB ON RAMP FROM KINGSHIGHWAY)	14+01.06	55	40	15	C	190	-1.69	-5.00	421	57	3.31	113.50	165.00	57.40	495	420.98	0.00
As_Built_Plans_Roadway_J6I0978-2010---I-64_Bellevue_to_Kingshighway	RDPR104	127	RAMP 4 (I-64 EB ON RAMP FROM KINGSHIGHWAY)	17+30.33	55	60	-5	S	400	-5.00	-2.31		149	2.69	114.90	165.00	148.70	495	N/A	174.99
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	17	92	RAMP 2 (I-64 EB OFF RAMP TO TOWER GROVE AVENUE)	05+80.00	50	40	10	S	455	-1.81	5.26		64	7.07	95.70	150.00	64.36	425	N/A	380.11
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	17	92	RAMP 2 (I-64 EB OFF RAMP TO TOWER GROVE AVENUE)	09+00.00	50	40	10	C	150	5.26	1.90	396	45	3.36	83.70	150.00	44.64	425	396.13	0.00
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	17	92	RAMP 1 (I-64 WB ON RAMP FROM BOYLE AVENUE)	03+50.00	55	40	15	S	360	0.19	5.75		65	5.56	114.90	165.00	64.75	495	N/A	361.70
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	17	92	RAMP 1 (I-64 WB ON RAMP FROM BOYLE AVENUE)	06+90.00	55	40	15	C	170	5.75	1.91	366	44	3.84	113.50	165.00	44.27	495	365.99	0.00
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	18	93	RAMP 3 (I-64 WB OFF RAMP TO BOYLE AVE)	00+70.00	50	20	30	C	70	3.18	-4.70	748	9	7.88	83.70	150.00	8.88	425	171.93	0.00
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	18	93	RAMP 3 (I-64 WB OFF RAMP TO BOYLE AVE)	03+82.50	50	40	10	S	515	-4.70	3.25		65	7.95	95.70	150.00	64.78	425	N/A	427.42
As_Built_Plans_Bridge-(A3740)_1977---Grand	81	8	(ON RAMP FROM GRAND BLVD TO I-64 WB)	03+44.80	55	45	10	C	250	-0.46	-4.44	368	63	3.98	113.50	165.00	62.75	495	395.83	0.00
As_Built_Plans_Bridge-(A3740)_1977---Grand	81	8	(ON RAMP FROM GRAND BLVD TO I-64 WB)	07+57.00	55	15	40	S	50	-4.44	0.49	148	10	4.93	114.90	165.00	10.15	495	N/A	320.45
As_Built_Plans_Roadway_1981---F-BRF-40-5(47)---Sarah_to_Compton	19	24	EB RP TO BERNARD (I-64 EB OFF RAMP MARKET/BERNARD)	01+50.00	30	30	0	S	80	-0.07	2.81		28	2.88	36.40	90.00	27.81	200	N/A	55.68
As_Built_Plans_Roadway_1981---F-BRF-40-5(47)---Sarah_to_Compton	19	24	EB RP TO BERNARD (I-64 EB OFF RAMP MARKET/BERNARD)	03+30.00	30	30	0	C	60	2.81	1.74	348	56	1.07	18.50	90.00	56.07	200	1038.41	0.00
As_Built_Plans_Roadway_1961---(U-611(9))_Grand_Loop_Ramp	18	37	LOOP RAMP (I-64 EB OFF RAMP TO GRAND BLVD)	02+88.44	20	30	-10	C	100	3.43	-0.46	230	26	3.89	6.10	60.00	25.71	115	327.38	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	19	38	MARKET ST EB (I-64 EB OFF RAMP TO MARKET STREET)	13+25.00	30	35	-5	S	200	1.12	5.00		52	3.88	36.40	90.00	51.55	200	N/A	75.10
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	19	38	MARKET ST EB (I-64 EB OFF RAMP TO MARKET STREET)	15+50.00	30	35	-5	C	250	5.00	-1.22	240	40	6.22	18.50	90.00	40.19	200	298.47	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	19	38	MARKET ST EB (I-64 EB OFF RAMP TO MARKET STREET)	19+88.50	30	25	5	S	150	-1.22	3.30		33	4.52	36.40	90.00	33.19	200	N/A	87.48
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	22	41	RAMP B-1 (ON RAMP TO I64- EB FROM FOREST PARK AVENUE)	07+77.38	35	30	5	S	300	-4.00	2.37		47	6.37	49.00	105.00	47.10	250	N/A	167.81
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	22	41	EB FOREST PARK (ON RAMP TO I-64 EB)	15+33.43	35	40	-5	C	400	5.00	-4.00	250	44	9.00	29.00	105.00	44.44	250	309.70	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	22	41	RAMP B-1 (ON RAMP TO I64- EB FROM FOREST PARK AVENUE)	12+94.49	35	40	-5	C	200	2.37	-1.08	300	58	3.45	29.00	105.00	57.97	250	412.75	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	23	42	RAMP B-2 (OFF RAMP FROM FOREST PARK TO MARKET ST)	12+19.28	35	35	0	C	100	6.00	2.66	265	30	3.34	29.00	105.00	29.94	250	373.05	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	23	42	RAMP B-2 (OFF RAMP FROM FOREST PARK TO MARKET ST)	14+40.05	35	30	5	C	50	2.66	0.50	350	23	2.16	29.00	105.00	23.15	250	524.54	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	20	39	MARKET ST WB (ON RAMP TO I-64 WB)	03+19.56	55	40	15	C	200	2.50	-0.85	305	60	3.35	113.50	165.00	59.70	495	422.09	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	20	39	MARKET ST WB (ON RAMP TO I-64 WB)	12+87.77	55	30	25	S	100	-0.85	1.58		41	2.43	114.90	165.00	41.15	495	N/A	158.08
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	20	39	MARKET ST WB (ON RAMP TO I-64 WB)	16+67.48	55	40	15	C	50	1.58	0.50	650	46	1.08	113.50	165.00	46.30	495	1024.07	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	25	44	RAMP M (RAMP FROM MARKET STREET AND I-64 WB TO FOREST PARK AVE)	03+62.86	40	30	10	C	100	1.86	-3.53	475	19	5.39	43.10	120.00	18.55	305	250.19	0.00
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	25	44	RAMP M (RAMP FROM MARKET STREET AND I-64 WB TO FOREST PARK AVE)	06+87.37	40	25	15	S	200	-3.53	3.25	475	29	6.78	63.40	120.00	29.50	305	N/A	233.29
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	24	43	WEST BOUND FOREST PARK (OFF RAMP FROM WB I-64 TO FOREST PARK)	11+30.00	40	40	0	S	100	-2.10	-0.50		63	1.60	63.40	120.00	62.50	305	N/A	55.05
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	25	44	WEST BOUND FOREST PARK (OFF RAMP FROM WB I-64 TO FOREST PARK)	15+80.00	40	40	0	S	200	-0.50	2.08		78	2.58	63.40	120.00	77.52	305	N/A	88.77
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	25	44	WEST BOUND FOREST PARK (OFF RAMP FROM WB I-64 TO FOREST PARK)	26+45.40	40	50	-10	S	200	2.08	4.00		104	1.92	63.40	120.00	104.17	305	N/A	66.06
As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	25	44	WEST BOUND FOREST PARK (OFF RAMP FROM WB I-64 TO FOREST PARK)	29+31.97	40	40	0	C	400	4.00	-5.00	250	44	9.00	43.10	120.00	44.44	305	309.70	0.00
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	19	94	TAYLOR AVE.	07+05.00	30	35	-5	S	200	-0.40	3.50		51	3.90	36.40	90.00	51.28	200	N/A	75.48
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	19	94	TAYLOR AVE.	09+00.72	30	30	0	C	175	3.50	-5.67	205	19	9.17	18.50	90.00	19.08	200	205.17	0.00
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	19	94	TAYLOR AVE.	10+80.00	30	30	0	S	165	-5.67	-1.24		37	4.43	36.40	90.00	37.25	200	N/A	85.74
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	19	94	NEWSTEAD AVE.	04+36.00	25	30	-5	S	145	-0.37	3.54		37	3.91	25.50	75.00	37.08	155	N/A	52.55
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	19	94	NEWSTEAD AVE.	06+11.25	25	35	-10	C	140	3.54	-1.03	306	31	4.57	11.10	75.00	30.63	155	306.11	0.00
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	19	94	NEWSTEAD AVE.	07+66.00	25	30	-5	C	95	-1.03	-5.82	273	20	4.79	11.10	75.00	19.83	155	272.76	0.00
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	19	94	NEWSTEAD AVE.	09+30.00	25	30	-5	S	190	-5.82	-0.74		37	5.08	25.50	75.00	37.40	155	N/A	68.28
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	20	95	TOWER GROVE AVE.	07+25.00	25	30	-5	S	175	1.12	5.80		37	4.68	25.50	75.00	37.39	155	N/A	62.90

ATTACHMENT A

J6I3585: I-64 FREEWAY EXISTING CONDITION MATRIX - VERTICAL GEOMETRY																					
Corridor Information								Vertical Geometrics						Vertical Design Criteria							
As-Built Plan Number	Sheet Number	PDF Page Number	Location	Station	Posted Speed (MPH)	Operational Speed (MPH)	Speed Difference (MPH)	Type (Sag, Crest)	Curve Length	Entrance Grade %	Exit Grade %	SSD	K	Calc'd A (Abs Ent. G-Ext G)	Req K (Tbl 3-34/36 Green book)	Req Length (3*Posted Speed Limit)	Calc'd K (Plan Length/A)	Req SSD - (Tbl 3-34/36 Green Book)	Calc'd SSD	Sag Comfort Length
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	20	95	TOWER GROVE AVE.	09+40.00	25	30	-5	C	190	5.80	-4.01	205	19	9.81	11.10	75.00	19.37	155	204.99	0.00
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	20	95	TOWER GROVE AVE.	11+05.00	25	30	-5	S	115	-4.01	-1.00		38	3.01	25.50	75.00	38.21	155	N/A	40.46
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	20	95	TOWER GROVE AVE.	16+00.00	25	30	-5	C	50	0.51	-1.36	600	27	1.87	11.10	75.00	26.74	155	602.01	0.00
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	21	96	ROUNDABOUT (TOWER GROVE AND PAPIN)	00+90.00	20	25	-5	S	100	-1.90	1.55		29	3.45	16.50	60.00	28.99	115	N/A	29.68
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	21	96	ROUNDABOUT (TOWER GROVE AND PAPIN)	03+15.00	20	25	-5	C	60	1.55	-1.90	343	17	3.45	6.10	60.00	17.39	115	342.75	0.00
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	21	96	W. PAPIN ST	01+61.00	25	25	0	S	98	-4.08	-0.47		27	3.61	25.50	75.00	27.15	155	N/A	48.52
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	18	93	BOYLE NORTH SB RT. TURN LANE	01+00.00	25	15	10	S	30	-2.95	1.84		6	4.79	25.50	75.00	6.26	155	N/A	64.38
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	18	93	BOYLE NORTH NB LANES	00+90.00	25	15	10	S	30	-2.91	0.54		9	3.45	25.50	75.00	8.70	155	N/A	46.37
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	20	95	BOYLE AVE.	08+05.00	25	30	-5	S	90	0.68	2.92		40	2.24	25.50	75.00	40.18	155	N/A	30.11
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	20	95	BOYLE AVE.	09+70.00	25	30	-5	C	115	2.92	-2.98	240	19	5.90	11.10	75.00	19.49	155	240.38	0.00
As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	20	95	BOYLE AVE.	11+65.00	25	35	-10	S	150	-2.98	-0.40		58	2.58	25.50	75.00	58.14	155	N/A	34.68
	Indicates Advis	advisory speed		Does Not Meet Design Criteria For Posted Speed																	
	Indicates Poste	Posted speed																			

ATTACHMENT A

J6I3585:	J6I3585: I-64 FREEWAY EXISTING CONDITION MATRIX - RAMP ACCELERATION AND DECELERATION LENGTHS																	
										Ramp Geometrics					Ramp Criteria			
Alignment Number	Alignment Sequence	As-Built Plan Number	Sheet Number	PDF Page Number	Location	ML Speed (MPH)	Operational Ramp Speed (MPH)	Acceleration/Decleration	Parallel (P) or Taper (T) Ramp Type	Measured Length	Ramp Radius	Ramp Superelevation	Average Grade %	Flat Grade Length	Grade Factor	Required L
4	A	As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	37	112	RAMP K3(I-64 WB OFF RAMP TO KINGSHIGHWAY)	55	50	D	P	2100.00	1910.00	5.5%	-2.49%	0	1.00	0
5	A	As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	37	112	RAMP K4 (I-64 EB ON RAMP FROM KINGSHIGHWAY)	55	50	A	P	872.00	1206.23	5.6%	-4.16%	0	0.00	0
6	A	As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	RAMP 2 - (I-64 EB OFF RAMP TO TOWER GROVE AVENUE)	55	20	D	P	872.00	850.00	3.8%	5.25%	440	0.80	352
7	A	As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	39	114	RAMP 1- (I-64 WB ON RAMP FROM BOYLE AVENUE)	55	25	A	P	2100.00	881.47	3.6%	5.57%	780	1.70	1326
8	A	As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	I-64 EB OFF RAMP TO VANDEVENTER	55	40	D	P	782.00	951.37	8.0%	-2.02%	285	1.00	285
9	A	As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	RAMP 3 - (I-64 WB OFF RAMP TO BOYLE AVE)	55	40	D	T	275.00	930.00	7.0%	4.11%	285	0.90	256.5
10	A	As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	I-64 WB ON RAMP FROM VANDEVENTER	55	50	A	P	987.00	819.02	8.0%	5.00%	0	0.00	0
11	A	As_Built_Plans_Roadway_J6I1248-2015---I-64_Kingshighway_to_Sarah	40	115	RAMP 4 - (I-64 EB ON RAMP FROM PAPIN ST)	55	25	A	P	415.00	954.93	4.0%	2.89%	780	1.00	780
12	A	As_Built_Plans_Bridge-(A3594)_1977---Viaduct	81	8	ON RAMP FROM GRAND BLVD TO I-64 WB	55	25	A	P	540.00	954.93	4.0%	4.07%	780	1.40	1092
13	A	As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4	23	I-64 EB OFF RAMP TO MARKET STREET	55	30	D	P	200.00	955.36	4.0%	4.30%	380	0.90	342
14	B	As_Built_Plans_Roadway_1961---(U-611(9))_Grand_Loop_Ramp	4	23	LOOP RAMP AT GRAND (I-64 EB OFF RAMP TO GRAND BLVD)	55	15	D	P	285.00	90.00	3.0%	3.10%	455	0.90	409.5
16	A	As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	6	25	RAMP B-1 (ON RAMP TO I64- EB FROM EB FOREST PARK)	55	30	A	P	1290.00	1146.28	4.0%	1.98%	670	1.00	670
17	A	As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4	23	RAMP B-2 (OFF RAMP FROM FOREST PARK TO MARKET ST)	40	15	D	P	627.00	300.00	5.0%	4.99%	295	0.90	265.5
18	A	As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	4	23	MARKET ST. W.B. (MARKET STREET WB ON RAMP TO I 64 WEST BOUND)	55	30	A	P	550.00	1910.00	3.0%	2.50%	670	1.00	670
20	A	As_Built_Plans_Roadway_U-40-5-(6)_1966---I-40(64)_Grand_Jefferson	3	22	WEST BOUND FOREST PARK (OFF RAMP FROM WB I-64 TO FOREST PARK)	55	30	D	P	1796.00	1910.08	3.0%	1.79%	380	1.00	380
			Indicates Advisory Speed					Does Not Meet Design Criteria For Posted Speed								
			Indicates Posted Speed													

Attachment B

Existing Utilities

ATTACHMENT B

Utility Company	Utility Type	Minor Utilities	Major Utilities*
ADB	Communications	Yes	Unknown
Ameren	Power	Yes	Yes
AT&T-D	Communications	Yes	Yes
AT&T-T	Communications	No	Yes
BJC Health Care	Communications	Yes	No
Bluebird	Communications	Yes	No
CenturyLink – National/Lumen	Communications	No	Yes
Everstream	Communications	Yes	No
Verizon (MCI)	Communications	Yes	Unknown
MetroLink	Rail Transit Power	No	Yes
MilliporeSigma	Communications	Yes	No
MoDOT ITS	Communications	Yes	Yes
MSD	Storm/Sewer	Yes	Yes
SLU	Communications	Yes	Yes
Spire	Gas	Yes	Yes
Sprint	Communications	Yes	No
St Louis City Lights	Power	Yes	No
St Louis City Signal	Power	Yes	No
St Louis City Water	Water	Yes	Yes
Wells Fargo	Communications	Yes	No
Windstream	Communications	Yes	No
Zayo	Communications	Yes	No

* Some facility sizes are unknown

The following utilities exist in the vicinity of the Jefferson Ave. overpass:

- MODOT ITS fiber optic along north side of the west bound lanes/ramps of I-64.

- CenturyLink -Lumen fiber optic cable along the south side of I-64 ROW. This facility is fully reimbursable to CenturyLink due to existing CenturyLink/MODOT agreement.

- St. Louis City Water (1) 20” main. North side turns out and runs under Jefferson Ave. South side crosses from the east side of Jefferson to the west side. Facility reimbursable.

- Multiple ATT-D duct systems attached to new Jefferson Bridge including a new 9-way conduit system running from east side of Jefferson Ave. to the west on south side of 64 and crosses I-64to the north and continues east back to the east edge of Jefferson Ave. ATT-D aerial cable along north side of 64 ROW.

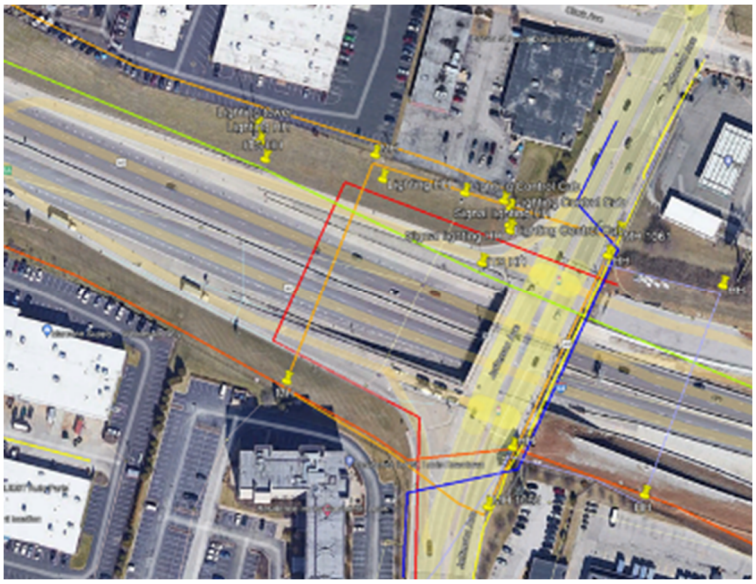
- ATT-T runs from east edge of Jefferson Ave. to the east and turns south crossing 64. Turns back to the west and stops at the east edge of Jefferson Ave.

- Spire has an 8” main running along east edge of Jefferson Ave. south to north.

ATTACHMENT B

- Verizon has underground facilities running along the west side of Jefferson Ave from the south turning west and crosses I-64to the north then turning east and crossing over to the east side of Jefferson Ave.

- Multiple Metro Sewer Dept structures for both sanitary and storm water thru-out Right of Way area.



The following Utilities exist in the vicinity of the area between Jefferson Ave. & S. Ewing:

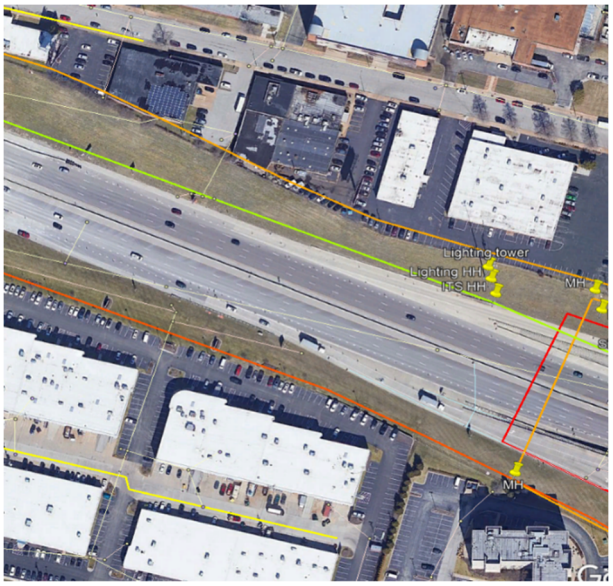
- MODOT ITS fiber continues on the north side of west bound I-64 lanes.

- CenturyLink-Lumen continues on the south side of the east bound of I-64 ROW. This. Facility is fully reimbursable to CenturyLink due to existing CenturyLink/MODOT agreement.

- ATT-D overhead facility on the north of I-64 Right of Way.

- Multiple Metro Sewer Dept structures for both sanitary and storm drainage thru-out Right of Way area.

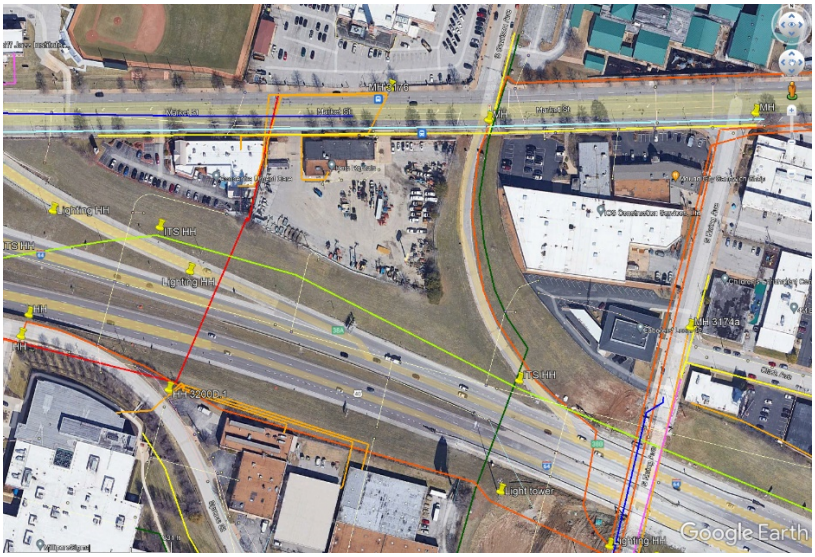
ATTACHMENT B



The following Utilities exist in the vicinity of the area of S. Ewing Ave.

- MODOT ITS fiber continues on the north side of west bound I-64 lanes
- CenturyLink-Lumen continues on the south side of east bound I-64 lanes and includes crossings at the I-64/S. Ewing Ave overpass and crossing at the west bound exit ramp.
- St. Louis City water has a 20” steel main that crossing at the overpass. A 6” water runs within the east bounds lanes of Market St.
- ATT-D 6-way duct bank attached to the bridge structure of S. Ewing Ave.
- 2” Spire gas line along the south side of Market St.
- A MillisporeSigma (3 way) duct package crossing I-64south to north at the exit ramp off west bound I-64.
- A Zayo underground fiber system along the southside of east bound Market St.
- Multiple Metro Sewer Dept structures for both sanitary and storm drainage thru-out Right of Way area.
- Ameren has overhead facilities along the southside of I-64 at 3050 Spruce St. runs to the north ending at southeast corner of 3100 Market St. and continuing north underground to north side of Market St. Ameren overhead continue to run west on the south side of Spruce St.

ATTACHMENT B



The following Utilities exist in the vicinity of the area of S. Compton Ave.

- MODOT ITS fiber continues and passes the south side of west bound I-64 lanes and continues for a distance between the west and east bound traffic lanes then crosses to the south of east bound lanes and crosses back north of east and west bound lanes and continuing northwest across the market ramp into west bound I-64.

- Zayo underground fiber continues from southside of Market St to the north along the east side of S. Compton Ave.

- St. Louis City water 12” and 30” steel main from south side of I-64 to the north side and crosses Market St. both water mains continue to the west crossing S. Compton Ave. and the 30” main follows along the north side of Forest Park Ave.

- CenturyLink-Lumen crosses from north to south side of Spruce St. and continues along the south side of Spruce to the west.

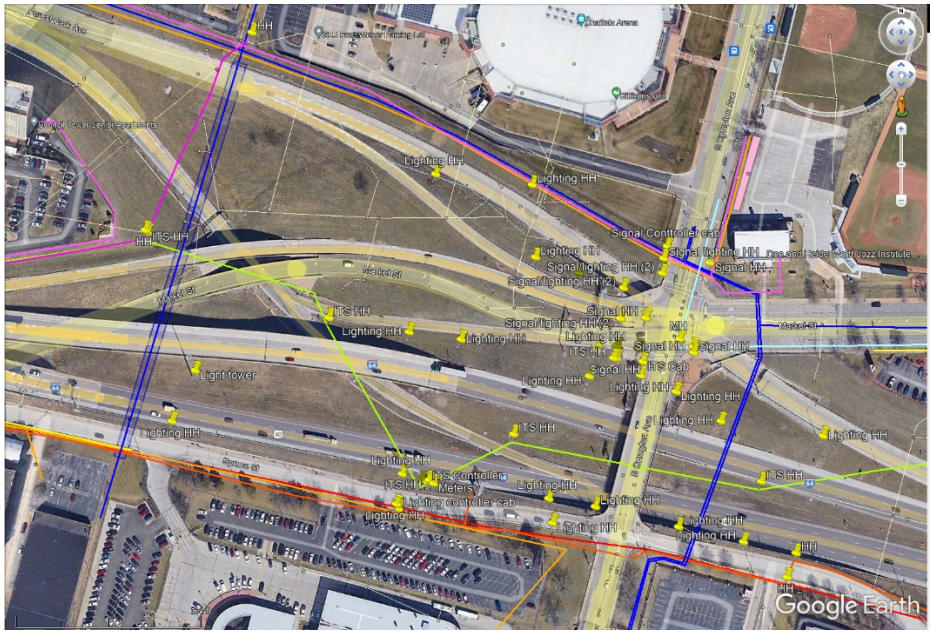
- CenturyLink -Lumen facilities at the northeast intersection of Market St. & S. Compton Ave.

- ATT-D UG facilities exist to the north of Forest Park Ave. and the south of Spruce St.

- Multiple Metro Sewer Dept structures for both sanitary and storm drainage thru-out Right of Way area.

- Ameren overhead continues to run to the west along south side of Spruce St.

ATTACHMENT B



The following Utilities exist in the vicinity of the area of Forest Park Ave./Market St./I-64

- MODOT ITS fiber continues along the north side of ramp to west bound I-64 lanes and continues along the north side of the west bound I-64 traffic lanes.

- St. Louis University fiber facilities crosses from the southeast side of Grand Forest Apts under Forest Park Ave. to the northside of the market St. ramp onto west bound I-64 and continues to west along north side of I-64 west bound. Fiber facilities also runs from the north to south side of I-64 to St. Theresa Ave.

- Charter facilities exist around the perimeter of the Midtown 300 complex/Council Tower Apts. continuing to the west on the northside of I-64 Right of Way. Underground facility also exist along the north Right of Way of Forest Park Ave.

- St. Louis City Water 36” main encased in concrete facility exists from northside of Forest Park Ave. southeast corner of Grand Forest Apts complex to the south under I-64 at the west side of the Metro Link Central Facility. A 48”, 20”, and 12” (parallel and encased in concrete on portions under roadways) water main system from the southwest corner of the Grand Forest Apts complex exists to the south to the intersection of Spruce St. & Bernard St. 30” main exists along north side of Forest Park Ave.

- 12” Spire gas main from southwest corner of Grand Forest Apts complex runs to the south under I-64 to the intersection of Spruce St. & Bernard St. A 2” gas main from the intersection of Spruce & Bernard St. runs to the west into the property at 3562 Bernard St.

ATTACHMENT B

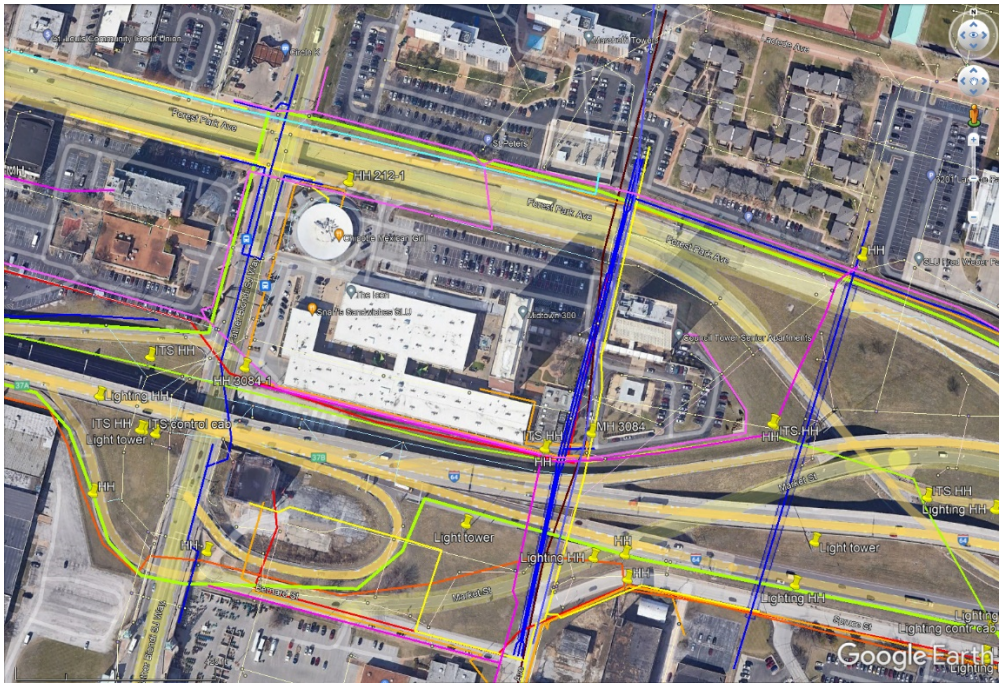
- Windstream Underground fiber facilities from the southwest corner of the Grand Forest Apts complex exists to the south to the intersection of Spruce St. & Bernard St.

- Ameren overhead continues west from the south side of Spruce St. across S. Theresa Ave. and continues west along the south side of Bernard St. turns north and stops at 3562 Bernard St. Ameren runs overhead along the north Right of Way of I-64 from Grand Blvd to the east and turns north underground within a private easement to the south side of Forest Park Ave. Right Of Way.

- ATT-D underground fiber facilities along the north Right of Way of west bound I-64 and east side of Grande Ave. from I-64 to intersection of Grande Ave. & Forest Park Ave. ATT-D underground facilities on the north side of Forest Park Ave. Right Of Way. Underground facilities from intersection of S. Theresa Ave. & Bernard St. to the west along Bernard Right of Way.

- Everstream fiber facility along north edge of Forest Park Ave. Right Of Way.

- Multiple Metro Sewer Dept structures for both sanitary and storm drainage thru-out Right of Way area.



The following Utilities exist in the vicinity of the area of Grand Blvd./Market St./Forest Park Ave/I-64

- MODOT ITS fiber continues along the north side of I-64 Right of Way

- CenturyLink-Lumen fiber continues along the south Right of Way of I-64.

ATTACHMENT B

- St. Louis City Water has a 30” steel main placed within Grand Blvd roadway from the north and continues to the south across I-64 and connects with a 12” main that continues to run south under Grand Blvd pavement. Turn out from under pavement at Bernard St. A 30” steel main ties into water system at Counsel Plaza (south of Forest Park Ave.) Ts off from center 30’ main and turns north to Forest Park Ave. and turns going east and west along south side of Forest Park Ave. Right Of Way.

- ATT-D has an underground fiber facility along east Right of Way of Grand Blvd. toward Forest Park Ave and turns east with south Right of Way.

- Charter has overhead facilities that cross east to west over Grand Blvd from the north side of I-64 Right of Way. Overhead facilities continue to the west in the north edge of I-64 Right of Way. Underground Charter facilities continue north along west edge of Grand Blvd Right of Way to Forest Park Ave. and turn east underground along south Right of Way of Forest Park Ave. Charter Underground facility crosses from south to north side of Forest Park Ave, just east of ramp to underpass Grand Blvd. Charter runs east and west after crossing Forest Park Ave., along north Right of Way.

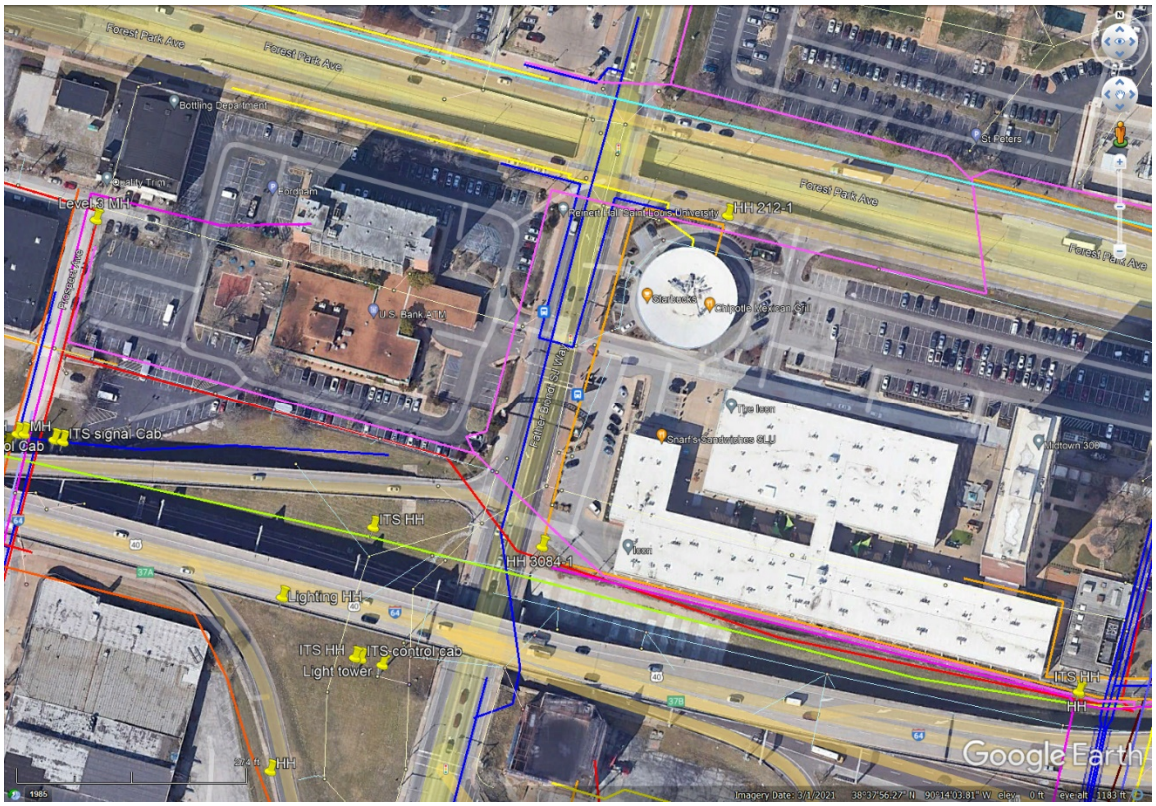
- Everstream facility runs east/west along Forest Park Ave. north Right of Way.

- Spire service line crosses west to east to 212 S. Grand Blvd

- Multiple Metro Sewer Dept structures for both sanitary and storm drainage thru-out Right of Way area.

- Ameren continues to run west from Grand Ave. along the north Right of Way of I-64.

ATTACHMENT B



The following Utilities exist in the vicinity of the area of Prospect Ave./S. Spring Ave./I-64

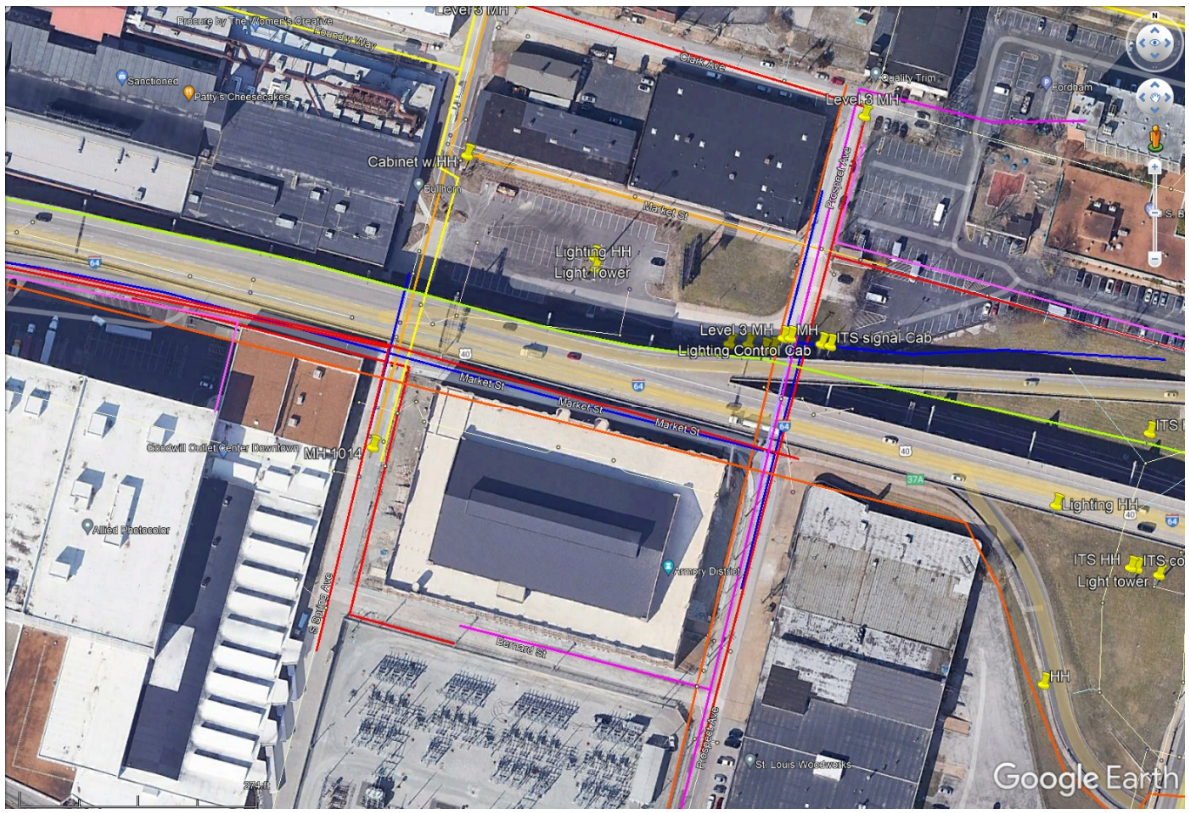
- MODOT ITS fiber continues along the north side of I-64 Right of Way.
- CenturyLink-Lumen fiber continues along the south Right of Way of I-64.
- ST. Louis City Water has a 12” main in place under I-64 from the north (Prospect Ave.) and continues to the south (Prospect Ave.) 12” main tie in and runs within roadway of Market St. from Prospect to Vandeventer Ave. 8” main runs from the north side of I-64 (southeast corner of new St. Louis Foundry dev.) to the south, crossing Market St. and continues south under pavement of S. Spring Ave.
- CenturyLink-Lumen has a underground fiber facility in place under I-64 from the north (Prospect Ave.) and continues to the south (Prospect Ave.).
- St. Louis Univ. has an underground facility in place under I-64 from the north (Prospect Ave.) and continues to the south (Prospect Ave.) utilizing a spare conduit within an ATT-T system.
- ATT-T has an underground facility in place under I-64 from the north (Prospect Ave.) and continues to the south (Prospect Ave.)
- Ameren underground duct systems from power station yard (addressed 501 Prospect Ave). runs within pavement on the east side of Prospect Ave to the north and crosses I-64 to the north under Prospect continuing out of study limits. Underground duct system from 501 Prospect Ave.

runs north under S. Spring Ave. continues to Market St. and turns west under Market St. Records showed 2 separate duct packages with roadway. (1 near center and 1 varied from center top south side of roadway).

- ATT-D has an underground 6-way duct run from the north side of I-64 (southeast corner of new St. Louis Foundry dev.) to the south, crossing Market St. and continues south under pavement of S. Spring Ave.

- Spire has an 8" steel gas main from the north side of I-64 (southeast corner of new St. Louis Foundry dev.) to the south, crossing Market St. and continues south under pavement of S. Spring Ave.

- Multiple Metro Sewer Dept structures for both sanitary and storm drainage thru-out Right of Way area.



The following Utilities exist in the vicinity of the area of I-64 from S Spring Ave. to Vandeventer Ave

- MODOT ITS fiber continues along the north side of I-64 Right of Way

- CenturyLink-Lumen fiber continues along the south Right of Way of I-64.

ATTACHMENT B

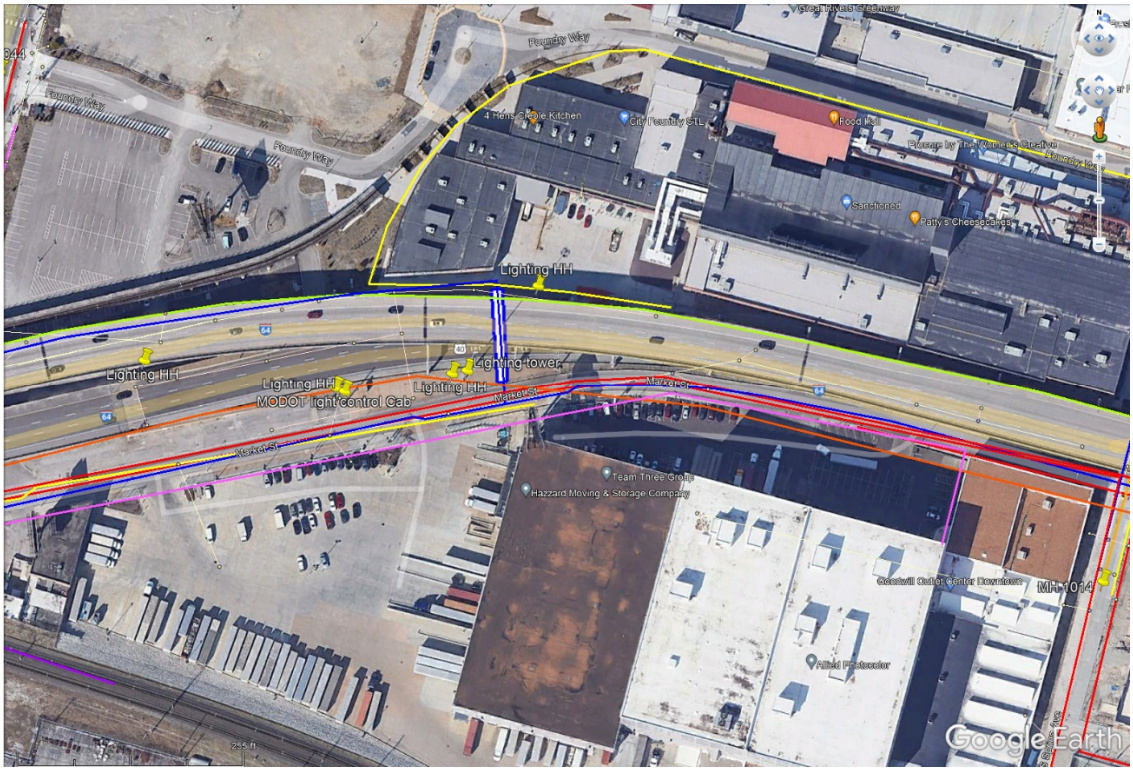
- St. Louis City Water 12” main continues to run within roadway of Market St. from Prospect to Vandeventer Ave. 12” steel main, encased in concrete, runs from south of Market St. ROW to the north side of I-64 in proximity of the St. Louis Foundry loading ramp. 12” main transitions to an 8” and turns west along north Right of Way of I-64.

- Charter has an Underground system along the south of Market St. ROW.

- Spire has a 4” main under pavement on the south side of Market St. Main ends at front of 3728 Market St. and begins at a 12” main tee on S. Vandeventer Ave., south of I-64. A 4” main runs thru the St. Louis Foundry Development and wraps around the west side of complex turning to the south and follows back to the east and ends past the St. Louis Foundry loading ramp area.

- Ameren duct runs continued to S. Vandeventer Ave. 1 run turned north along east edge of Roadway. 2nd run turned south and ran along east side of roadway and gradually veered from east side to the west side of S. Vandeventer Ave.

- Multiple Metro Sewer Dept structures for both sanitary and storm drainage thru-out Right of Way area.



The following Utilities exist in the vicinity of the area of I-64 from S. Vandeventer Ave to S. Sarah St.

- MODOT ITS fiber continues along the north side of I-64 Right of Way.

ATTACHMENT B

- CenturyLink-Lumen fiber continues along the south Right of Way of I-64. Underground fiber exists on northwest edge of Right of Way of S. Vandeventer Ave.

- CenturyLink-Lumen fiber from entrance to IKEA continues south along west Right of way of Vandeventer Ave. to under I-64 to intersection of Clayton Ave., turns west and follows north Right of Way of Clayton Ave to the west and continues past the underpass of I-64.

- St. Louis City Water 12" main runs within roadway of S. Vandeventer Ave. north of I-64 to the south and crosses under I-64 continuing southwest under pavement with 6" and 12" tap at Sarpy Ave. A 6" tap at Gratiot St. 6" Gratiot tap that continues west to S. Sarah and transitions to 12" main at the turn and continues north to underpass of I-64. A 6" tap at Sarpy Ave, just north I-64. 12" main continues north out of study area to Clayton Rd. Transitions to 6" main to turn to the east under Clayton Rd and back into the scope of study area.

- Main stops in proximity at the front of 3928 Clayton Rd. 12" main along S. Vandeventer has (2) 6" taps @ Papin St. 1 east and 1 west. 6" tap to west continues to S. Sarah St. (out of Study area, but enters back into study area past Bartle Ave.) 6" tap at Sarpy continues to west turns south at St. Bernard's Ln. 6" tap then connects with 6" on Gratiot St.

- Spire 12" main runs within roadway of S. Vandeventer Ave, north of I-64 to the south and crosses under I-64 with a 2" main tap at Clayton Ave. that continues to S. Sarah St. A 4" main tap at intersection of Gratiot ST. & S. Vandeventer Ave. that runs west to front of 4001 Gratiot St. and stops.

- Metro overhead cantilever power for rail system runs east to west under S. Vandeventer Ave & I-64

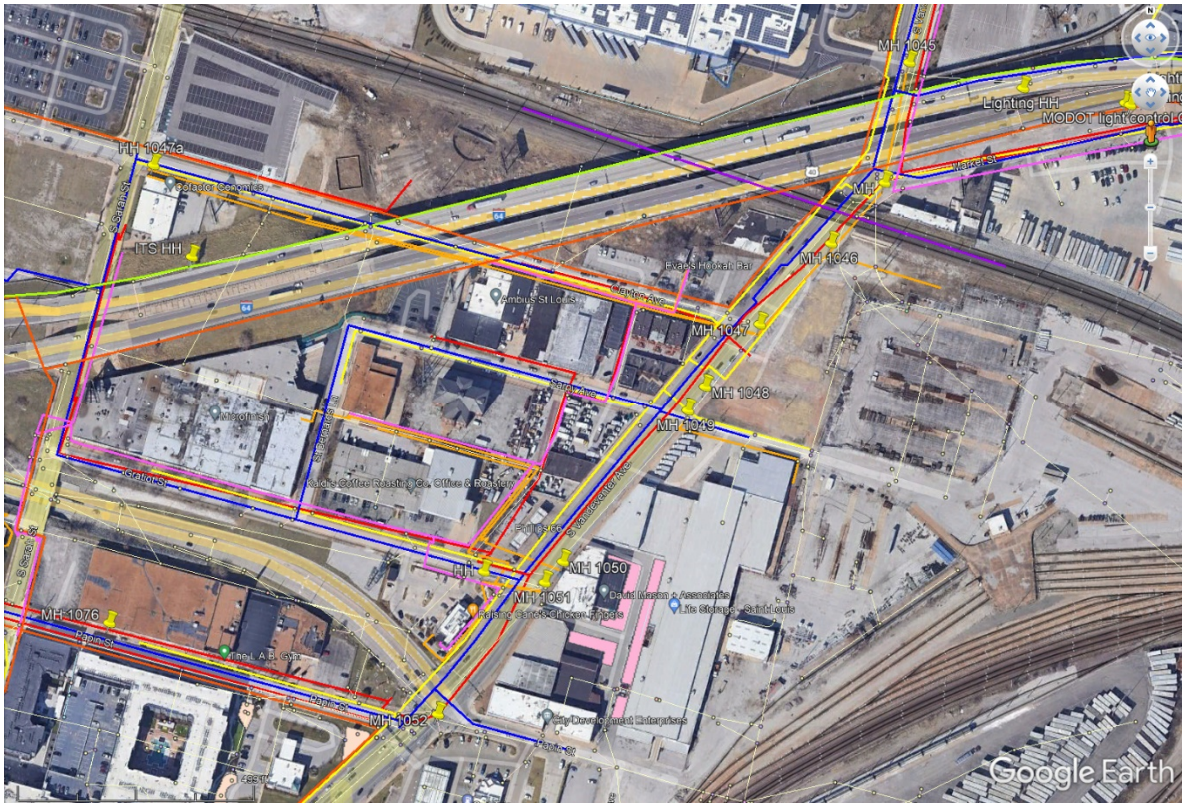
- ATT-D shows underground and overheard facilities that run from S. Vandeventer Ave. to the west along Clayton Ave on the south side of ROW. Underground facilities that run underground from MH(s) 1050/1051 to the west and turning into rear easements ending at St. Bernard's Lane, including 1 fiber to serve 805 S. Vandeventer Ave.

- Charter shows primarily overhead facilities along the south side of Clayton Ave. and feed thru rear easements to Gratiot St. North side of Gratiot St., facilities run to the west to S. Sarah St. and crosses to the west side and turns south. An underground facility crosses S. Sarah St. and turns north crossing under I-64.

- Ameren has multiple overhead aerial facilities feeding from underground system under S. Vandeventer Ave. along north side of Right of Way of Gratiot. North side of Right of Way of Sarpy Ave. South side of Right of Way of Clayton Ave. An underground facility runs from south side to north side of 64 within the east edge of S. Sarah St. Right Of Way.

- Multiple Metro Sewer Dept structures for both sanitary and storm drainage thru-out Right of Way area.

ATTACHMENT B



The following Utilities exist in the vicinity of the area of I-64 from S. Sarah Ave to S. Boyle Ave.

- MODOT ITS fiber continues along the north side of I-64 Right of Way

- CenturyLink-Lumen fiber continues along the south Right of Way of I-64 just west of S. Sarah St. Underground fiber system turns north and south. CenturyLink turning north passes under I-64 to the north and turns west and continues to run in the north Right of Way. CenturyLink system that turns south on S. Sarah St. runs on the west side of Right of Way till the service leaves the study limits. An overhead Fiber cable enters back into the study limits at the front of 4144 Papin St. and continues to run along the south side of Papin St. to the Tower Grove round about.

- St. Louis City water has a 6” main runs within the Papin St. roadway From S. Sarah St.to the west past S. Boyle and continues to Tower Grove Ave. A 6” water main runs within the Gratiot St. roadway and turns north at the S. Sarah St intersection and continues north out of the study limits. A 6” main taps into the Sarah St. 6” at the intersection of Sarpy Ave. and S. Sarah St and continues west on Sarpy ending near the front of 4209 Sarpy Ave. 6” main runs north from the intersection of Papin St. and S. Boyle Ave. under the roadway of S. Boyle and turns out from under pavement and crosses I-64 from the south to the north and turns back under pavement north of the ramp onto west bound I-64 out of study limits.

- Charter facilities run south from the intersection of Gratiot St. & S. Sarah St. along the west side of S. Sarah St. and continue out of the study limits. Charter facilities serving 4245 Papin St.

ATTACHMENT B

leaves address, crosses to south side of Papin St. turns west and continues overhead past S. Boyle Ave. to Tower Grove round about.

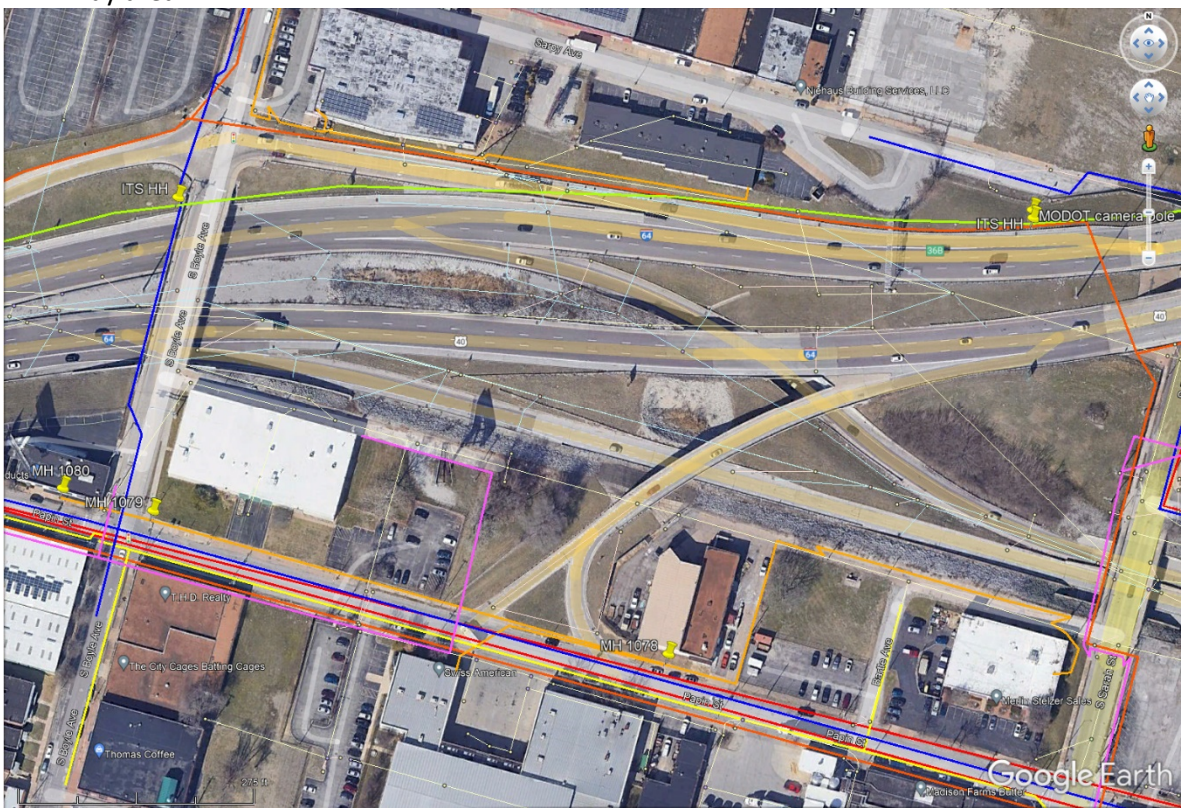
- Spire facilities enter study limits at the front of 4144 Papin St. with a 2” main along the south edge of roadway and continue west to intersection of S. Boyle and Papin St. 2” main turns south out of study limits.

- ATT-D underground duct bank w/manhole structures at front of 4144 Papin St. continues to the west on the north side of Papin St. Right Of Way past S. Boyle St. and ends at manhole front of 4307 Papin St. Underground and overhead cable on the north side of I-64 Right of Way. From rear of 4200 Sarpy Ave. to west and turning north on S. Boyle Ave. out of study limits.

- Verizon facilities run from the front of 4144 Papin St. along the south side of Papin St. Right of Way and continues west to Tower Grove round about.

- Ameren overhead facility runs along north side of Papin St. Right of Way from east to west and enters into the underground at Tower Grove Ave.

- Multiple Metro Sewer Dept structures for both sanitary and storm drainage thru-out Right of Way area.



ATTACHMENT B

The following Utilities exist in the vicinity of the area of I-64 from S. Boyle Ave. to S. Newstead

- MODOT ITS fiber continues along the north side of I-64 Right of Way

- CenturyLink-Lumen continues to run on the north side Right of Way of I-64. Lumen overhead facility runs from the intersection Papin St. & Tower Grove Ave. to the north along the west side of Tower Grove Ave. and continuing to cross I-64 out of the study limits.

- St. Louis City water has a 6" main that crosses I-64 north to south. It is possible this is attached to the bridge. Upon the crossing I-64 on the north water main leaves the study limits. On the south, water crosses Papin St. and turns west and passes along the roundabout.

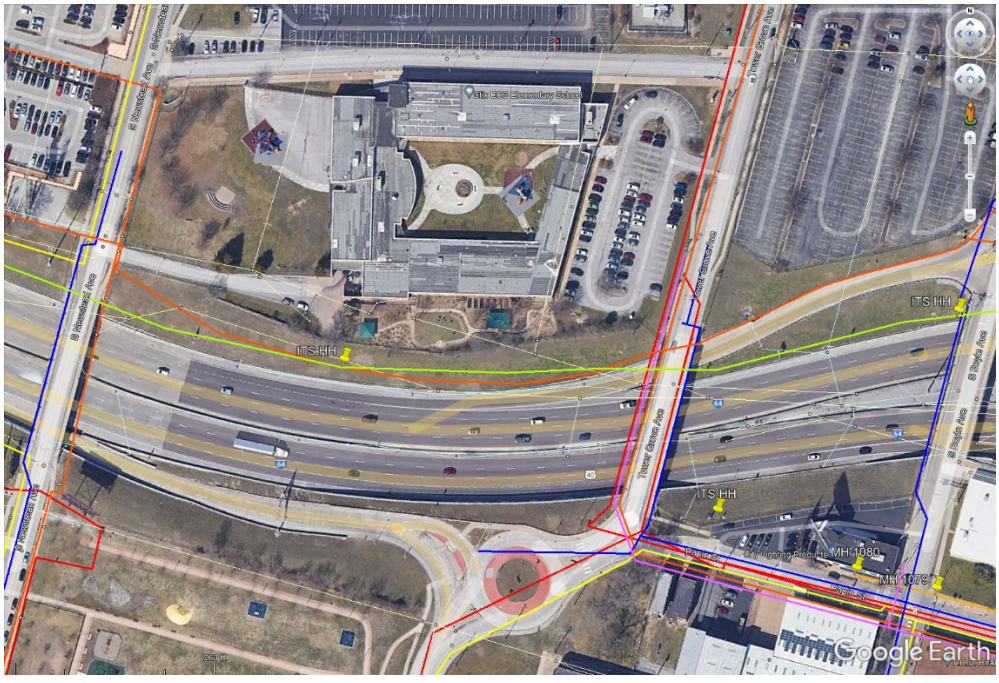
- Verizon aerial facility crosses I-64 north to south along the west side of Tower Grove Right of Way and continuing out of study limits.

- Charter aerial facility crosses I-64 north to south along the west side of Tower Grove Right of Way and continuing out of study limits.

- Spire has a 8" steel main along the S Newstead west side Right of Way turns west just north of the Newstead bridge and continues west for approx. 140' then turns south and crosses I-64 turning east back to S. Newstead and turning south in the west edge of road continuing out of the study limits.

- Ameren underground facility runs north from manhole at intersection of Papin St. and Tower Grove Ave. and run southeast continuing out of study limits.

- Multiple Metro Sewer Dept structures for both sanitary and storm drainage thru-out Right of Way area.



ATTACHMENT B

The following Utilities exist in the vicinity of the area of I-64 from S. Newstead to S. Taylor Ave.

- MODOT ITS fiber continues along the north side of I-64 Right of Way

- CenturyLink-Lumen facility continues to run within the I-64 Right of Way on the north side and continues to the west past S. Taylor Ave. UG facility crosses from north to south of I-64 within duct system attached to the S. Taylor Ave overpass.

- ADB has a underground facility that runs from the east side of S. Taylor Ave. north of I-64 to the south and turns east along north side of I-64 Right of Way. Facility continues east for approximate 450' and turns south under I-64 to the south edge of I-64 Right of Way and turns west back to the east side of S. Taylor and turns south continuing out of study limits.

- Verizon has a underground facility that runs from the east side of S. Taylor Ave. north of I-64 to the south and turns east along north side of I-64 Right of Way. Facility continues east for approx. 210' and turns south under I-64 to the south edge of I-64 Right of Way and turns west back across S. Taylor and continues to follow the I-64 south Right of Way.

- St. Louis City water has a 6" main that runs from the north within the west side of S. Taylor and crosses to the east just north of S. Taylor overpass of I-64. Line continues to the east for approx. 100' and turns south and runs under I-64 to the south of I-64 Right of Way. Line turns to the west and then turns south in the back of S. Taylor right Of Way. Main continues south out of the study limits.

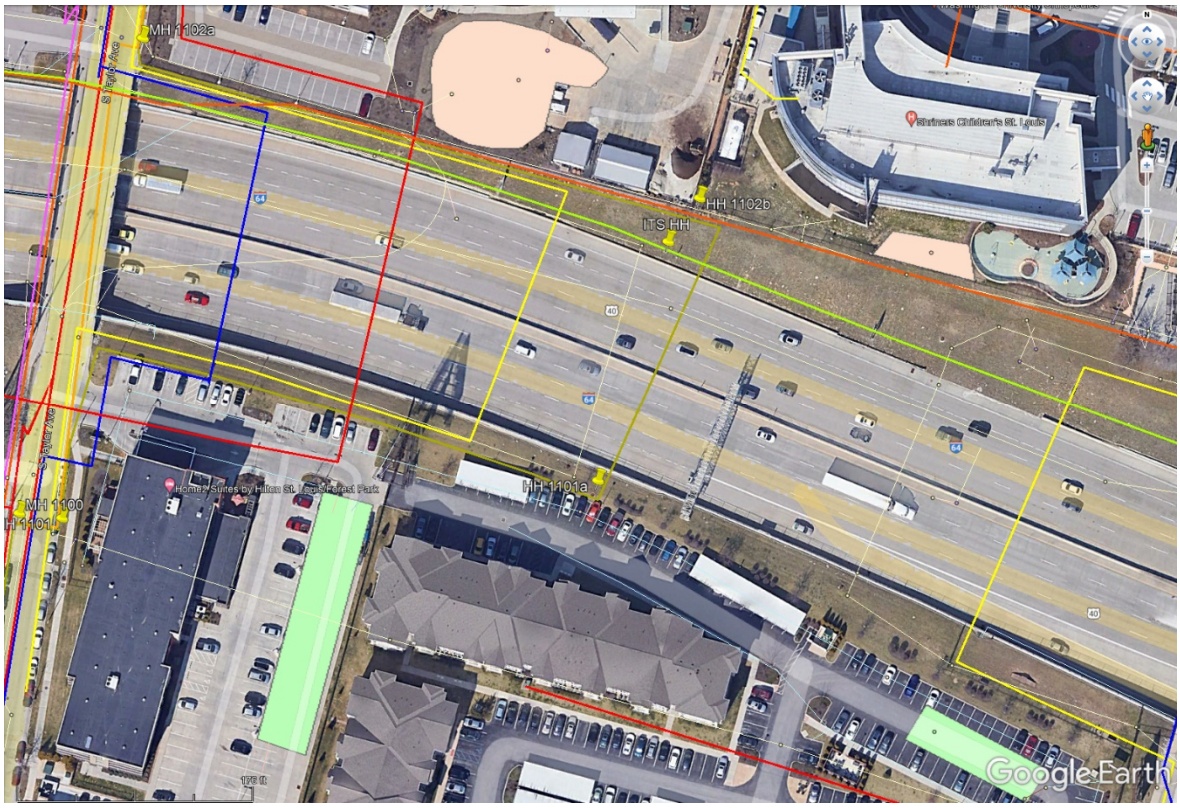
- Charter UG facility crosses from north to south of I-64 within duct system attached to the S. Taylor Ave overpass.

- ATT-D facility crosses from north to south of I-64 within duct system attached to the S. Taylor Ave overpass.

- Ameren underground facilities cross S. Newstead Ave. within study limits on the south side of I-64for approximately 150 feet. Underground facilities cross I-64, north to south, within a duct package in the S. Taylor Ave overpass to I-64. Facilities are out of study scope on the north and south side once it passes bridge structure.

- Multiple Metro Sewer Dept structures for both sanitary and storm drainage thru-out Right of Way area.

ATTACHMENT B



The following Utilities exist in the vicinity of the S. Taylor Ave. to S. Kingshighway Blvd

- MODOT ITS fiber continues west along the north side of I-64 Right of Way. Fiber branches off east of the S. Kingshighway overpass and runs south under I-64 turns west continuing to west out of study limits.

- CenturyLink-Lumen facility continues to run within the I-64 Right of Way on the north side and continues to the west past S. Kingshighway Blvd.

- Verizon facility continues to follow the south side of the I-64 right Of Way. Facility veers to the south out of the study limits and crosses to the west side of S. Kingshighway and turns north along the west edge of S. Kingshighway Blvd entering back into the study limits. Facility turns to the west crossing the east bound ramp to S. Kingshighway Blvd that splits south and continuing west out of study limits. Verizon facility runs north to south along the west edge of S. Kingshighway Blvd.

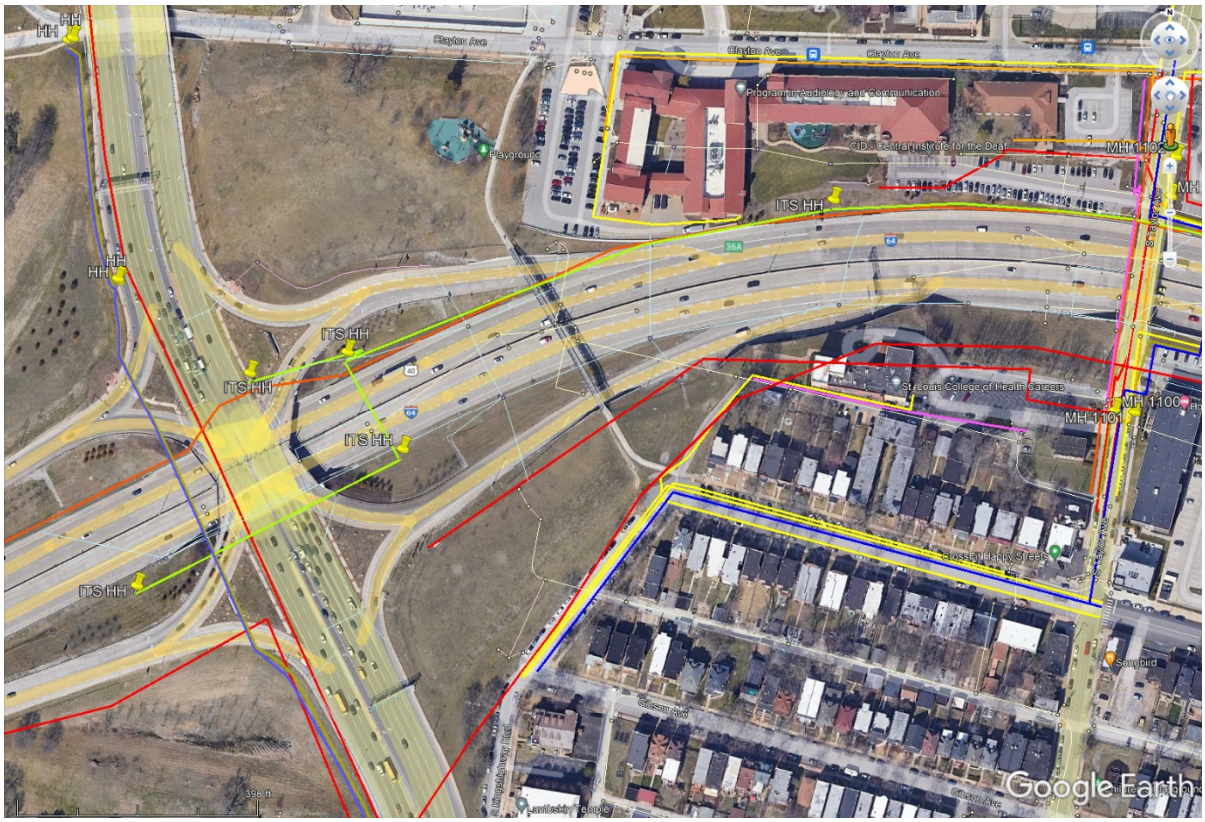
- Bluebird has a fiber facility runs north to south along the west edge of S. Kingshighway Blvd. thru study limits. Joint venture with ADB.

- ADB has duct package facility runs north to south along the west edge of S. Kingshighway Blvd. thru study limits. Joint venture with Bluebird.

- Ameren has underground facilities within the I-64 Right of Way running along the south side of the on ramp to east bound I-64, off S. Kingshighway.

ATTACHMENT B

- Multiple Metro Sewer Dept structures for both sanitary and storm drainage thru-out Right of Way area.

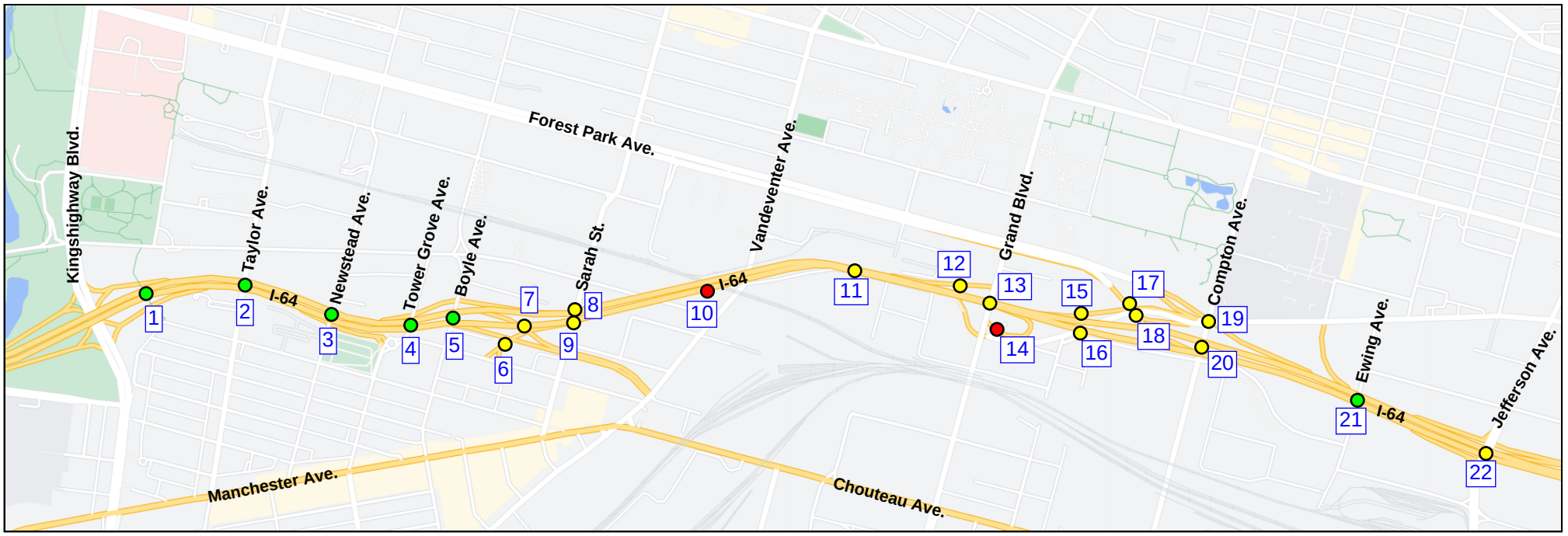


Attachment C

Bridge Structures – Tier 1

APPENDIX C

Tier 1 Existing Bridge NBI Conditions



#	Bridge No.	Facility Carried	Feature Crossed	Built	Structure Type	Deck	Super	Sub
1	A8034	Pedestrian Overpass	I-64, Ramp WB I-64 to Kingshighway	2009	Steel Thru Truss	7	8	7
2	A8049	Taylor Ave.	I-64	2015	Cont. P/S Concrete NU-Girders	7	7	8
3	A8050	Newstead Ave.	I-64, Ramp EB I-64 to Tower Grove Ave.	2013	Cont. P/S Concrete NU-Girders	7	7	8
4	A8051	Tower Grove Ave.	I-64, Ramp Boyle Ave. to I-64	2014	Cont. P/S Concrete I-Girders	7	7	7
5	A8052	Boyle Ave.	I-64, Ramp EB I-64 to Vandeventer Ave.	2014	Cont. P/S Concrete NU-Girders	7	7	7
6	A3735	EB I-64 On-Ramp	EB I-64 Ramp to Vandeventer Ave.	1977	Cont. Composite Plate Girder	5	7	6
7	L0669	EB I-64	Ramp Vandeventer Ave. to EB I-64	1956	Simple WF Girder Spans	7	7	6
8	A3651	WB I-64	Sarah St.	1981	Cont. P/S Concrete I-Girders	6	6	7
9	A3893	EB I-64	Sarah St.	1982	P/S Concrete I-Girders	6	7	7
10	L0667	EB I-64	Vandeventer Ave.; Clayton Ave.; Metro	1956	Cont. Steel Plate Girder	4	6	6
11	A3594	WB I-64	EB I-64, Grand Blvd., Misc. Streets	1982	Cont. Steel Plate Girder	7	7	6
12	A3740	Ramp Grand Blvd. to WB I-64	Fill	1981	Cont. P/S Concrete I-Girders	7	7	6
13	L0638	Grand Blvd.	I-64	1954	Concrete Box Girder Span	6	6	6
14	A0549	Ramp EB I-64 to Grand Blvd.	Federal Sign Company Entrance	1960	Cont. Concrete Solid Slab	4	4	5
15	A3741	Ramp Market St to WB I-64	Fill	1981	Cont. Concrete Solid Slab	5	5	7
16	A0832	EB I-64	Market St.	1963	Cont. Concrete Box Girder	6	6	7
17	A3636	Market St. to WB I-64	Forest Park Ave.	1981	Cont. P/S Concrete I-Girders	6	7	7
18	A0835	EB Market St.	Ramp to Forest Park Parkway	1963	Cont. Concrete Box Girder	5	5	7
19	A7080	Compton Ave.	Ramp WB I-64 to Forest Park Ave.	2005	P/S Concrete Box Girders	7	5	7
20	A7081	Compton Ave.	I-64	2005	Cont. Composite Plate Girder	6	7	8
21	A8851	Ewing Ave.	I-64	2020	Cont. P/S Concrete NU-Girders	8	8	9
22	A7853	Jefferson Ave.	I-64	2013	Cont. P/S Concrete NU-Girders	6	7	7

Overall NBI Rating

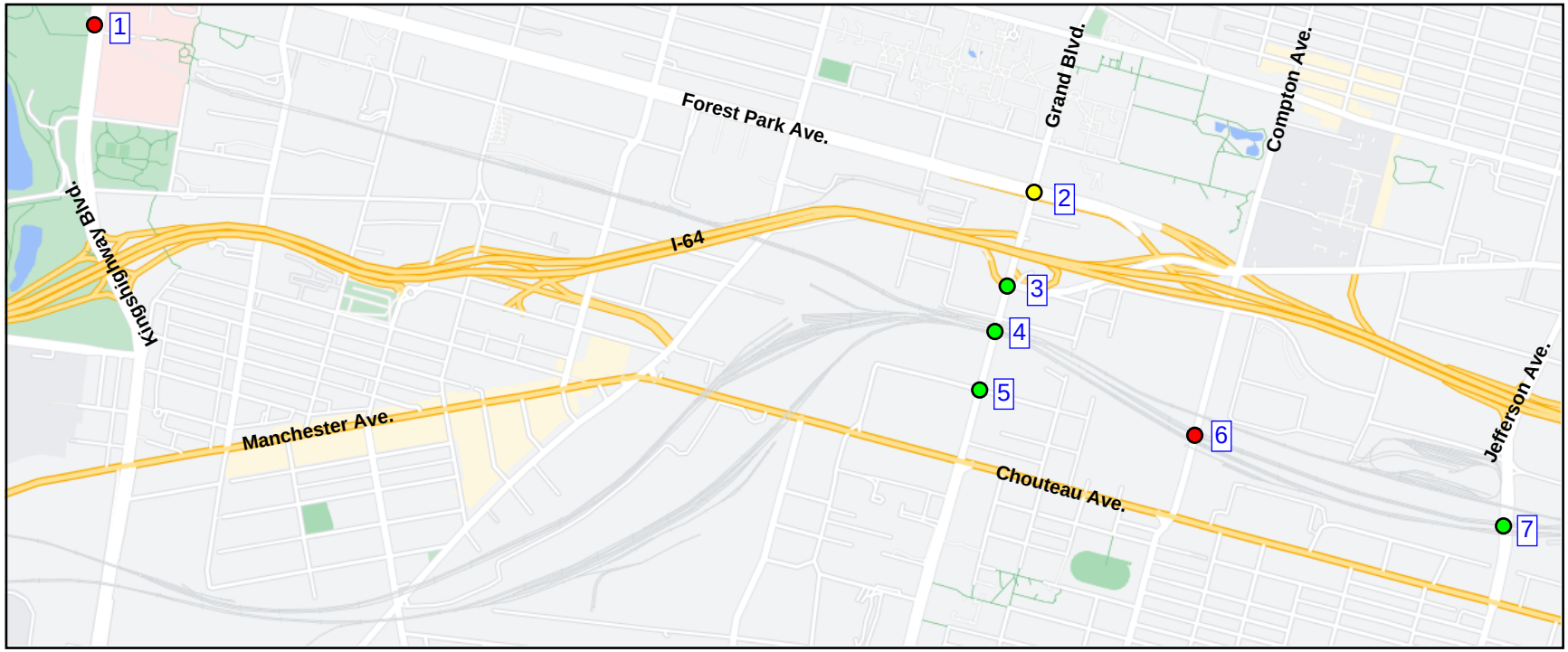
- 7 - 9 - Good
- 5 - 6 - Fair
- 0 - 4 - Poor

Attachment D

Bridge Structures – Tier 2

APPENDIX D

Tier 2 Existing Bridge NBI Conditions



#	Bridge No.	Facility Carried	Feature Crossed	Built	Structure Type	Deck	Super	Sub
1	0250.07	Kingshighway Blvd.	Metrolink	1937	Steel WF Girders	4	5	6
2	0400.02	Grand Ave.	Forest Park Parkway	1961	Voided Concrete Slab	6	5	6
3	0400.11	Grand Ave.	Bernard St.	2011	P/S Concrete I-Girder	8	9	8
4	0300.04	Grand Ave.	UPRR, Metrolink & Scott Ave.	2011	Haunched Steel Plate Girder	7	8	8
5	0400.12	Grand Ave.	Gratiot St.	2011	P/S Concrete I-Girder	7	9	9
6	0300.01	Compton Ave.	MO PAC RR, BNSF FF, N&W RR	1965	Steel WF Girders	4	3	5
7	0300.05	Jefferson Ave.	Metrolink & TRRA	2007	Cont. P/S Concrete I-Girders	7	9	9

Overall NBI Rating

- 7 - 9 - Good
- 5 - 6 - Fair
- 0 - 4 - Poor