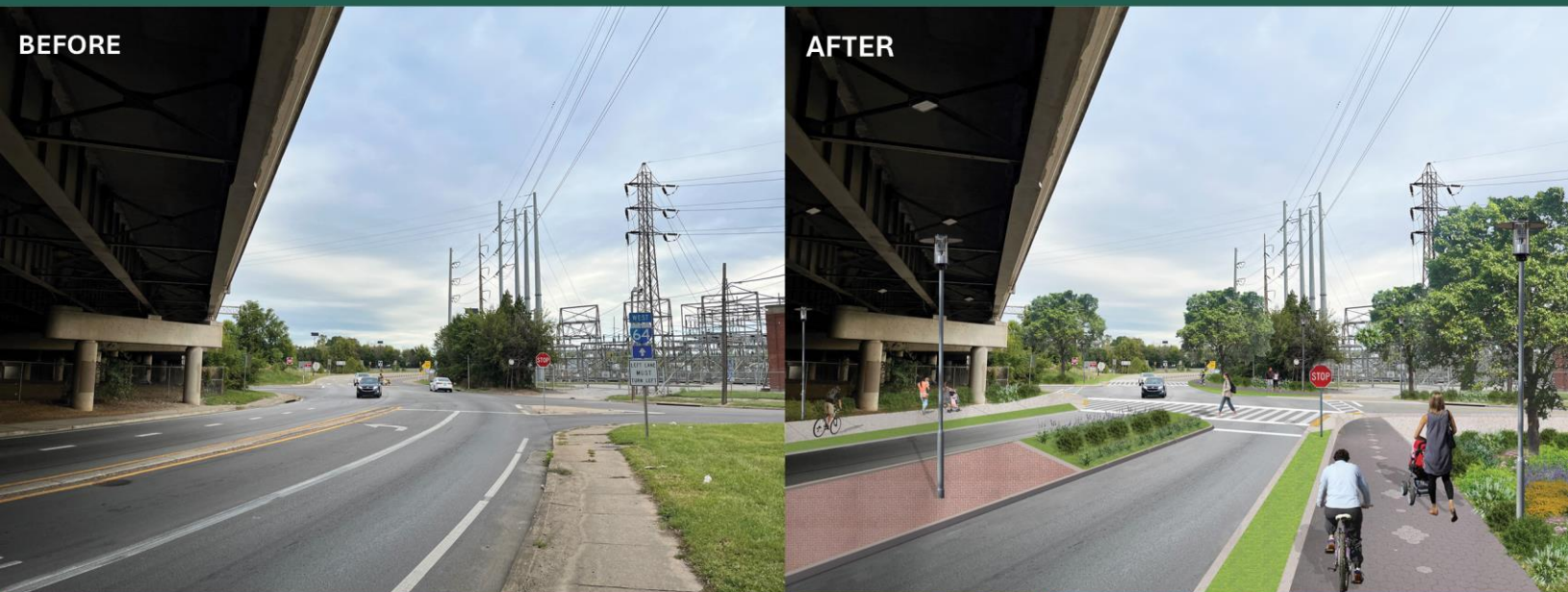


# Reconnecting Central Portland to the Riverfront



## Appendix H – Traffic Data



# Crash Savings Methodology

## Crash Data

Historical crash data for the study area was obtained from Kentucky State Police (KSP) data for five consecutive years (2019-2023). Crashes on private property were omitted from the analysis. The remaining crashes were plotted on a roadway map of the study area using the latitude and longitude coordinates included in the data. The crashes were then manually assigned to relevant improvements at either an intersection or segment in the study area. Crashes which were included in this analysis are listed in **Figure 1**.

## Crash Modification Factors

The Federal Highway Administration (FHWA) through the Highway Safety Manual (HSM) has developed a methodology for assessing the benefits of future geometric and operational improvements on traffic safety through the application of Crash Modification Factors (CMF). A CMF is a multiplicative factor used to compute the expected number of crashes after implementing a given countermeasure at a specific site. The CMFs used in this analysis are shown in **Table 1**.

*Table 1: Crash Modification Factors*

| ID              | Description   | CMF   | Rating | Crash Type          | Crash Severity | Area Type      | Notes  |
|-----------------|---|-------|--------|---------------------|----------------|----------------|--|
| CMF 147         | 15% Reduction in Mean Speed   | 0.56  | 3      | All                 | K              | All            |  |
| CMF 148         | 15% Reduction in Mean Speed   | 0.78  | 3      | All                 | ABC            | All            |  |
| CMF 149         | 15% Reduction in Mean Speed   | 0.85  | 3      | All                 | O              | All            |  |
| CMF 8922        | Implement Systemic Signing and Visibility Improvements at Signalized Intersections      | 0.955 | 4      | All                 | All            | All            |  |
| CMF 8902        | Implement Systemic Signing and Visibility Improvements at Stop-Controlled Intersections | 0.902 | 4      | All                 | All            | All            |  |
| CMF 10070       | Change Minimum Intersection Angle   | 0.76  | 3      | All                 | All            | Urban          | Change angle from 22 to 90 degrees = 0.76                              |
| HSM Table 12-24 | Installation of Left-Turn Lanes   | 0.67  | n/a    | All except Ped/Bike | All            | Urban/Suburban | Three-leg intersection, Minor-road stop control, One approach          |
| HSM Eq 12-36    | Intersection Lighting (signalized)  | 0.911 | n/a    | All                 | All            | Urban/Suburban | Table 12-27: Proportion of Crashes that Occur at Night = 0.235 for 4SG |
| HSM Eq 12-36    | Intersection Lighting (unsignalized)  | 0.913 | n/a    | All                 | All            | Urban/Suburban | Table 12-27: Proportion of Crashes that Occur at Night = 0.229 for 4ST |

## Traffic Growth

A 0.5% annual growth rate was used in the traffic forecast for the Northwest Louisville Community Connectivity Study. That growth rate was selected based on historical traffic count trends, employment and population projections included in the KIPDA Regional Traffic Model, census data, and development efforts in the area.



## Methodology

Safety improvements are proposed at 6 different locations, as shown on **Figure 2**. At each location, the CMFs which apply to the improvements are multiplied together to determine the combined effect of all relevant CMFs. The number of existing crashes is multiplied by the combined CMF to determine the projected number of crashes at each location. The number of reduced crashes is projected out over the next 20 years, assuming the crash rate remains the same and the number of crashes is proportional to the increasing traffic volumes. These calculations are shown on **Figure 2**.

## Travel Time Methodology

### Traffic Volumes

Traffic volumes were taken from the traffic forecast for the Northwest Louisville Community Connectivity Study.

### Segment Travel Time

The existing travel times along segments were determined by dividing the length of the segment by the 85<sup>th</sup> percentile speed on the segment, as reported by the Kentucky Transportation Cabinet. Design travel times were developed by assuming that the safety improvements would reduce speeds to 25 mph along all segments. Changes in Vehicle Hours Traveled along segments was determined by multiplying the change in travel times by the segment volumes. These calculations are shown on **Figure 3**.

### Intersection Travel Time

Intersection travel times were based on an analysis of the operational performance of the study intersections using Synchro 11 to apply Highway Capacity Manual methodology. The resulting intersection delays are shown on **Figure 3**. As no signal timing changes are proposed, there is no change in intersection travel times or Vehicle Hours Traveled between the existing and design condition.

## Methodology

The proposed safety improvements are expected to result in lower speeds in the study area, which would result in increased travel times. The change in travel time for the 22<sup>nd</sup> Street corridor from Northwestern Parkway to Bank Street can be determined by adding the travel time changes for each segment and intersection along the corridor. The resulting travel time increases are shown in **Table 2**.

Table 2: Change in Travel Time for the 22nd Street Corridor

| Trucks                |                           |                      |                      | Light Vehicles        |                           |                      |                      |
|-----------------------|---------------------------|----------------------|----------------------|-----------------------|---------------------------|----------------------|----------------------|
| Avg Daily VMT (miles) | Average Daily VHT (hours) | Annual VMT (million) | Annual VHT (million) | Avg Daily VMT (miles) | Average Daily VHT (hours) | Annual VMT (million) | Annual VHT (million) |
| 0                     | 1.2                       | 0                    | 0.0005               | 0                     | 25.0                      | 0                    | 0.0193               |

Figure 1: Crash Data

| IncidentID | RdwyNumber | RoadwayName  | CollisionDate | CollisionTime | UnitsInvolved | Weather | DirAnalysisCode   | MannerofCollision            | LightCondition                  | Severity | Intersection        |
|------------|------------|--------------|---------------|---------------|---------------|---------|---|------------------------------|---------------------------------|----------|---------------------|
| 32639776   |            | LYTLE        | 2023-12-25    | 1715          | 2             | RAINING | ANGLE COLLISION - OTHER                                 | ANGLE                        | DARK-HWY LIGHTED/ON             | B        | 22nd St & Lytle St  |
| 32607861   | US0150     | 22ND         | 2023-12-15    | 1835          | 2             | CLEAR   | OPPOSING LEFT TURN                                      | OPPOSING LEFT TURN           | DARK-HWY LIGHTED/ON             | O        | 22nd & Portland     |
| 32607811   | US0150     | 22ND         | 2023-12-15    | 1539          | 2             | CLEAR   | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DAYLIGHT                        | O        |                     |
| 32522397   | US0150     | 22ND         | 2023-11-29    | 1959          | 2             | CLEAR   | REAR END IN TRAFFIC LANES BOTH VEHICLES MOVING          | REAR END                     | DARK-HWY LIGHTED/ON             | O        | 22nd St & Lytle St  |
| 32382617   | US0150     | 22ND         | 2023-10-26    | 1104          | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | O        | 22nd & Portland     |
| 32363464   | US0150     | 22ND         | 2023-10-23    | 459           | 2             | CLEAR   | OPPOSING LEFT TURN                                      | OPPOSING LEFT TURN           | DARK-HWY LIGHTED/ON             | B        | 22nd St & Lytle St  |
| 32281460   |            | NORTHWESTERN | 2023-09-27    | 601           | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DARK-HWY LIGHTED/ON             | O        | 22nd & Northwestern |
| 32134046   |            | LYTLE        | 2023-09-01    | 1540          | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DAYLIGHT                        | O        | 22nd St & Lytle St  |
| 32138112   | US0150     | 22ND         | 2023-08-31    | 1636          | 3             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | C        | 22nd & Portland     |
| 31951167   | US0150     | 22ND         | 2023-07-25    | 700           | 2             | CLEAR   | ANGLE COLLISION - ONE VEHICLE TURNING LEFT              | ANGLE                        | DAYLIGHT                        | C        | 22nd St & Lytle St  |
| 31916397   |            | PORTLAND     | 2023-07-19    | 1400          | 3             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | O        | 22nd & Portland     |
| 31828803   | US0150     | 22ND         | 2023-06-24    | 2256          | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DARK-HWY LIGHTED/ON             | A        | 22nd St & Lytle St  |
| 31886860   |            | LYTLE        | 2023-06-11    | 2330          | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DARK-HWY LIGHTED/ON             | O        | 22nd St & Lytle St  |
| 31728776   |            | BANK         | 2023-06-03    | 800           | 2             | CLEAR   | HEAD-ON COLLISION                                       | HEAD ON                      | DAYLIGHT                        | O        | 22nd St & Bank St   |
| 31707419   |            | LYTLE        | 2023-05-31    | 1951          | 2             | CLEAR   | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DAYLIGHT                        | O        | 22nd St & Lytle St  |
| 31695738   |            | BANK         | 2023-05-28    | 2229          | 2             | CLEAR   | COLLISION WITH PEDESTRIAN IN INTERSECTION               | SINGLE VEHICLE               | DARK-HWY LIGHTED/ON             | B        | 22nd St & Bank St   |
| 31670472   |            | PORTLAND     | 2023-05-23    | 2240          | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DARK-HWY LIGHTED/ON             | O        | 22nd & Portland     |
| 31629521   | US0150     | 22ND         | 2023-05-12    | 2250          | 2             | CLEAR   | SIDESWIPE COLLISION - SAME DIRECTION                    | SIDESWIPE-SAME DIRECTION     | DARK-HWY LIGHTED/ON             | O        | 22nd St & Lytle St  |
| 31598017   |            | LYTLE        | 2023-05-05    | 2110          | 2             | CLEAR   | VEHICLE BACKING IN INTERSECTION                         | BACKING                      | DARK (UNKNOWN ROADWAY LIGHTING) | O        | 22nd St & Lytle St  |
| 31598146   |            | PORTLAND     | 2023-05-01    | 1736          | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | O        | 22nd & Portland     |
| 31521661   | KY3064     | PORTLAND     | 2023-04-18    | 1751          | 2             | CLEAR   | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DAYLIGHT                        | O        | 22nd & Portland     |
| 31464646   |            | PORTLAND     | 2023-04-06    | 1050          | 2             | CLOUDY  | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DAYLIGHT                        | B        | 22nd & Portland     |
| 31289635   | I 0064     |              | 2023-02-26    | 1930          | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | O        | 22nd & Northwestern |
| 31289594   | US0150     | 22ND         | 2023-02-26    | 1330          | 2             | CLEAR   | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DAYLIGHT                        | O        | 22nd & Ramps        |
| 31002087   |            | PORTLAND     | 2023-01-02    | 1610          | 2             | CLOUDY  | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DAYLIGHT                        | B        | 22nd & Portland     |
| 19094015   | NULL       | PORTLAND     | 2019-12-21    | 2100          | 3             | UNKNOWN | OPPOSITE DIRECTION - BOTH VEHICLES GOING STRAIGHT AHEAD | SIDESWIPE-OPPOSITE DIRECTION | #N/A                            | O        | 22nd & Portland     |
| 72299993   | US0150     | 22ND         | 2019-01-07    | 1706          | 2             | CLOUDY  | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DARK (UNKNOWN ROADWAY LIGHTING) | C        | 22nd & Portland     |
| 72306946   | US0150     | 22ND         | 2019-01-23    | 638           | 2             | RAINING | 1 VEHICLE ENTERING/LEAVING ENTRANCE                     | ANGLE                        | DARK-HWY LIGHTED/ON             | O        |                     |
| 72321064   | US0150     | 22ND         | 2019-02-27    | 1520          | 3             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | O        | 22nd St & Lytle St  |
| 72328806   | US0150     | 22ND         | 2019-03-14    | 1700          | 2             | RAINING | SIDESWIPE COLLISION - OPPOSITE DIRECTION                | SIDESWIPE-OPPOSITE DIRECTION | DAYLIGHT                        | O        | 22nd St & Bank St   |
| 72333063   | US0150     | 22ND         | 2019-03-29    | 2024          | 2             | RAINING | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DARK-HWY LIGHTED/ON             | O        | 22nd St & Bank St   |
| 72333064   | US0150     | 22ND         | 2019-03-29    | 2024          | 2             | RAINING | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DARK-HWY LIGHTED/ON             | C        |                     |
| 72336003   | NULL       | PORTLAND     | 2019-04-07    | 157           | 2             | CLEAR   | REAR END IN TRAFFIC LANES BOTH VEHICLES MOVING          | REAR END                     | DARK-HWY LIGHTED/ON             | O        | 22nd & Portland     |
| 72342748   | US0150     | 22ND         | 2019-04-21    | 1917          | 3             | CLEAR   | COLLISION WITH PEDESTRIAN                               | SINGLE VEHICLE               | DAYLIGHT                        | C        | 22nd & Portland     |
| 72347869   | NULL       | PORTLAND     | 2019-05-03    | 1436          | 2             | CLOUDY  | ANGLE COLLISION - OTHER                                 | ANGLE                        | DAYLIGHT                        | C        | 22nd & Portland     |
| 72363345   | NULL       | BANK         | 2019-06-04    | 1530          | 2             | CLEAR   | ANGLE COLLISION - ONE VEHICLE TURNING LEFT              | ANGLE                        | DAYLIGHT                        | O        | 22nd St & Bank St   |
| 72368455   | KY3064     | PORTLAND     | 2019-06-18    | 824           | 2             | CLOUDY  | ANGLE COLLISION - OTHER                                 | ANGLE                        | DAYLIGHT                        | C        | 22nd & Portland     |
| 72369859   | US0150     | 22ND         | 2019-06-21    | 1015          | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | O        | 22nd St & Bank St   |
| 72378836   | KY3082     | BANK         | 2019-07-12    | 1943          | 2             | CLEAR   | VEHICLE BACKING   | BACKING                      | DAYLIGHT                        | O        | 22nd St & Bank St   |
| 72379023   | NULL       | LYTLE        | 2019-07-08    | 1438          | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | O        | 22nd St & Lytle St  |
| 72383976   | US0150     | 22ND         | 2019-07-19    | 1930          | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DAYLIGHT                        | O        | 22nd & Portland     |
| 72391009   | KY3064     | PORTLAND     | 2019-08-09    | 1248          | 1             | CLEAR   | COLLISION WITH FIXED OBJECT                             | SINGLE VEHICLE               | DAYLIGHT                        | C        | 22nd & Portland     |
| 72393024   | US0150     | 22ND         | 2019-08-13    | 1800          | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | O        | 22nd & Portland     |
| 72405750   | NULL       | BANK         | 2019-09-11    | 757           | 3             | CLOUDY  | ANGLE COLLISION - OTHER                                 | ANGLE                        | DAYLIGHT                        | O        | 22nd St & Bank St   |
| 72409041   | NULL       | PORTLAND     | 2019-09-18    | 1503          | 2             | CLEAR   | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DAYLIGHT                        | O        | 22nd & Portland     |
| 72412950   | NULL       | LYTLE        | 2019-09-27    | 1619          | 2             | CLEAR   | OPPOSING LEFT TURN                                      | OPPOSING LEFT TURN           | DAYLIGHT                        | O        | 22nd St & Lytle St  |
| 72413265   | US0150     | 22ND         | 2019-09-26    | 1523          | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | O        | 22nd & Ramps        |
| 72416495   | NULL       | BANK         | 2019-10-05    | 1320          | 2             | CLEAR   | OPPOSING LEFT TURN                                      | OPPOSING LEFT TURN           | DAYLIGHT                        | O        | 22nd St & Bank St   |
| 72416794   | US0150     | 22ND         | 2019-09-25    | 1204          | 2             | CLEAR   | 1 VEHICLE ENTERING/LEAVING ENTRANCE                     | ANGLE                        | DAYLIGHT                        | C        |                     |
| 72418263   | NULL       | LYTLE        | 2019-08-06    | 851           | 2             | CLEAR   | 1 VEHICLE ENTERING/LEAVING ENTRANCE                     | ANGLE                        | DAYLIGHT                        | O        | 22nd St & Lytle St  |
| 72418440   | US0150     | 22ND         | 2019-10-09    | 951           | 2             | CLOUDY  | REAR END IN TRAFFIC LANES BOTH VEHICLES MOVING          | REAR END                     | DAYLIGHT                        | O        | 22nd & Northwestern |
| 72419737   | NULL       | PORTLAND     | 2019-10-12    | 1108          | 2             | CLEAR   | VEHICLE BACKING   | BACKING                      | DAYLIGHT                        | O        | 22nd & Portland     |
| 72420586   | US0150     | 22ND         | 2019-10-14    | 1707          | 2             | CLEAR   | 1 VEHICLE ENTERING/LEAVING ENTRANCE                     | ANGLE                        | DAYLIGHT                        | O        |                     |
| 72426889   | NULL       | PORTLAND     | 2019-10-07    | 2220          | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DARK-HWY LIGHTED/ON             | O        | 22nd & Portland     |
| 72427837   | US0150     | 22ND         | 2019-10-29    | 725           | 2             | CLEAR   | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DAWN                            | O        | 22nd & Portland     |
| 72434414   | US0150     | 22ND         | 2019-11-05    | 1326          | 2             | CLEAR   | COLLISION WITH PEDESTRIAN                               | SINGLE VEHICLE               | DAYLIGHT                        | A        |                     |
| 72435594   | NULL       | PORTLAND     | 2019-11-02    | 1500          | 2             | CLEAR   | SIDESWIPE COLLISION - SAME DIRECTION                    | SIDESWIPE-SAME DIRECTION     | DAYLIGHT                        | O        | 22nd & Portland     |
| 72435808   | NULL       | LYTLE        | 2019-11-13    | 830           | 2             | CLEAR   | COLLISION WITH PEDESTRIAN                               | SINGLE VEHICLE               | DAYLIGHT                        | A        | 22nd St & Lytle St  |
| 72438438   | US0150     | 22ND         | 2019-11-18    | 1950          | 2             | CLEAR   | 1 VEHICLE ENTERING/LEAVING ENTRANCE                     | ANGLE                        | DARK-HWY NOT LIGHTED            | O        | 22nd & Ramps        |
| 72441811   | US0150     | 22ND         | 2019-11-24    | 840           | 2             | CLEAR   | 1 VEHICLE ENTERING/LEAVING ENTRANCE                     | ANGLE                        | DAYLIGHT                        | O        |                     |
| 72447092   | NULL       | BANK         | 2019-12-06    | 1522          | 2             | CLOUDY  | ANGLE COLLISION - OTHER                                 | ANGLE                        | DAYLIGHT                        | O        | 22nd St & Bank St   |
| 72447924   | US0150     | 22ND         | 2019-12-06    | 1804          | 2             | CLOUDY  | COLLISION IN PARKING LOT                                | BACKING                      | DARK-HWY LIGHTED/ON             | O        |                     |
| 72454656   | NULL       | PORTLAND     | 2019-12-21    | 2100          | 3             | CLEAR   | OPPOSITE DIRECTION - BOTH VEHICLES GOING STRAIGHT AHEAD | SIDESWIPE-OPPOSITE DIRECTION | DARK (UNKNOWN ROADWAY LIGHTING) | O        | 22nd & Portland     |
| 72461597   | US0150     | 22ND         | 2020-01-09    | 1952          | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DARK-HWY LIGHTED/ON             | C        | 22nd St & Lytle St  |
| 72467253   | KY3082     | BANK         | 2020-01-22    | 1535          | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | C        | 22nd St & Bank St   |
| 72469193   | NULL       | BANK         | 2020-01-29    | 15            | 1             | CLEAR   | COLLISION WITH FIXED OBJECT                             | SINGLE VEHICLE               | DARK-HWY LIGHTED/ON             | O        | 22nd St & Bank St   |
| 72469566   | NULL       | PORTLAND     | 2020-01-29    | 1927          | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DARK-HWY LIGHTED/ON             | O        | 22nd & Portland     |
| 72476637   | NULL       | BANK         | 2020-02-15    | 354           | 1             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | SINGLE VEHICLE               | DARK-HWY LIGHTED/ON             | K        | 22nd St & Bank St   |
| 72479567   | US0150     | 22ND         | 2020-02-22    | 1720          | 2             | CLEAR   | COLLISION IN PARKING LOT                                | ANGLE                        | DAYLIGHT                        | O        |                     |
| 72482053   | US0150     | 22ND         | 2020-02-28    | 625           | 2             | CLEAR   | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DARK-HWY NOT LIGHTED            | O        | 22nd & Northwestern |
| 72495718   | I 0064     | NULL         | 2020-04-21    | 1547          | 2             | CLEAR   | OTHER RAMP RELATED COLLISIONS NOT LISTED ABOVE          | REAR END                     | DAYLIGHT                        | C        | 22nd & Ramps        |
| 72498646   | US0150     | 22ND         | 2020-05-02    | 1928          | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | O        |                     |
| 72506837   | NULL       | PORTLAND     | 2020-06-02    | 1439          | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DAYLIGHT                        | O        | 22nd & Portland     |
| 72510211   | NULL       | LYTLE        | 2020-06-11    | 2300          | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DARK-HWY LIGHTED/ON             | B        | 22nd St & Lytle St  |
| 72510801   | NULL       | PORTLAND     | 2020-06-13    | 2355          | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DARK-HWY LIGHTED/ON             | O        | 22nd & Portland     |
| 72524116   | NULL       | BANK         | 2020-07-23    | 1605          | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DAYLIGHT                        | C        | 22nd St & Bank St   |
| 72526632   | US0150     | 22ND         | 2020-07-31    | 1302          | 3             | CLOUDY  | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT                        | C        | 22nd St & Lytle St  |
| 72539432   | NULL       | BANK         | 2020-09-04    | 2123          | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | SINGLE VEHICLE               | DARK-HWY LIGHTED/ON             | A        | 22nd St & Bank St   |
| 72541357   | NULL       | NORTHWESTERN | 2020-09-11    | 1555          | 2             | CLOUDY  | ANGLE COLLISION - OTHER                                 | ANGLE                        | DAYLIGHT                        | O        | 22nd & Northwestern |

Figure 1: Crash Data

| IncidentID | RdwyNumber | RoadwayName  | CollisionDate | CollisionTime | UnitsInvolved | Weather | DirAnalysisCode   | MannerofCollision            | LightCondition       | Severity | Intersection        |
|------------|------------|--------------|---------------|---------------|---------------|---------|---|------------------------------|----------------------|----------|---------------------|
| 72543027   | NULL       | PORTLAND     | 2020-09-12    | 1925          | 1             | RAINING | COLLISION WITH FIXED OBJECT                             | SINGLE VEHICLE               | DAYLIGHT             | O        | 22nd & Portland     |
| 72544133   | US0150     | 22ND         | 2020-09-20    | 1451          | 2             | CLEAR   | 1 VEHICLE ENTERING/LEAVING ENTRANCE                     | ANGLE                        | DAYLIGHT             | C        |                     |
| 72548947   | US0150     | 22ND         | 2020-10-04    | 240           | 1             | CLEAR   | COLLISION WITH FIXED OBJECT                             | SINGLE VEHICLE               | DARK-HWY LIGHTED/ON  | O        | 22nd St & Bank St   |
| 72549861   | NULL       | BANK         | 2020-10-06    | 1505          | 2             | CLEAR   | OPPOSITE DIRECTION - BOTH VEHICLES GOING STRAIGHT AHEAD | SIDESWIPE-OPPOSITE DIRECTION | DAYLIGHT             | B        | 22nd St & Bank St   |
| 72562899   | KY3064     | PORTLAND     | 2020-11-09    | 1800          | 1             | CLEAR   | OTHER ROADWAY OR MID-BLOCK COLLISION                    | SINGLE VEHICLE               | DARK-HWY NOT LIGHTED | O        | 22nd & Portland     |
| 72574928   | NULL       | PORTLAND     | 2020-12-14    | 1515          | 2             | CLOUDY  | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DAYLIGHT             | B        | 22nd & Portland     |
| 72576745   | US0150     | 22ND         | 2020-12-19    | 1910          | 2             | RAINING | ANGLE COLLISION - OTHER                                 | ANGLE                        | DARK-HWY LIGHTED/ON  | O        | 22nd St & Bank St   |
| 72580428   | NULL       | PORTLAND     | 2020-12-30    | 1500          | 2             | RAINING | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT             | C        | 22nd & Portland     |
| 72602933   | NULL       | PORTLAND     | 2021-03-13    | 1130          | 2             | CLOUDY  | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT             | O        | 22nd & Portland     |
| 72605363   | US0150     | 22ND         | 2021-03-02    | 1426          | 2             | CLEAR   | 1 VEHICLE PARKED POSITION (NOT PARKING LOT/DRIVEWAY)    | BACKING                      | DAYLIGHT             | O        |                     |
| 72608434   | US0150     | 22ND         | 2021-03-25    | 1802          | 2             | CLOUDY  | COLLISION IN PARKING LOT                                | SINGLE VEHICLE               | DAYLIGHT             | B        |                     |
| 72616271   | US0150     | 22ND         | 2021-04-22    | 30            | 1             | CLEAR   | COLLISION IN PARKING LOT                                | SINGLE VEHICLE               | DARK-HWY LIGHTED/ON  | O        | 22nd St & Lytle St  |
| 72618678   | I 0064     | NULL         | 2021-04-28    | 2034          | 1             | RAINING | OVERTURNED ON RAMP                                      | SINGLE VEHICLE               | DARK-HWY LIGHTED/OFF | A        | 22nd & Ramps        |
| 72619681   | US0150     | 22ND         | 2021-04-29    | 1512          | 2             | CLOUDY  | ANGLE COLLISION - OTHER                                 | ANGLE                        | DAYLIGHT             | B        | 22nd St & Bank St   |
| 72621940   | US0150     | 22ND         | 2021-05-01    | 2321          | 2             | CLOUDY  | COLLISION IN PARKING LOT                                | REAR END                     | DARK-HWY LIGHTED/ON  | O        | 22nd St & Lytle St  |
| 72642984   | NULL       | BANK         | 2021-07-02    | 1150          | 1             | CLEAR   | COLLISION WITH FIXED OBJECT                             | SINGLE VEHICLE               | DAYLIGHT             | B        | 22nd St & Bank St   |
| 72646297   | NULL       | LYTLE        | 2021-07-11    | 336           | 2             | RAINING | OTHER INTERSECTION COLLISIONS                           | SINGLE VEHICLE               | DARK-HWY LIGHTED/ON  | C        | 22nd St & Lytle St  |
| 72647555   | KY3082     | BANK         | 2021-07-14    | 2104          | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DAYLIGHT             | O        | 22nd St & Bank St   |
| 72649327   | KY3082     | BANK         | 2021-06-26    | 2159          | 2             | CLEAR   | ANGLE COLLISION - ONE VEHICLE TURNING LEFT              | ANGLE                        | DAYLIGHT             | O        | 22nd St & Bank St   |
| 72653425   | NULL       | BANK         | 2021-07-21    | 1432          | 2             | RAINING | HEAD-ON COLLISION                                       | HEAD ON                      | DAYLIGHT             | B        | 22nd St & Bank St   |
| 72653478   | NULL       | PORTLAND     | 2021-07-22    | 1800          | 2             | CLEAR   | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DAYLIGHT             | O        | 22nd & Portland     |
| 72658840   | US0150     | 22ND         | 2021-08-15    | 850           | 2             | CLOUDY  | SIDESWIPE COLLISION - SAME DIRECTION                    | SIDESWIPE-SAME DIRECTION     | DAYLIGHT             | O        |                     |
| 72659659   | KY3064     | PORTLAND     | 2021-08-17    | 1608          | 1             | CLOUDY  | COLLISION WITH FIXED OBJECT                             | SINGLE VEHICLE               | DAYLIGHT             | O        | 22nd & Portland     |
| 72660066   | US0150     | 22ND         | 2021-08-18    | 1540          | 2             | CLOUDY  | 1 VEHICLE ENTERING/LEAVING ENTRANCE                     | ANGLE                        | DAYLIGHT             | B        |                     |
| 72671231   | KY3064     | PORTLAND     | 2021-09-16    | 846           | 2             | CLEAR   | SIDESWIPE-SAME DIRECTION                                | SIDESWIPE-SAME DIRECTION     | DAYLIGHT             | O        | 22nd & Portland     |
| 72671520   | KY3082     | BANK         | 2021-09-16    | 2034          | 2             | CLEAR   | COLLISION WITH PEDESTRIAN                               | SINGLE VEHICLE               | DARK-HWY LIGHTED/ON  | C        | 22nd St & Bank St   |
| 72675212   | US0150     | 22ND         | 2021-09-23    | 1831          | 2             | CLEAR   | 1 VEHICLE ENTERING/LEAVING ENTRANCE                     | ANGLE                        | DAYLIGHT             | O        | 22nd & Northwestern |
| 72697767   | US0150     | 22ND         | 2021-11-17    | 500           | 2             | CLEAR   | HEAD-ON COLLISION                                       | HEAD ON                      | DARK-HWY LIGHTED/OFF | A        | 22nd & Portland     |
| 72709977   | US0150     | 22ND         | 2021-12-16    | 1257          | 2             | CLOUDY  | REAR END IN TRAFFIC LANES BOTH VEHICLES MOVING          | REAR END                     | DAYLIGHT             | O        | 22nd & Portland     |
| 72714446   | US0150     | 22ND         | 2021-12-17    | 2128          | 2             | RAINING | VEHICLE BACKING   | BACKING                      | DARK-HWY LIGHTED/ON  | O        | 22nd & Portland     |
| 72718812   | I 0064     | NULL         | 2021-12-26    | 1511          | 2             | CLEAR   | OTHER RAMP RELATED COLLISIONS NOT LISTED ABOVE          | REAR END                     | DAYLIGHT             | O        | 22nd & Portland     |
| 72733617   | US0150     | 22ND         | 2022-02-22    | 600           | 1             | RAINING | COLLISION WITH FIXED OBJECT                             | SINGLE VEHICLE               | DARK-HWY LIGHTED/ON  | B        | 22nd St & Lytle St  |
| 72745680   | I 0064     | NULL         | 2022-03-26    | 1615          | 2             | CLEAR   | OTHER RAMP RELATED COLLISIONS NOT LISTED ABOVE          | REAR END                     | DAYLIGHT             | O        | 22nd & Ramps        |
| 72753869   | US0150     | 22ND         | 2022-04-23    | 2228          | 3             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DARK-HWY LIGHTED/ON  | B        | 22nd & Portland     |
| 72771166   | NULL       | NORTHWESTERN | 2022-06-10    | 815           | 2             | CLEAR   | 1 VEHICLE ENTERING/LEAVING ENTRANCE                     | ANGLE                        | DAYLIGHT             | O        | 22nd & Northwestern |
| 72780118   | US0150     | 22ND         | 2022-07-06    | 844           | 2             | CLEAR   | OTHER INTERSECTION COLLISIONS                           | REAR END                     | DAYLIGHT             | O        | 22nd St & Bank St   |
| 72780970   | NULL       | LYTLE        | 2022-06-30    | 1905          | 1             | CLEAR   | COLLISION WITH FIXED OBJECT                             | SINGLE VEHICLE               | DAYLIGHT             | O        | 22nd St & Lytle St  |
| 72784074   | US0150     | 22ND         | 2022-07-17    | 2210          | 2             | CLOUDY  | COLLISION WITH BICYCLIST                                | SINGLE VEHICLE               | DARK-HWY LIGHTED/ON  | B        |                     |
| 72810110   | US0150     | 22ND         | 2022-09-25    | 1325          | 2             | CLEAR   | 1 VEHICLE ENTERING/LEAVING ENTRANCE                     | ANGLE                        | DAYLIGHT             | O        | 22nd & Portland     |
| 72826710   | NULL       | PORTLAND     | 2022-11-08    | 1545          | 2             | CLEAR   | ANGLE COLLISION - OTHER                                 | ANGLE                        | DAYLIGHT             | B        | 22nd & Portland     |
| 72841488   | US0150     | 22ND         | 2022-12-13    | 1130          | 2             | CLEAR   | COLLISION IN PARKING LOT                                | SINGLE VEHICLE               | DAYLIGHT             | O        | 22nd St & Lytle St  |
| 72849110   | NULL       | PORTLAND     | 2022-12-31    | 1710          | 2             | CLEAR   | COLLISION WITH PEDESTRIAN                               | SINGLE VEHICLE               | DUSK                 | A        | 22nd & Portland     |

Figure 2: Reduced Crashes

| Location                                      | Proposed Improvements  | CMF(s)  | KABCO_CMF |      |      |      |      | Existing Crashes (5 Yrs) |   |   |   |    | Projected Crashes (5 Yrs) |      |      |      |       | Crash Reduced (5 Yrs) |      |      |      |      | Crash Reduced (20 Yrs) [0.5% Traffic Growth] |      |      |      |       | Total 20 Year Reduction |
|---|--|---|-----------|------|------|------|------|--------------------------|---|---|---|----|---------------------------|------|------|------|-------|-----------------------|------|------|------|------|--|------|------|------|-------|-------------------------|
|   |  |   | K         | A    | B    | C    | O    | K                        | A | B | C | O  | K                         | A    | B    | C    | O     | K                     | A    | B    | C    | O    | K  | A    | B    | C    | O     |                         |
| 22nd Street at Northwestern Pkwy              | Add intersection lighting;<br>Improved signing and marking;<br>Reduced speed | HSM: Intersection Lighting - 4ST (0.913);<br><br>CMF 8902: Improved Signing and Marking (0.902);<br><br>CMFs 147-149: 15% Reduction in Mean Speed (0.56 K, 0.78 ABC, 0.85 PDO)                                  | 0.46      | 0.64 | 0.64 | 0.64 | 0.70 | 0                        | 0 | 0 | 0 | 7  | 0.00                      | 0.00 | 0.00 | 0.00 | 4.90  | 0.00                  | 0.00 | 0.00 | 0.00 | 2.10 | 0.00   | 0.00 | 0.00 | 0.00 | 8.83  | 8.83                    |
| 22nd Street at I-64 EB ramps                  | Square up ramps;<br>Add left turn lanes;<br>Reduced speed                    | CMF 10070: Change Minimum Intersection Angle (22 to 90 deg=0.76);<br><br>HSM Table 12-24: Installation of Left-Turn Lanes (0.67);<br><br>CMFs 147-149: 15% Reduction in Mean Speed (0.56 K, 0.78 ABC, 0.85 PDO) | 0.29      | 0.40 | 0.40 | 0.40 | 0.43 | 0                        | 1 | 0 | 1 | 4  | 0.00                      | 0.40 | 0.00 | 0.40 | 1.73  | 0.00                  | 0.60 | 0.00 | 0.60 | 2.27 | 0.00   | 2.53 | 0.00 | 2.53 | 9.54  | 14.61                   |
| 22nd Street at Portland Ave                   | Add intersection lighting;<br>Improved signing and marking;<br>Reduced speed | HSM: Intersection Lighting - 4SG (.911);<br><br>CMF 8922: Improved Signing and Marking (0.955);<br><br>CMFs 147-149: 15% Reduction in Mean Speed (0.56 K, 0.78 ABC, 0.85 PDO)                                   | 0.49      | 0.68 | 0.68 | 0.68 | 0.74 | 0                        | 2 | 5 | 7 | 29 | 0.00                      | 1.36 | 3.39 | 4.75 | 21.45 | 0.00                  | 0.64 | 1.61 | 2.25 | 7.55 | 0.00   | 2.70 | 6.76 | 9.46 | 31.76 | 50.68                   |
| 22nd Street at Lytle St                       | Add intersection lighting;<br>Improved signing and marking;<br>Reduced speed | HSM: Intersection Lighting - 4ST (0.913);<br><br>CMF 8902: Improved Signing and Marking (0.902);<br><br>CMFs 147-149: 15% Reduction in Mean Speed (0.56 K, 0.78 ABC, 0.85 PDO)                                  | 0.46      | 0.64 | 0.64 | 0.64 | 0.70 | 0                        | 2 | 4 | 4 | 14 | 0.00                      | 1.28 | 2.57 | 2.57 | 9.80  | 0.00                  | 0.72 | 1.43 | 1.43 | 4.20 | 0.00   | 3.01 | 6.02 | 6.02 | 17.66 | 32.70                   |
| 22nd Street at Bank St                        | Add intersection lighting;<br>Improved signing and marking;<br>Reduced speed | HSM: Intersection Lighting - 4SG (.911);<br><br>CMF 8922: Improved Signing and Marking (0.955);<br><br>CMFs 147-149: 15% Reduction in Mean Speed (0.56 K, 0.78 ABC, 0.85 PDO)                                   | 0.49      | 0.68 | 0.68 | 0.68 | 0.74 | 1                        | 1 | 5 | 3 | 15 | 0.49                      | 0.68 | 3.39 | 2.04 | 11.09 | 0.51                  | 0.32 | 1.61 | 0.96 | 3.91 | 2.16   | 1.35 | 6.76 | 4.05 | 16.43 | 30.75                   |
| 22nd Street from Northwestern Pkwy to Bank St | Complete Streets improvements resulting in reduced speeds                    | CMFs 147-149: 15% Reduction in Mean Speed (0.56 K, 0.78 ABC, 0.85 PDO)  | 0.56      | 0.78 | 0.78 | 0.78 | 0.85 | 0                        | 1 | 3 | 3 | 9  | 0.00                      | 0.78 | 2.34 | 2.34 | 7.65  | 0.00                  | 0.22 | 0.66 | 0.66 | 1.35 | 0.00   | 0.93 | 2.78 | 2.78 | 5.68  | 12.15                   |

Figure 3: Travel Times

| SEGMENTS          |                               |               |           |                    |                    | Existing Conditions - 2024 |                   |                       |                   |                      |                      |                       |                   |                      |                      | Design Conditions - 2024 |      |     |                |       |       |             |                   |             |                   |
|-------------------|-------------------------------|---------------|-----------|--------------------|--------------------|----------------------------|-------------------|-----------------------|-------------------|----------------------|----------------------|-----------------------|-------------------|----------------------|----------------------|--------------------------|------|-----|----------------|-------|-------|-------------|-------------------|-------------|-------------------|
|                   |                               |               |           |                    |                    | 85th% speed                | Travel Time (sec) | Trucks                |                   |                      | Light Vehicles       |                       |                   | 85th% Speed          | Travel Time (sec)    | Trucks                   |      |     | Light Vehicles |       |       | 85th% Speed | Travel Time (sec) | 85th% Speed | Travel Time (sec) |
|                   |                               |               |           |                    |                    |                            |                   | Avg Daily VMT (miles) | Average Daily VHT | Annual VMT (million) | Annual VHT (million) | Avg Daily VMT (miles) | Average Daily VHT | Annual VMT (million) | Annual VHT (million) |                          |      |     |                |       |       |             |                   |             |                   |
| Route             | Location                      | Length (feet) | 2024 AADT | 2024 AADT (trucks) | 2024 AADT (lights) |                            |                   |                       |                   |                      |                      |                       |                   |                      |                      |                          |      |     |                |       |       |             |                   |             |                   |
| 22nd Street       | Northwestern Pkwy             | 520           | 7900      | 590                | 7310               | 31                         | 11.4              | 58                    | 1.9               | 0.021                | 0.001                | 720                   | 23                | 0.263                | 0.008                | 25                       | 14.2 | 58  | 2.3            | 0.021 | 0.001 | 720         | 29                | 0.263       | 0.011             |
| 22nd Street       | I-64 EB Ramps to Portland Ave | 80            | 16100     | 1200               | 14900              | 31                         | 1.8               | 18                    | 0.6               | 0.007                | 0.000                | 226                   | 7                 | 0.082                | 0.003                | 25                       | 2.2  | 18  | 0.7            | 0.007 | 0.000 | 226         | 9                 | 0.082       | 0.003             |
| 22nd Street       | Portland Ave to Lytle St      | 370           | 12900     | 960                | 11940              | 29                         | 8.7               | 67                    | 2.3               | 0.025                | 0.001                | 837                   | 29                | 0.305                | 0.011                | 25                       | 10.1 | 67  | 2.7            | 0.025 | 0.001 | 837         | 33                | 0.305       | 0.012             |
| 22nd Street       | Lytle St to Bank St           | 360           | 12900     | 960                | 11940              | 28                         | 8.8               | 65                    | 2.3               | 0.024                | 0.001                | 814                   | 29                | 0.297                | 0.011                | 25                       | 9.8  | 65  | 2.6            | 0.024 | 0.001 | 814         | 33                | 0.297       | 0.012             |
| Portland Ave      | 22nd St to 26th St            | 2340          | 4200      | 250                | 3950               | 40                         | 39.9              | 111                   | 2.8               | 0.040                | 0.001                | 1751                  | 44                | 0.639                | 0.016                | 25                       | 63.8 | 111 | 4.4            | 0.040 | 0.002 | 1751        | 70                | 0.639       | 0.026             |
| Portland Ave      | 26th St to 33rd St            | 3460          | 3300      | 190                | 3110               | 41                         | 57.5              | 125                   | 3.0               | 0.045                | 0.001                | 2038                  | 50                | 0.744                | 0.018                | 25                       | 94.4 | 125 | 5.0            | 0.045 | 0.002 | 2038        | 82                | 0.744       | 0.030             |
| Northwestern Pkwy | 33rd St to 35th St            | 500           | 3100      | 180                | 2920               | 38                         | 9.0               | 17                    | 0.4               | 0.006                | 0.000                | 277                   | 7                 | 0.101                | 0.003                | 25                       | 13.6 | 17  | 0.7            | 0.006 | 0.000 | 277         | 11                | 0.101       | 0.004             |
| Bank St           | 22nd St to 26th St            | 2350          | 5000      | 220                | 4780               | 40                         | 40.1              | 98                    | 2.4               | 0.036                | 0.001                | 2127                  | 53                | 0.777                | 0.019                | 25                       | 64.1 | 98  | 3.9            | 0.036 | 0.001 | 2127        | 85                | 0.777       | 0.031             |
| Bank St           | 26th St to 33rd St            | 3040          | 4500      | 200                | 4300               | 40                         | 51.8              | 115                   | 2.9               | 0.042                | 0.001                | 2476                  | 62                | 0.904                | 0.023                | 25                       | 82.9 | 115 | 4.6            | 0.042 | 0.002 | 2476        | 99                | 0.904       | 0.036             |
| Bank St           | 33rd St to 35th St            | 500           | 3000      | 130                | 2870               | 37                         | 9.2               | 12                    | 0.3               | 0.004                | 0.000                | 272                   | 7                 | 0.099                | 0.003                | 25                       | 13.6 | 12  | 0.5            | 0.004 | 0.000 | 272         | 11                | 0.099       | 0.004             |

| INTERSECTIONS               |         |           |                    |                    |      | Existing Conditions - 2024 |                   |                           |                      |                | Design Conditions - 2024 |                           |                      |                |                      |
|-----------------------------|---------|-----------|--------------------|--------------------|------|----------------------------|-------------------|---------------------------|----------------------|----------------|--------------------------|---------------------------|----------------------|----------------|----------------------|
|                             |         |           |                    |                    |      | 85th% speed                | Travel Time (sec) | Trucks                    |                      | Light Vehicles | Delay (sec) [Synchro AM] | Trucks                    |                      | Light Vehicles | Annual VHT (million) |
|                             |         |           |                    |                    |      |                            |                   | Average Daily VHT (hours) | Annual VHT (million) |                |                          | Average Daily VHT (hours) | Annual VHT (million) |                |                      |
| Intersection                | Signal? | 2024 AADT | 2024 AADT (trucks) | 2024 AADT (lights) |      |                            |                   |                           |                      |                |                          |                           |                      |                |                      |
| 22nd St & Northwestern Pkwy | No      | 4380      | 330                | 4050               | 10.0 | 0.9                        | 0.0003            | 11.3                      | 0.004                | 10.0           | 0.9                      | 0.0003                    | 11.3                 | 0.004          |                      |
| 22nd St & Portland Ave      | Yes     | 7080      | 530                | 6550               | 8.3  | 1.2                        | 0.0004            | 15.1                      | 0.006                | 8.3            | 1.2                      | 0.0004                    | 15.1                 | 0.006          |                      |
| 22nd St & Bank St           | Yes     | 4350      | 320                | 4030               | 12.8 | 1.1                        | 0.0004            | 14.3                      | 0.005                | 12.8           | 1.1                      | 0.0004                    | 14.3                 | 0.005          |                      |
| Portland Ave & 26th St      | Yes     | 1380      | 80                 | 1300               | 12.2 | 0.3                        | 0.0001            | 4.4                       | 0.002                | 12.2           | 0.3                      | 0.0001                    | 4.4                  | 0.002          |                      |
| Portland Ave & 33rd St      | Yes     | 2200      | 130                | 2070               | 25.0 | 0.9                        | 0.0003            | 14.4                      | 0.005                | 25.0           | 0.9                      | 0.0003                    | 14.4                 | 0.005          |                      |
| Northwestern Pkwy & 35th St | No      | 1400      | 80                 | 1320               | 1.6  | 0.0                        | 0.0000            | 0.6                       | 0.000                | 1.6            | 0.0                      | 0.0000                    | 0.6                  | 0.000          |                      |
| Bank St & 26th St           | Yes     | 3430      | 150                | 3280               | 7.6  | 0.3                        | 0.0001            | 6.9                       | 0.003                | 7.6            | 0.3                      | 0.0001                    | 6.9                  | 0.003          |                      |
| Bank St & 33rd St           | No      | 2030      | 90                 | 1940               | 1.4  | 0.0                        | 0.0000            | 0.8                       | 0.000                | 1.4            | 0.0                      | 0.0000                    | 0.8                  | 0.000          |                      |
| Bank St & 35th St           | Yes     | 1800      | 80                 | 1720               | 8.8  | 0.2                        | 0.0001            | 4.2                       | 0.002                | 8.8            | 0.2                      | 0.0001                    | 4.2                  | 0.002          |                      |

| SEGMENTS          |                               |               |           |                    |                    | Existing Conditions - 2048 |                   |                       |                           |                      |                      |                       |                           |                      |                      | Design Conditions - 2048 |      |     |                |       |       |             |                   |             |                   |
|-------------------|-------------------------------|---------------|-----------|--------------------|--------------------|----------------------------|-------------------|-----------------------|---------------------------|----------------------|----------------------|-----------------------|---------------------------|----------------------|----------------------|--------------------------|------|-----|----------------|-------|-------|-------------|-------------------|-------------|-------------------|
|                   |                               |               |           |                    |                    | 85th% speed                | Travel Time (sec) | Trucks                |                           |                      | Light Vehicles       |                       |                           | 85th% Speed          | Travel Time (sec)    | Trucks                   |      |     | Light Vehicles |       |       | 85th% Speed | Travel Time (sec) | 85th% Speed | Travel Time (sec) |
|                   |                               |               |           |                    |                    |                            |                   | Avg Daily VMT (miles) | Average Daily VHT (hours) | Annual VMT (million) | Annual VHT (million) | Avg Daily VMT (miles) | Average Daily VHT (hours) | Annual VMT (million) | Annual VHT (million) |                          |      |     |                |       |       |             |                   |             |                   |
| Route             | Location                      | Length (feet) | 2048 AADT | 2048 AADT (trucks) | 2048 AADT (lights) |                            |                   |                       |                           |                      |                      |                       |                           |                      |                      |                          |      |     |                |       |       |             |                   |             |                   |
| 22nd Street       | Northwestern Pkwy             | 520           | 8800      | 650                | 8150               | 31                         | 11.4              | 64                    | 2.1                       | 0.023                | 0.001                | 803                   | 26                        | 0.293                | 0.009                | 25                       | 14.2 | 64  | 2.6            | 0.023 | 0.001 | 803         | 32                | 0.293       | 0.012             |
| 22nd Street       | I-64 EB Ramps to Portland Ave | 80            | 18100     | 1340               | 16760              | 31                         | 1.8               | 20                    | 0.7                       | 0.007                | 0.000                | 254                   | 8                         | 0.093                | 0.003                | 25                       | 2.2  | 20  | 0.8            | 0.007 | 0.000 | 254         | 10                | 0.093       | 0.004             |
| 22nd Street       | Portland Ave to Lytle St      | 370           | 14400     | 1070               | 13330              | 29                         | 8.7               | 75                    | 2.6                       | 0.027                | 0.001                | 934                   | 32                        | 0.341                | 0.012                | 25                       | 10.1 | 75  | 3.0            | 0.027 | 0.001 | 934         | 37                | 0.341       | 0.014             |
| 22nd Street       | Lytle St to Bank St           | 360           | 14400     | 1070               | 13330              | 28                         | 8.8               | 73                    | 2.6                       | 0.027                | 0.001                | 909                   | 32                        | 0.332                | 0.012                | 25                       | 9.8  | 73  | 2.9            | 0.027 | 0.001 | 909         | 36                | 0.332       | 0.013             |
| Portland Ave      | 22nd St to 26th St            | 2340          | 4700      | 270                | 4430               | 40                         | 39.9              | 120                   | 3.0                       | 0.044                | 0.001                | 1963                  | 49                        | 0.717                | 0.018                | 25                       | 63.8 | 120 | 4.8            | 0.044 | 0.002 | 1963        | 79                | 0.717       | 0.029             |
| Portland Ave      | 26th St to 33rd St            | 3460          | 3700      | 220                | 3480               | 41                         | 57.5              | 144                   | 3.5                       | 0.053                | 0.001                | 2280                  | 56                        | 0.832                | 0.020                | 25                       | 94.4 | 144 | 5.8            | 0.053 | 0.002 | 2280        | 91                | 0.832       | 0.033             |
| Northwestern Pkwy | 33rd St to 35th St            | 500           | 3500      | 200                | 3300               | 38                         | 9.0               | 19                    | 0.5                       | 0.007                | 0.000                | 313                   | 8                         | 0.114                | 0.003                | 25                       | 13.6 | 19  | 0.8            | 0.007 | 0.000 | 313         | 13                | 0.114       | 0.005             |
| Bank St           | 22nd St to 26th St            | 2350          | 5600      | 240                | 5360               | 40                         | 40.1              | 107                   | 2.7                       | 0.039                | 0.001                | 2386                  | 60                        | 0.871                | 0.022                | 25                       | 64.1 | 107 | 4.3            | 0.039 | 0.002 | 2386        | 95                | 0.871       | 0.035             |
| Bank St           | 26th St to 33rd St            | 3040          | 5100      | 220                | 4880               | 40                         | 51.8              | 127                   | 3.2                       | 0.046                | 0.001                | 2810                  | 70                        | 1.026                | 0.026                | 25                       | 82.9 | 127 | 5.1            | 0.046 | 0.002 | 2810        | 112               | 1.026       | 0.041             |
| Bank St           | 33rd St to 35th St            | 500           | 3400      | 150                | 3250               | 37                         | 9.2               | 14                    | 0.4                       | 0.005                | 0.000                | 308                   | 8                         | 0.112                | 0.003                | 25                       | 13.6 | 14  | 0.6            | 0.005 | 0.000 | 308         | 12                | 0.112       | 0.004             |

| INTERSECTIONS               |         |           |                    |                    |      | Existing Conditions - 2048 |                   |                           |                      |                | Design Conditions - 2048 |                           |                      |                |                      |
|-----------------------------|---------|-----------|--------------------|--------------------|------|----------------------------|-------------------|---------------------------|----------------------|----------------|--------------------------|---------------------------|----------------------|----------------|----------------------|
|                             |         |           |                    |                    |      | 85th% speed                | Travel Time (sec) | Trucks                    |                      | Light Vehicles | Delay (sec) [Synchro AM] | Trucks                    |                      | Light Vehicles | Annual VHT (million) |
|                             |         |           |                    |                    |      |                            |                   | Average Daily VHT (hours) | Annual VHT (million) |                |                          | Average Daily VHT (hours) | Annual VHT (million) |                |                      |
| Intersection                | Signal? | 2048 AADT | 2048 AADT (trucks) | 2048 AADT (lights) |      |                            |                   |                           |                      |                |                          |                           |                      |                |                      |
| 22nd St & Northwestern Pkwy | No      | 4900      | 360                | 4540               | 10.0 | 1.0                        | 0.0004            | 12.6                      | 0.005                | 10.0           | 1.0                      | 0.0004                    | 12.6                 | 0.005          |                      |
| 22nd St & Portland Ave      | Yes     | 6920      | 510                | 6410               | 8.3  | 1.2                        | 0.0004            | 14.8                      | 0.005                | 8.3            | 1.2                      | 0.0004                    | 14.8                 | 0.005          |                      |
| 22nd St & Bank St           | Yes     | 4350      | 320                | 4030               | 12.8 | 1.1                        | 0.0004            | 14.3                      | 0.005                | 12.8           | 1.1                      | 0.0004                    | 14.3                 | 0.005          |                      |
| Portland Ave & 26th St      | Yes     | 1450      | 80                 | 1370               | 12.2 | 0.3                        | 0.0001            | 4.6                       | 0.002                | 12.2           | 0.3                      | 0.0001                    | 4.6                  | 0.002          |                      |
| Portland Ave & 33rd St      | Yes     | 1450      | 80                 | 1370               | 25.0 | 0.6                        | 0.0002            | 9.5                       | 0.003                | 25.0           | 0.6                      | 0.0002                    | 9.5                  | 0.003          |                      |
| Northwestern Pkwy & 35th St | No      | 930       | 50                 | 880                | 1.6  | 0.0                        | 0.0000            | 0.4                       | 0.000                | 1.6            | 0.0                      | 0.0000                    | 0.4                  | 0.000          |                      |
| Bank St & 26th St           | Yes     | 610       | 30                 | 580                | 7.6  | 0.1                        | 0.0000            | 1.2                       | 0.000                | 7.6            | 0.1                      | 0.0000                    | 1.2                  | 0.000          |                      |
| Bank St & 33rd St           | No      | 1420      | 60                 | 1360               | 1.4  | 0.0                        | 0.0000            | 0.5                       | 0.000                | 1.4            | 0.0                      | 0.0000                    | 0.5                  | 0.000          |                      |
| Bank St & 35th St           | Yes     | 1050      | 50                 | 1000               | 8.8  | 0.1                        | 0.0000            | 2.4                       | 0.001                | 8.8            | 0.1                      | 0.0000                    | 2.4                  | 0.001          |                      |