



3440 FORBES AVENUE DEVELOPMENT  
TRANSPORTATION IMPACT STUDY  
City of Pittsburgh, Allegheny County, Pennsylvania

TECHNICAL MEMORANDUM #1

Prepared for:  
WEXFORD SCIENCE + TECHNOLOGY, LLC  
Baltimore, Maryland

Prepared by:  
TRANS ASSOCIATES ENGINEERING CONSULTANTS, INC.  
Pittsburgh, Pennsylvania

July 10, 2019

**3440 Forbes Avenue Development  
Transportation Study  
Summary of Findings**

1. Traffic Analysis

- a. The site is well-served by public transit, which will be further enhanced by implementation of the BRT project.
- b. The site is accessible by bicycle, with enhancements to be added with the BRT project.
- c. The site is pedestrian-accessible with sidewalks on the Forbes Avenue and Coltart Avenue sides.
- d. Given the multi-modal transportation conditions in Oakland, the number of automobile trips will be relatively low, as persons associated with the building use the various available modes.
- e. Peak hour traffic volume projects are:
  - i. AM peak – 55 entering vehicles / 10 exiting vehicles
  - ii. PM peak – 13 entering vehicles / 54 exiting vehicles
- f. All future traffic analyses were performed assumed the BRT would be in place.
- g. Site garage access will be right in/right out via Iroquois Way, with a stop sign on the garage exiting lane.
- h. Peak hour levels of service at all study intersections will be acceptable levels of service D or better.
- i. Traffic signal warrants are not met at the Forbes Avenue/Coltart Avenue intersection with the project in place.

**Table 1**  
**CAPACITY ANALYSIS SUMMARY**  
**3440 Forbes Avenue Development Transportation Impact Study**  
**City of Pittsburgh, Allegheny County, Pennsylvania**

| Intersection/Approach/Movement            | Level of Service (Delay in Seconds) <sup>(1)</sup> |               |            |                             |               |            |
|---|--|---------------|------------|-----------------------------|---------------|------------|
|   | AM Peak Hour <sup>(2)</sup>                        |               |            | PM Peak Hour <sup>(3)</sup> |               |            |
|   | 2019 Existing                                      | 2022 No Build | 2022 Build | 2019 Existing               | 2022 No Build | 2022 Build |
| <b>Forbes Avenue &amp; Halket Street</b>  |  |               |            |                             |               |            |
| Eastbound Forbes Avenue                   |  |               |            |                             |               |            |
| Left Turn/Through                         | B (15.5)   | B (13.4)      | B (13.6)   | B (14.6)                    | B (13.6)      | B (13.8)   |
| Through                                   | B (14.7)   | B (11.7)      | B (11.8)   | B (14.0)                    | B (12.0)      | B (11.9)   |
| Through/Right Turn                        | B (14.6)   | A (8.6)       | A (8.6)    | B (13.9)                    | A (8.3)       | A (8.3)    |
| Approach                                  | B (15.0)   | B (12.1)      | B (12.2)   | B (14.2)                    | B (12.5)      | B (12.5)   |
| Northbound Halket Street                  |  |               |            |                             |               |            |
| Through/Right Turn                        | C (23.2)   | C (25.0)      | C (25.0)   | C (22.6)                    | C (24.7)      | C (25.0)   |
| Southbound Halket Street                  |  |               |            |                             |               |            |
| Left Turn/Through                         | C (20.8)   | C (24.6)      | C (24.4)   | C (22.3)                    | C (25.8)      | C (26.2)   |
| OVERALL INTERSECTION                      | B (16.7)   | B (15.3)      | B (15.3)   | B (16.3)                    | B (15.6)      | B (15.7)   |
| <b>Forbes Avenue &amp; Coltart Avenue</b> |  |               |            |                             |               |            |
| Northbound Coltart Avenue                 |  |               |            |                             |               |            |
| Right Turn                                | E (35.6)   | E (39.9)      | E (43.2)   | E (40.4)                    | F (80.7)      | F (133.2)  |
| OVERALL INTERSECTION                      | A (1.2)  | A (1.4)       | A (1.6)    | A (1.3)                     | A (3.7)       | A (8.5)    |
| <b>Forbes Avenue &amp; McKee Place</b>    |  |               |            |                             |               |            |
| Eastbound Forbes Avenue                   |  |               |            |                             |               |            |
| Left Turn/Through                         | B (11.7)   | A (7.5)       | A (7.5)    | B (14.4)                    | A (8.5)       | A (8.5)    |
| Through                                   | B (11.0)   | B (11.9)      | B (11.9)   | B (14.1)                    | C (20.2)      | C (20.3)   |
| Through/Right Turn                        | B (11.0)   | A (6.7)       | A (7.0)    | B (14.0)                    | A (8.3)       | A (8.4)    |
| Approach                                  | B (11.2)   | B (11.0)      | B (10.9)   | B (14.4)                    | B (19.1)      | B (19.2)   |
| Northbound McKee Place                    |  |               |            |                             |               |            |
| Through/Right Turn                        | C (32.1)   | C (32.4)      | C (32.4)   | C (21.3)                    | C (21.4)      | C (21.4)   |
| Southbound McKee Place                    |  |               |            |                             |               |            |
| Left Turn                                 | D (37.5)   | D (37.1)      | D (37.1)   | C (26.5)                    | C (26.7)      | C (26.7)   |
| Through                                   | C (23.5)   | C (22.7)      | C (22.9)   | B (19.9)                    | B (19.8)      | B (19.8)   |
| Approach                                  | C (28.7)   | C (28.1)      | C (28.0)   | C (22.8)                    | C (22.8)      | C (22.8)   |
| OVERALL INTERSECTION                      | B (15.8)   | B (15.4)      | B (15.3)   | B (16.2)                    | B (19.7)      | B (19.8)   |
| <b>Halket Street &amp; Iroquois Way</b>   |  |               |            |                             |               |            |
| Westbound Iroquois Way                    |  |               |            |                             |               |            |
| Left Turn/Right Turn                      | C (16.5)   | C (18.5)      | C (18.3)   | B (12.5)                    | B (12.1)      | B (12.6)   |
| Northbound Halket Street                  |  |               |            |                             |               |            |
| Through/Right Turn                        | A (0.0)  | A (0.0)       | A (0.0)    | A (0.0)                     | A (0.0)       | A (0.0)    |
| Southbound Halket Street                  |  |               |            |                             |               |            |
| Left Turn/Through                         | A (0.5)  | A (1.4)       | A (1.4)    | A (0.1)                     | A (0.3)       | A (0.3)    |
| OVERALL INTERSECTION                      | A (1.2)  | A (1.7)       | A (1.8)    | A (0.7)                     | A (1.2)       | A (1.6)    |
| <b>Coltart Avenue &amp; Iroquois Way</b>  |  |               |            |                             |               |            |
| Eastbound Iroquois Way                    |  |               |            |                             |               |            |
| Left Turn/Through/Right Turn              | A (9.0)  | A (9.1)       | A (9.1)    | A (9.0)                     | A (9.3)       | A (9.6)    |
| Westbound Iroquois Way                    |  |               |            |                             |               |            |
| Left Turn/Through/Right Turn              | A (9.3)  | A (9.4)       | A (9.4)    | A (9.7)                     | A (9.8)       | B (10.0)   |
| Northbound Coltart Avenue                 |  |               |            |                             |               |            |
| Left Turn/Through/Right Turn              | A (2.0)  | A (2.4)       | A (2.4)    | A (0.3)                     | A (0.6)       | A (0.6)    |
| Southbound Coltart Avenue                 |  |               |            |                             |               |            |
| Left Turn/Through/Right Turn              | A (0.0)  | A (0.0)       | A (0.0)    | A (0.0)                     | A (0.0)       | A (0.0)    |
| OVERALL INTERSECTION                      | A (3.6)  | A (3.7)       | A (3.9)    | A (6.5)                     | A (7.0)       | A (7.5)    |
| <b>McKee Place &amp; Iroquois Way</b>     |  |               |            |                             |               |            |
| Northbound McKee Place                    |  |               |            |                             |               |            |
| Left Turn/Through                         | A (0.2)  | A (0.2)       | A (0.4)    | A (1.9)                     | A (1.9)       | A (1.8)    |
| Southbound McKee Place                    |  |               |            |                             |               |            |
| Through/Right Turn                        | A (0.0)  | A (0.0)       | A (0.0)    | A (0.0)                     | A (0.0)       | A (0.0)    |
| OVERALL INTERSECTION                      | A (0.1)  | A (0.1)       | A (0.2)    | A (1.0)                     | A (1.0)       | A (1.0)    |

**Table 1 (cont'd)**  
**CAPACITY ANALYSIS SUMMARY**  
**Forbes - Coltart Development Transportation Impact Study**  
**City of Pittsburgh, Allegheny County, Pennsylvania**

| Intersection/Approach/Movement                                   | Level of Service (Delay in Seconds) <sup>(1)</sup> |               |            |                             |               |            |
|--|--|---------------|------------|-----------------------------|---------------|------------|
|  | AM Peak Hour <sup>(2)</sup>                        |               |            | PM Peak Hour <sup>(3)</sup> |               |            |
|  | 2019 Existing                                      | 2022 No Build | 2022 Build | 2019 Existing               | 2022 No Build | 2022 Build |
| <b>Iroquois Way and Lot 3 Driveway / Southernly CVS Driveway</b> |  |               |            |                             |               |            |
| Westbound Iroquois Way   |  |               |            |                             |               |            |
| Left Turn/Through/Right Turn                                     | A (0.6)  | A (3.1)       | N/A        | A (0.1)                     | A (0.4)       | N/A        |
| Northbound Lot 3 Driveway  |  |               |            |                             |               |            |
| Left Turn/Through  | A (0.0)  | A (9.1)       | N/A        | A (9.3)                     | A (9.4)       | N/A        |
| Southbound CVS Driveway  |  |               |            |                             |               |            |
| Through/Right Turn   | A (9.0)  | A (9.2)       | N/A        | A (8.8)                     | A (8.8)       | N/A        |
| OVERALL INTERSECTION   | A (3.6)  | A (4.7)       | N/A        | A (2.4)                     | A (3.4)       | N/A        |
| <b>Forbes Avenue and Northernly CVS Driveway</b>                 |  |               |            |                             |               |            |
| Eastbound Forbes Avenue  |  |               |            |                             |               |            |
| Left Turn/Through  | A (0.0)  | A (0.0)       | N/A        | A (0.0)                     | A (0.0)       | N/A        |
| Northbound Northernly CVS Driveway                               |  |               |            |                             |               |            |
| Right Turn   | C (22.8)   | C (24.3)      | N/A        | D (32.9)                    | E (41.6)      | N/A        |
| OVERALL INTERSECTION   | A (0.1)  | A (0.1)       | N/A        | A (0.5)                     | A (0.6)       | N/A        |
| <b>Iroquois Way and Lot 3 Driveway/Proposed Site Driveway</b>    |  |               |            |                             |               |            |
| Westbound Iroquois Way   |  |               |            |                             |               |            |
| Through/Right Turn   | N/A  | N/A           | A (1.3)    | N/A                         | N/A           | A (0.4)    |
| Northbound Lot 3 Driveway  |  |               |            |                             |               |            |
| Left Turn/Through  | N/A  | N/A           | A (9.3)    | N/A                         | N/A           | A (9.8)    |
| Southbound Proposed Site Driveway                                |  |               |            |                             |               |            |
| Through/Right Turn   | N/A  | N/A           | A (8.7)    | N/A                         | N/A           | A (9.0)    |
| OVERALL INTERSECTION   | N/A  | N/A           | A (2.1)    | N/A                         | N/A           | A (4.7)    |

(1) Level of service determined through the use of Synchro Traffic Simulation Software, Version 10. All calculations were performed using the methodologies published in Highway Capacity Manual 2010 by the Transportation Research Board.

(2) 7:30 A.M. to 8:30 A.M.

(3) 4:45 P.M. to 5:45 P.M.

**TABLE 2  
TRIP GENERATION SUMMARY  
3440 Forbes Avenue Development Transportation Impact Study  
City of Pittsburgh, Allegheny County, Pennsylvania**

| Development Component   | Size    |    | ITE Land Use | Area Type              | Trip Type   | Number of Trips |           |            |              |            |            |     |
|---|---------|----|--------------|------------------------|-------------|-----------------|-----------|------------|--------------|------------|------------|-----|
|   |         |    |              |                        |             | AM Peak Hour    |           |            | PM Peak Hour |            |            |     |
|   |         |    |              |                        |             | Enter           | Exit      | Total      | Enter        | Exit       | Total      |     |
| <b>ITE TRIP GENERATION, 10TH EDITION<sup>(1)</sup>, UNADJUSTED FOR MODE</b> |         |    |              |                        |             |                 |           |            |              |            |            |     |
| Restaurant  | 4,760   | SF | 932          | General Urban/Suburban | Total Trips | 26              | 21        | 47         | 29           | 18         | 47         |     |
| General Office Building   | 230,104 | SF | 710          | General Urban/Suburban | Total Trips | 209             | 34        | 243        | 40           | 211        | 251        |     |
| <b>Total</b>  |         |    |              |                        |             | <b>235</b>      | <b>55</b> | <b>290</b> | <b>69</b>    | <b>229</b> | <b>298</b> |     |
| <b>ITE TRIP GENERATION, 10TH EDITION, WITH ADJUSTMENTS</b>                  |         |    |              |                        |             |                 |           |            |              |            |            |     |
| Restaurant <sup>(2)</sup>   | 4,760   | SF | 932          | General Urban/Suburban | Automobile  | 10.0%           | 3         | 2          | 5            | 3          | 2          | 5   |
|   |         |    |              |                        | Transit     | 25.0%           | 7         | 5          | 12           | 7          | 5          | 12  |
|   |         |    |              |                        | Pedestrian  | 55.0%           | 14        | 12         | 26           | 16         | 10         | 26  |
|   |         |    |              |                        | Bicycle     | 10.0%           | 2         | 2          | 4            | 3          | 2          | 5   |
| General Office Building <sup>(2)</sup>                                      | 230,104 | SF | 710          | General Urban/Suburban | Automobile  | 25.0%           | 52        | 8          | 60           | 10         | 52         | 62  |
|   |         |    |              |                        | Transit     | 50.0%           | 105       | 17         | 122          | 20         | 105        | 125 |
|   |         |    |              |                        | Pedestrian  | 20.0%           | 41        | 7          | 48           | 8          | 42         | 50  |
|   |         |    |              |                        | Bicycle     | 5.0%            | 11        | 2          | 13           | 2          | 11         | 13  |
| <b>TOTAL TRIPS</b>  |         |    |              |                        |             | <b>235</b>      | <b>55</b> | <b>290</b> | <b>69</b>    | <b>229</b> | <b>298</b> |     |
| <b>AUTOMOBILE TRIPS ONLY</b>  |         |    |              |                        |             | <b>55</b>       | <b>10</b> | <b>65</b>  | <b>13</b>    | <b>54</b>  | <b>67</b>  |     |

(1) Total trips calculated using the average rates and calculations from the Institute of Transportation Engineers (ITE) *Trip Generation 10th Edition*, 2017.

(2) Modal splits for the proposed development were estimated by TA.

Source: Analysis by Trans Associates.

**TABLE 3  
LOADING REQUIREMENT SUMMARY  
3440 Forbes Avenue Development Transportation Impact Study  
City of Pittsburgh, Allegheny County, Pennsylvania**

| Development Component | Size        | Number of Required Spaces <sup>(1)</sup>         |                                   |
|-----------------------|-------------|--|-----------------------------------|
|                       |             | Minimum Off-Street Loading Standard              | Required Number of Loading Spaces |
| Office                | 230,104 GSF | 3 loading spaces for<br>200,001 SF to 250,000 SF | 3                                 |
| Restaurant            | 4,760 GSF   | 1 loading space for<br>2,401 SF to 20,000 SF     | 1                                 |
| TOTAL                 | --          | --   | 4                                 |

(1) Based on the City of Pittsburgh Urban Zoning Code, Chapter 914: Parking Loading and Access.

Source: Analysis by Trans Associates

**Table 4**  
**QUEUE LENGTH SUMMARY**  
**3440 Forbes Avenue Development Transportation Impact Study**  
**City of Pittsburgh, Allegheny County, Pennsylvania**

| Intersection/Approach/Movement                                   | Existing Queue Capacity | 95th Percentile Queue Length (Feet) <sup>(1)</sup> |                              |                           |                             |                              |                           |
|--|-------------------------|--|------------------------------|---------------------------|-----------------------------|------------------------------|---------------------------|
|  |                         | AM Peak Hour <sup>(2)</sup>                        |                              |                           | PM Peak Hour <sup>(3)</sup> |                              |                           |
|  |                         | 2019 Existing                                      | 2022 No Build <sup>(4)</sup> | 2022 Build <sup>(4)</sup> | 2019 Existing               | 2022 No Build <sup>(4)</sup> | 2022 Build <sup>(4)</sup> |
| <b>Forbes Avenue &amp; Halket Street</b>                         |                         |  |                              |                           |                             |                              |                           |
| Eastbound Forbes Avenue  |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through/Right Turn                                     | 640                     | 223  | N/A                          | N/A                       | 199                         | N/A                          | N/A                       |
| Left Turn/Through  | 640                     | N/A  | 195                          | 199                       | N/A                         | 208                          | 207                       |
| Right Turn   | 120                     | N/A  | 42                           | 42                        | N/A                         | 30                           | 30                        |
| Northbound Halket Street   |                         |  |                              |                           |                             |                              |                           |
| Through/Right Turn   | 350                     | 168  | 171                          | 172                       | 152                         | 165                          | 170                       |
| Southbound Halket Street   |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through  | 250                     | 132  | 157                          | 155                       | 151                         | 164                          | 165                       |
| <b>Forbes Avenue &amp; Coltart Avenue</b>                        |                         |  |                              |                           |                             |                              |                           |
| Northbound Coltart Avenue  |                         |  |                              |                           |                             |                              |                           |
| Right Turn   | 320                     | 33   | 40                           | 48                        | 33                          | 90                           | 155                       |
| <b>Forbes Avenue &amp; McKee Place</b>                           |                         |  |                              |                           |                             |                              |                           |
| Eastbound Forbes Avenue  |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through/Right Turn                                     | 290                     | 57   | N/A                          | N/A                       | 60                          | N/A                          | N/A                       |
| Left Turn  | 290                     | N/A  | 53                           | 33                        | N/A                         | 29                           | 23                        |
| Through  | 290                     | N/A  | 167                          | 77                        | N/A                         | 484                          | 517                       |
| Right Turn   | 120                     | N/A  | 18                           | 17                        | N/A                         | 14                           | 13                        |
| Northbound McKee Place   |                         |  |                              |                           |                             |                              |                           |
| Through/Right Turn   | > 500                   | 206  | 209                          | 209                       | 115                         | 117                          | 117                       |
| Southbound McKee Place   |                         |  |                              |                           |                             |                              |                           |
| Left Turn  | 120                     | 68   | 66                           | 66                        | 85                          | 84                           | 84                        |
| Through  | 260                     | 87   | 85                           | 90                        | 96                          | 95                           | 95                        |
| <b>Halket Street &amp; Iroquois Way</b>                          |                         |  |                              |                           |                             |                              |                           |
| Westbound Iroquois Way   |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Right Turn   | 105                     | 8  | 10                           | 13                        | 5                           | 8                            | 10                        |
| Northbound Halket Street   |                         |  |                              |                           |                             |                              |                           |
| Through/Right Turn   | 190                     | 0  | 0                            | 0                         | 0                           | 0                            | 0                         |
| Southbound Halket Street   |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through  | 120                     | 0  | 3                            | 3                         | 0                           | 0                            | 0                         |
| <b>Coltart Avenue &amp; Iroquois Way</b>                         |                         |  |                              |                           |                             |                              |                           |
| Eastbound Iroquois Way   |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through/Right Turn                                     | 185                     | 0  | 0                            | 0                         | 3                           | 5                            | 5                         |
| Westbound Iroquois Way   |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through/Right Turn                                     | 300                     | 3  | 3                            | 3                         | 10                          | 13                           | 18                        |
| Northbound Coltart Avenue  |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through/Right Turn                                     | 480                     | 0  | 3                            | 3                         | 0                           | 0                            | 0                         |
| Southbound Coltart Avenue  |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through/Right Turn                                     | 320                     | 0  | 0                            | 0                         | 0                           | 0                            | 0                         |
| <b>McKee Place &amp; Iroquois Way</b>                            |                         |  |                              |                           |                             |                              |                           |
| Northbound McKee Place   |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through  | 470                     | 0  | 0                            | 0                         | 5                           | 5                            | 3                         |
| Southbound McKee Place   |                         |  |                              |                           |                             |                              |                           |
| Through/Right Turn   | 140                     | 0  | 0                            | 0                         | 0                           | 0                            | 0                         |
| <b>Iroquois Way and Lot 3 Driveway / Southernly CVS Driveway</b> |                         |  |                              |                           |                             |                              |                           |
| Westbound Iroquois Way   |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through/Right Turn                                     | 240                     | 0  | 0                            | N/A                       | 0                           | 0                            | N/A                       |
| Northbound Lot 3 Driveway  |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through  | 50                      | 0  | 0                            | N/A                       | 0                           | 3                            | N/A                       |
| Southbound CVS Driveway  |                         |  |                              |                           |                             |                              |                           |
| Through/Right Turn   | 50                      | 3  | 3                            | N/A                       | 3                           | 3                            | N/A                       |
| <b>Forbes Avenue and Northernly CVS Driveway</b>                 |                         |  |                              |                           |                             |                              |                           |
| Eastbound Forbes Avenue  |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through  |                         | 0  | 0                            | N/A                       | 0                           | 0                            | N/A                       |
| Northbound Northernly CVS Driveway                               |                         |  |                              |                           |                             |                              |                           |
| Right Turn   |                         | 3  | 3                            | N/A                       | 15                          | 18                           | N/A                       |

**Table 4 (cont'd)**  
**QUEUE LENGTH SUMMARY**  
**3440 Forbes Avenue Development Transportation Impact Study**  
**City of Pittsburgh, Allegheny County, Pennsylvania**

| Intersection/Approach/Movement                                  | Existing Queue Capacity | 95th Percentile Queue Length (Feet) <sup>(1)</sup> |                              |                           |                             |                              |                           |
|---|-------------------------|--|------------------------------|---------------------------|-----------------------------|------------------------------|---------------------------|
|   |                         | AM Peak Hour <sup>(2)</sup>                        |                              |                           | PM Peak Hour <sup>(3)</sup> |                              |                           |
|   |                         | 2019 Existing                                      | 2022 No Build <sup>(4)</sup> | 2022 Build <sup>(4)</sup> | 2019 Existing               | 2022 No Build <sup>(4)</sup> | 2022 Build <sup>(4)</sup> |
| <b>Iroquois Way and Lot 3 Driveway / Proposed Site Driveway</b> |                         |  |                              |                           |                             |                              |                           |
| Westbound Iroquois Way  |                         |  |                              |                           |                             |                              |                           |
| Through/Right Turn  |                         | N/A  | N/A                          | 0                         | N/A                         | N/A                          | 0                         |
| Northbound Lot 3 Driveway                                       |                         |  |                              |                           |                             |                              |                           |
| Left Turn/Through   |                         | N/A  | N/A                          | 0                         | N/A                         | N/A                          | 3                         |
| Southbound Proposed Site Driveway                               |                         |  |                              |                           |                             |                              |                           |
| Through/Right Turn  |                         | N/A  | N/A                          | 0                         | N/A                         | N/A                          | 5                         |

(1) 95th percentile queue length determined through the use of Synchro Traffic Simulation Software, Version 10.

(2) 7:30 A.M. to 8:30 A.M.

(3) 4:45 P.M. to 5:45 P.M.

(4) Includes BRT.

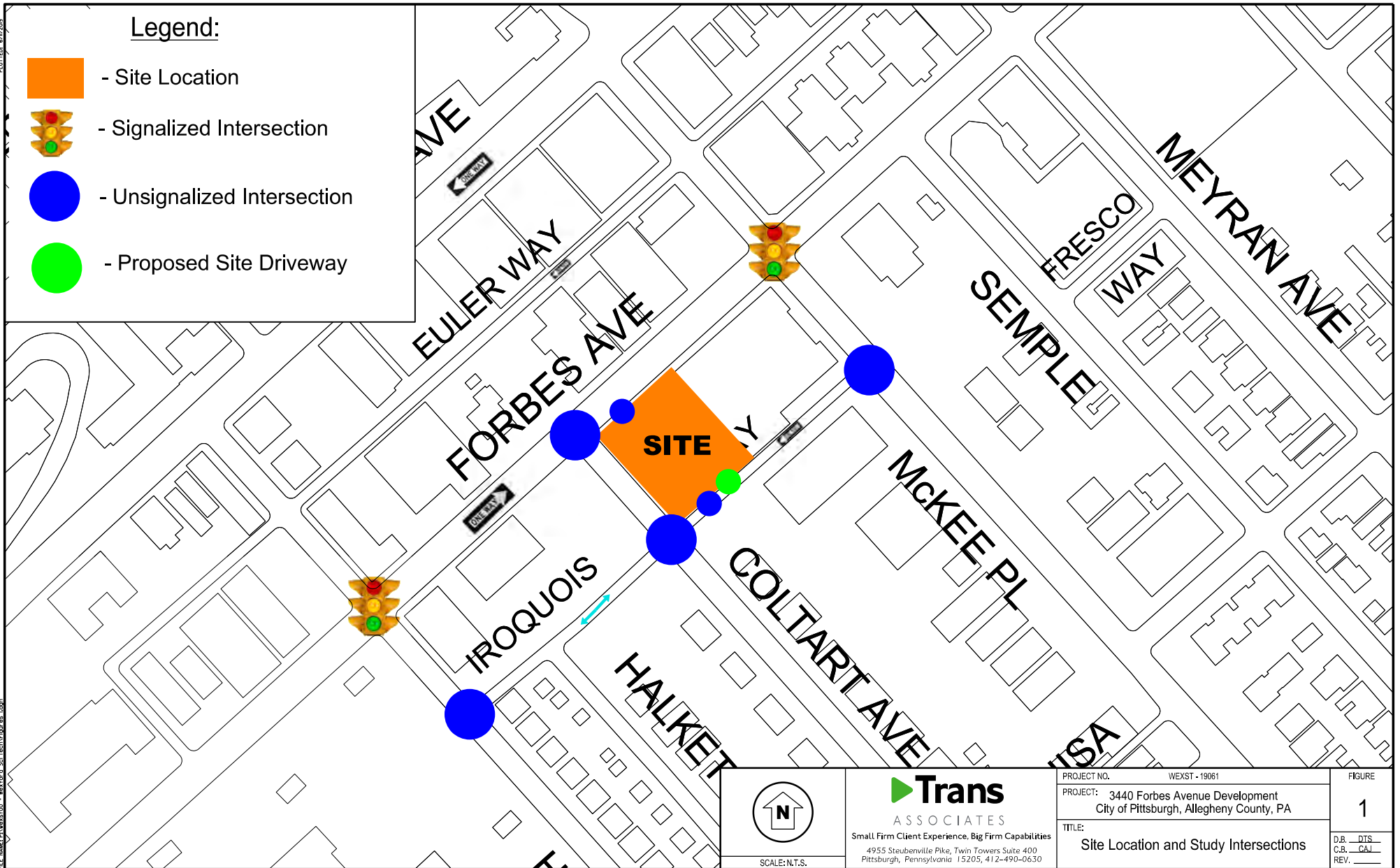


PLOTTED: 6/12/2018

FILE NAME: D:\wexst100 - wexford\_sst\Tech\Figures\1001

**Legend:**

-  - Site Location
-  - Signalized Intersection
-  - Unsignalized Intersection
-  - Proposed Site Driveway



SCALE: N.T.S.

**Trans**

ASSOCIATES

Small Firm Client Experience. Big Firm Capabilities  
4955 Steubenville Pike, Twin Towers Suite 400  
Pittsburgh, Pennsylvania 15205, 412-490-0630

PROJECT NO. WEXST - 19061

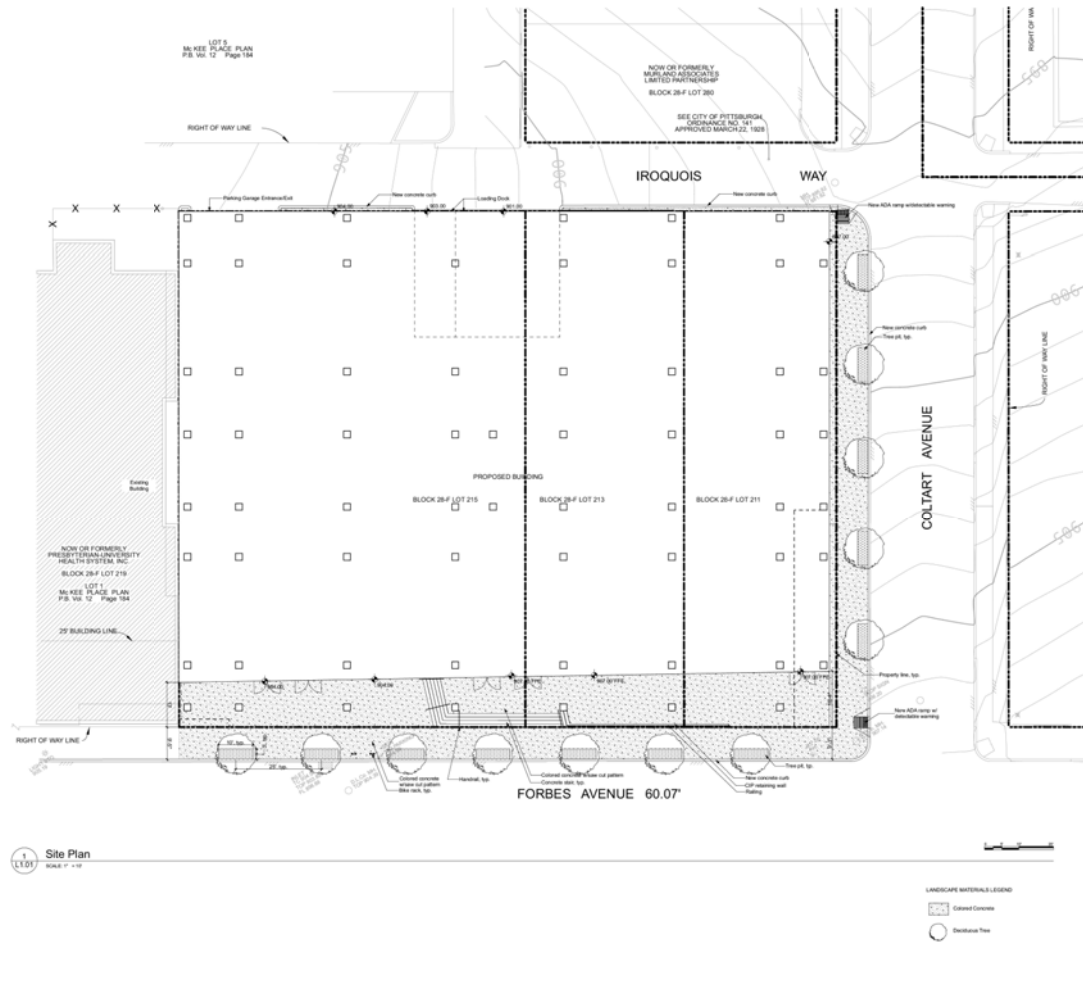
PROJECT: 3440 Forbes Avenue Development  
City of Pittsburgh, Allegheny County, PA

TITLE: Site Location and Study Intersections

FIGURE

1

D.B. DTS  
C.B. CAL  
REV. \_\_\_\_\_





# Strada

100 William Penn Place  
Pittsburgh, PA 15222  
www.strada.com  
Pittsburgh, PA 15222

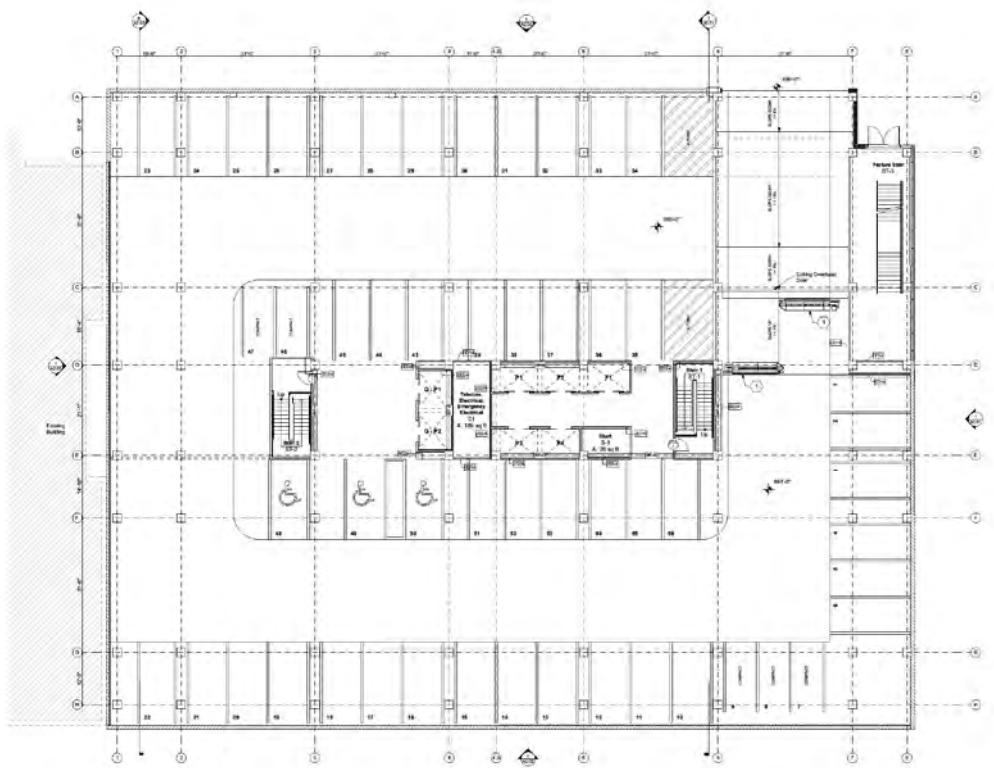
NOT FOR CONSTRUCTION

|   |
|---|
| Professional's Seal                           |
| Project Name                                  |
| 10121 Wexford Oakland<br>Mixed Use Core Shell |
| Project Number                                |
| 10121   |
| Client  |
| Woodward Clyde and<br>Technology              |
| Natural Details                               |
| Date: Project Phase                           |
| 01/14/19 90% DD Set                           |
| Drawing Title                                 |
| Site Plan                                     |
| Sheet Number                                  |
| <b>L1.01</b>                                  |

|  |   |  |  |
|--|---|--|--|
| <br>SCALE: N.T.S. | <br><b>Trans</b><br>ASSOCIATES<br>Small Firm Client Experience. Big Firm Capabilities<br>4955 Steubenville Pike, Twin Towers Suite 400<br>Pittsburgh, Pennsylvania 15205, 412-490-0630 | PROJECT NO. WEXST - 19061<br>PROJECT: 3440 Forbes Avenue Development<br>City of Pittsburgh, Allegheny County, PA | FIGURE<br><h2 style="margin: 0;">2A</h2> |
|  | TITLE:<br><h2 style="margin: 0;">Site Plan</h2>   | D.B. <u>DTS</u><br>C.B. <u>CAJ</u><br>REV. _____   |  |

PLOTED: 6/20/2019

FILE NAME: D:\west100 - westford\_sst\_tech\figure\_2.dgn



Basement Plan  
SCALE: N.T.S.

**CONSTRUCTION**

1. In the responsibility of the contractor to field verify all existing conditions and dimensions. Report discrepancies to the architect prior to commencement of work.
2. Distribute all work with MEP drawings.
3. All dimensions are measured to the center of the member unless otherwise noted.
4. No dimensions are shown for 1/2" thick metal and steel unless otherwise noted. All steel is to be galvanized and shall be per manufacturer's specifications.
5. The size scale of all shop drawings to be in accordance with the manufacturer's specifications.



**Control Number**

1. Double doors noted dated with opening and seal.
2. Existing access control hardware.
3. Callouts to point into bottom of cabinet control system.

**Strada**

4500 Westmoreland  
Pittsburgh, PA  
www.strada.com  
strada@strada.com

NOT FOR CONSTRUCTION  
Professional's Seal

Project Name  
1111 Westmoreland  
Mixed Use Core Shell  
Project Number  
111111  
Client  
Pittsburgh Science and  
Technology  
Design Office  
Date: Project Phase  
2/14/19 50% SDD Set

Drawing Title  
Basement Plan  
Sheet Number  
**A1.01**



SCALE: N.T.S.



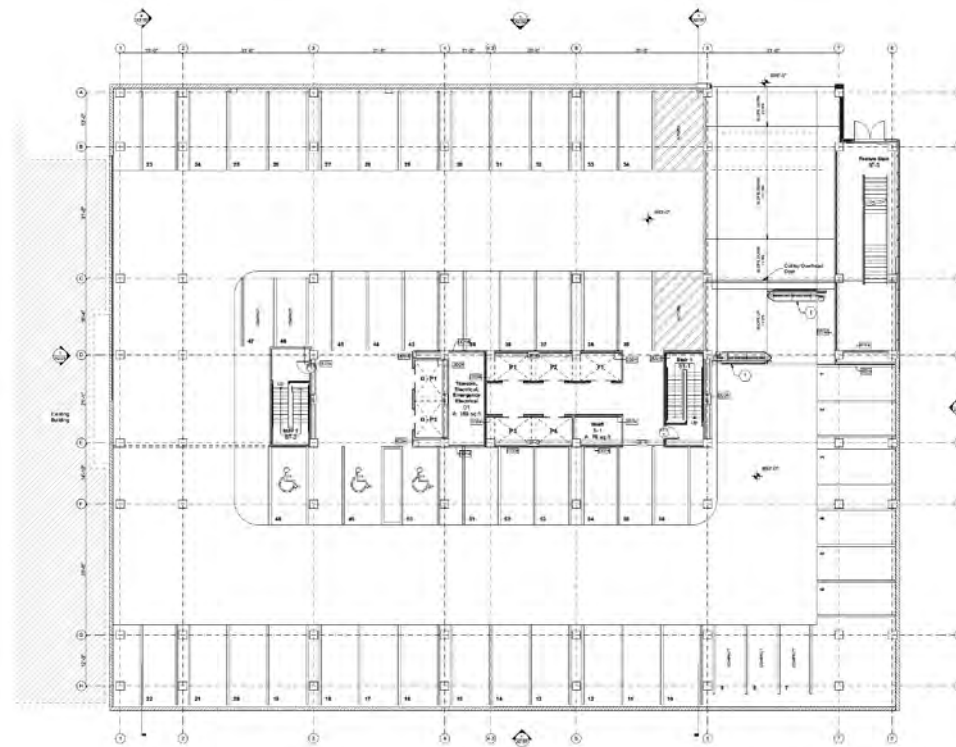
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4955 Steubenville Pike, Twin Towers Suite 400  
Pittsburgh, Pennsylvania 15205, 412-490-0630

PROJECT NO. WEXST - 19061  
PROJECT: 3440 Forbes Avenue Development  
City of Pittsburgh, Allegheny County, PA

TITLE: Site Plan

FIGURE  
**2B**

D.B. DTS  
C.B. CAJ  
REV. \_\_\_\_\_



Basement Plan  
SCALE: 1/8" = 1'-0"

**Construction Key**

- 1. Mass Frame Structure:**  
 a. In the responsibility of the contractor to verify and coordinate with the Structural Engineer's development of the exterior panel construction of the wall.
- 2. Coordinate all work with MEP drawings.**
- 3. All foundation components to the exterior of the wall shall be 12" thick.**
- 4. All foundation "chairs" MUST NOT be installed until after the concrete pour. All chairs shall be installed in the concrete before the concrete is finished and shall not only be in the form of the foundation but also be in the form of the foundation.**
- 5. The height of all wall panels are to be in accordance with the foundation and exterior dimensions.**

**Notes:**

- 1. Provide access panel below all ceiling and wall.
- 2. Parking access control barrier.
- 3. General good work, local of exterior walling.

# Strada

An Wilson Prolex  
 2000  
 Pittsburgh, PA 15201  
 412.325.1100  
 www.strada.com

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 Professional's Seal

Project Name:  
 150-1 Market Center  
 West One Cor. Steel

Project Number:  
 1501

Client:  
 Westwood Service and Technology

Local Office:  
 Steel - Project Room  
 150-1 150-101

Drawing Title:  
 Basement Plan

Sheet Number:  
**A1.01**

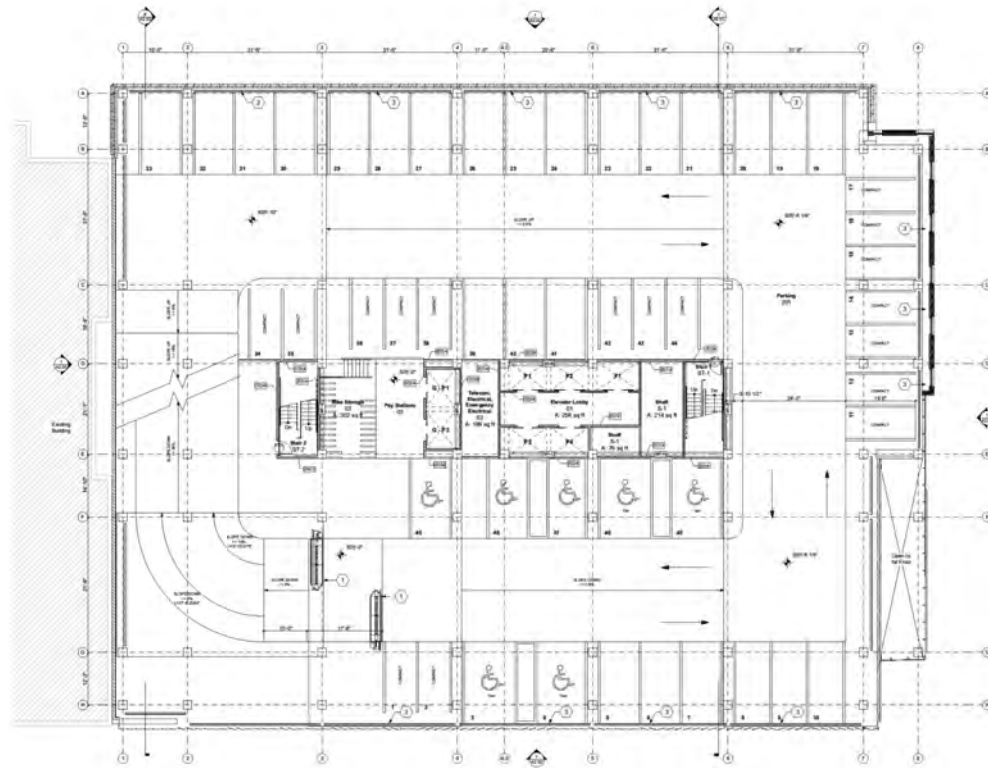


SCALE: N.T.S.



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|             |  |  |
|-------------|--|--|
| PROJECT NO. | WEXST - 19061  | FIGURE   |
| PROJECT:    | 3440 Forbes Avenue Development<br>City of Pittsburgh, Allegheny County, PA | 2C   |
| TITLE:      | Site Plan  | D.B. <u>DTS</u><br>C.B. <u>CAJ</u><br>REV. _____ |



2nd Floor Plan  
SCALE: 1/4" = 1'-0"

- Construction Note**
- WE3 - Review Form Construction
- General Construction Notes**
- It is the responsibility of the contractor to verify all existing conditions and dimensions. Report discrepancies to the project partner.
  - Coordinate all work with MEP drawings.
  - All dimensions are measured to the finished S.F. with tolerance 1/8" ±.
  - All dimensions are measured to the center of the member unless otherwise noted. All dimensions are to be confirmed and shall allow for thickness of each member. All dimensions are to be confirmed and shall allow for thickness of each member.
  - The range lines of all drawings are to be confirmed and shall allow for thickness of each member.



- Circle Number**
- ① - Provide access control device with standby and lock
  - ② - Building access control hardware
  - ③ - Structural panel (see typical of exterior party wall)

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An Office Floor Plan  
Scale: 1/4" = 1'-0"  
Drawing No: 2019-0630  
Drawing Title: 2nd Floor Plan

NOT FOR CONSTRUCTION

Professional's Seal

---

Project Name: 18121 Westford Cultural Mixed Use Core (West)

Project Number: 18121



Client: Westford Science and Technology

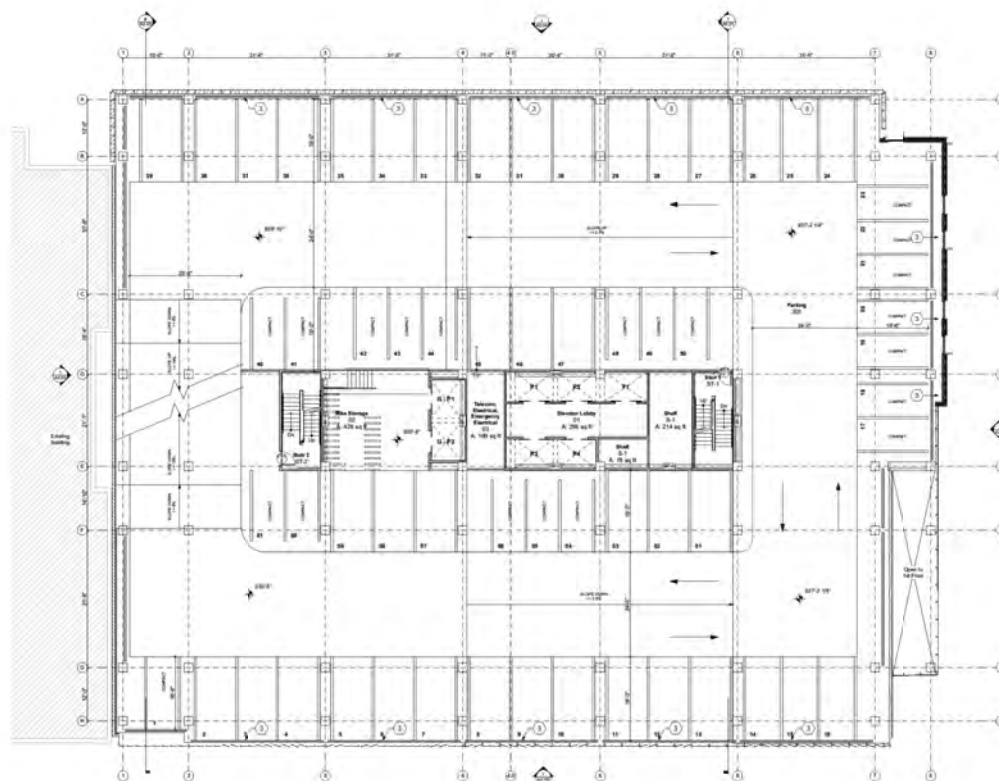
Issue Dates: Date: Project Phase: 01/14/19 50% SD Set

---

Drawing Title: 2nd Floor Plan

Sheet Number: **A1.03**

|  |   |  |  |
|--|---|--|--|
| <br>SCALE: N.T.S. | <br><b>Trans</b><br>ASSOCIATES<br>Small Firm Client Experience. Big Firm Capabilities<br>4955 Steubenville Pike, Twin Towers Suite 400<br>Pittsburgh, Pennsylvania 15205, 412-490-0630 | PROJECT NO. WEXST - 19061<br>PROJECT: 3440 Forbes Avenue Development<br>City of Pittsburgh, Allegheny County, PA | FIGURE<br><b>2D</b>                              |
|  | TITLE: <b>Site Plan</b>   |  | D.B. <u>DTS</u><br>C.B. <u>CAJ</u><br>REV. _____ |



3rd Floor Plan  
SCALE: 1/8" = 1'-0"

**Construction Key**

SEE: Steel Frame Elevation

**General Construction Notes**

1. It is the responsibility of the contractor to verify all existing conditions and dimensions. Report discrepancies to the architect prior to construction of the work.
2. Coordinate all work with MEP drawings.
3. All openings are indicated by the frame and shall be finished in accordance with the frame manufacturer's instructions.
4. All openings shall be finished in accordance with the frame manufacturer's instructions and shall allow for drainage of any water. (See: 05100 - Openings and Frames)
5. The height of all floor levels are to be finished in accordance with the frame manufacturer's instructions.



**Callout Notes**

- 1. Provide access control devices with holding and exit.
- 2. Building access control devices.
- 3. Coordinate panel sets, signal & control wiring.

# Strada

3440 Forbes Ave. Suite 400  
Pittsburgh, PA 15205  
www.transassociates.com  
515.321.1111

**NOT FOR CONSTRUCTION**

Professional's Seal

**Project Name**

1801 Westford Oakland

Westford, PA 15201

**Project Number**

1801

**Client**

Westford Science and Technology

**Project Origin**

Client - Project Phase

10/1/18 50% B3B Set

**Drawing Title**

3rd Level Plan

**Sheet Number**

**A1.04**



SCALE: N.T.S.



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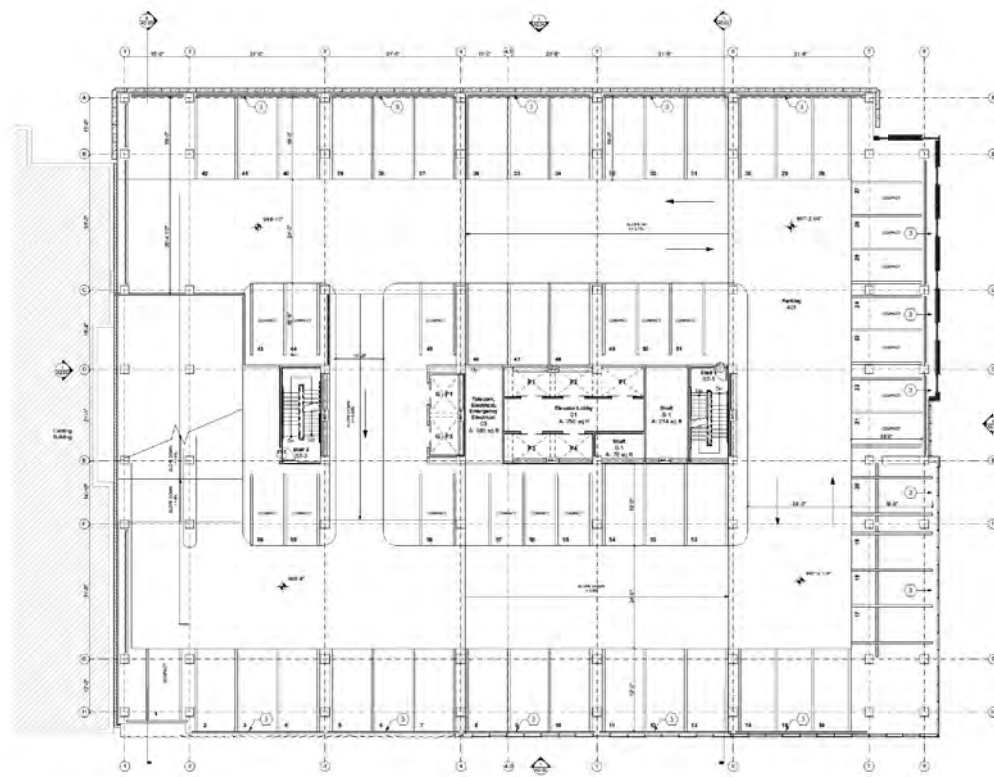
PROJECT NO. WEXST - 19061  
PROJECT: 3440 Forbes Avenue Development  
City of Pittsburgh, Allegheny County, PA

TITLE: Site Plan

FIGURE  
**2E**

D.B. DTS  
C.B. CAL  
REV. \_\_\_\_\_





4th Floor Plan  
SCALE: 1/8" = 1'-0"

- Construction Key**
- General Construction Notes**
1. It is the responsibility of the contractor to verify all existing conditions and dimensions. Report discrepancies to the architect prior to construction of the work.
  2. Coordinate all work with MEP drawings.
  3. All dimensions are indicated in the Section D wall and ceiling notes.
  4. All dimensions are noted NED of and/or measured and dimensioned for reference of all trades. ALL DIMENSIONS MARKED NED OF MUST BE ACCURATE. Measurements are taken to the face unless noted.
  5. The large scale of this project will be measured off from the adjacent wall, unless otherwise indicated.

- Circle Notes**
1. Provide access control panels with blocking and air.
  2. Working access control furniture.
  3. Make sure panel is fully typical of all access panels installed.

# Strada

Architectural Firm  
1000  
Pittsburgh, PA 15203  
www.strada.com  
info@strada.com

NOT FOR CONSTRUCTION

Professional's Seal

---

Project Name  
1813 Woodland Oakland  
Woodland Court West

---

Project Number  
18101

---

Client  
Woodward-Clyde and  
Technology

---

Issue Dates  
Date: Project Phase: 04/18/19 04/18/19

---

Drawing Title  
4th Floor Plan

---

Sheet Number  
**A1.05**



SCALE: N.T.S.



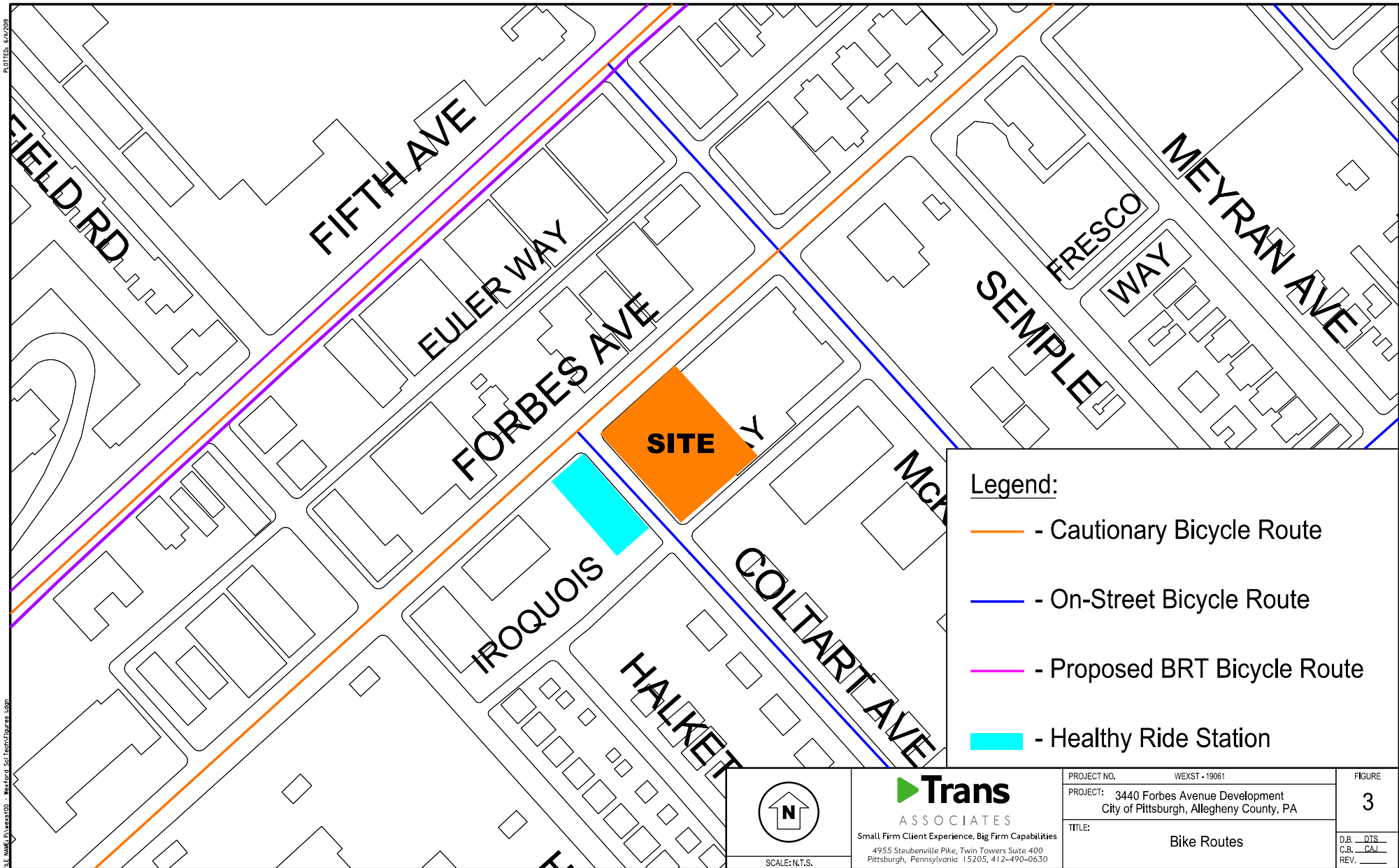
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Pittsburgh, Pennsylvania 15205, 412-490-0630

|             |  |
|-------------|--|
| PROJECT NO. | WEXST - 19061  |
| PROJECT:    | 3440 Forbes Avenue Development<br>City of Pittsburgh, Allegheny County, PA |
| TITLE:      | Site Plan  |





|        |     |
|--------|-----|
| FIGURE | 2F  |
| D.B.   | DTS |
| C.B.   | CAJ |
| REV.   |     |

PLOTTED: 6/12/2018

FILE NAME: D:\west100 - westford\_sst\Tech\figures\fig...



**Legend:**

-  - Cautionary Bicycle Route
-  - On-Street Bicycle Route
-  - Proposed BRT Bicycle Route
-  - Healthy Ride Station



SCALE: N.T.S.



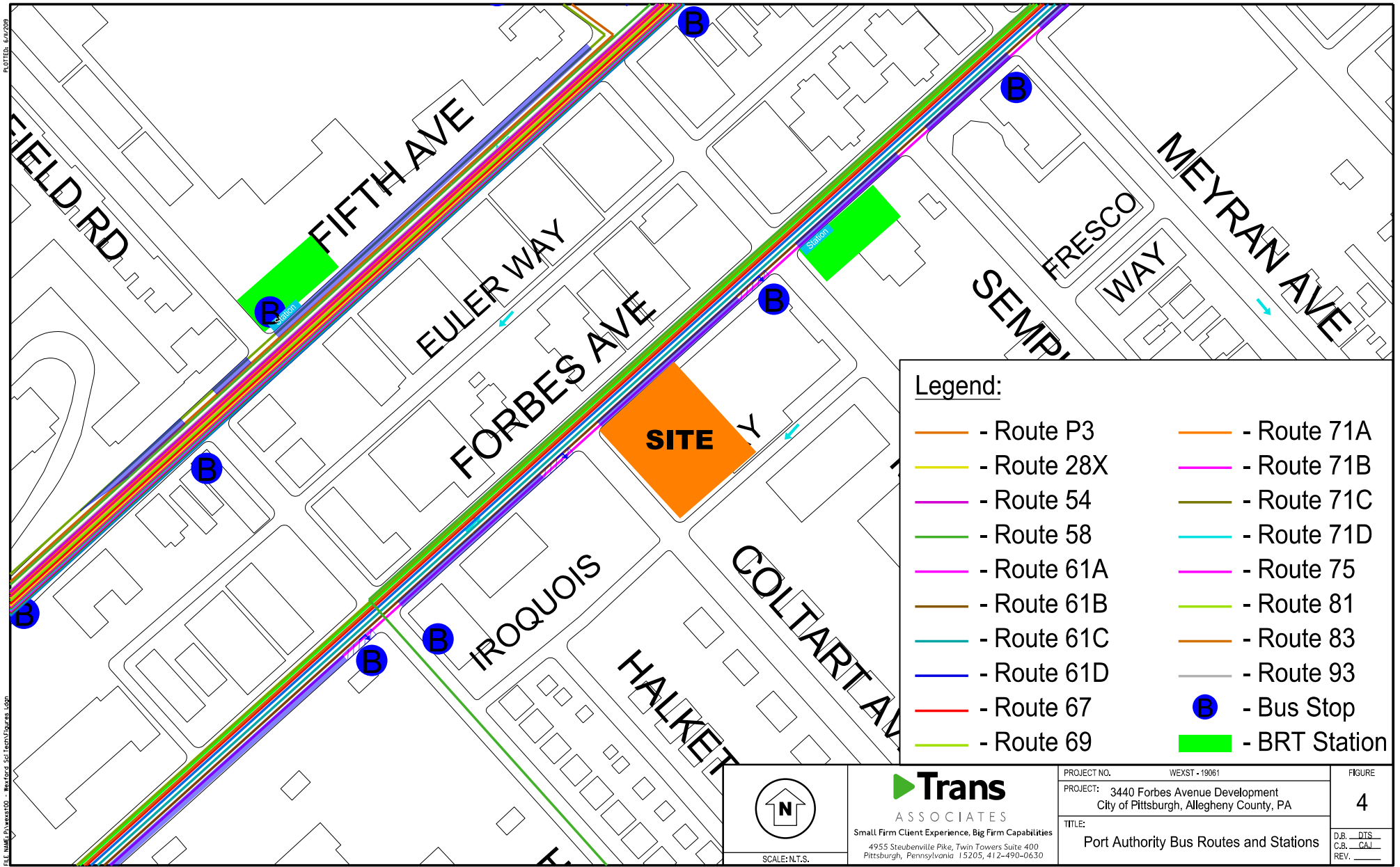
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|             |  |        |        |
|-------------|--|--------|--------|
| PROJECT NO. | WEXST - 19061  | FIGURE | 3      |
| PROJECT:    | 3440 Forbes Avenue Development<br>City of Pittsburgh, Allegheny County, PA | D.B.   | D.T.S. |
| TITLE:      | Bike Routes  | C.B.   | C.A.J. |
|             |  | REV.   |        |



PLOTTED: 6/12/2018

FILE NAME: D:\west100 - westford\_sst\tech\figures\100



**Legend:**

- Route P3
- Route 28X
- Route 54
- Route 58
- Route 61A
- Route 61B
- Route 61C
- Route 61D
- Route 67
- Route 69
- Route 71A
- Route 71B
- Route 71C
- Route 71D
- Route 75
- Route 81
- Route 83
- Route 93
- Bus Stop
- BRT Station



SCALE: N.T.S.

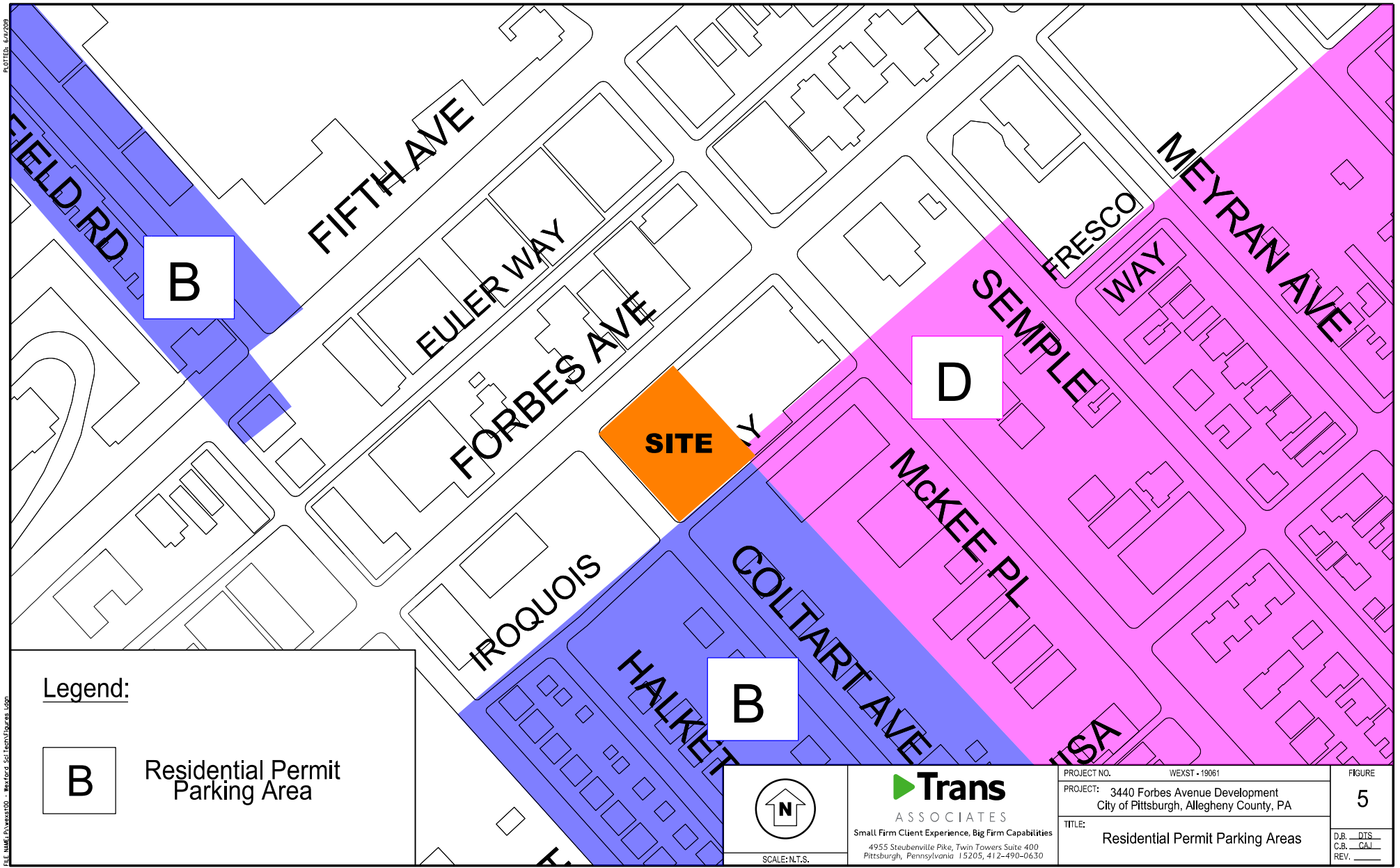


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|   |   |
|---|---|
| PROJECT NO. WEXST - 19061   | FIGURE  |
| PROJECT: 3440 Forbes Avenue Development<br>City of Pittsburgh, Allegheny County, PA | 4   |
| TITLE: Port Authority Bus Routes and Stations                                       | D.B. <u>   </u> D.T.S. <u>   </u><br>C.B. <u>   </u> C.A.J. <u>   </u><br>REV. <u>   </u> |

PLOTTED: 6/12/2018

FILE NAME: D:\west100 - westford\_sst\Tech\figures\fig...



Legend:



Residential Permit  
Parking Area



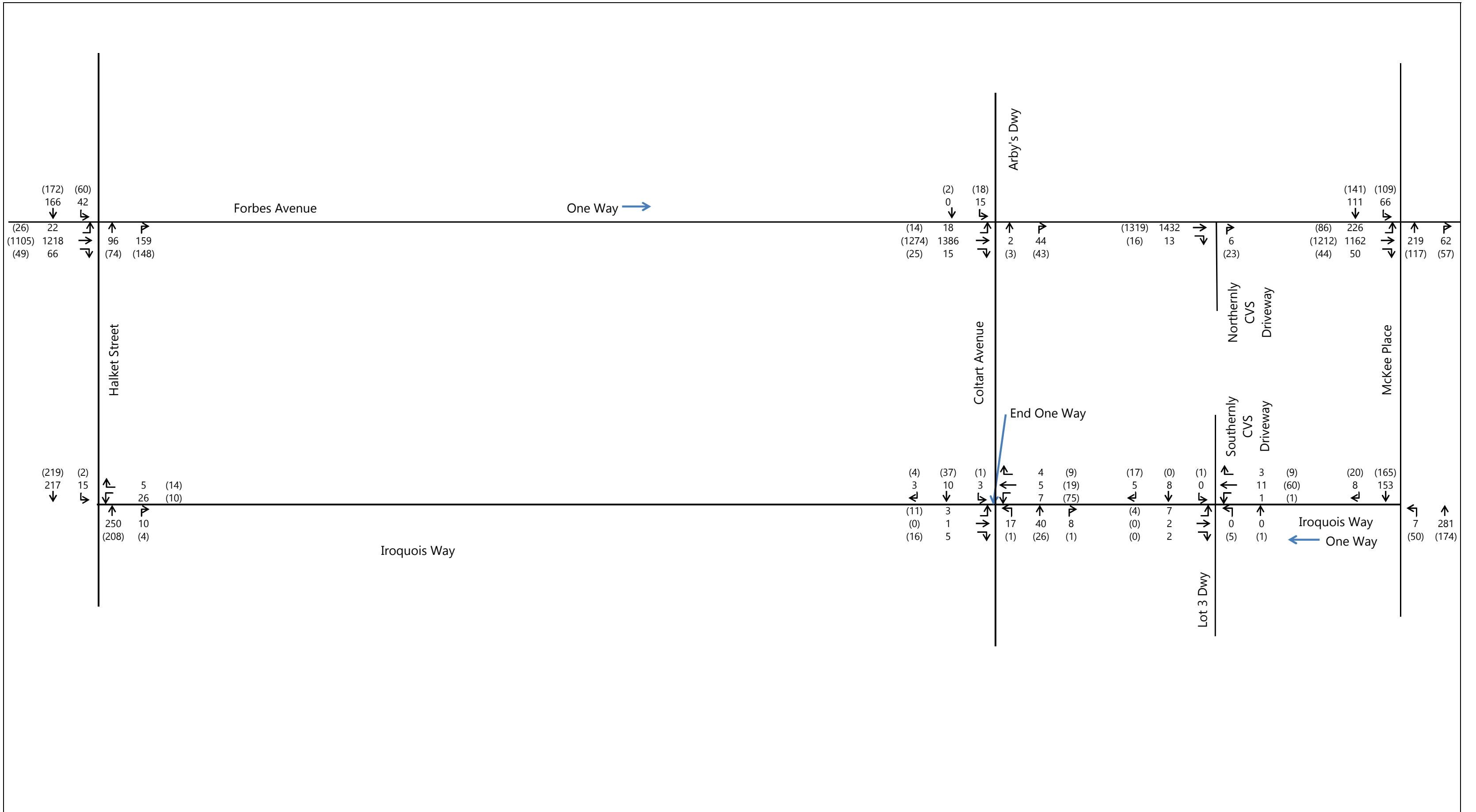
SCALE: N.T.S.

**Trans**

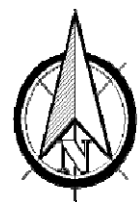
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|             |  |        |        |
|-------------|--|--------|--------|
| PROJECT NO. | WEXST - 19061  | FIGURE | 5      |
| PROJECT:    | 3440 Forbes Avenue Development<br>City of Pittsburgh, Allegheny County, PA |        |        |
| TITLE:      | Residential Permit Parking Areas   |        |        |
| D.B.        | D.T.S.   | C.B.   | C.A.J. |
| REV.        |  |        |        |



**Legend**  
 123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.

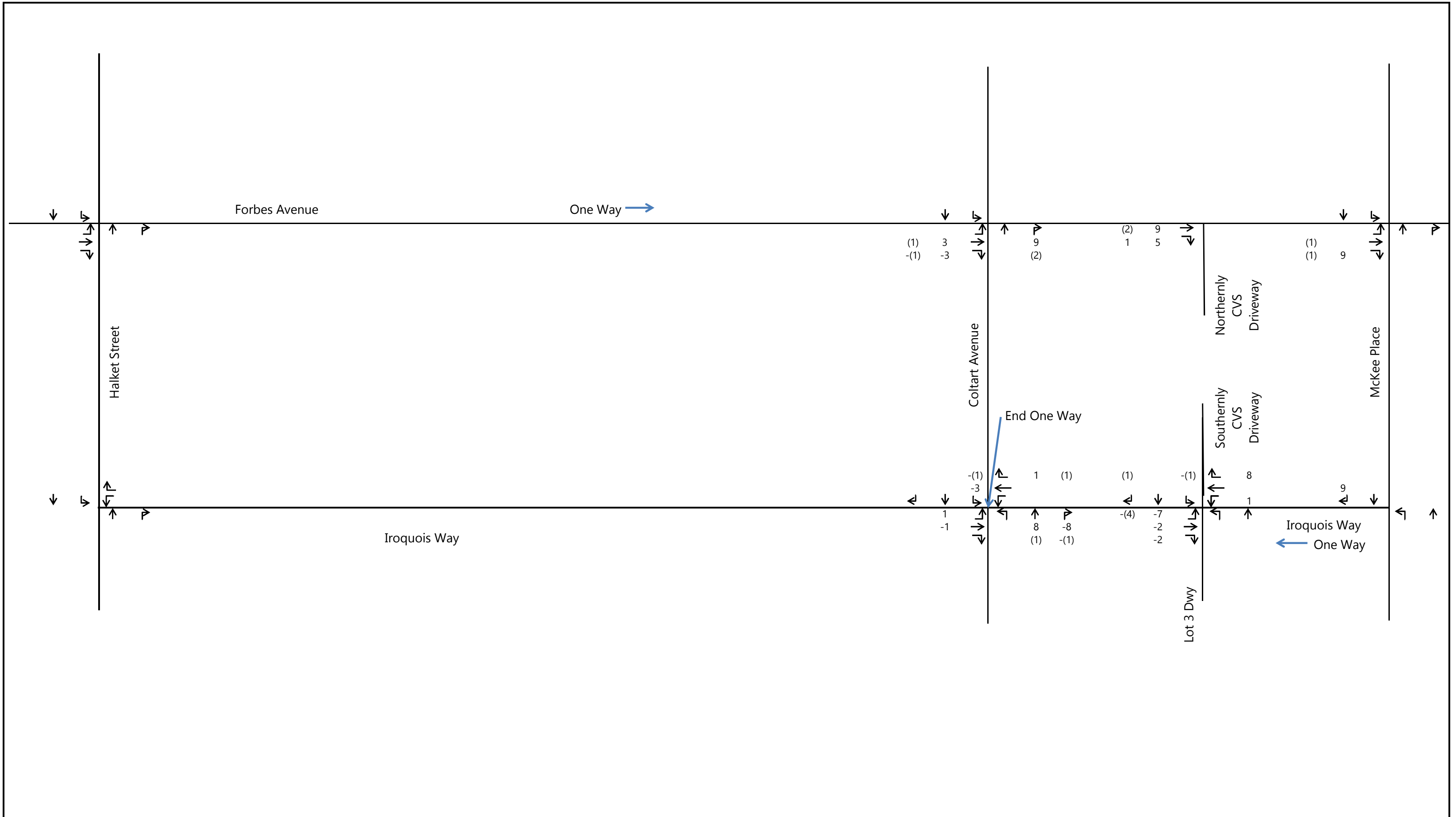
**Trans ASSOCIATES**  
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 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

Project No: WEXST00 - 19061  
 Project: 3440 Forbes Avenue Development TIS  
 City of Pittsburgh, Allegheny County, PA  
 Title: 2019 Existing Conditions  
 Peak Hour Traffic Volumes (without Completed Background Trips)

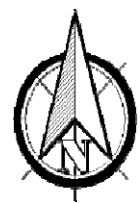
FIGURE

6

D.B. DTS  
 C.B. CAJ  
 REV.



**Legend**  
 123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.

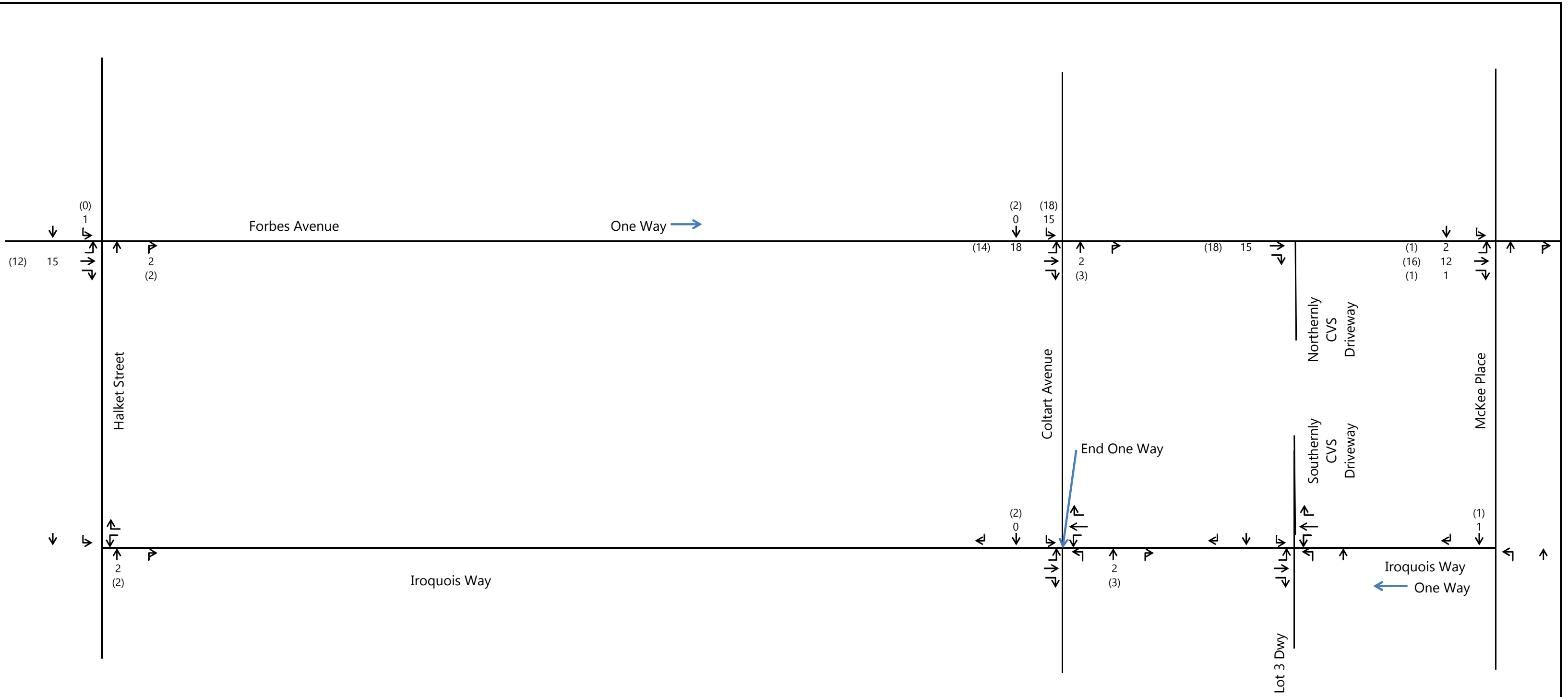
**Trans**  
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Project No: WEXST00 - 19061  
 Project: 3440 Forbes Avenue Development TIS  
 City of Pittsburgh, Allegheny County, PA  
 Title: Rerouted Illegal Iroquois Way Traffic

FIGURE

7

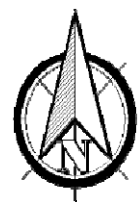
D.B. DTS  
 C.B. CAJ  
 REV.



\* Arby's traffic was removed because construction on the 3407, 3417 & 3427 Forbes Avenue Development was started but not yet complete at the time of data collection. 3407, 3417 & 3427 Forbes Avenue Development site trips will be included in the Build and No Build Volumes.

**Legend**

- 123 - A.M. Peak Hour Traffic Volumes
- (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.

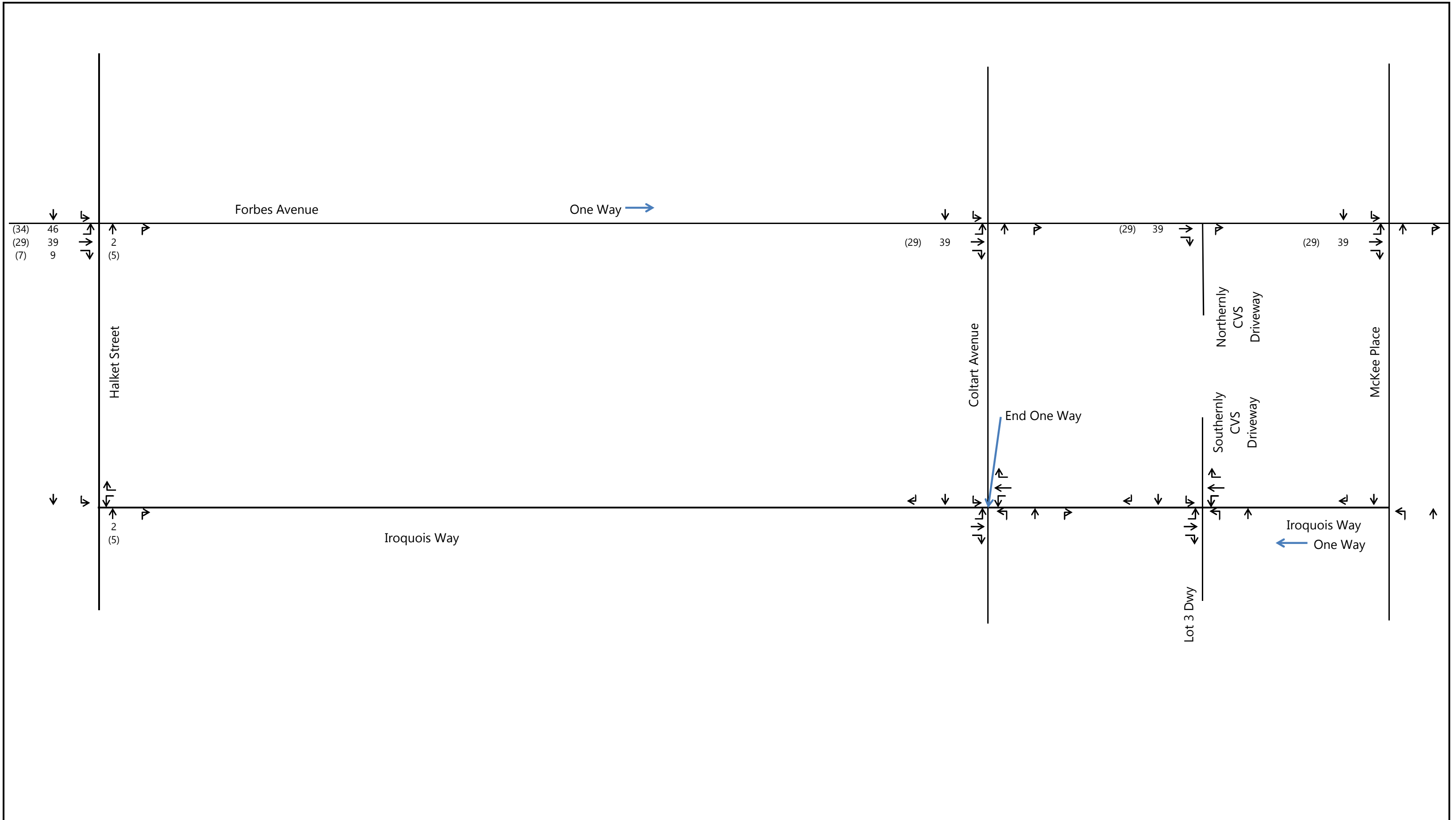
**Trans ASSOCIATES**  
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 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | Removed Old Arby's Site Trips  |

FIGURE

**8**

D.B. DTS  
C.B. CAJ  
REV.



**Legend**

123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.

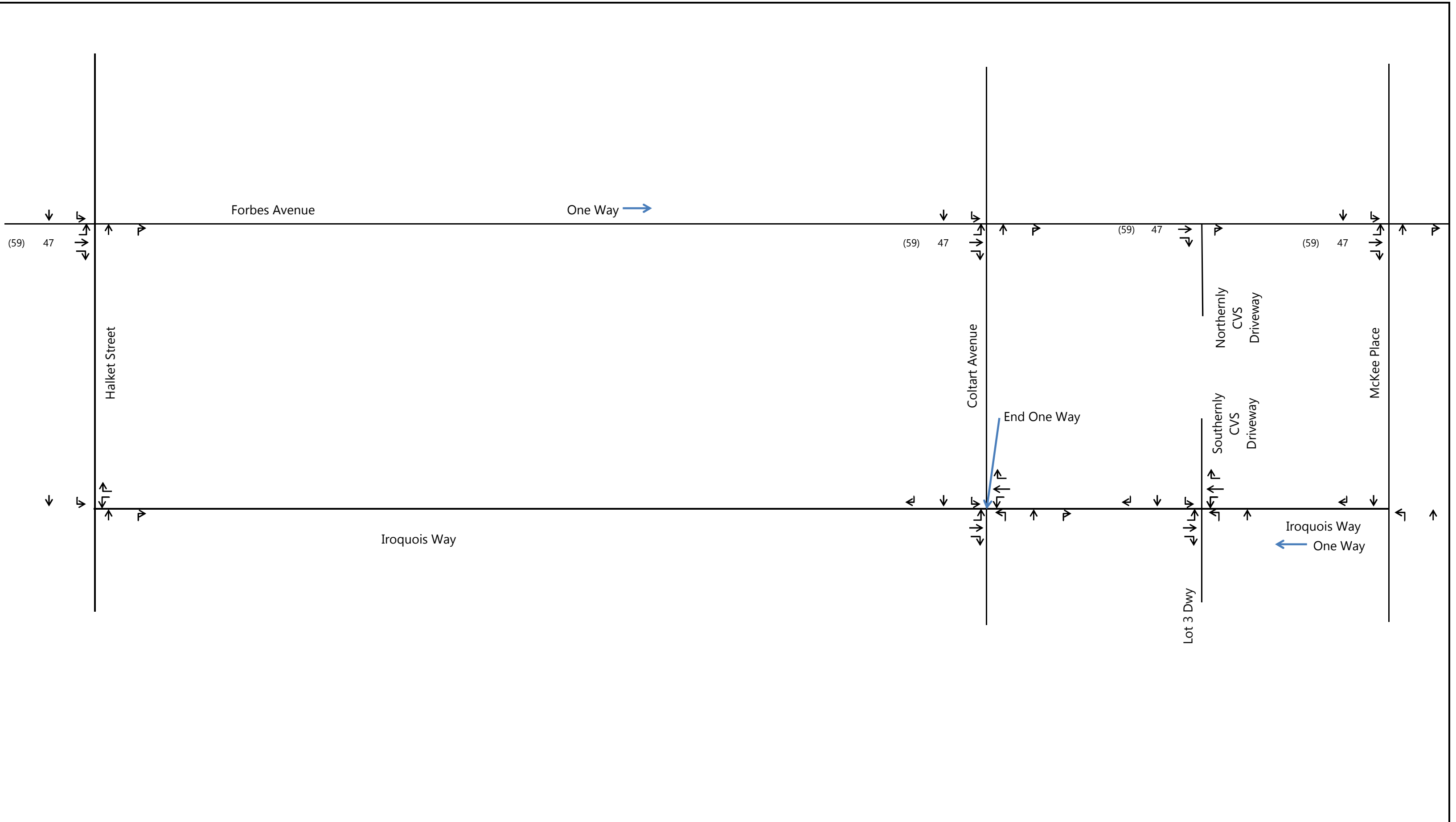
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|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | Skyvue & Forbes Avenue Hotel Completed Background Trips                        |

FIGURE

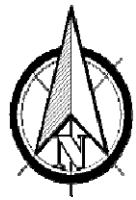
9

D.B. DTS  
 C.B. CAJ  
 REV.



**Legend**

123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.

**Trans**  
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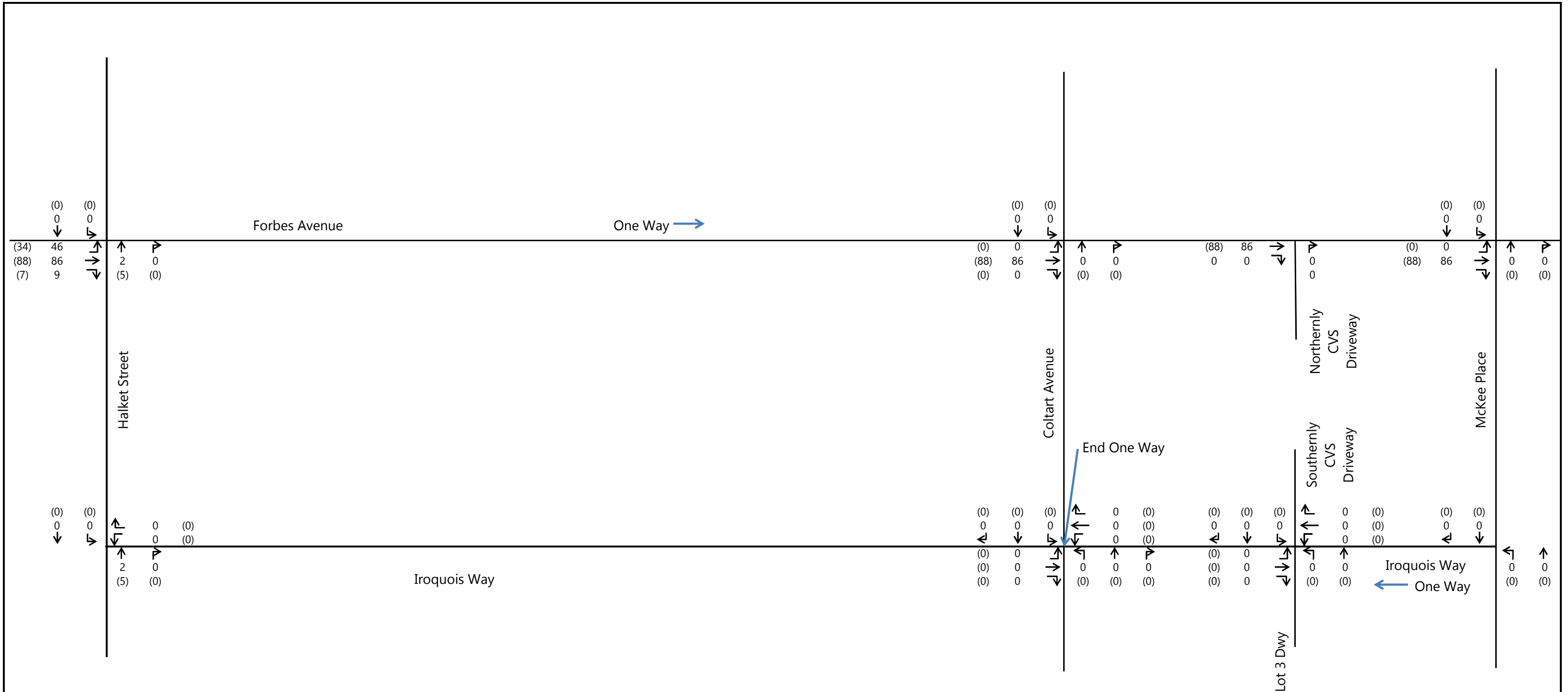
|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | PAA Hotel Completed Background Trips   |

FIGURE

**10**

D.B. DTS  
 C.B. CAJ  
 REV.





**Legend**

123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.



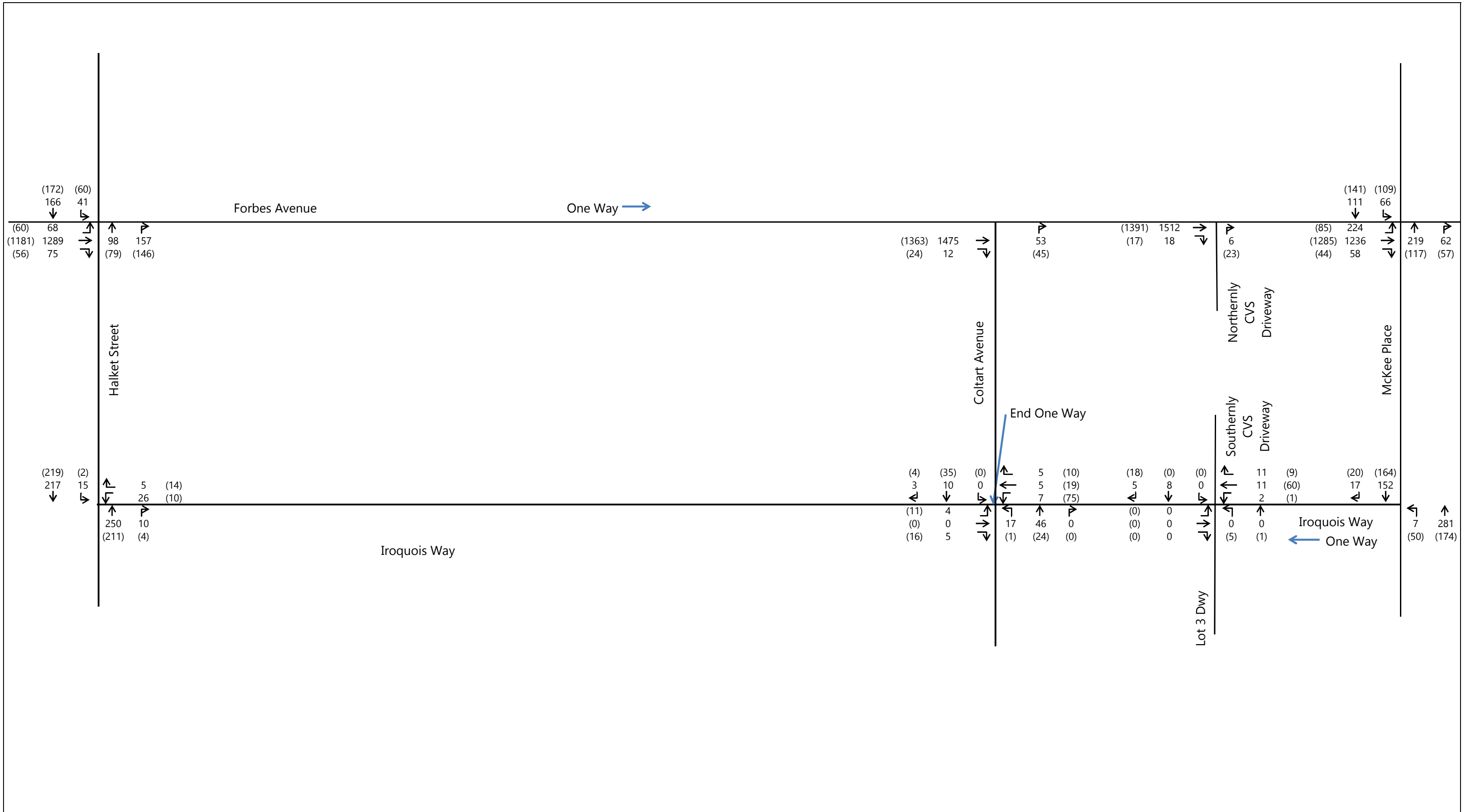
Project No: WEXST00 - 19061  
 Project: 3440 Forbes Avenue Development TIS  
 City of Pittsburgh, Allegheny County, PA  
 Title: Total Completed Background Trips

FIGURE

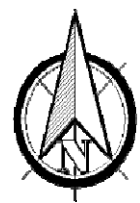
**11**

D.B. DTS  
 C.B. CAJ  
 REV.





Legend  
 123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.

**Trans**  
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 Small Firm Client Experience, Big Firm Capabilities  
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Project No: WEXST00 - 19061

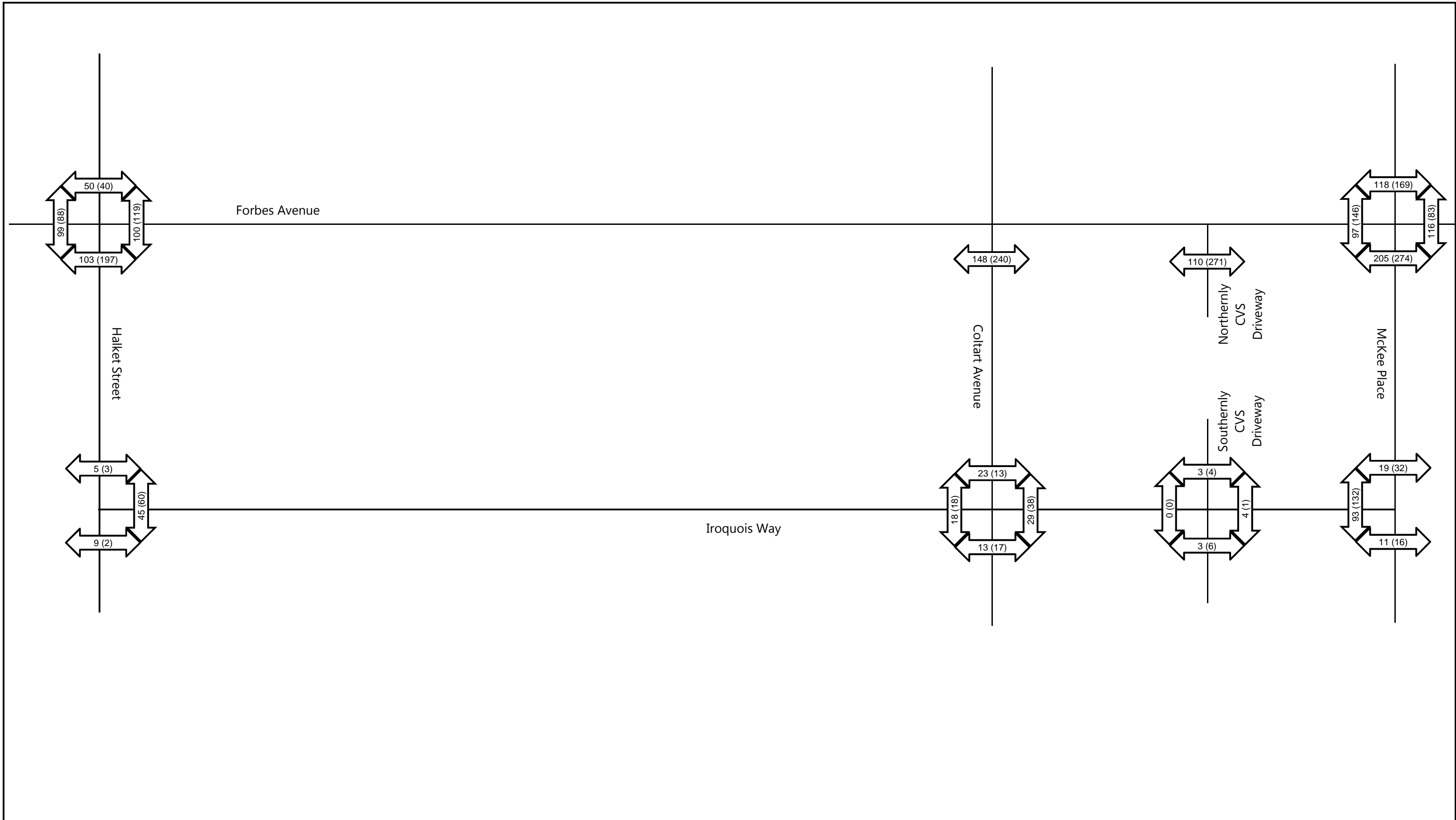
Project: 3440 Forbes Avenue Development TIS  
 City of Pittsburgh, Allegheny County, PA



Title: 2019 Existing Conditions  
 Peak Hour Traffic Volumes

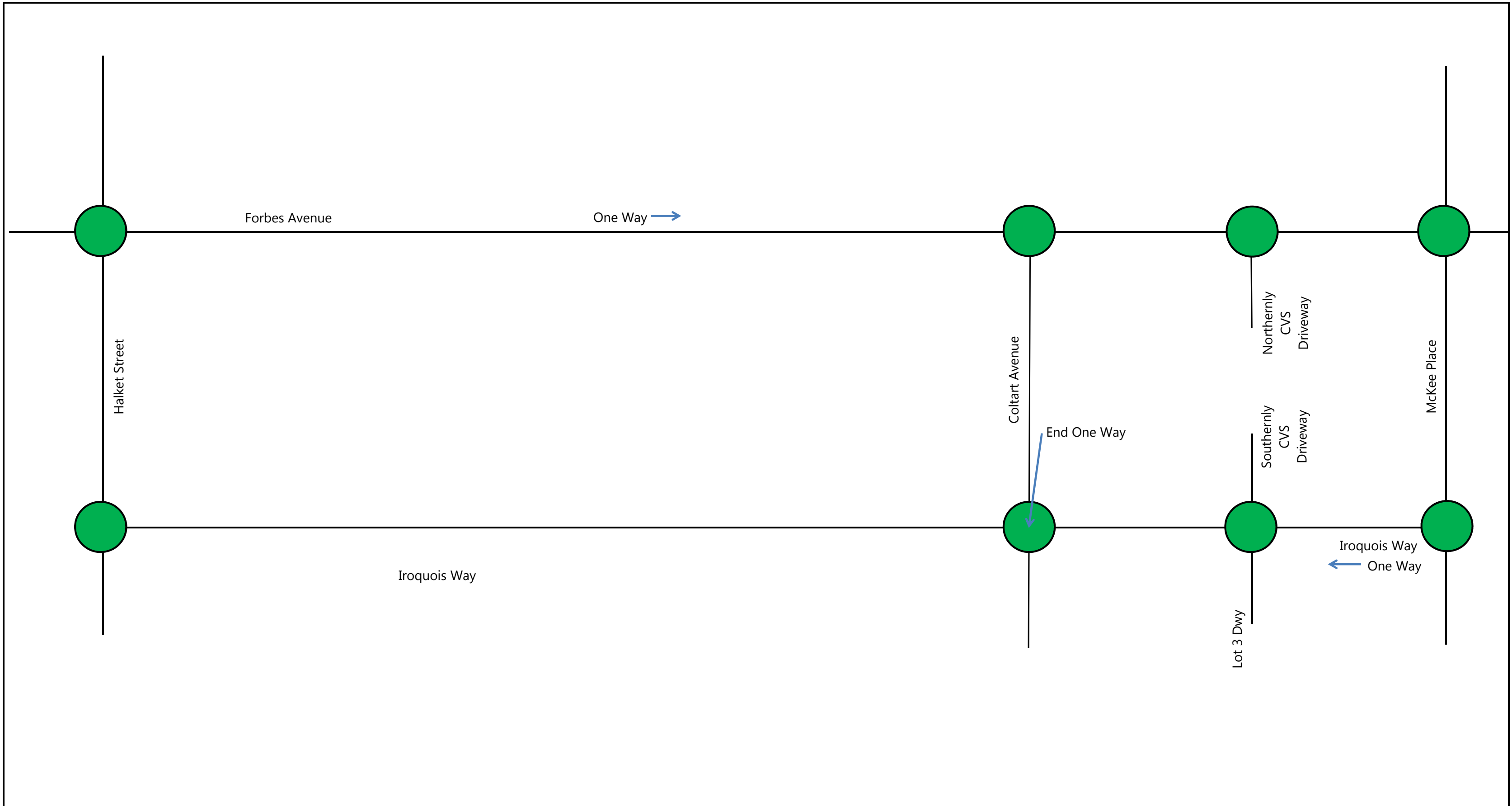
FIGURE

12

D.B. DTS  
 C.B. CAJ  
 REV.



|  |  |   |   |
|--|--|---|---|
| <br>SCALE: N.T.S. | <br><b>Trans ASSOCIATES</b><br>Small Firm Client Experience, Big Firm Capabilities<br>Twin Towers Suite 400 / 4955 Steubenville Pike<br>Pittsburgh, Pennsylvania 15205 / (412) 490-0630 | Project No: WEXST00 - 19061   | FIGURE<br><h1>13</h1><br>D.B. DTS<br>C.B. CAJ<br>REV. |
|  |  | Project: 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |   |
|  |  | Title: 2019 Existing<br>Peak Hour Pedestrian Volumes                                    |   |



**Legend**

- - Overall Intersection LOS A, B, C, or D
- - Overall Intersection LOS E
- - Overall Intersection LOS F



SCALE: N.T.S.

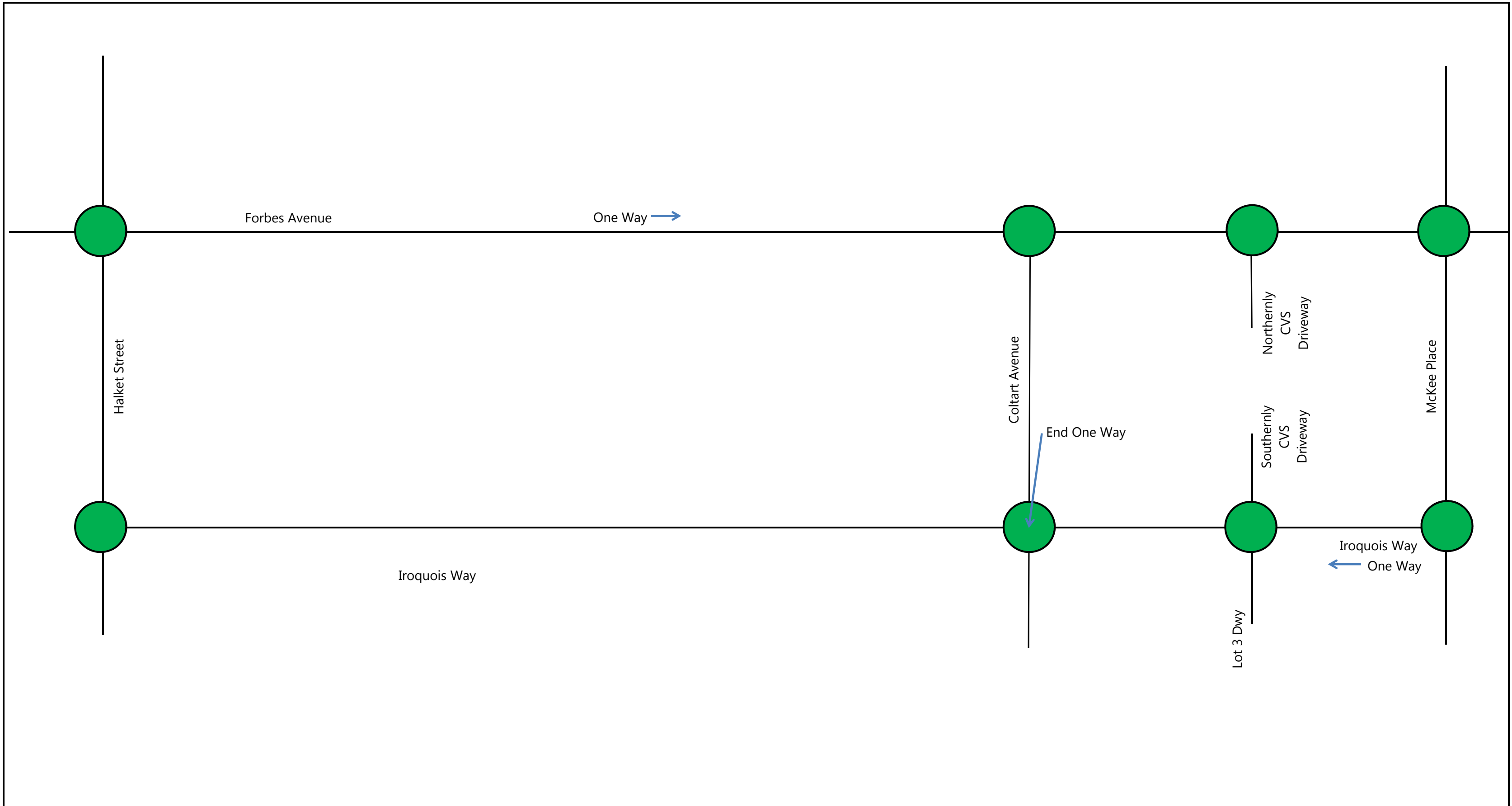
  
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 Twin Towers Suite 400 / 4955 Steubenville Pike  
 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | 2019 Existing Conditions<br>AM Peak Hour Levels of Service                     |

FIGURE

**14**

D.B. DTS  
C.B. CAJ  
REV.



**Legend**

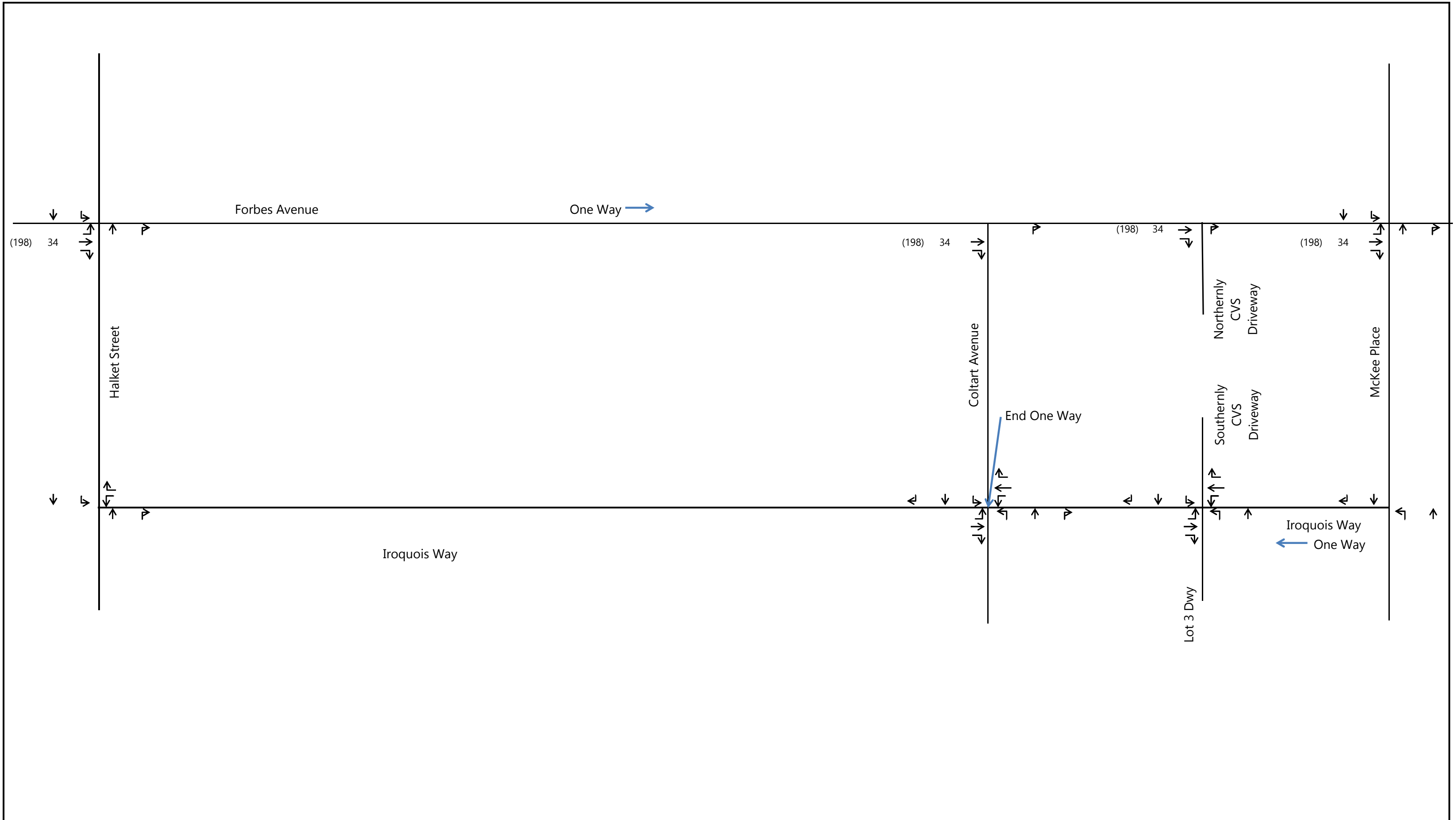
- - Overall Intersection LOS A, B, C, or D
- - Overall Intersection LOS E
- - Overall Intersection LOS F



SCALE: N.T.S.

  
**Trans**  
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 Small Firm Client Experience, Big Firm Capabilities  
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 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

|             |  |  |
|-------------|--|--|
| Project No: | WEXST00 - 19061  | FIGURE<br><br><h1 style="margin: 0;">15</h1> |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |  |
| Title:      | 2019 Existing Conditions<br>AM Peak Hour Levels of Service                     |  |
|             |  | D.B. DTS<br>C.B. CAJ<br>REV.                 |



**Legend**

123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.

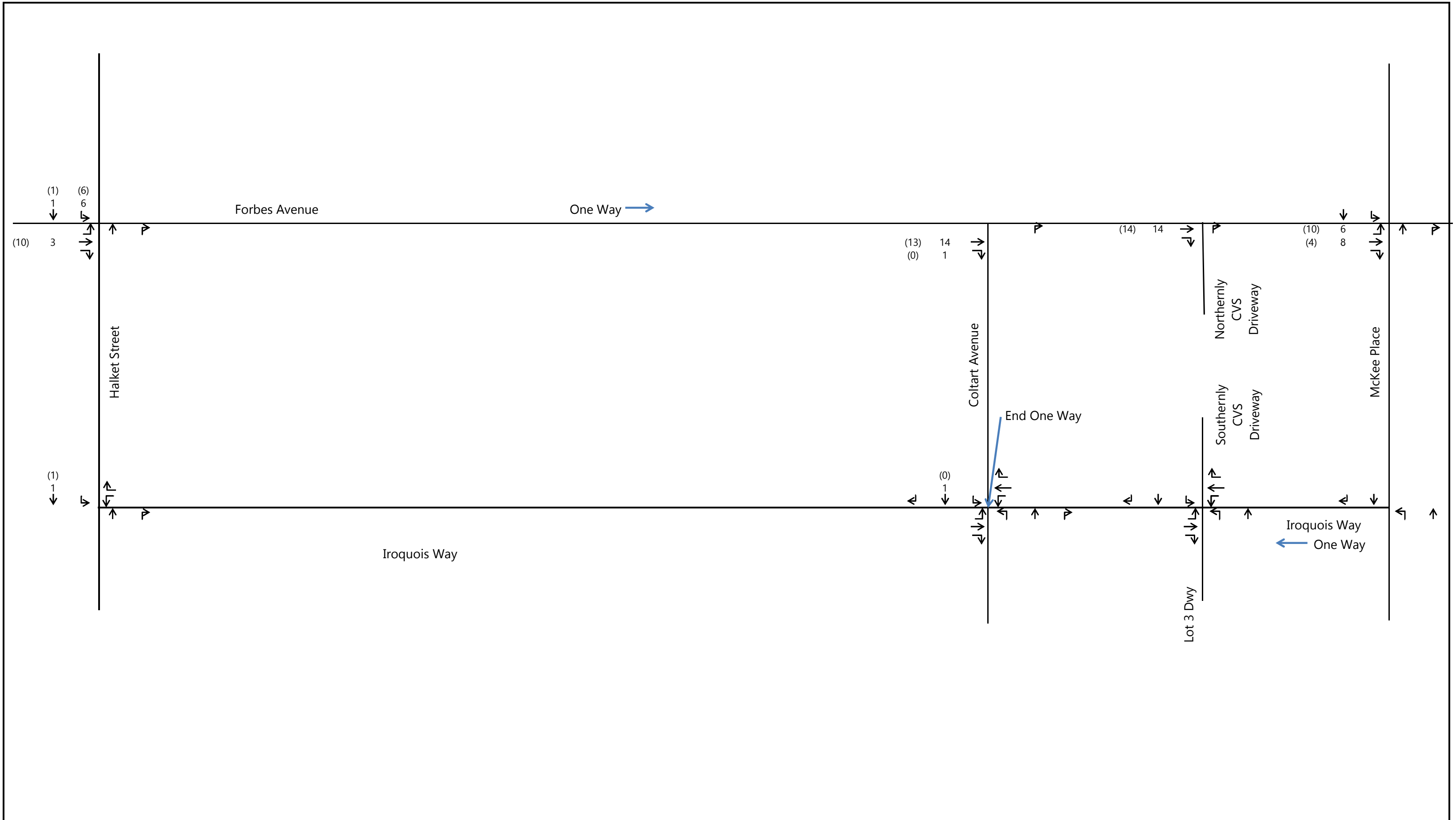
**Trans**  
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 Small Firm Client Experience, Big Firm Capabilities  
 Twin Towers Suite 400 / 4955 Steubenville Pike  
 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | Oakland Portal Background Trips  |

FIGURE

**16**

D.B. DTS  
 C.B. CAJ  
 REV.



**Legend**

123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.

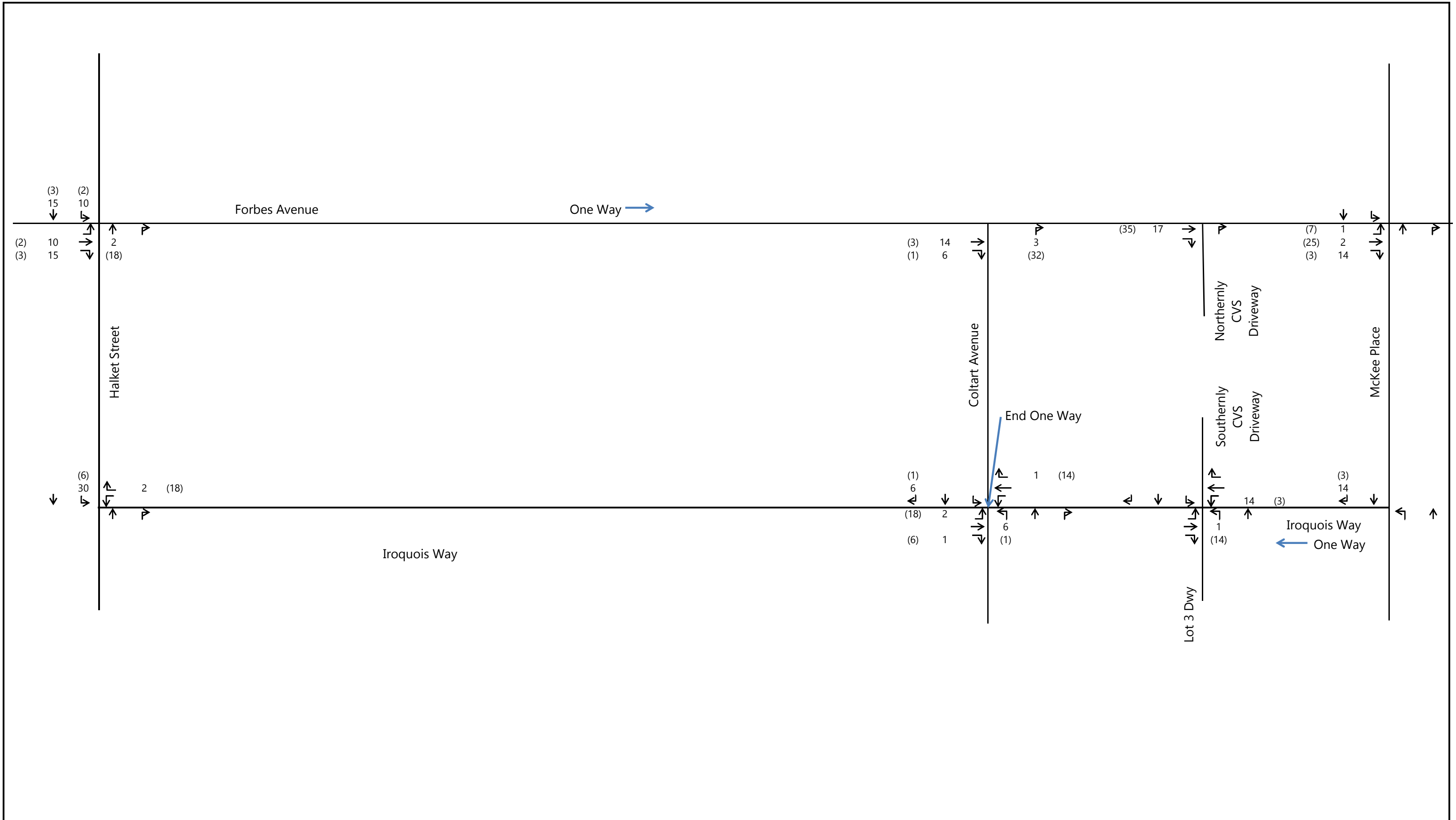
**Trans**  
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 Small Firm Client Experience, Big Firm Capabilities  
 Twin Towers Suite 400 / 4955 Steubenville Pike  
 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | 3407, 3417, and 3427 Forbes Background Trips                                   |

FIGURE

**17**

D.B. DTS  
 C.B. CAJ  
 REV.



**Legend**

123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.

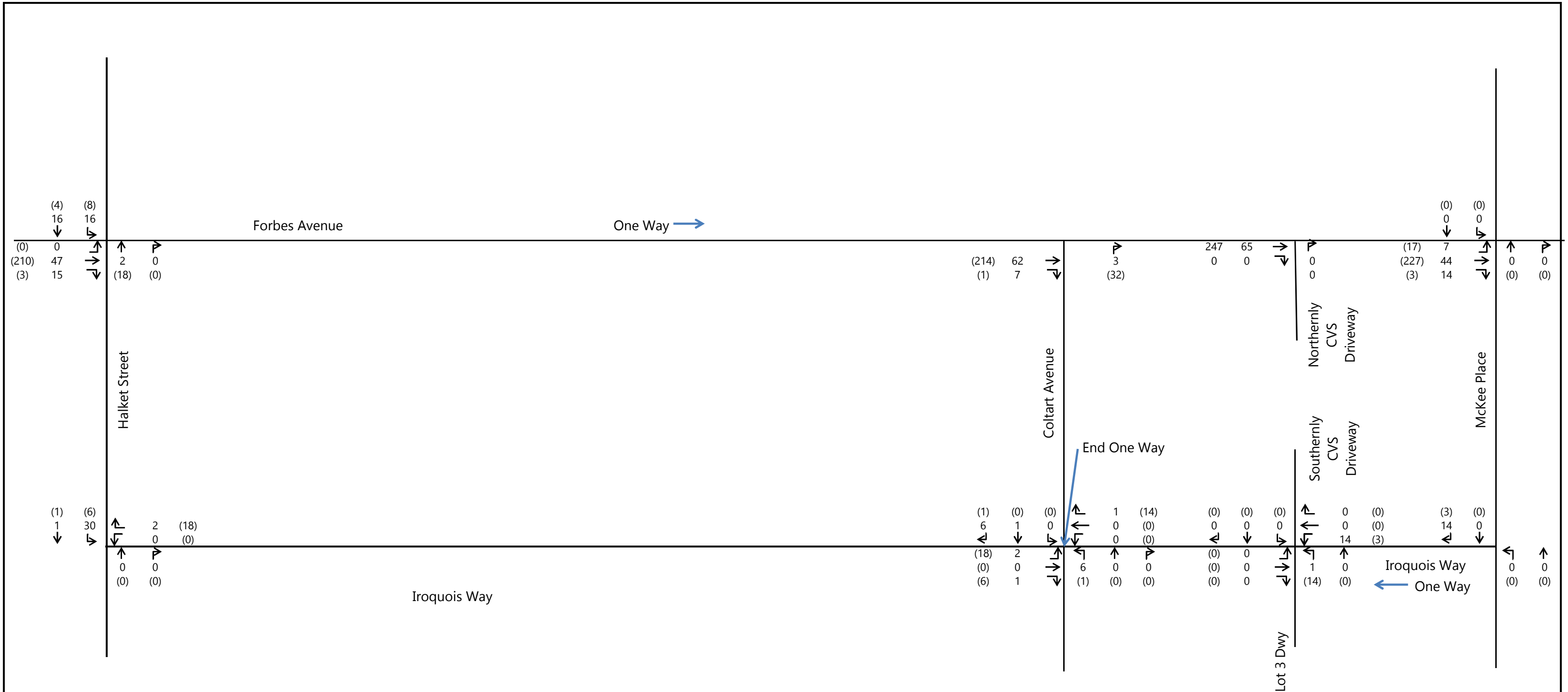
**Trans**  
 ASSOCIATES  
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 Twin Towers Suite 400 / 4955 Steubenville Pike  
 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | 3420 & 3422 Forbes Background Trips  |

FIGURE

**18**

D.B. DTS  
 C.B. CAJ  
 REV.



Total Background Trips from the Following Studies:  
 3407, 3417 & 3427 Forbes Avenue Development  
 Oakland Portal  
 3420-3422 Forbes Avenue Development

**Legend**

123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.



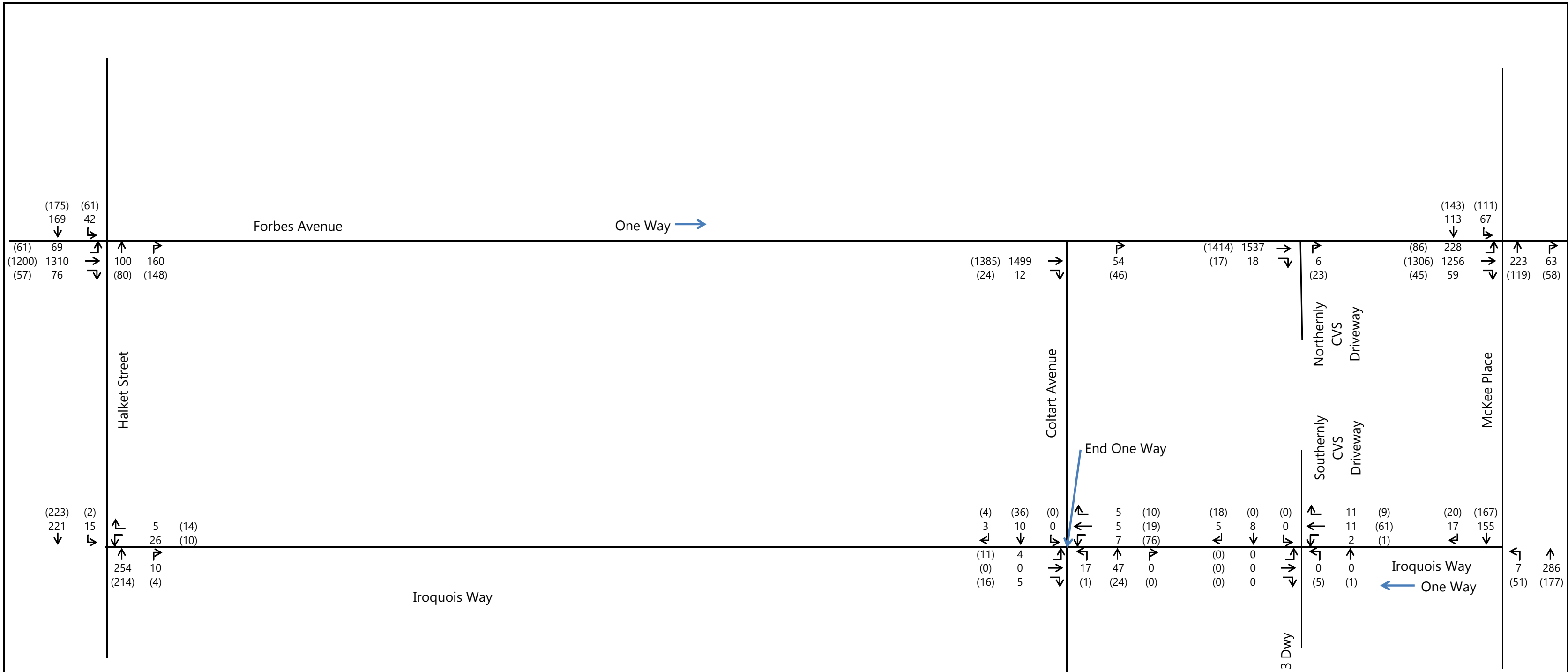
Project No: WEXST00 - 19061  
 Project: 3440 Forbes Avenue Development TIS  
 City of Pittsburgh, Allegheny County, PA  
 Title: Total Approved Background Development Trips

FIGURE

19

D.B. DTS  
 C.B. CAJ  
 REV.





**Legend**

123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.

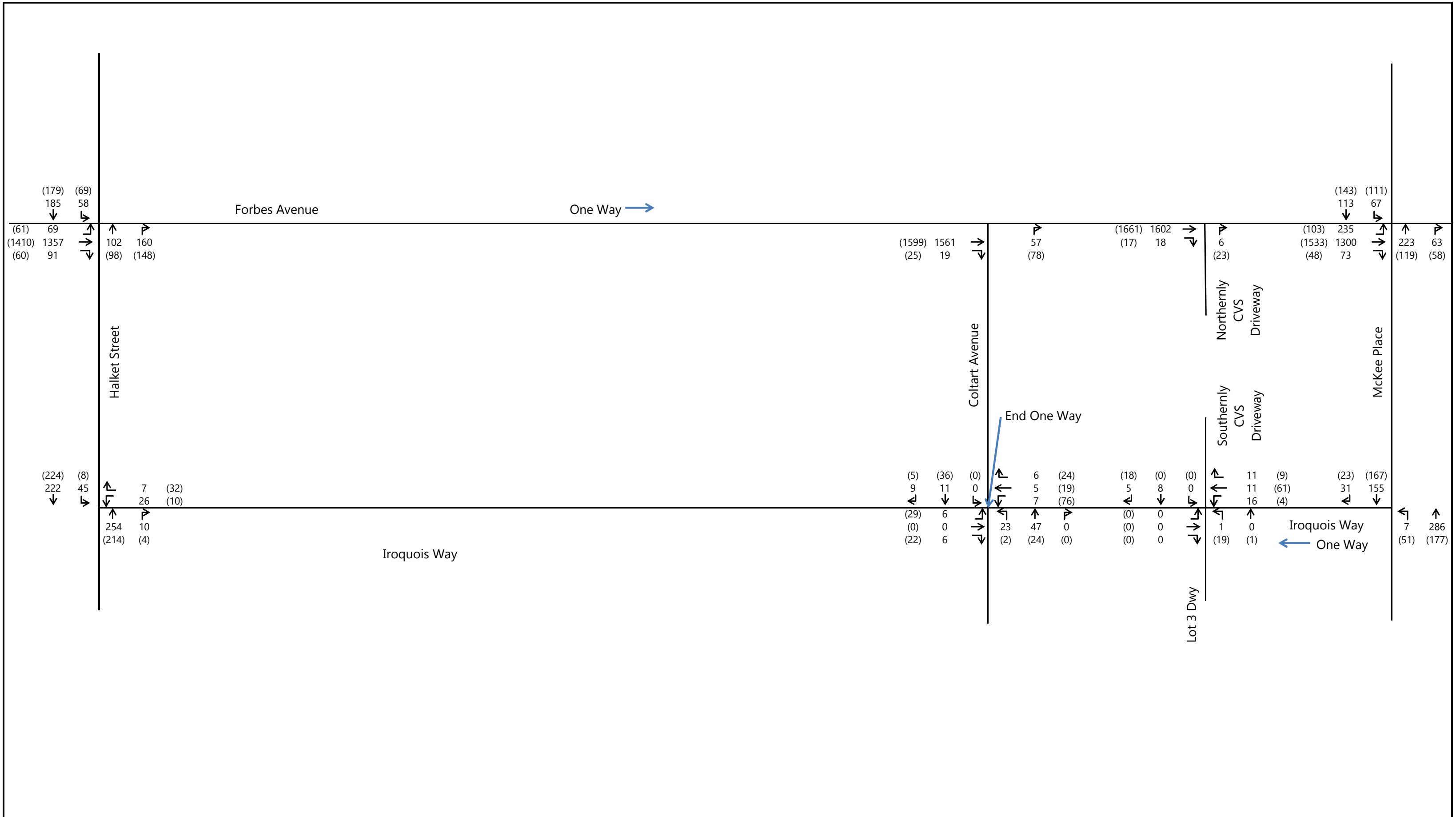
**Trans**  
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 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | 2022 Background<br>Peak Hour Traffic Volumes                                   |

FIGURE

**20**

D.B. DTS  
 C.B. CAJ  
 REV.



**Legend**  
 123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes

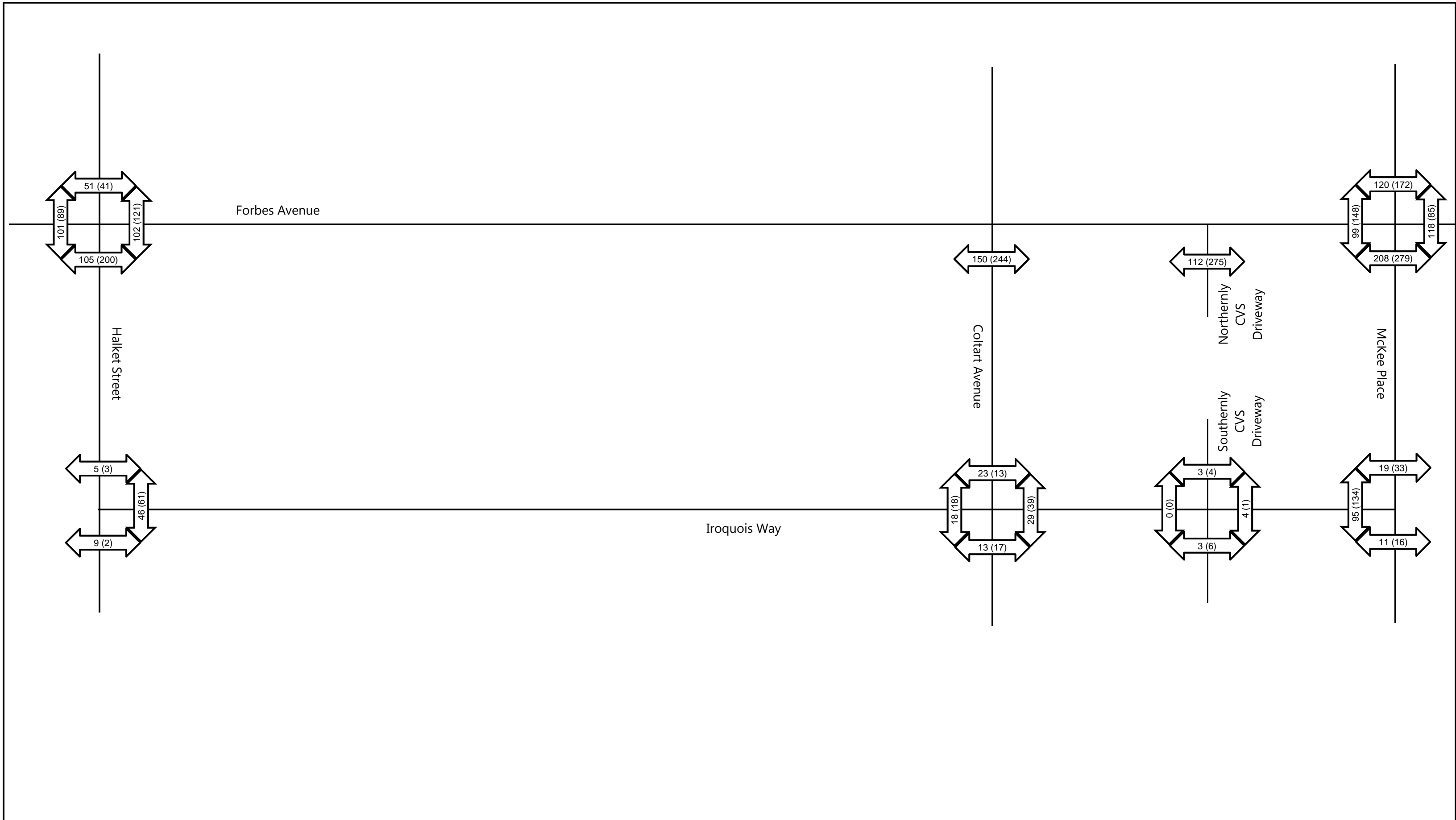




SCALE: N.T.S.

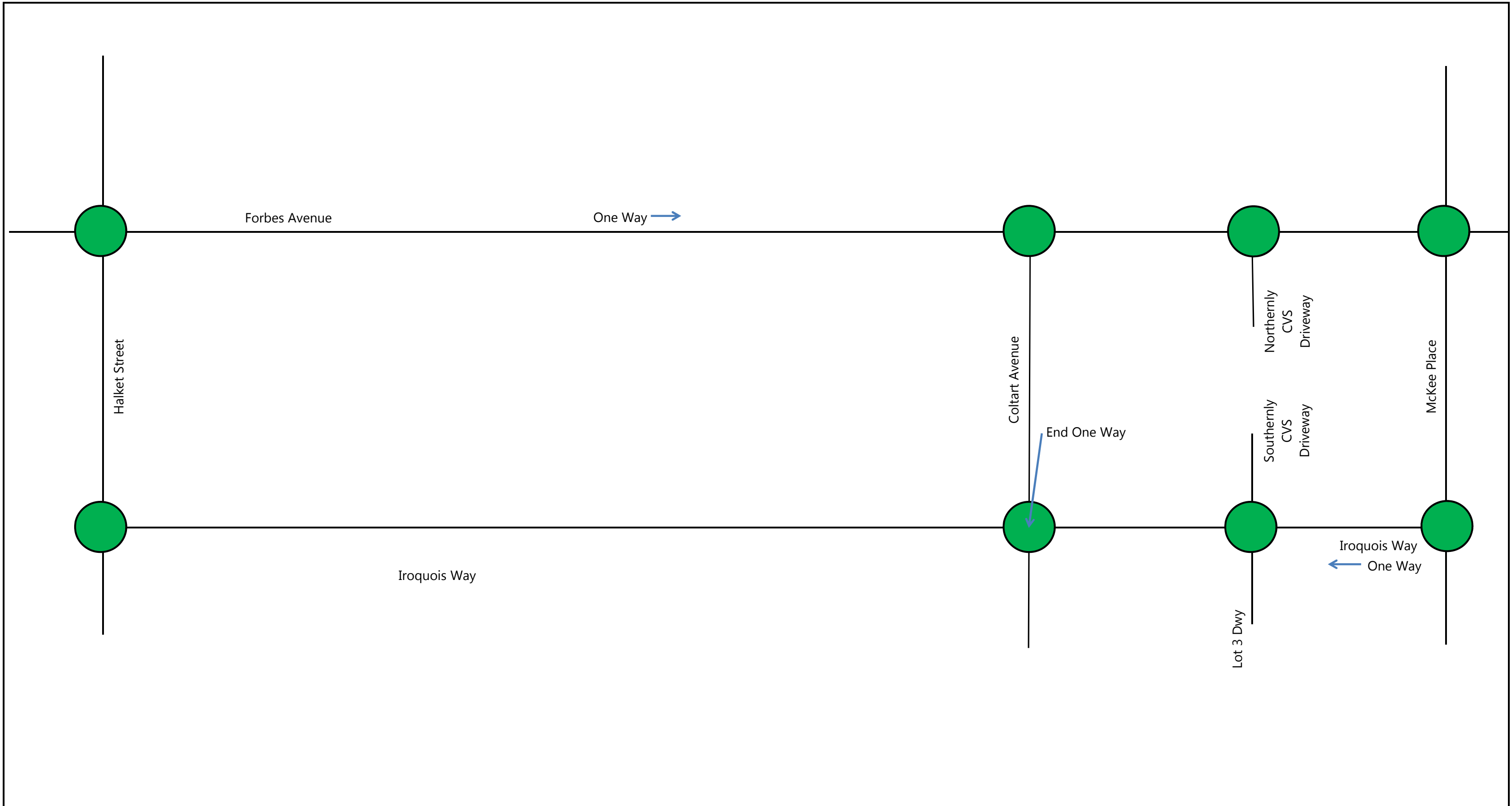
**Trans ASSOCIATES**  
 Small Firm Client Experience, Big Firm Capabilities  
 Twin Towers Suite 400 / 4955 Steubenville Pike  
 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | 2022 No Build Conditions<br>Peak Hour Traffic Volumes                          |




|                              |    |
|------------------------------|----|
| FIGURE                       | 21 |
| D.B. DTS<br>C.B. CAJ<br>REV. |    |



|  |  |   |   |
|--|--|---|---|
| <br>SCALE: N.T.S. | <br><b>Trans ASSOCIATES</b><br>Small Firm Client Experience, Big Firm Capabilities<br>Twin Towers Suite 400 / 4955 Steubenville Pike<br>Pittsburgh, Pennsylvania 15205 / (412) 490-0630 | Project No: WEXST00 - 19061   | FIGURE<br><h1>22</h1><br>D.B. DTS<br>C.B. CAJ<br>REV. |
|  |  | Project: 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |   |
|  |  | Title: 2022 No Build<br>Peak Hour Pedestrian Volumes                                    |   |



**Legend**

-  - Overall Intersection LOS A, B, C, or D
-  - Overall Intersection LOS E
-  - Overall Intersection LOS F



SCALE: N.T.S.



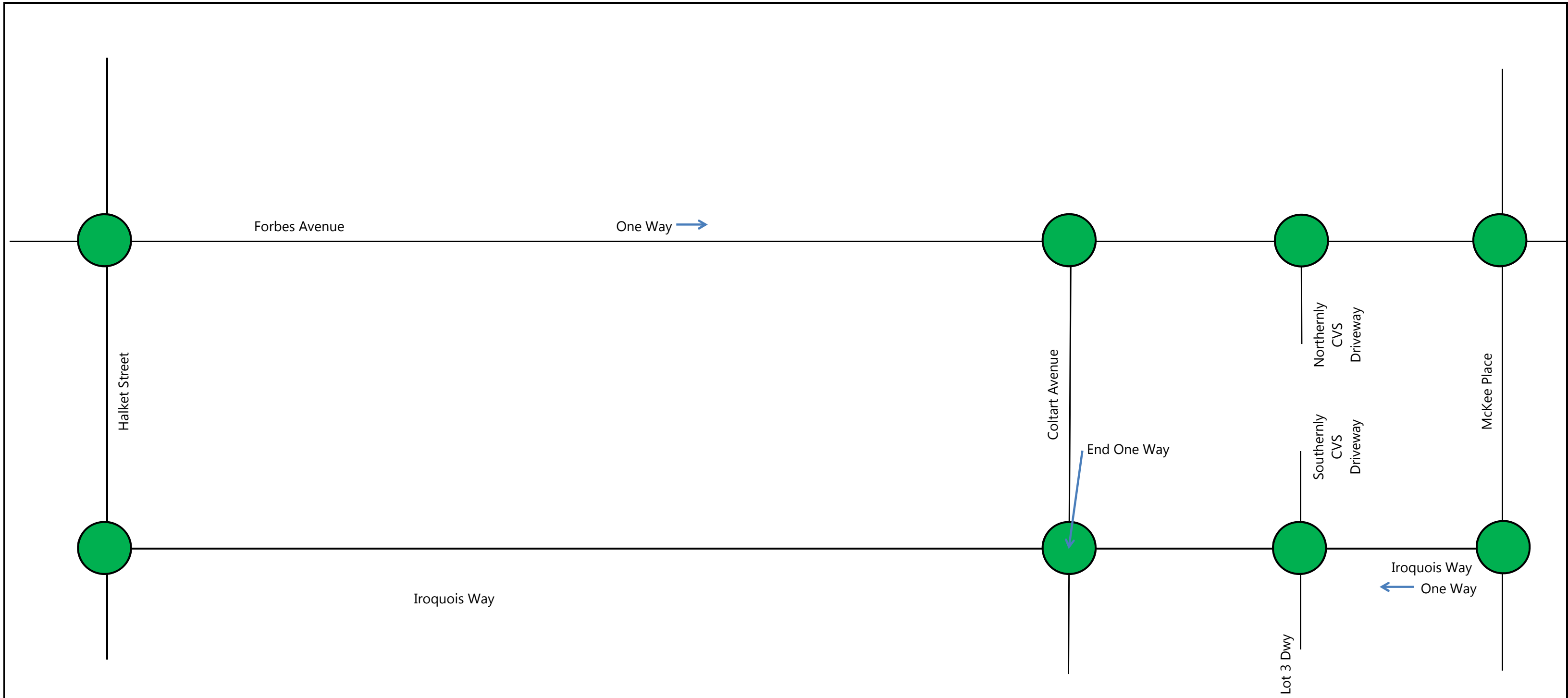
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 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | 2022 No Build Conditions<br>AM Peak Hour Levels of Service                     |

FIGURE

**23**

D.B. DTS  
C.B. CAJ  
REV.



**Legend**

- - Overall Intersection LOS A, B, C, or D
- - Overall Intersection LOS E
- - Overall Intersection LOS F



SCALE: N.T.S.


  
**Trans**
  
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 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

Project No: WEXST00 - 19061

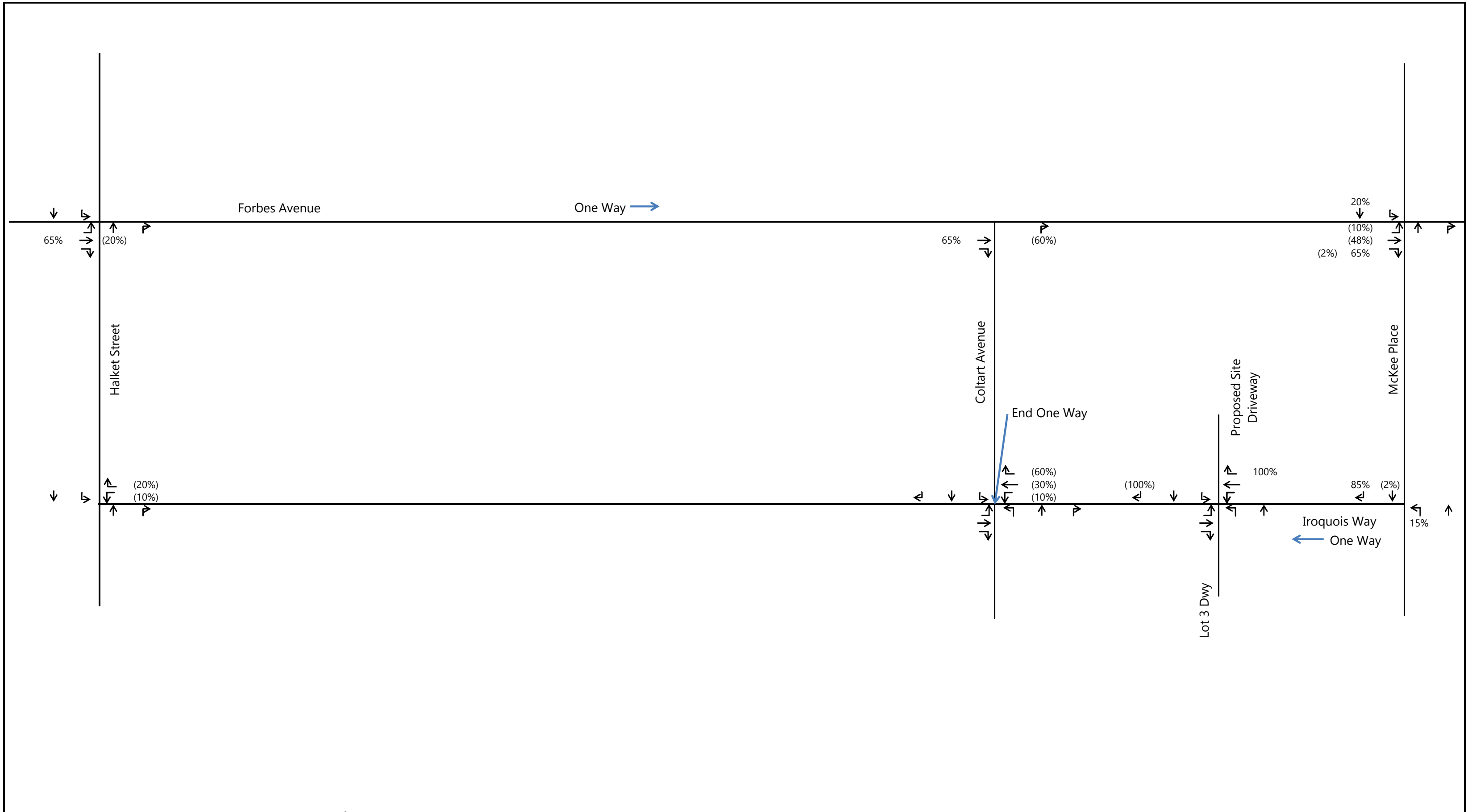
Project: 3440 Forbes Avenue Development TIS  
City of Pittsburgh, Allegheny County, PA

Title: 2022 No Build Conditions  
PM Peak Hour Levels of Service

FIGURE

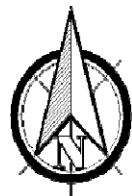
24

D.B. DTS  
 C.B. CAJ  
 REV.



**Legend**

- 12% - Arrival Distribution
- (12%) - Departure Distribution



SCALE: N.T.S.

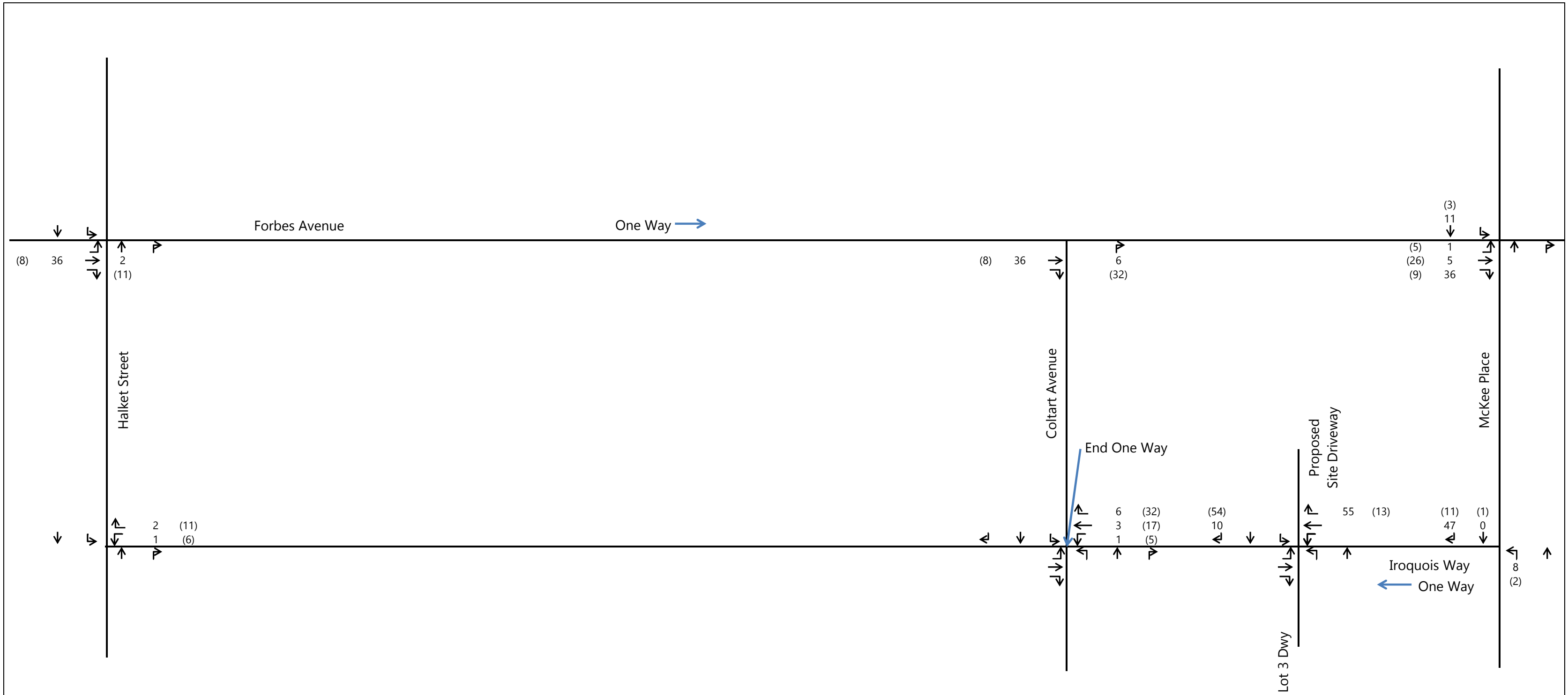
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Pittsburgh, Pennsylvania 15205 / (412) 490-0630

|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | Site Trip Distribution   |

FIGURE

25

D.B. DTS  
C.B. CAJ  
REV.



**Legend**

123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.



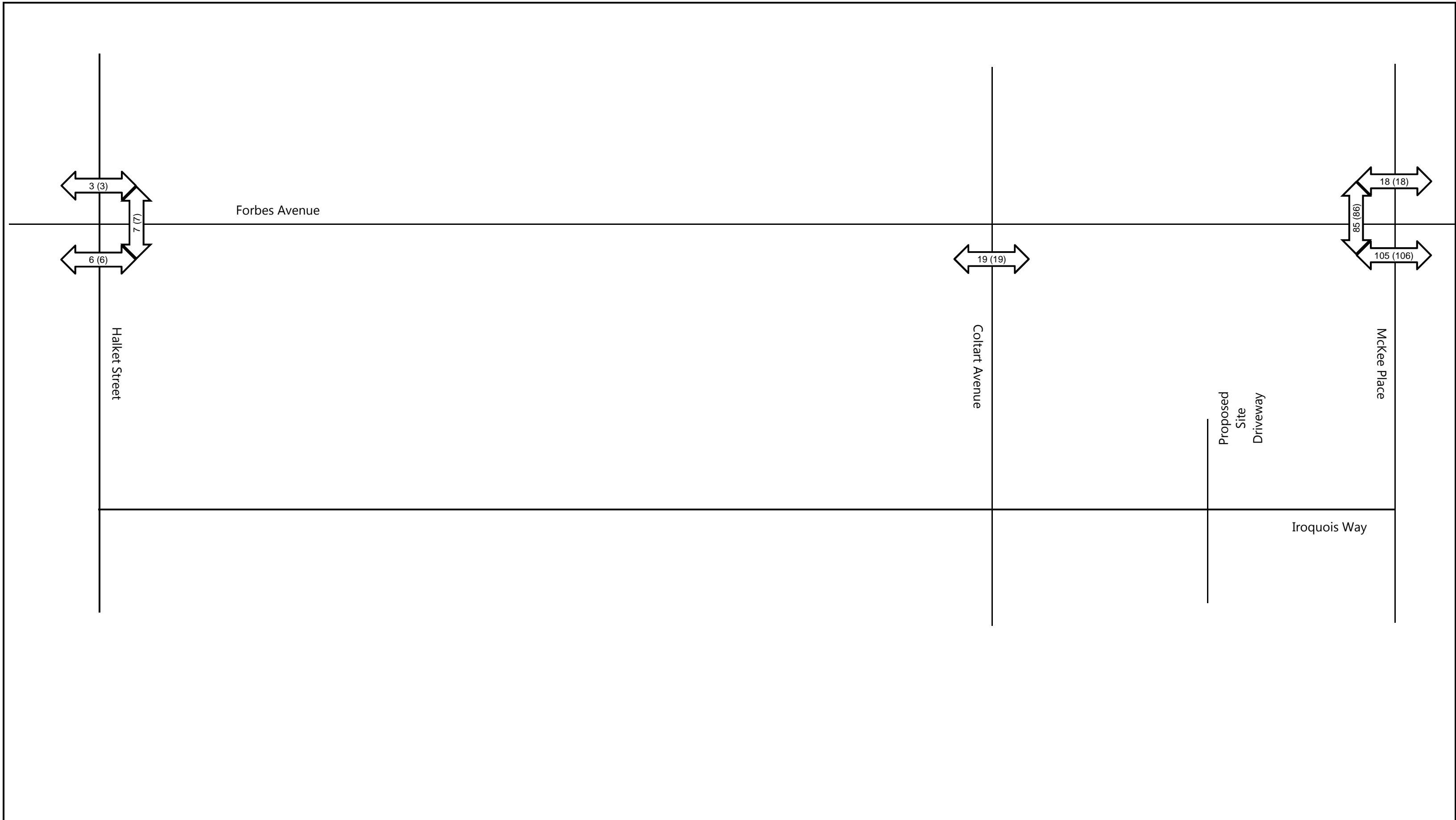
**Small Firm Client Experience, Big Firm Capabilities**  
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 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

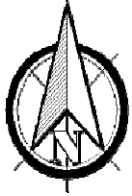

|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | Site-Generated Trips   |

FIGURE

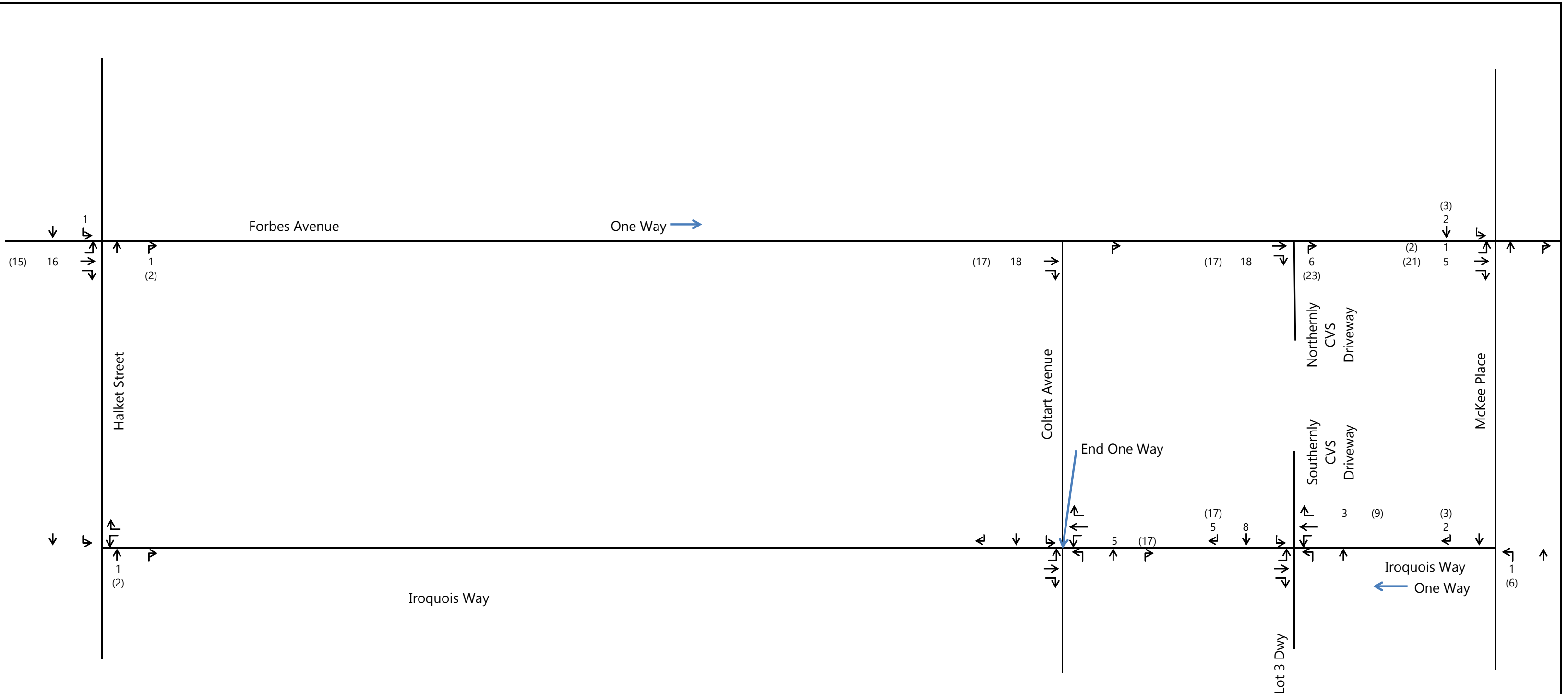
**26**

D.B. DTS  
 C.B. CAJ  
 REV.



|  |   |   |                              |
|--|---|---|------------------------------|
| <br>SCALE: N.T.S. | <br><b>Trans</b><br>ASSOCIATES<br>Small Firm Client Experience, Big Firm Capabilities<br>Twin Towers Suite 400 / 4955 Steubenville Pike<br>Pittsburgh, Pennsylvania 15205 / (412) 490-0630 | Project No: WEXST00 - 19061   | FIGURE<br><h1>27</h1>        |
|  |   | Project: 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |                              |
|  |   | Title: Site-Generated Pedestrian Trips  | D.B. DTS<br>C.B. CAJ<br>REV. |





Site Trips to be Removed

| AM Peak Hour |      |       | PM Peak Hour |      |       |
|--------------|------|-------|--------------|------|-------|
| Enter        | Exit | Total | Enter        | Exit | Total |
| 16           | 19   | 35    | 25           | 41   | 66    |

**Legend**

- 123 - A.M. Peak Hour Traffic Volumes
- (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.

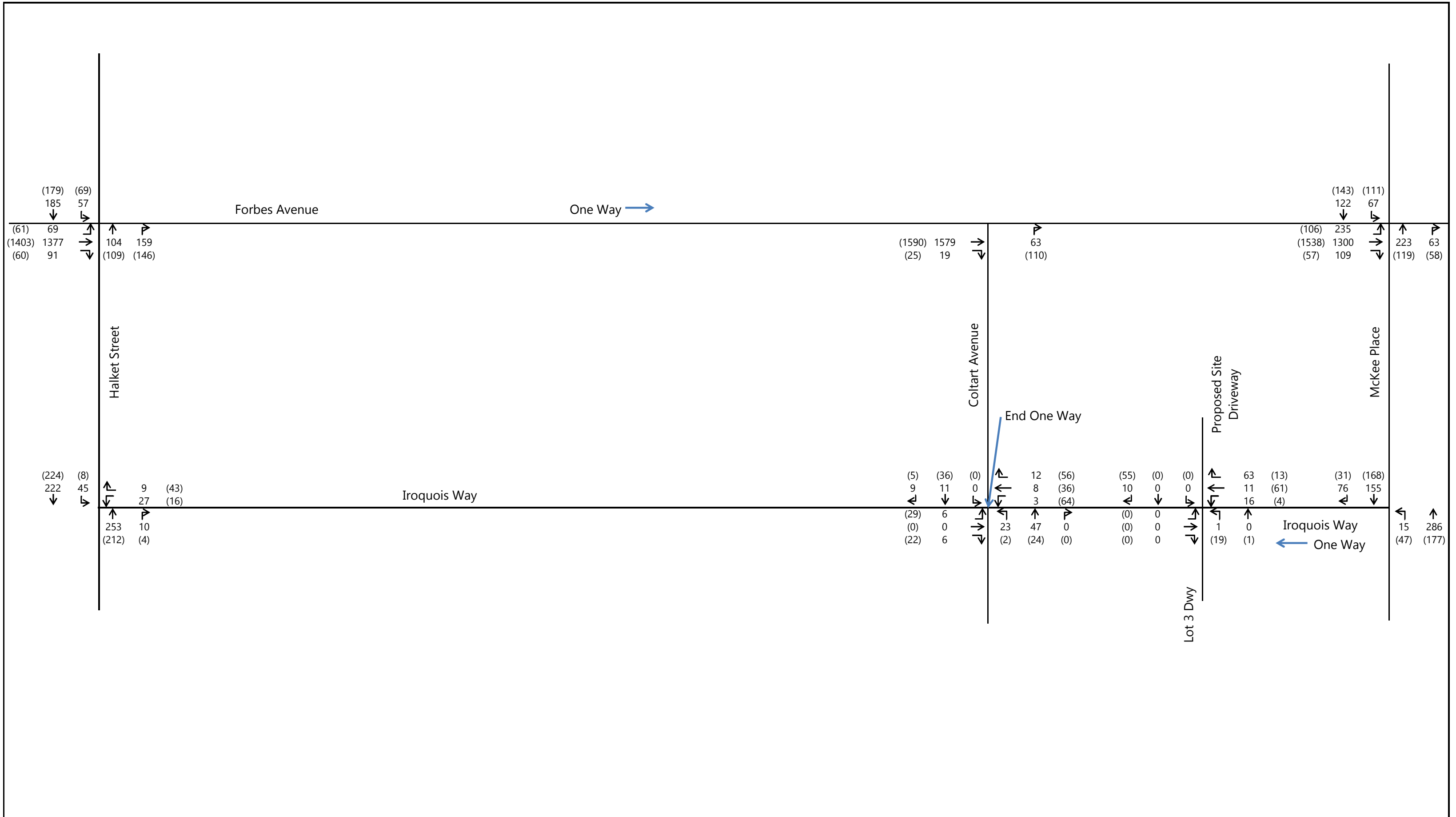
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Pittsburgh, Pennsylvania 15205 / (412) 490-0630

|             |  |
|-------------|--|
| Project No: | WEXST00 - 19061  |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |
| Title:      | 2019 Existing Site Traffic (to be removed)                                     |

FIGURE

**28**

D.B. DTS  
C.B. CAJ  
REV.



**Legend**  
 123 - A.M. Peak Hour Traffic Volumes  
 (123) - P.M. Peak Hour Traffic Volumes



SCALE: N.T.S.

**Trans ASSOCIATES**  
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 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

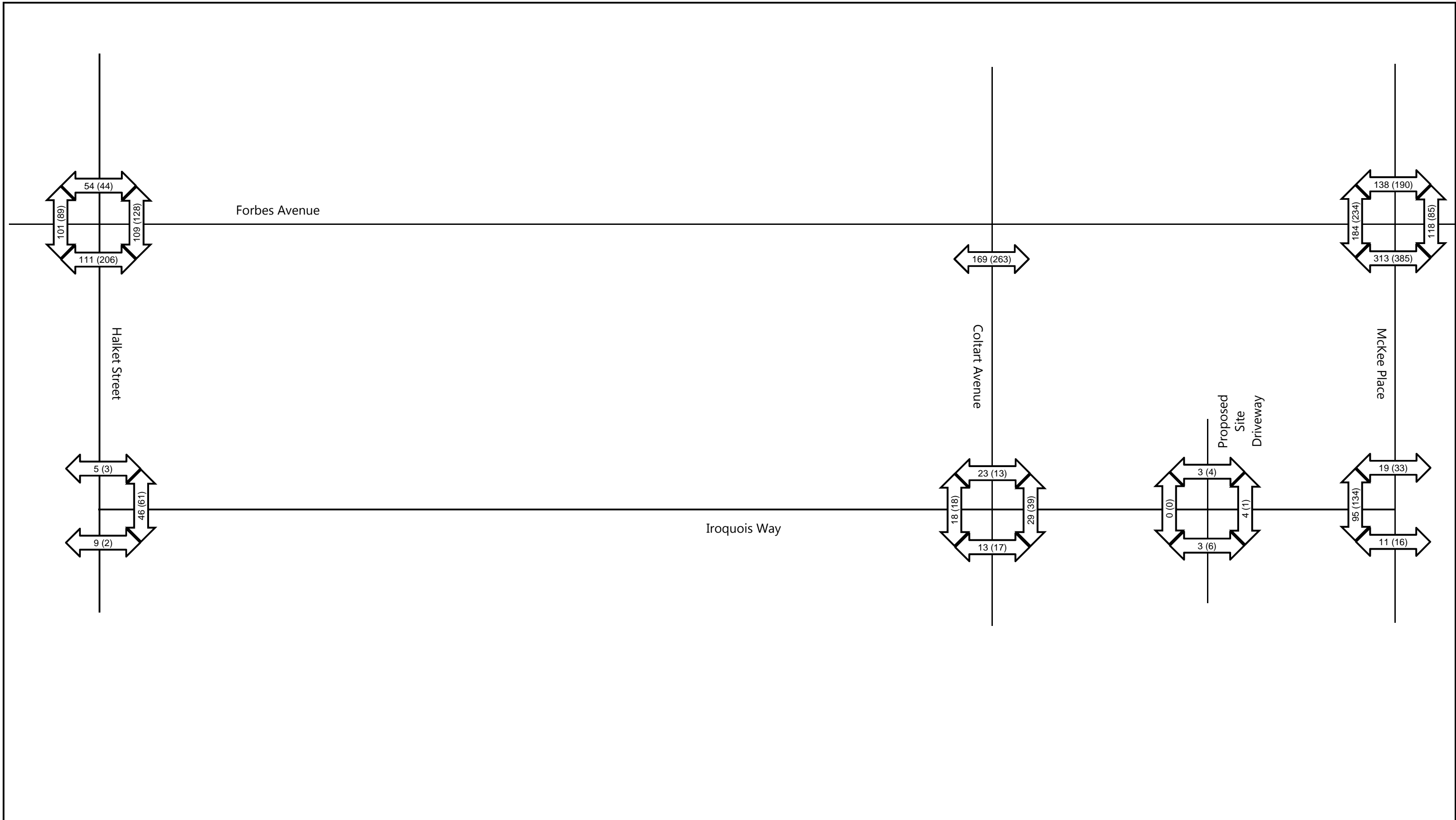
Project No: WEXST00 - 19061  
 Project: 3440 Forbes Avenue Development TIS  
 City of Pittsburgh, Allegheny County, PA

Title: 2022 Build Conditions  
 Peak Hour Traffic Volumes

FIGURE

29

D.B. DTS  
 C.B. CAJ  
 REV.



SCALE: N.T.S.

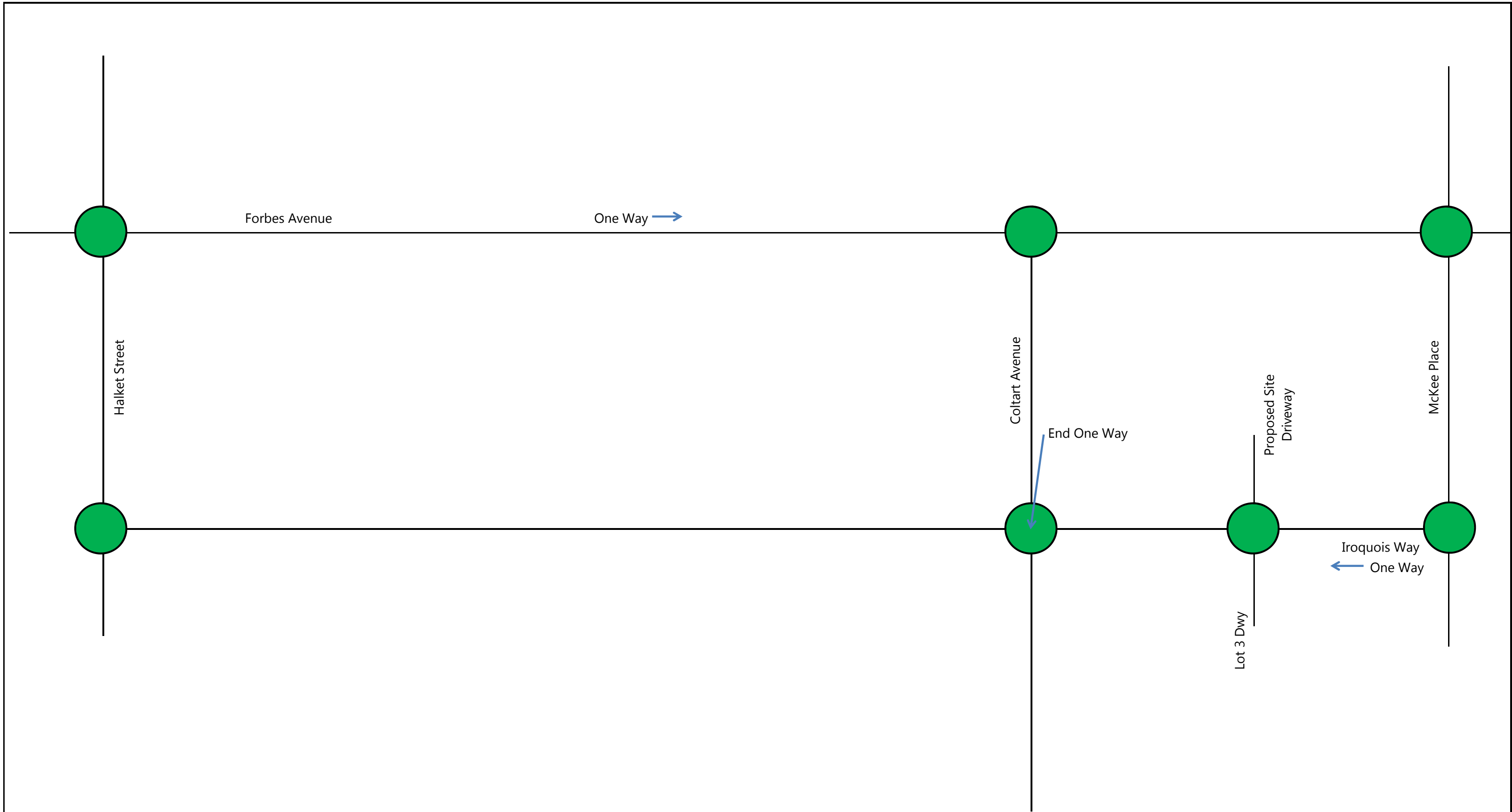
**Trans**  
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Pittsburgh, Pennsylvania 15205 / (412) 490-0630

Project No: WEXST00 - 19061  
Project: 3440 Forbes Avenue Development TIS  
City of Pittsburgh, Allegheny County, PA  
Title: 2022 Build  
Peak Hour Pedestrian Volumes

FIGURE

30

D.B. DTS  
C.B. CAJ  
REV.



**Legend**

- - Overall Intersection LOS A, B, C, or D
- - Overall Intersection LOS E
- - Overall Intersection LOS F



SCALE: N.T.S.

**Trans**  
ASSOCIATES

*Small Firm Client Experience, Big Firm Capabilities*

Twin Towers Suite 400 / 4955 Steubenville Pike  
Pittsburgh, Pennsylvania 15205 / (412) 490-0630

Project No: WEXST00 - 19061

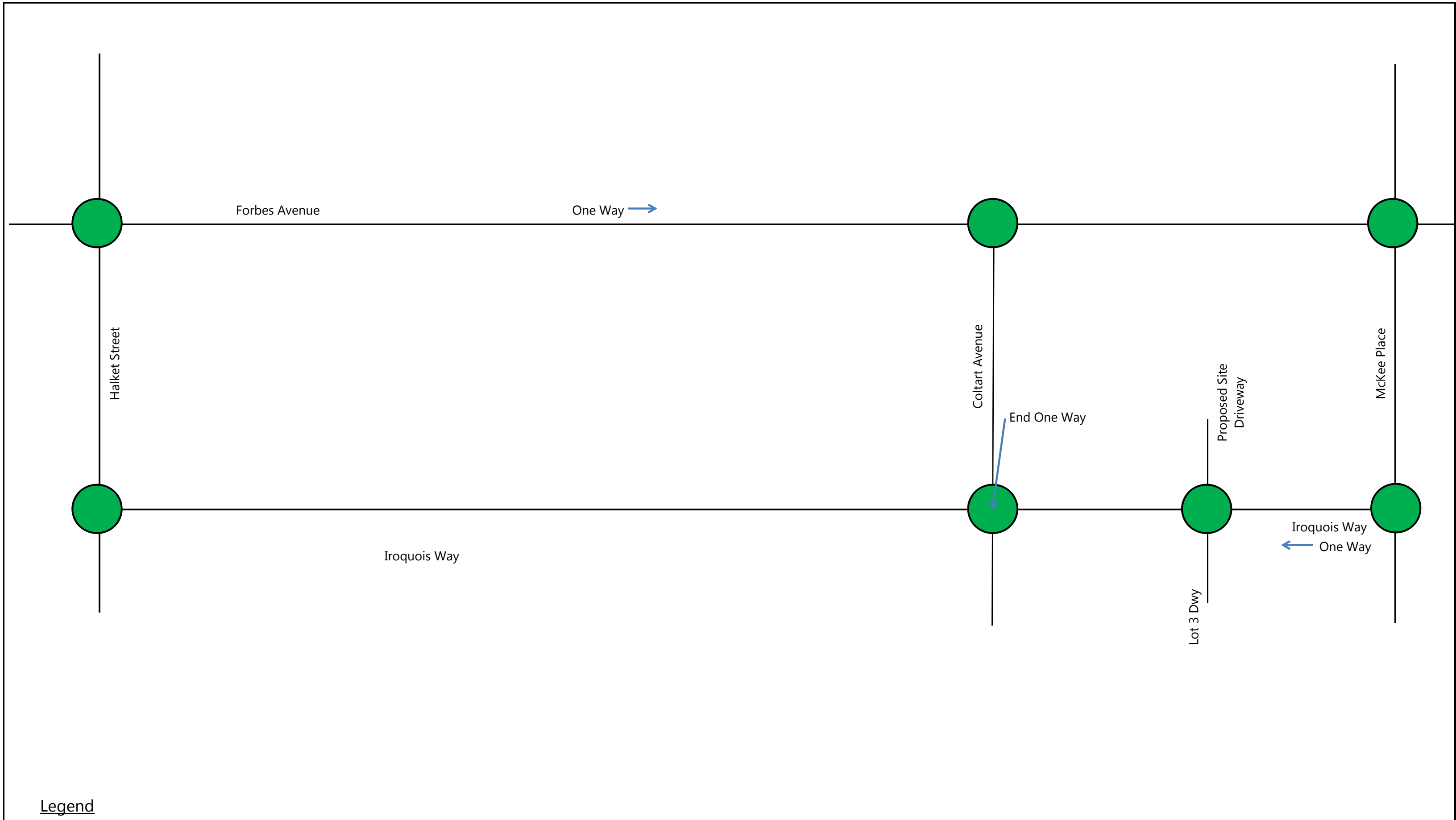
Project: 3440 Forbes Avenue Development TIS  
City of Pittsburgh, Allegheny County, PA

Title: 2022 Build Conditions  
AM Peak Hour Levels of Service

FIGURE

**31**

D.B. DTS  
C.B. CAJ  
REV.



**Legend**

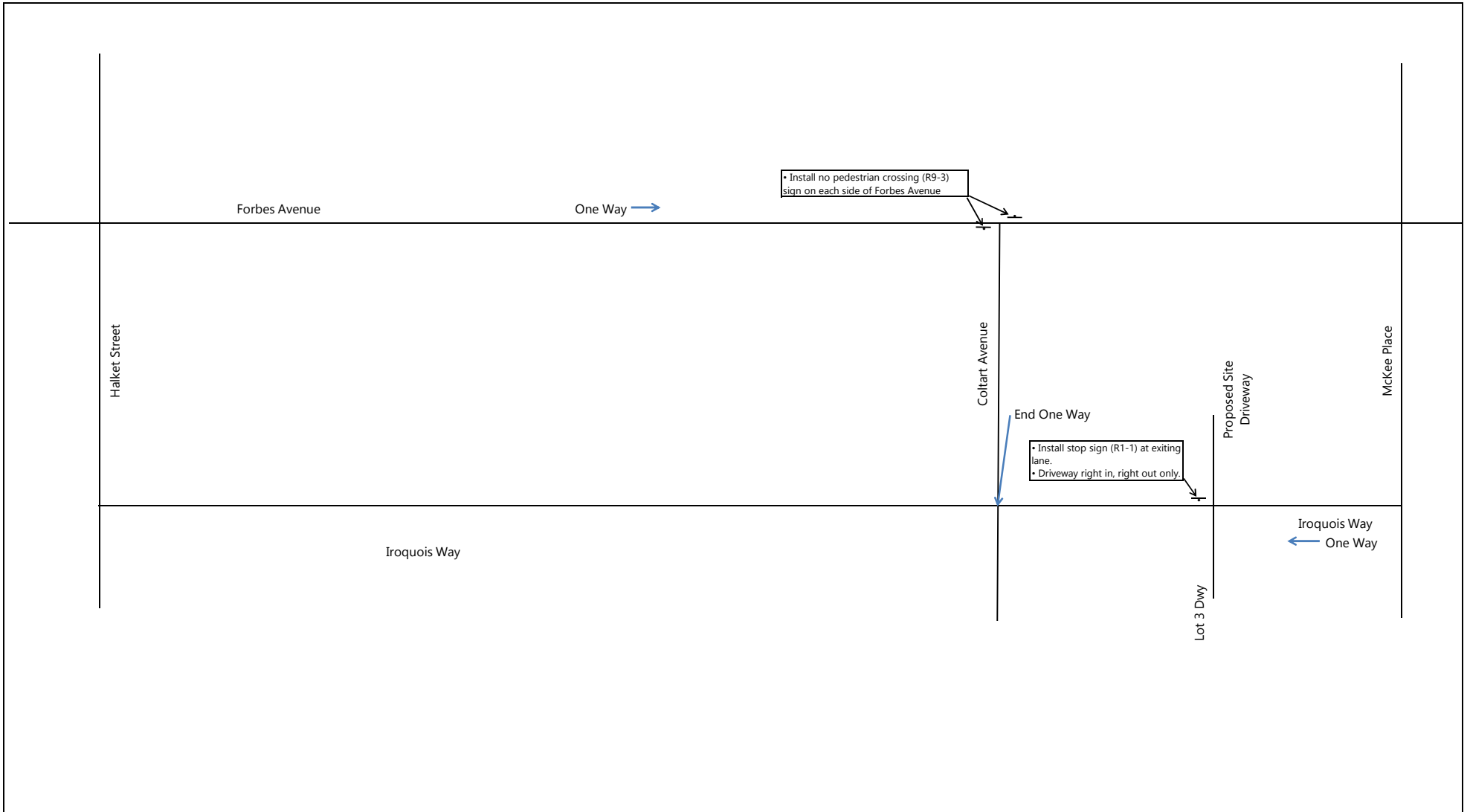
- - Overall Intersection LOS A, B, C, or D
- - Overall Intersection LOS E
- - Overall Intersection LOS F





SCALE: N.T.S.

  
**Trans**  
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 Pittsburgh, Pennsylvania 15205 / (412) 490-0630

|             |  |  |
|-------------|--|--|
| Project No: | WEXST00 - 19061  | FIGURE<br><br><h1 style="margin: 0;">32</h1> |
| Project:    | 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |  |
| Title:      | 2022 Build Conditions<br>PM Peak Hour Levels of Service                        |  |
|             |  | D.B. DTS<br>C.B. CAJ<br>REV.                 |



|  |   |   |   |
|--|---|---|---|
| <br>SCALE: N.T.S. | <br><b>Trans</b><br>ASSOCIATES<br>Small Firm Client Experience, Big Firm Capabilities<br>Twin Towers Suite 400 / 4955 Steubenville Pike<br>Pittsburgh, Pennsylvania 15205 / (412) 490-0630 | Project No: WEXST00 - 19061   | FIGURE<br><h1>33</h1><br>D.B. DTS<br>C.B. CAJ<br>REV. |
|  |   | Project: 3440 Forbes Avenue Development TIS<br>City of Pittsburgh, Allegheny County, PA |   |
|  |   | Title: Recommended Mitigation Measures  |   |

**STUDY AND ANALYSIS INFORMATION**

Municipality: City of Pittsburgh  
 County: Allegheny County  
 PennDOT Engineering District: 11

Analysis Date: 6/6/2019  
 Conducted By: DTS  
 Agency/Company Name: Trans Associates

**Analysis Information**

Data Collection Date: 3/21/2019  
 Day of the Week: Thursday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

**Major Street Information**

Major Street Name and Route Number: Forbes Avenue  
 Major Street Approach #1 Direction: E-Bound  
 Major Street Approach #2 Direction: N/A

Number of Lanes for Moving Traffic on Each Major Street Approach: 3 LANE(S)  
 Speed Limit or 85th Percentile Speed on the Major Street: 25 MPH

**Minor Street Information**

Minor Street Name and Route Number: Coltart Street  
 Minor Street Approach #1 Direction: N-Bound  
 Minor Street Approach #2 Direction: N/A

Number of Lanes for Moving Traffic on Each Minor Street Approach: 1 LANE(S)

**TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS**

|   | Applicable? | Warrant Met? |
|---|-------------|--------------|
| Warrant 1, Eight-Hour Vehicular Volume        | No          | N/A          |
| Warrant 2, Four-Hour Vehicular Volume         | Yes         | No           |
| Warrant 3, Peak Hour                          | Yes         | No           |
| Warrant 4, Pedestrian Volume                  | No          | N/A          |
| Warrant 5, School Crossing                    | No          | N/A          |
| Warrant 6, Coordinated Signal System          | No          | N/A          |
| Warrant 7, Crash Experience                   | No          | N/A          |
| Warrant 8, Roadway Network                    | No          | N/A          |
| Warrant 9, Intersection Near a Grade Crossing | No          | N/A          |
| Warrant PA-1, ADT Volume Warrant              | No          | N/A          |
| Warrant PA-2, Midblock and Trail Crossings    | No          | N/A          |

**MUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME**

| Number of Lanes for Moving Traffic on Each Approach |                 |
|---|-----------------|
| Major Street:                                       | 2 or More Lanes |
| Minor Street:                                       | 1 Lane          |

| Total Number of Unique Hours Met On Figure 4C-1 |
|---|
| <b>2</b>  |

|   |    |
|---|----|
| Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street? | No |
|---|----|

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 12:00 AM                | 0                       | 0                             |           |
| 12:15 AM                | 0                       | 0                             |           |
| 12:30 AM                | 0                       | 0                             |           |
| 12:45 AM                | 0                       | 0                             |           |
| 1:00 AM                 | 0                       | 0                             |           |
| 1:15 AM                 | 0                       | 0                             |           |
| 1:30 AM                 | 0                       | 0                             |           |
| 1:45 AM                 | 0                       | 0                             |           |
| 2:00 AM                 | 0                       | 0                             |           |
| 2:15 AM                 | 0                       | 0                             |           |
| 2:30 AM                 | 0                       | 0                             |           |
| 2:45 AM                 | 0                       | 0                             |           |
| 3:00 AM                 | 0                       | 0                             |           |
| 3:15 AM                 | 0                       | 0                             |           |
| 3:30 AM                 | 0                       | 0                             |           |
| 3:45 AM                 | 0                       | 0                             |           |
| 4:00 AM                 | 0                       | 0                             |           |
| 4:15 AM                 | 0                       | 0                             |           |
| 4:30 AM                 | 0                       | 0                             |           |
| 4:45 AM                 | 0                       | 0                             |           |
| 5:00 AM                 | 0                       | 0                             |           |
| 5:15 AM                 | 0                       | 0                             |           |
| 5:30 AM                 | 0                       | 0                             |           |
| 5:45 AM                 | 0                       | 0                             |           |
| 6:00 AM                 | 0                       | 0                             |           |
| 6:15 AM                 | 400                     | 16                            |           |
| 6:30 AM                 | 800                     | 32                            |           |
| 6:45 AM                 | 1200                    | 48                            |           |
| 7:00 AM                 | 1600                    | 64                            |           |
| 7:15 AM                 | 1600                    | 64                            |           |
| 7:30 AM                 | 1600                    | 64                            |           |
| 7:45 AM                 | 1600                    | 64                            |           |
| 8:00 AM                 | 1600                    | 64                            |           |
| 8:15 AM                 | 1200                    | 48                            |           |
| 8:30 AM                 | 800                     | 32                            |           |
| 8:45 AM                 | 400                     | 16                            |           |
| 9:00 AM                 | 0                       | 0                             |           |
| 9:15 AM                 | 0                       | 0                             |           |
| 9:30 AM                 | 0                       | 0                             |           |
| 9:45 AM                 | 0                       | 0                             |           |
| 10:00 AM                | 0                       | 0                             |           |
| 10:15 AM                | 0                       | 0                             |           |
| 10:30 AM                | 0                       | 0                             |           |
| 10:45 AM                | 0                       | 0                             |           |
| 11:00 AM                | 0                       | 0                             |           |
| 11:15 AM                | 0                       | 0                             |           |
| 11:30 AM                | 0                       | 0                             |           |
| 11:45 AM                | 0                       | 0                             |           |



| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 12:00 PM                | 0                       | 0                             |           |
| 12:15 PM                | 0                       | 0                             |           |
| 12:30 PM                | 0                       | 0                             |           |
| 12:45 PM                | 0                       | 0                             |           |
| 1:00 PM                 | 0                       | 0                             |           |
| 1:15 PM                 | 0                       | 0                             |           |
| 1:30 PM                 | 0                       | 0                             |           |
| 1:45 PM                 | 0                       | 0                             |           |
| 2:00 PM                 | 0                       | 0                             |           |
| 2:15 PM                 | 0                       | 0                             |           |
| 2:30 PM                 | 0                       | 0                             |           |
| 2:45 PM                 | 0                       | 0                             |           |
| 3:00 PM                 | 0                       | 0                             |           |
| 3:15 PM                 | 404                     | 28                            |           |
| 3:30 PM                 | 808                     | 56                            |           |
| 3:45 PM                 | 1212                    | 84                            |           |
| 4:00 PM                 | 1616                    | 112                           | Met       |
| 4:15 PM                 | 1616                    | 112                           | Met       |
| 4:30 PM                 | 1616                    | 112                           | Met       |
| 4:45 PM                 | 1616                    | 112                           | Met       |
| 5:00 PM                 | 1616                    | 112                           | Met       |
| 5:15 PM                 | 1212                    | 84                            |           |
| 5:30 PM                 | 808                     | 56                            |           |
| 5:45 PM                 | 404                     | 28                            |           |
| 6:00 PM                 | 0                       | 0                             |           |
| 6:15 PM                 | 0                       | 0                             |           |
| 6:30 PM                 | 0                       | 0                             |           |
| 6:45 PM                 | 0                       | 0                             |           |
| 7:00 PM                 | 0                       | 0                             |           |
| 7:15 PM                 | 0                       | 0                             |           |
| 7:30 PM                 | 0                       | 0                             |           |
| 7:45 PM                 | 0                       | 0                             |           |
| 8:00 PM                 | 0                       | 0                             |           |
| 8:15 PM                 | 0                       | 0                             |           |
| 8:30 PM                 | 0                       | 0                             |           |
| 8:45 PM                 | 0                       | 0                             |           |
| 9:00 PM                 | 0                       | 0                             |           |
| 9:15 PM                 | 0                       | 0                             |           |
| 9:30 PM                 | 0                       | 0                             |           |
| 9:45 PM                 | 0                       | 0                             |           |
| 10:00 PM                | 0                       | 0                             |           |
| 10:15 PM                | 0                       | 0                             |           |
| 10:30 PM                | 0                       | 0                             |           |
| 10:45 PM                | 0                       | 0                             |           |
| 11:00 PM                | 0                       | 0                             |           |

**MUTCD WARRANT 3, PEAK HOUR**

| Number of Lanes for Moving Traffic on Each Approach |                 |
|---|-----------------|
| Major Street:                                       | 2 or More Lanes |
| Minor Street:                                       | 1 Lane          |

|   |    |
|---|----|
| Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street? | No |
|---|----|

|   |    |
|---|----|
| Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time? | No |
|---|----|

| Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present*   |     |
|--|-----|
| Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach? | Yes |
| Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?   | Yes |
| Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?                                | Yes |
| <i>*If applicable, attach all supporting calculations and documentation.</i>   |     |

|  |
|--|
| Total Number of Unique Hours Met<br>On Figure 4C-3 |
| <b>0</b>   |

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 12:00 AM                | 0                       | 0                             |           |
| 12:15 AM                | 0                       | 0                             |           |
| 12:30 AM                | 0                       | 0                             |           |
| 12:45 AM                | 0                       | 0                             |           |
| 1:00 AM                 | 0                       | 0                             |           |
| 1:15 AM                 | 0                       | 0                             |           |
| 1:30 AM                 | 0                       | 0                             |           |
| 1:45 AM                 | 0                       | 0                             |           |
| 2:00 AM                 | 0                       | 0                             |           |
| 2:15 AM                 | 0                       | 0                             |           |
| 2:30 AM                 | 0                       | 0                             |           |
| 2:45 AM                 | 0                       | 0                             |           |
| 3:00 AM                 | 0                       | 0                             |           |
| 3:15 AM                 | 0                       | 0                             |           |
| 3:30 AM                 | 0                       | 0                             |           |
| 3:45 AM                 | 0                       | 0                             |           |
| 4:00 AM                 | 0                       | 0                             |           |
| 4:15 AM                 | 0                       | 0                             |           |
| 4:30 AM                 | 0                       | 0                             |           |
| 4:45 AM                 | 0                       | 0                             |           |
| 5:00 AM                 | 0                       | 0                             |           |
| 5:15 AM                 | 0                       | 0                             |           |
| 5:30 AM                 | 0                       | 0                             |           |
| 5:45 AM                 | 0                       | 0                             |           |
| 6:00 AM                 | 0                       | 0                             |           |
| 6:15 AM                 | 400                     | 16                            |           |
| 6:30 AM                 | 800                     | 32                            |           |
| 6:45 AM                 | 1200                    | 48                            |           |
| 7:00 AM                 | 1600                    | 64                            |           |
| 7:15 AM                 | 1600                    | 64                            |           |
| 7:30 AM                 | 1600                    | 64                            |           |
| 7:45 AM                 | 1600                    | 64                            |           |
| 8:00 AM                 | 1600                    | 64                            |           |
| 8:15 AM                 | 1200                    | 48                            |           |

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 8:30 AM                 | 800                     | 32                            |           |
| 8:45 AM                 | 400                     | 16                            |           |
| 9:00 AM                 | 0                       | 0                             |           |
| 9:15 AM                 | 0                       | 0                             |           |
| 9:30 AM                 | 0                       | 0                             |           |
| 9:45 AM                 | 0                       | 0                             |           |
| 10:00 AM                | 0                       | 0                             |           |
| 10:15 AM                | 0                       | 0                             |           |
| 10:30 AM                | 0                       | 0                             |           |
| 10:45 AM                | 0                       | 0                             |           |
| 11:00 AM                | 0                       | 0                             |           |
| 11:15 AM                | 0                       | 0                             |           |
| 11:30 AM                | 0                       | 0                             |           |
| 11:45 AM                | 0                       | 0                             |           |
| 12:00 PM                | 0                       | 0                             |           |
| 12:15 PM                | 0                       | 0                             |           |
| 12:30 PM                | 0                       | 0                             |           |
| 12:45 PM                | 0                       | 0                             |           |
| 1:00 PM                 | 0                       | 0                             |           |
| 1:15 PM                 | 0                       | 0                             |           |
| 1:30 PM                 | 0                       | 0                             |           |
| 1:45 PM                 | 0                       | 0                             |           |
| 2:00 PM                 | 0                       | 0                             |           |
| 2:15 PM                 | 0                       | 0                             |           |
| 2:30 PM                 | 0                       | 0                             |           |
| 2:45 PM                 | 0                       | 0                             |           |
| 3:00 PM                 | 0                       | 0                             |           |
| 3:15 PM                 | 404                     | 28                            |           |
| 3:30 PM                 | 808                     | 56                            |           |
| 3:45 PM                 | 1212                    | 84                            |           |
| 4:00 PM                 | 1616                    | 112                           |           |
| 4:15 PM                 | 1616                    | 112                           |           |
| 4:30 PM                 | 1616                    | 112                           |           |
| 4:45 PM                 | 1616                    | 112                           |           |
| 5:00 PM                 | 1616                    | 112                           |           |
| 5:15 PM                 | 1212                    | 84                            |           |
| 5:30 PM                 | 808                     | 56                            |           |
| 5:45 PM                 | 404                     | 28                            |           |
| 6:00 PM                 | 0                       | 0                             |           |
| 6:15 PM                 | 0                       | 0                             |           |
| 6:30 PM                 | 0                       | 0                             |           |
| 6:45 PM                 | 0                       | 0                             |           |
| 7:00 PM                 | 0                       | 0                             |           |
| 7:15 PM                 | 0                       | 0                             |           |
| 7:30 PM                 | 0                       | 0                             |           |
| 7:45 PM                 | 0                       | 0                             |           |
| 8:00 PM                 | 0                       | 0                             |           |
| 8:15 PM                 | 0                       | 0                             |           |
| 8:30 PM                 | 0                       | 0                             |           |
| 8:45 PM                 | 0                       | 0                             |           |
| 9:00 PM                 | 0                       | 0                             |           |
| 9:15 PM                 | 0                       | 0                             |           |
| 9:30 PM                 | 0                       | 0                             |           |
| 9:45 PM                 | 0                       | 0                             |           |
| 10:00 PM                | 0                       | 0                             |           |
| 10:15 PM                | 0                       | 0                             |           |
| 10:30 PM                | 0                       | 0                             |           |
| 10:45 PM                | 0                       | 0                             |           |
| 11:00 PM                | 0                       | 0                             |           |

MUTCD Figure 4C-3. Warrant 3, Peak Hour

