

# **APPENDIX E TRANSPORTATION: TRIP GENERATION SUMMARIES**

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| NCHRP 684 Internal Trip Capture Estimation Tool |                     |               |             |
|---|---------------------|---------------|-------------|
| Project Name:                                   | Yard @ Crossman     | Organization: | Renaissance |
| Project Location:                               |                     | Performed By: |             |
| Scenario Description:                           |                     | Date:         | 11/23/2016  |
| Analysis Year:                                  |                     | Checked By:   |             |
| Analysis Period:                                | AM Street Peak Hour | Date:         |             |

| Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate) |   |          |       |                                      |          |         |
|--|---|----------|-------|--------------------------------------|----------|---------|
| Land Use   | Development Data (For Information Only) |          |       | Estimated Vehicle-Trips <sup>1</sup> |          |         |
|  | ITE LUCs <sup>2</sup>                   | Quantity | Units | Total                                | Entering | Exiting |
| Office   | 710                                     | 40       | KSF   | 92                                   | 81       | 11      |
| Retail   | 826                                     | 10       | KSF   | 68                                   | 33       | 35      |
| Restaurant   | 932                                     | 10       | KSF   | 108                                  | 69       | 49      |
| Cinema/Entertainment   |   |          |       | 0                                    |          |         |
| Residential  | 230                                     | 176      | DU    | 89                                   | 19       | 71      |
| Hotel  |   |          |       | 0                                    |          |         |
| All Other Land Uses <sup>3</sup>   |   |          |       | 0                                    |          |         |
|  |   |          |       | 357                                  | 191      | 166     |

| Table 2-A: Mode Split and Vehicle Occupancy Estimates |                        |           |                 |                        |           |                 |
|---|------------------------|-----------|-----------------|------------------------|-----------|-----------------|
| Land Use  | Entering Trips         |           |                 | Exiting Trips          |           |                 |
|   | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized |
| Office  |                        | 2%        |                 |                        | 2%        |                 |
| Retail  |                        | 2%        |                 |                        | 2%        |                 |
| Restaurant  |                        | 2%        |                 |                        | 2%        |                 |
| Cinema/Entertainment                                  |                        |           |                 |                        |           |                 |
| Residential   |                        | 2%        |                 |                        | 2%        |                 |
| Hotel   |                        |           |                 |                        |           |                 |
| All Other Land Uses <sup>2</sup>                      |                        | 2%        |                 |                        | 2%        |                 |

| Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance) |                  |        |            |                      |             |       |
|---|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)   | Destination (To) |        |            |                      |             |       |
|   | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office  |                  |        |            |                      |             |       |
| Retail  |                  |        |            |                      |             |       |
| Restaurant  |                  |        |            |                      |             |       |
| Cinema/Entertainment  |                  |        |            |                      |             |       |
| Residential   |                  |        |            |                      |             |       |
| Hotel   |                  |        |            |                      |             |       |

| Table 4-A: Internal Person-Trip Origin-Destination Matrix <sup>*</sup> |                  |        |            |                      |             |       |
|--|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)  | Destination (To) |        |            |                      |             |       |
|  | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office   |                  | 3      | 7          | 0                    | 0           | 0     |
| Retail   | 3                |        | 5          | 0                    | 0           | 0     |
| Restaurant   | 11               | 3      |            | 0                    | 1           | 0     |
| Cinema/Entertainment   | 0                | 0      | 0          |                      | 0           | 0     |
| Residential  | 1                | 1      | 12         | 0                    |             | 0     |
| Hotel  | 0                | 0      | 0          | 0                    | 0           |       |

| Table 5-A: Computations Summary           |       |          |         |
|---|-------|----------|---------|
|   | Total | Entering | Exiting |
| All Person-Trips                          | 357   | 191      | 166     |
| Internal Capture Percentage               | 26%   | 25%      | 28%     |
| External Vehicle-Trips <sup>5</sup>       | 257   | 141      | 116     |
| External Transit-Trips <sup>6</sup>       | 6     | 3        | 3       |
| External Non-Motorized Trips <sup>6</sup> | 0     | 0        | 0       |

| Table 6-A: Internal Trip Capture Percentages by Land Use |                |               |
|--|----------------|---------------|
| Land Use   | Entering Trips | Exiting Trips |
| Office   | 19%            | 91%           |
| Retail   | 21%            | 23%           |
| Restaurant   | 41%            | 31%           |
| Cinema/Entertainment                                     | N/A            | N/A           |
| Residential  | 6%             | 20%           |
| Hotel  | N/A            | N/A           |

<sup>1</sup> Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.  
<sup>2</sup> Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.  
<sup>3</sup> Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).  
<sup>4</sup> Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.  
<sup>5</sup> Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.  
<sup>6</sup> Person-Trips  
<sup>\*</sup> Indicates computation that has been rounded to the nearest whole number.  
 Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

| NCHRP 684 Internal Trip Capture Estimation Tool |                     |               |             |
|---|---------------------|---------------|-------------|
| Project Name:                                   | Yard @ Crossman     | Organization: | Renaissance |
| Project Location:                               |                     | Performed By: |             |
| Scenario Description:                           |                     | Date:         | 11/23/2016  |
| Analysis Year:                                  |                     | Checked By:   |             |
| Analysis Period:                                | PM Street Peak Hour | Date:         |             |

| Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate) |   |          |       |                                      |          |         |
|--|---|----------|-------|--------------------------------------|----------|---------|
| Land Use   | Development Data (For Information Only) |          |       | Estimated Vehicle-Trips <sup>3</sup> |          |         |
|  | ITE LUCs <sup>1</sup>                   | Quantity | Units | Total                                | Entering | Exiting |
| Office   | 710                                     | 40       | KSF   | 123                                  | 21       | 102     |
| Retail   | 826                                     | 10       | KSF   | 45                                   | 20       | 25      |
| Restaurant   | 932                                     | 10       | KSF   | 99                                   | 59       | 40      |
| Cinema/Entertainment   |   |          |       | 0                                    |          |         |
| Residential  | 230                                     | 175      | DU    | 114                                  | 74       | 40      |
| Hotel  |   |          |       | 0                                    |          |         |
| All Other Land Uses <sup>2</sup>   |   |          |       | 0                                    |          |         |
|  |   |          |       | 381                                  | 174      | 207     |

| Table 2-P: Mode Split and Vehicle Occupancy Estimates |                        |           |                 |                        |           |                 |
|---|------------------------|-----------|-----------------|------------------------|-----------|-----------------|
| Land Use  | Entering Trips         |           |                 | Exiting Trips          |           |                 |
|   | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized |
| Office  |                        | 2%        |                 |                        | 2%        |                 |
| Retail  |                        | 2%        |                 |                        | 2%        |                 |
| Restaurant  |                        | 2%        |                 |                        | 2%        |                 |
| Cinema/Entertainment                                  |                        |           |                 |                        |           |                 |
| Residential   |                        | 2%        |                 |                        | 2%        |                 |
| Hotel   |                        |           |                 |                        |           |                 |
| All Other Land Uses <sup>2</sup>                      |                        | 2%        |                 |                        | 2%        |                 |

| Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance) |                  |        |            |                      |             |       |
|---|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)   | Destination (To) |        |            |                      |             |       |
|   | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office  |                  |        |            |                      |             |       |
| Retail  |                  |        |            |                      |             |       |
| Restaurant  |                  |        |            |                      |             |       |
| Cinema/Entertainment  |                  |        |            |                      |             |       |
| Residential   |                  |        |            |                      |             |       |
| Hotel   |                  |        |            |                      |             |       |

| Table 4-P: Internal Person-Trip Origin-Destination Matrix <sup>6</sup> |                  |        |            |                      |             |       |
|--|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)  | Destination (To) |        |            |                      |             |       |
|  | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office   |                  | 2      | 1          | 0                    | 2           | 0     |
| Retail   | 1                |        | 7          | 0                    | 7           | 0     |
| Restaurant   | 1                | 10     |            | 0                    | 7           | 0     |
| Cinema/Entertainment   | 0                | 0      | 0          |                      | 0           | 0     |
| Residential  | 2                | 2      | 8          | 0                    |             | 0     |
| Hotel  | 0                | 0      | 0          | 0                    | 0           |       |

| Table 5-P: Computations Summary           |       |          |         |
|---|-------|----------|---------|
|   | Total | Entering | Exiting |
| All Person-Trips                          | 381   | 174      | 207     |
| Internal Capture Percentage               | 26%   | 20%      | 24%     |
| External Vehicle-Trips <sup>5</sup>       | 276   | 122      | 154     |
| External Transit-Trips <sup>6</sup>       | 5     | 2        | 3       |
| External Non-Motorized Trips <sup>5</sup> | 0     | 0        | 0       |

| Table 6-P: Internal Trip Capture Percentages by Land Use |                |               |
|--|----------------|---------------|
| Land Use   | Entering Trips | Exiting Trips |
| Office   | 19%            | 5%            |
| Retail   | 70%            | 60%           |
| Restaurant   | 27%            | 45%           |
| Cinema/Entertainment                                     | N/A            | N/A           |
| Residential  | 22%            | 30%           |
| Hotel  | N/A            | N/A           |

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.  
<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.  
<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).  
<sup>4</sup>Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.  
<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.  
<sup>6</sup>Person-Trips  
<sup>7</sup>Indicates computation that has been rounded to the nearest whole number.  
 Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

| NCHRP 684 Internal Trip Capture Estimation Tool |                     |               |             |
|---|---------------------|---------------|-------------|
| Project Name:                                   | City Site South     | Organization: | Renaissance |
| Project Location:                               |                     | Performed By: |             |
| Scenario Description:                           |                     | Date:         | 11/23/2016  |
| Analysis Year:                                  |                     | Checked By:   |             |
| Analysis Period:                                | AM Street Peak Hour | Date:         |             |

| Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate) |   |          |       |                                      |          |         |
|--|---|----------|-------|--------------------------------------|----------|---------|
| Land Use   | Development Data (For Information Only) |          |       | Estimated Vehicle-Trips <sup>1</sup> |          |         |
|  | ITE LUCs <sup>2</sup>                   | Quantity | Units | Total                                | Entering | Exiting |
| Office   | 710                                     | 30       | KSF   | 73                                   | 64       | 9       |
| Retail   | 826                                     | 65       | KSF   | 445                                  | 214      | 231     |
| Restaurant   |   |          |       | 0                                    |          |         |
| Cinema/Entertainment   |   |          |       | 0                                    |          |         |
| Residential  | 230                                     | 76       | DU    | 41                                   | 7        | 34      |
| Hotel  |   |          |       | 0                                    |          |         |
| All Other Land Uses <sup>3</sup>   |   |          |       | 0                                    |          |         |
|  |   |          |       | 559                                  | 285      | 274     |

| Table 2-A: Mode Split and Vehicle Occupancy Estimates |                        |           |                 |                        |           |                 |
|---|------------------------|-----------|-----------------|------------------------|-----------|-----------------|
| Land Use  | Entering Trips         |           |                 | Exiting Trips          |           |                 |
|   | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized |
| Office  |                        | 2%        |                 |                        | 2%        |                 |
| Retail  |                        | 2%        |                 |                        | 2%        |                 |
| Restaurant  |                        |           |                 |                        |           |                 |
| Cinema/Entertainment                                  |                        |           |                 |                        |           |                 |
| Residential   |                        | 2%        |                 |                        | 2%        |                 |
| Hotel   |                        |           |                 |                        |           |                 |
| All Other Land Uses <sup>2</sup>                      |                        | 2%        |                 |                        | 2%        |                 |

| Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance) |                  |        |            |                      |             |       |
|---|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)   | Destination (To) |        |            |                      |             |       |
|   | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office  |                  |        |            |                      |             |       |
| Retail  |                  |        |            |                      |             |       |
| Restaurant  |                  |        |            |                      |             |       |
| Cinema/Entertainment  |                  |        |            |                      |             |       |
| Residential   |                  |        |            |                      |             |       |
| Hotel   |                  |        |            |                      |             |       |

| Table 4-A: Internal Person-Trip Origin-Destination Matrix* |                  |        |            |                      |             |       |
|--|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)  | Destination (To) |        |            |                      |             |       |
|  | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office   |                  | 3      | 0          | 0                    | 0           | 0     |
| Retail   | 3                |        | 0          | 0                    | 0           | 0     |
| Restaurant   | 0                | 0      |            | 0                    | 0           | 0     |
| Cinema/Entertainment                                       | 0                | 0      | 0          |                      | 0           | 0     |
| Residential  | 1                | 0      | 0          | 0                    |             | 0     |
| Hotel  | 0                | 0      | 0          | 0                    | 0           |       |

| Table 5-A: Computations Summary           |       |          |         |
|---|-------|----------|---------|
|   | Total | Entering | Exiting |
| All Person-Trips                          | 559   | 285      | 274     |
| Internal Capture Percentage               | 3%    | 2%       | 3%      |
| External Vehicle-Trips <sup>5</sup>       | 534   | 273      | 261     |
| External Transit-Trips <sup>6</sup>       | 11    | 5        | 6       |
| External Non-Motorized Trips <sup>6</sup> | 0     | 0        | 0       |

| Table 6-A: Internal Trip Capture Percentages by Land Use |                |               |
|--|----------------|---------------|
| Land Use   | Entering Trips | Exiting Trips |
| Office   | 6%             | 33%           |
| Retail   | 1%             | 1%            |
| Restaurant   | N/A            | N/A           |
| Cinema/Entertainment                                     | N/A            | N/A           |
| Residential  | 0%             | 3%            |
| Hotel  | N/A            | N/A           |

<sup>1</sup> Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.  
<sup>2</sup> Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.  
<sup>3</sup> Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).  
<sup>4</sup> Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.  
<sup>5</sup> Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.  
<sup>6</sup> Person-Trips  
<sup>7</sup> Indicates computation that has been rounded to the nearest whole number.  
 Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

| NCHRP 684 Internal Trip Capture Estimation Tool |                     |               |             |
|---|---------------------|---------------|-------------|
| Project Name:                                   | City Site South     | Organization: | Renaissance |
| Project Location:                               |                     | Performed By: |             |
| Scenario Description:                           |                     | Date:         | 11/23/2016  |
| Analysis Year:                                  |                     | Checked By:   |             |
| Analysis Period:                                | PM Street Peak Hour | Date:         |             |

| Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate) |   |          |       |                                      |          |         |
|--|---|----------|-------|--------------------------------------|----------|---------|
| Land Use   | Development Data (For Information Only) |          |       | Estimated Vehicle-Trips <sup>3</sup> |          |         |
|  | ITE LUCs <sup>1</sup>                   | Quantity | Units | Total                                | Entering | Exiting |
| Office   | 710                                     | 30       | KSF   | 112                                  | 19       | 93      |
| Retail   | 826                                     | 65       | KSF   | 326                                  | 193      | 143     |
| Restaurant   |   |          |       | 0                                    |          |         |
| Cinema/Entertainment   |   |          |       | 0                                    |          |         |
| Residential  | 230                                     | 75       | DU    | 47                                   | 31       | 16      |
| Hotel  |   |          |       | 0                                    |          |         |
| All Other Land Uses <sup>2</sup>   |   |          |       | 0                                    |          |         |
|  |   |          |       | 485                                  | 233      | 252     |

| Table 2-P: Mode Split and Vehicle Occupancy Estimates |                        |           |                 |                        |           |                 |
|---|------------------------|-----------|-----------------|------------------------|-----------|-----------------|
| Land Use  | Entering Trips         |           |                 | Exiting Trips          |           |                 |
|   | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized |
| Office  |                        | 2%        |                 |                        | 2%        |                 |
| Retail  |                        | 2%        |                 |                        | 2%        |                 |
| Restaurant  |                        |           |                 |                        |           |                 |
| Cinema/Entertainment                                  |                        |           |                 |                        |           |                 |
| Residential   |                        | 2%        |                 |                        | 2%        |                 |
| Hotel   |                        |           |                 |                        |           |                 |
| All Other Land Uses <sup>2</sup>                      |                        | 2%        |                 |                        | 2%        |                 |

| Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance) |                  |        |            |                      |             |       |
|---|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)   | Destination (To) |        |            |                      |             |       |
|   | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office  |                  |        |            |                      |             |       |
| Retail  |                  |        |            |                      |             |       |
| Restaurant  |                  |        |            |                      |             |       |
| Cinema/Entertainment  |                  |        |            |                      |             |       |
| Residential   |                  |        |            |                      |             |       |
| Hotel   |                  |        |            |                      |             |       |

| Table 4-P: Internal Person-Trip Origin-Destination Matrix <sup>6</sup> |                  |        |            |                      |             |       |
|--|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)  | Destination (To) |        |            |                      |             |       |
|  | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office   |                  | 15     | 0          | 0                    | 1           | 0     |
| Retail   | 3                |        | 0          | 0                    | 14          | 0     |
| Restaurant   | 0                | 0      |            | 0                    | 0           | 0     |
| Cinema/Entertainment   | 0                | 0      | 0          |                      | 0           | 0     |
| Residential  | 1                | 7      | 0          | 0                    |             | 0     |
| Hotel  | 0                | 0      | 0          | 0                    | 0           |       |

| Table 5-P: Computations Summary           |       |          |         |
|---|-------|----------|---------|
|   | Total | Entering | Exiting |
| All Person-Trips                          | 485   | 233      | 252     |
| Internal Capture Percentage               | 17%   | 19%      | 16%     |
| External Vehicle-Trips <sup>5</sup>       | 395   | 189      | 206     |
| External Transit-Trips <sup>6</sup>       | 8     | 3        | 5       |
| External Non-Motorized Trips <sup>5</sup> | 0     | 0        | 0       |

| Table 6-P: Internal Trip Capture Percentages by Land Use |                |               |
|--|----------------|---------------|
| Land Use   | Entering Trips | Exiting Trips |
| Office   | 21%            | 17%           |
| Retail   | 12%            | 12%           |
| Restaurant   | N/A            | N/A           |
| Cinema/Entertainment                                     | N/A            | N/A           |
| Residential  | 48%            | 50%           |
| Hotel  | N/A            | N/A           |

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.  
<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.  
<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).  
<sup>4</sup>Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.  
<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.  
<sup>6</sup>Person-Trips  
<sup>7</sup>Indicates computation that has been rounded to the nearest whole number.  
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| NCHRP 684 Internal Trip Capture Estimation Tool |                     |               |             |
|---|---------------------|---------------|-------------|
| Project Name:                                   | North Alden         | Organization: | Renaissance |
| Project Location:                               |                     | Performed By: |             |
| Scenario Description:                           |                     | Date:         | 11/23/2016  |
| Analysis Year:                                  |                     | Checked By:   |             |
| Analysis Period:                                | AM Street Peak Hour | Date:         |             |

| Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate) |   |          |       |                                      |          |         |
|--|---|----------|-------|--------------------------------------|----------|---------|
| Land Use   | Development Data (For Information Only) |          |       | Estimated Vehicle-Trips <sup>1</sup> |          |         |
|  | ITE LUCs <sup>2</sup>                   | Quantity | Units | Total                                | Entering | Exiting |
| Office   |   |          |       | 0                                    |          |         |
| Retail   |   |          |       | 0                                    |          |         |
| Restaurant   |   |          |       | 0                                    |          |         |
| Cinema/Entertainment   |   |          |       | 0                                    |          |         |
| Residential  | 230                                     | 100      | DU    | 62                                   | 9        | 43      |
| Hotel  |   |          |       | 0                                    |          |         |
| All Other Land Uses <sup>3</sup>   |   |          |       | 0                                    |          |         |
|  |   |          |       | 52                                   | 9        | 43      |

| Table 2-A: Mode Split and Vehicle Occupancy Estimates |                        |           |                 |                        |           |                 |
|---|------------------------|-----------|-----------------|------------------------|-----------|-----------------|
| Land Use  | Entering Trips         |           |                 | Exiting Trips          |           |                 |
|   | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized |
| Office  |                        | 2%        |                 |                        | 2%        |                 |
| Retail  |                        | 2%        |                 |                        | 2%        |                 |
| Restaurant  |                        |           |                 |                        |           |                 |
| Cinema/Entertainment                                  |                        |           |                 |                        |           |                 |
| Residential   |                        | 2%        |                 |                        | 2%        |                 |
| Hotel   |                        |           |                 |                        |           |                 |
| All Other Land Uses <sup>2</sup>                      |                        | 2%        |                 |                        | 2%        |                 |

| Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance) |                  |        |            |                      |             |       |
|---|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)   | Destination (To) |        |            |                      |             |       |
|   | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office  |                  |        |            |                      |             |       |
| Retail  |                  |        |            |                      |             |       |
| Restaurant  |                  |        |            |                      |             |       |
| Cinema/Entertainment  |                  |        |            |                      |             |       |
| Residential   |                  |        |            |                      |             |       |
| Hotel   |                  |        |            |                      |             |       |

| Table 4-A: Internal Person-Trip Origin-Destination Matrix* |                  |        |            |                      |             |       |
|--|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)  | Destination (To) |        |            |                      |             |       |
|  | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office   |                  | 0      | 0          | 0                    | 0           | 0     |
| Retail   | 0                |        | 0          | 0                    | 0           | 0     |
| Restaurant   | 0                | 0      |            | 0                    | 0           | 0     |
| Cinema/Entertainment                                       | 0                | 0      | 0          |                      | 0           | 0     |
| Residential  | 0                | 0      | 0          | 0                    |             | 0     |
| Hotel  | 0                | 0      | 0          | 0                    | 0           |       |

| Table 5-A: Computations Summary           |       |          |         |
|---|-------|----------|---------|
|   | Total | Entering | Exiting |
| All Person-Trips                          | 52    | 9        | 43      |
| Internal Capture Percentage               | 0%    | 0%       | 0%      |
| External Vehicle-Trips <sup>5</sup>       | 51    | 9        | 42      |
| External Transit-Trips <sup>6</sup>       | 1     | 0        | 1       |
| External Non-Motorized Trips <sup>6</sup> | 0     | 0        | 0       |

| Table 6-A: Internal Trip Capture Percentages by Land Use |                |               |
|--|----------------|---------------|
| Land Use   | Entering Trips | Exiting Trips |
| Office   | N/A            | N/A           |
| Retail   | N/A            | N/A           |
| Restaurant   | N/A            | N/A           |
| Cinema/Entertainment                                     | N/A            | N/A           |
| Residential  | 0%             | 0%            |
| Hotel  | N/A            | N/A           |

<sup>1</sup> Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.  
<sup>2</sup> Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.  
<sup>3</sup> Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).  
<sup>4</sup> Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.  
<sup>5</sup> Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.  
<sup>6</sup> Person-Trips  
<sup>7</sup> Indicates computation that has been rounded to the nearest whole number.  
 Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

| NCHRP 684 Internal Trip Capture Estimation Tool |                     |               |             |
|---|---------------------|---------------|-------------|
| Project Name:                                   | North Alden         | Organization: | Renaissance |
| Project Location:                               |                     | Performed By: |             |
| Scenario Description:                           |                     | Date:         | 11/23/2016  |
| Analysis Year:                                  |                     | Checked By:   |             |
| Analysis Period:                                | PM Street Peak Hour | Date:         |             |

| Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate) |   |          |       |                                      |          |         |
|--|---|----------|-------|--------------------------------------|----------|---------|
| Land Use   | Development Data (For Information Only) |          |       | Estimated Vehicle-Trips <sup>3</sup> |          |         |
|  | ITE LUCs <sup>1</sup>                   | Quantity | Units | Total                                | Entering | Exiting |
| Office   |   |          |       | 0                                    |          |         |
| Retail   |   |          |       | 0                                    |          |         |
| Restaurant   |   |          |       | 0                                    |          |         |
| Cinema/Entertainment   |   |          |       | 0                                    |          |         |
| Residential  | 230                                     | 100      | DU    | 60                                   | 40       | 20      |
| Hotel  |   |          |       | 0                                    |          |         |
| All Other Land Uses <sup>2</sup>   |   |          |       | 0                                    |          |         |
|  |   |          |       | 60                                   | 40       | 20      |

| Table 2-P: Mode Split and Vehicle Occupancy Estimates |                        |           |                 |                        |           |                 |
|---|------------------------|-----------|-----------------|------------------------|-----------|-----------------|
| Land Use  | Entering Trips         |           |                 | Exiting Trips          |           |                 |
|   | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized |
| Office  |                        | 2%        |                 |                        | 2%        |                 |
| Retail  |                        | 2%        |                 |                        | 2%        |                 |
| Restaurant  |                        |           |                 |                        |           |                 |
| Cinema/Entertainment                                  |                        |           |                 |                        |           |                 |
| Residential   |                        | 2%        |                 |                        | 2%        |                 |
| Hotel   |                        |           |                 |                        |           |                 |
| All Other Land Uses <sup>2</sup>                      |                        | 2%        |                 |                        | 2%        |                 |

| Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance) |                  |        |            |                      |             |       |
|---|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)   | Destination (To) |        |            |                      |             |       |
|   | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office  |                  |        |            |                      |             |       |
| Retail  |                  |        |            |                      |             |       |
| Restaurant  |                  |        |            |                      |             |       |
| Cinema/Entertainment  |                  |        |            |                      |             |       |
| Residential   |                  |        |            |                      |             |       |
| Hotel   |                  |        |            |                      |             |       |

| Table 4-P: Internal Person-Trip Origin-Destination Matrix <sup>6</sup> |                  |        |            |                      |             |       |
|--|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)  | Destination (To) |        |            |                      |             |       |
|  | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office   |                  | 0      | 0          | 0                    | 0           | 0     |
| Retail   | 0                |        | 0          | 0                    | 0           | 0     |
| Restaurant   | 0                | 0      |            | 0                    | 0           | 0     |
| Cinema/Entertainment   | 0                | 0      | 0          |                      | 0           | 0     |
| Residential  | 0                | 0      | 0          | 0                    |             | 0     |
| Hotel  | 0                | 0      | 0          | 0                    | 0           |       |

| Table 5-P: Computations Summary           |       |          |         |
|---|-------|----------|---------|
|   | Total | Entering | Exiting |
| All Person-Trips                          | 60    | 40       | 20      |
| Internal Capture Percentage               | 0%    | 0%       | 0%      |
| External Vehicle-Trips <sup>5</sup>       | 59    | 39       | 20      |
| External Transit-Trips <sup>6</sup>       | 1     | 1        | 0       |
| External Non-Motorized Trips <sup>5</sup> | 0     | 0        | 0       |

| Table 6-P: Internal Trip Capture Percentages by Land Use |                |               |
|--|----------------|---------------|
| Land Use   | Entering Trips | Exiting Trips |
| Office   | N/A            | N/A           |
| Retail   | N/A            | N/A           |
| Restaurant   | N/A            | N/A           |
| Cinema/Entertainment                                     | N/A            | N/A           |
| Residential  | 0%             | 0%            |
| Hotel  | N/A            | N/A           |

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.  
<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.  
<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).  
<sup>4</sup>Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.  
<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.  
<sup>6</sup>Person-Trips  
<sup>7</sup>Indicates computation that has been rounded to the nearest whole number.  
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| NCHRP 684 Internal Trip Capture Estimation Tool |                     |               |             |
|---|---------------------|---------------|-------------|
| Project Name:                                   | South Alden         | Organization: | Renaissance |
| Project Location:                               |                     | Performed By: |             |
| Scenario Description:                           |                     | Date:         | 11/23/2016  |
| Analysis Year:                                  |                     | Checked By:   |             |
| Analysis Period:                                | AM Street Peak Hour | Date:         |             |

| Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate) |   |          |       |                                      |          |         |
|--|---|----------|-------|--------------------------------------|----------|---------|
| Land Use   | Development Data (For Information Only) |          |       | Estimated Vehicle-Trips <sup>1</sup> |          |         |
|  | ITE LUCs <sup>2</sup>                   | Quantity | Units | Total                                | Entering | Exiting |
| Office   | 710                                     | 15       | KSF   | 42                                   | 37       | 5       |
| Retail   | 826                                     | 5        | KSF   | 34                                   | 16       | 18      |
| Restaurant   |   |          |       | 0                                    |          |         |
| Cinema/Entertainment   |   |          |       | 0                                    |          |         |
| Residential  | 230                                     | 26       | DU    | 17                                   | 3        | 14      |
| Hotel  |   |          |       | 0                                    |          |         |
| All Other Land Uses <sup>3</sup>   |   |          |       | 0                                    |          |         |
|  |   |          |       | 93                                   | 56       | 37      |

| Table 2-A: Mode Split and Vehicle Occupancy Estimates |                        |           |                 |                        |           |                 |
|---|------------------------|-----------|-----------------|------------------------|-----------|-----------------|
| Land Use  | Entering Trips         |           |                 | Exiting Trips          |           |                 |
|   | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized |
| Office  |                        | 2%        |                 |                        | 2%        |                 |
| Retail  |                        | 2%        |                 |                        | 2%        |                 |
| Restaurant  |                        |           |                 |                        |           |                 |
| Cinema/Entertainment                                  |                        |           |                 |                        |           |                 |
| Residential   |                        | 2%        |                 |                        | 2%        |                 |
| Hotel   |                        |           |                 |                        |           |                 |
| All Other Land Uses <sup>2</sup>                      |                        | 2%        |                 |                        | 2%        |                 |

| Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance) |                  |        |            |                      |             |       |
|---|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)   | Destination (To) |        |            |                      |             |       |
|   | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office  |                  |        |            |                      |             |       |
| Retail  |                  |        |            |                      |             |       |
| Restaurant  |                  |        |            |                      |             |       |
| Cinema/Entertainment  |                  |        |            |                      |             |       |
| Residential   |                  |        |            |                      |             |       |
| Hotel   |                  |        |            |                      |             |       |

| Table 4-A: Internal Person-Trip Origin-Destination Matrix* |                  |        |            |                      |             |       |
|--|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)  | Destination (To) |        |            |                      |             |       |
|  | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office   |                  | 1      | 0          | 0                    | 0           | 0     |
| Retail   | 1                |        | 0          | 0                    | 0           | 0     |
| Restaurant   | 0                | 0      |            | 0                    | 0           | 0     |
| Cinema/Entertainment                                       | 0                | 0      | 0          |                      | 0           | 0     |
| Residential  | 0                | 0      | 0          | 0                    |             | 0     |
| Hotel  | 0                | 0      | 0          | 0                    | 0           |       |

| Table 5-A: Computations Summary           |       |          |         |
|---|-------|----------|---------|
|   | Total | Entering | Exiting |
| All Person-Trips                          | 93    | 56       | 37      |
| Internal Capture Percentage               | 4%    | 4%       | 5%      |
| External Vehicle-Trips <sup>5</sup>       | 88    | 53       | 35      |
| External Transit-Trips <sup>6</sup>       | 1     | 1        | 0       |
| External Non-Motorized Trips <sup>6</sup> | 0     | 0        | 0       |

| Table 6-A: Internal Trip Capture Percentages by Land Use |                |               |
|--|----------------|---------------|
| Land Use   | Entering Trips | Exiting Trips |
| Office   | 3%             | 20%           |
| Retail   | 6%             | 6%            |
| Restaurant   | N/A            | N/A           |
| Cinema/Entertainment                                     | N/A            | N/A           |
| Residential  | 0%             | 0%            |
| Hotel  | N/A            | N/A           |

<sup>1</sup> Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.  
<sup>2</sup> Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.  
<sup>3</sup> Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).  
<sup>4</sup> Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.  
<sup>5</sup> Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.  
<sup>6</sup> Person-Trips  
<sup>7</sup> Indicates computation that has been rounded to the nearest whole number.  
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| NCHRP 684 Internal Trip Capture Estimation Tool |                     |               |             |
|---|---------------------|---------------|-------------|
| Project Name:                                   | South Alden         | Organization: | Renaissance |
| Project Location:                               |                     | Performed By: |             |
| Scenario Description:                           |                     | Date:         | 11/23/2016  |
| Analysis Year:                                  |                     | Checked By:   |             |
| Analysis Period:                                | PM Street Peak Hour | Date:         |             |

| Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate) |   |          |       |                                      |          |         |
|--|---|----------|-------|--------------------------------------|----------|---------|
| Land Use   | Development Data (For Information Only) |          |       | Estimated Vehicle-Trips <sup>3</sup> |          |         |
|  | ITE LUCs <sup>1</sup>                   | Quantity | Units | Total                                | Entering | Exiting |
| Office   | 710                                     | 15       | KSF   | 95                                   | 16       | 79      |
| Retail   | 826                                     | 5        | KSF   | 25                                   | 14       | 11      |
| Restaurant   |   |          |       | 0                                    |          |         |
| Cinema/Entertainment   |   |          |       | 0                                    |          |         |
| Residential  | 230                                     | 25       | DU    | 19                                   | 13       | 6       |
| Hotel  |   |          |       | 0                                    |          |         |
| All Other Land Uses <sup>2</sup>   |   |          |       | 0                                    |          |         |
|  |   |          |       | 139                                  | 43       | 96      |

| Table 2-P: Mode Split and Vehicle Occupancy Estimates |                        |           |                 |                        |           |                 |
|---|------------------------|-----------|-----------------|------------------------|-----------|-----------------|
| Land Use  | Entering Trips         |           |                 | Exiting Trips          |           |                 |
|   | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized |
| Office  |                        | 2%        |                 |                        | 2%        |                 |
| Retail  |                        | 2%        |                 |                        | 2%        |                 |
| Restaurant  |                        |           |                 |                        |           |                 |
| Cinema/Entertainment                                  |                        |           |                 |                        |           |                 |
| Residential   |                        | 2%        |                 |                        | 2%        |                 |
| Hotel   |                        |           |                 |                        |           |                 |
| All Other Land Uses <sup>2</sup>                      |                        | 2%        |                 |                        | 2%        |                 |

| Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance) |                  |        |            |                      |             |       |
|---|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)   | Destination (To) |        |            |                      |             |       |
|   | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office  |                  |        |            |                      |             |       |
| Retail  |                  |        |            |                      |             |       |
| Restaurant  |                  |        |            |                      |             |       |
| Cinema/Entertainment  |                  |        |            |                      |             |       |
| Residential   |                  |        |            |                      |             |       |
| Hotel   |                  |        |            |                      |             |       |

| Table 4-P: Internal Person-Trip Origin-Destination Matrix <sup>6</sup> |                  |        |            |                      |             |       |
|--|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)  | Destination (To) |        |            |                      |             |       |
|  | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office   |                  | 1      | 0          | 0                    | 1           | 0     |
| Retail   | 0                |        | 0          | 0                    | 3           | 0     |
| Restaurant   | 0                | 0      |            | 0                    | 0           | 0     |
| Cinema/Entertainment   | 0                | 0      | 0          |                      | 0           | 0     |
| Residential  | 0                | 1      | 0          | 0                    |             | 0     |
| Hotel  | 0                | 0      | 0          | 0                    | 0           |       |

| Table 5-P: Computations Summary           |       |          |         |
|---|-------|----------|---------|
|   | Total | Entering | Exiting |
| All Person-Trips                          | 139   | 43       | 96      |
| Internal Capture Percentage               | 9%    | 14%      | 6%      |
| External Vehicle-Trips <sup>5</sup>       | 125   | 37       | 88      |
| External Transit-Trips <sup>6</sup>       | 2     | 0        | 2       |
| External Non-Motorized Trips <sup>5</sup> | 0     | 0        | 0       |

| Table 6-P: Internal Trip Capture Percentages by Land Use |                |               |
|--|----------------|---------------|
| Land Use   | Entering Trips | Exiting Trips |
| Office   | 0%             | 3%            |
| Retail   | 14%            | 27%           |
| Restaurant   | N/A            | N/A           |
| Cinema/Entertainment                                     | N/A            | N/A           |
| Residential  | 31%            | 17%           |
| Hotel  | N/A            | N/A           |

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.  
<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.  
<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).  
<sup>4</sup>Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.  
<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.  
<sup>6</sup>Person-Trips  
<sup>7</sup>Indicates computation that has been rounded to the nearest whole number.  
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| NCHRP 684 Internal Trip Capture Estimation Tool |                     |               |             |
|---|---------------------|---------------|-------------|
| Project Name:                                   | Virginia Drive East | Organization: | Renaissance |
| Project Location:                               |                     | Performed By: |             |
| Scenario Description:                           |                     | Date:         | 11/23/2016  |
| Analysis Year:                                  |                     | Checked By:   |             |
| Analysis Period:                                | AM Street Peak Hour | Date:         |             |

| Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate) |   |          |       |                                      |          |         |
|--|---|----------|-------|--------------------------------------|----------|---------|
| Land Use   | Development Data (For Information Only) |          |       | Estimated Vehicle-Trips <sup>1</sup> |          |         |
|  | ITE LUCs <sup>2</sup>                   | Quantity | Units | Total                                | Entering | Exiting |
| Office   | 710                                     | 50       | KSF   | 110                                  | 97       | 13      |
| Retail   | 826                                     | 25       | KSF   | 171                                  | 82       | 89      |
| Restaurant   |   |          |       | 0                                    |          |         |
| Cinema/Entertainment   |   |          |       | 0                                    |          |         |
| Residential  | 230                                     | 220      | DU    | 97                                   | 16       | 81      |
| Hotel  |   |          |       | 0                                    |          |         |
| All Other Land Uses <sup>3</sup>   | 210                                     | 6        | DU    | 4                                    | 1        | 3       |
|  |   |          |       | 382                                  | 196      | 186     |

| Table 2-A: Mode Split and Vehicle Occupancy Estimates |                        |           |                 |                        |           |                 |
|---|------------------------|-----------|-----------------|------------------------|-----------|-----------------|
| Land Use  | Entering Trips         |           |                 | Exiting Trips          |           |                 |
|   | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized |
| Office  |                        | 2%        |                 |                        | 2%        |                 |
| Retail  |                        | 2%        |                 |                        | 2%        |                 |
| Restaurant  |                        |           |                 |                        |           |                 |
| Cinema/Entertainment                                  |                        |           |                 |                        |           |                 |
| Residential   |                        | 2%        |                 |                        | 2%        |                 |
| Hotel   |                        |           |                 |                        |           |                 |
| All Other Land Uses <sup>2</sup>                      |                        | 2%        |                 |                        | 2%        |                 |

| Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance) |                  |        |            |                      |             |       |
|---|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)   | Destination (To) |        |            |                      |             |       |
|   | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office  |                  |        |            |                      |             |       |
| Retail  |                  |        |            |                      |             |       |
| Restaurant  |                  |        |            |                      |             |       |
| Cinema/Entertainment  |                  |        |            |                      |             |       |
| Residential   |                  |        |            |                      |             |       |
| Hotel   |                  |        |            |                      |             |       |

| Table 4-A: Internal Person-Trip Origin-Destination Matrix* |                  |        |            |                      |             |       |
|--|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)  | Destination (To) |        |            |                      |             |       |
|  | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office   |                  | 4      | 0          | 0                    | 0           | 0     |
| Retail   | 4                |        | 0          | 0                    | 0           | 0     |
| Restaurant   | 0                | 0      |            | 0                    | 0           | 0     |
| Cinema/Entertainment                                       | 0                | 0      | 0          |                      | 0           | 0     |
| Residential  | 2                | 1      | 0          | 0                    |             | 0     |
| Hotel  | 0                | 0      | 0          | 0                    | 0           |       |

| Table 5-A: Computations Summary           |       |          |         |
|---|-------|----------|---------|
|   | Total | Entering | Exiting |
| All Person-Trips                          | 382   | 196      | 186     |
| Internal Capture Percentage               | 6%    | 6%       | 6%      |
| External Vehicle-Trips <sup>5</sup>       | 352   | 181      | 171     |
| External Transit-Trips <sup>6</sup>       | 8     | 4        | 4       |
| External Non-Motorized Trips <sup>6</sup> | 0     | 0        | 0       |

| Table 6-A: Internal Trip Capture Percentages by Land Use |                |               |
|--|----------------|---------------|
| Land Use   | Entering Trips | Exiting Trips |
| Office   | 6%             | 31%           |
| Retail   | 6%             | 4%            |
| Restaurant   | N/A            | N/A           |
| Cinema/Entertainment                                     | N/A            | N/A           |
| Residential  | 0%             | 4%            |
| Hotel  | N/A            | N/A           |

<sup>1</sup> Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.  
<sup>2</sup> Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.  
<sup>3</sup> Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).  
<sup>4</sup> Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.  
<sup>5</sup> Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.  
<sup>6</sup> Person-Trips  
<sup>7</sup> Indicates computation that has been rounded to the nearest whole number.  
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| NCHRP 684 Internal Trip Capture Estimation Tool |                     |               |             |
|---|---------------------|---------------|-------------|
| Project Name:                                   | Virginia Drive East | Organization: | Renaissance |
| Project Location:                               |                     | Performed By: |             |
| Scenario Description:                           |                     | Date:         | 11/23/2016  |
| Analysis Year:                                  |                     | Checked By:   |             |
| Analysis Period:                                | PM Street Peak Hour | Date:         |             |

| Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate) |   |          |       |                                      |          |         |
|--|---|----------|-------|--------------------------------------|----------|---------|
| Land Use   | Development Data (For Information Only) |          |       | Estimated Vehicle-Trips <sup>3</sup> |          |         |
|  | ITE LUCs <sup>1</sup>                   | Quantity | Units | Total                                | Entering | Exiting |
| Office   | 710                                     | 50       | KSF   | 134                                  | 23       | 111     |
| Retail   | 826                                     | 25       | KSF   | 126                                  | 71       | 55      |
| Restaurant   |   |          |       | 0                                    |          |         |
| Cinema/Entertainment   |   |          |       | 0                                    |          |         |
| Residential  | 230                                     | 220      | DU    | 115                                  | 77       | 38      |
| Hotel  |   |          |       | 0                                    |          |         |
| All Other Land Uses <sup>2</sup>   | 210                                     | 5        | DU    | 5                                    | 3        | 2       |
|  |   |          |       | 380                                  | 174      | 206     |

| Table 2-P: Mode Split and Vehicle Occupancy Estimates |                        |           |                 |                        |           |                 |
|---|------------------------|-----------|-----------------|------------------------|-----------|-----------------|
| Land Use  | Entering Trips         |           |                 | Exiting Trips          |           |                 |
|   | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized |
| Office  |                        | 2%        |                 |                        | 2%        |                 |
| Retail  |                        | 2%        |                 |                        | 2%        |                 |
| Restaurant  |                        |           |                 |                        |           |                 |
| Cinema/Entertainment                                  |                        |           |                 |                        |           |                 |
| Residential   |                        | 2%        |                 |                        | 2%        |                 |
| Hotel   |                        |           |                 |                        |           |                 |
| All Other Land Uses <sup>2</sup>                      |                        | 2%        |                 |                        | 2%        |                 |

| Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance) |                  |        |            |                      |             |       |
|---|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)   | Destination (To) |        |            |                      |             |       |
|   | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office  |                  |        |            |                      |             |       |
| Retail  |                  |        |            |                      |             |       |
| Restaurant  |                  |        |            |                      |             |       |
| Cinema/Entertainment  |                  |        |            |                      |             |       |
| Residential   |                  |        |            |                      |             |       |
| Hotel   |                  |        |            |                      |             |       |

| Table 4-P: Internal Person-Trip Origin-Destination Matrix <sup>6</sup> |                  |        |            |                      |             |       |
|--|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)  | Destination (To) |        |            |                      |             |       |
|  | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office   |                  | 6      | 0          | 0                    | 2           | 0     |
| Retail   | 1                |        | 0          | 0                    | 14          | 0     |
| Restaurant   | 0                | 0      |            | 0                    | 0           | 0     |
| Cinema/Entertainment   | 0                | 0      | 0          |                      | 0           | 0     |
| Residential  | 2                | 7      | 0          | 0                    |             | 0     |
| Hotel  | 0                | 0      | 0          | 0                    | 0           |       |

| Table 5-P: Computations Summary           |       |          |         |
|---|-------|----------|---------|
|   | Total | Entering | Exiting |
| All Person-Trips                          | 380   | 174      | 206     |
| Internal Capture Percentage               | 17%   | 18%      | 16%     |
| External Vehicle-Trips <sup>5</sup>       | 310   | 140      | 170     |
| External Transit-Trips <sup>6</sup>       | 6     | 2        | 4       |
| External Non-Motorized Trips <sup>5</sup> | 0     | 0        | 0       |

| Table 6-P: Internal Trip Capture Percentages by Land Use |                |               |
|--|----------------|---------------|
| Land Use   | Entering Trips | Exiting Trips |
| Office   | 13%            | 7%            |
| Retail   | 18%            | 27%           |
| Restaurant   | N/A            | N/A           |
| Cinema/Entertainment                                     | N/A            | N/A           |
| Residential  | 21%            | 24%           |
| Hotel  | N/A            | N/A           |

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.  
<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.  
<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).  
<sup>4</sup>Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.  
<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.  
<sup>6</sup>Person-Trips  
<sup>7</sup>Indicates computation that has been rounded to the nearest whole number.  
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