

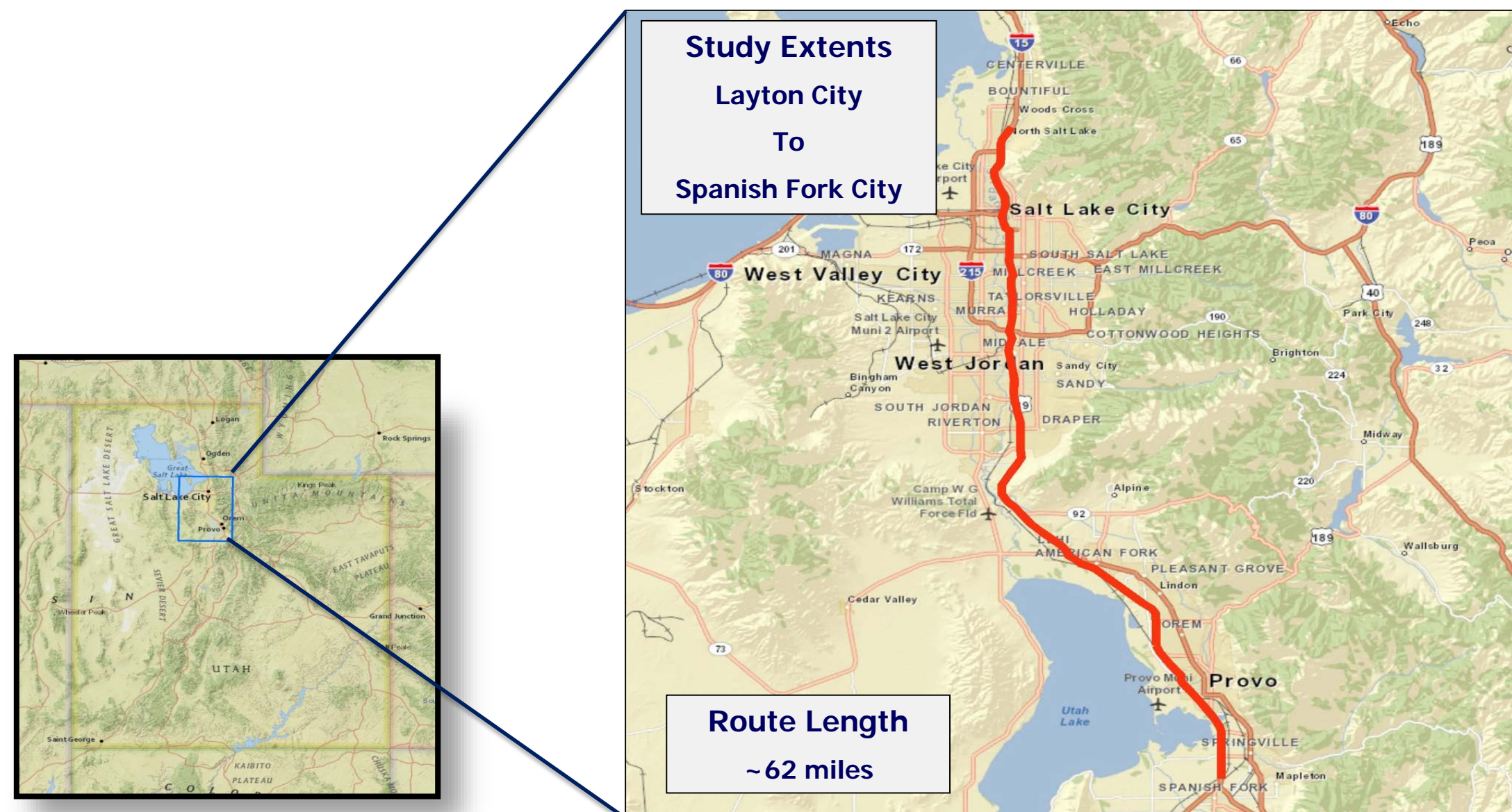
# Congestion Pricing Analysis of I-15 HOT Lanes in Utah



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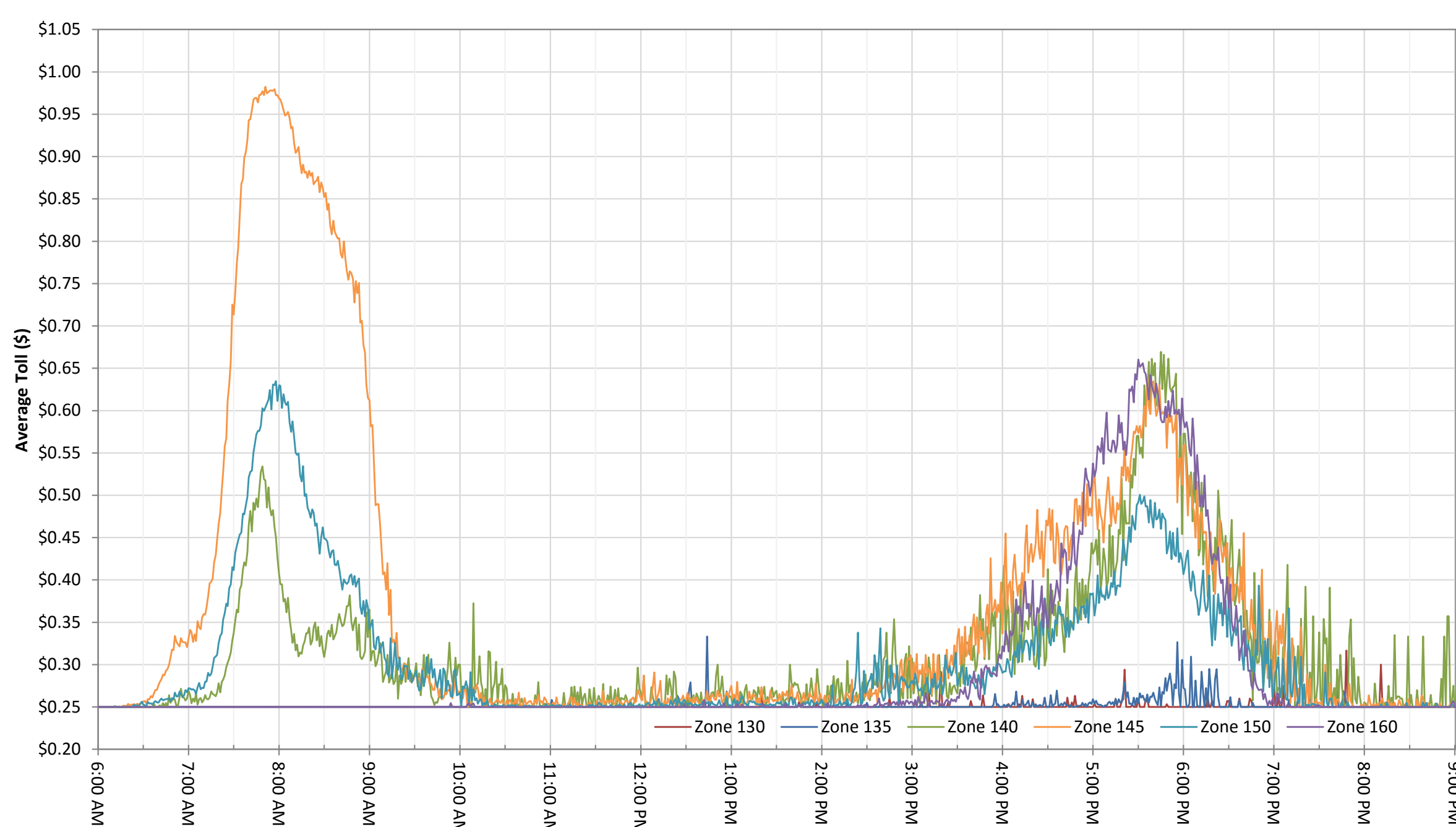
## I-15 HOT and General Purpose Lanes in Utah



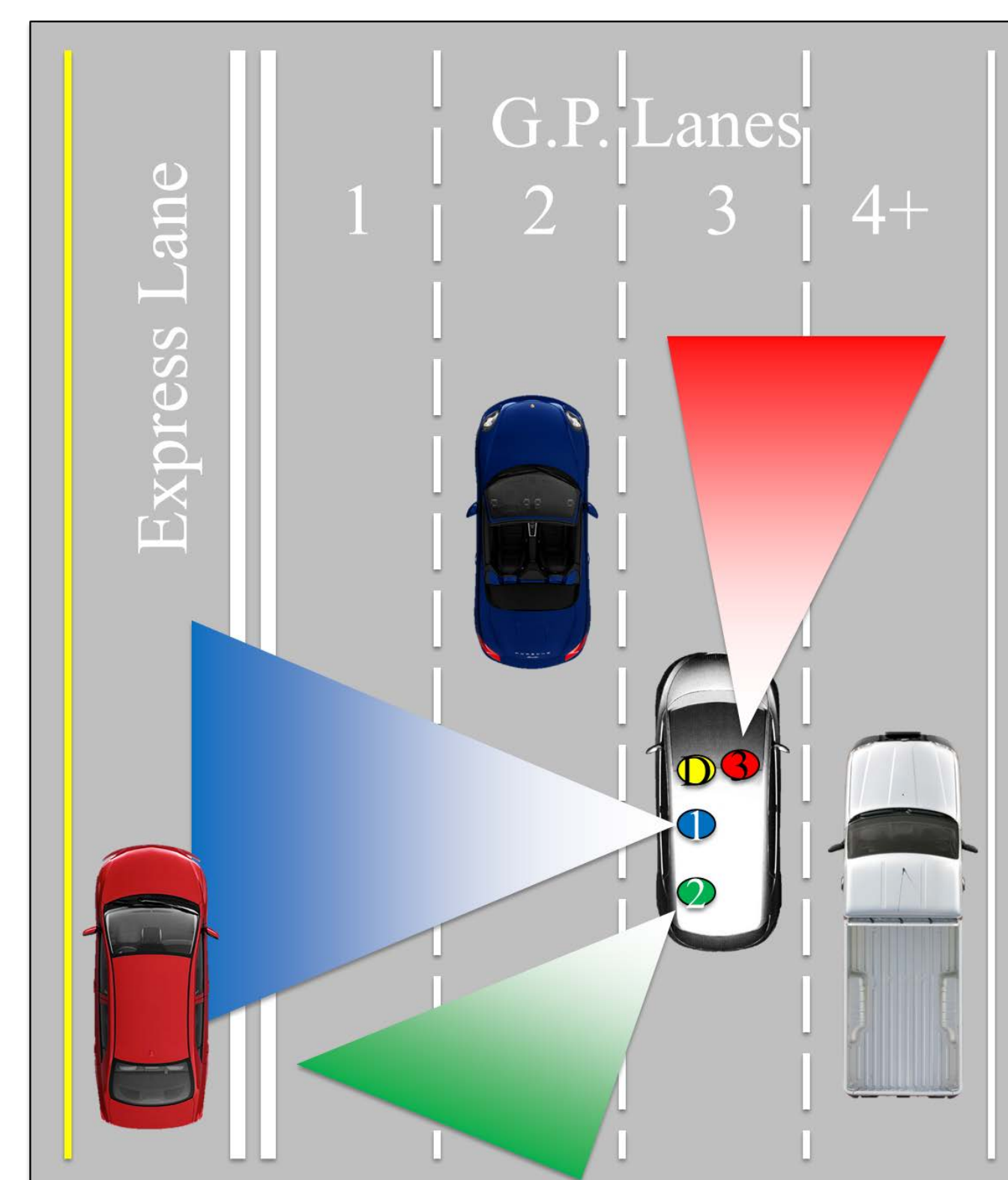
## Express Lanes in Utah

- 62 mile facility through urbanized area
- 55mph goal in HOT lanes
- Accommodates SOV, HOV 2, HOV 3+, C decal, Express Pass, motorcycle, bus, freight and emergency vehicles
- Study options that impact speed and volume:
  - Education campaign
  - Increased enforcement
  - Peak period toll rates
  - C decal permitting

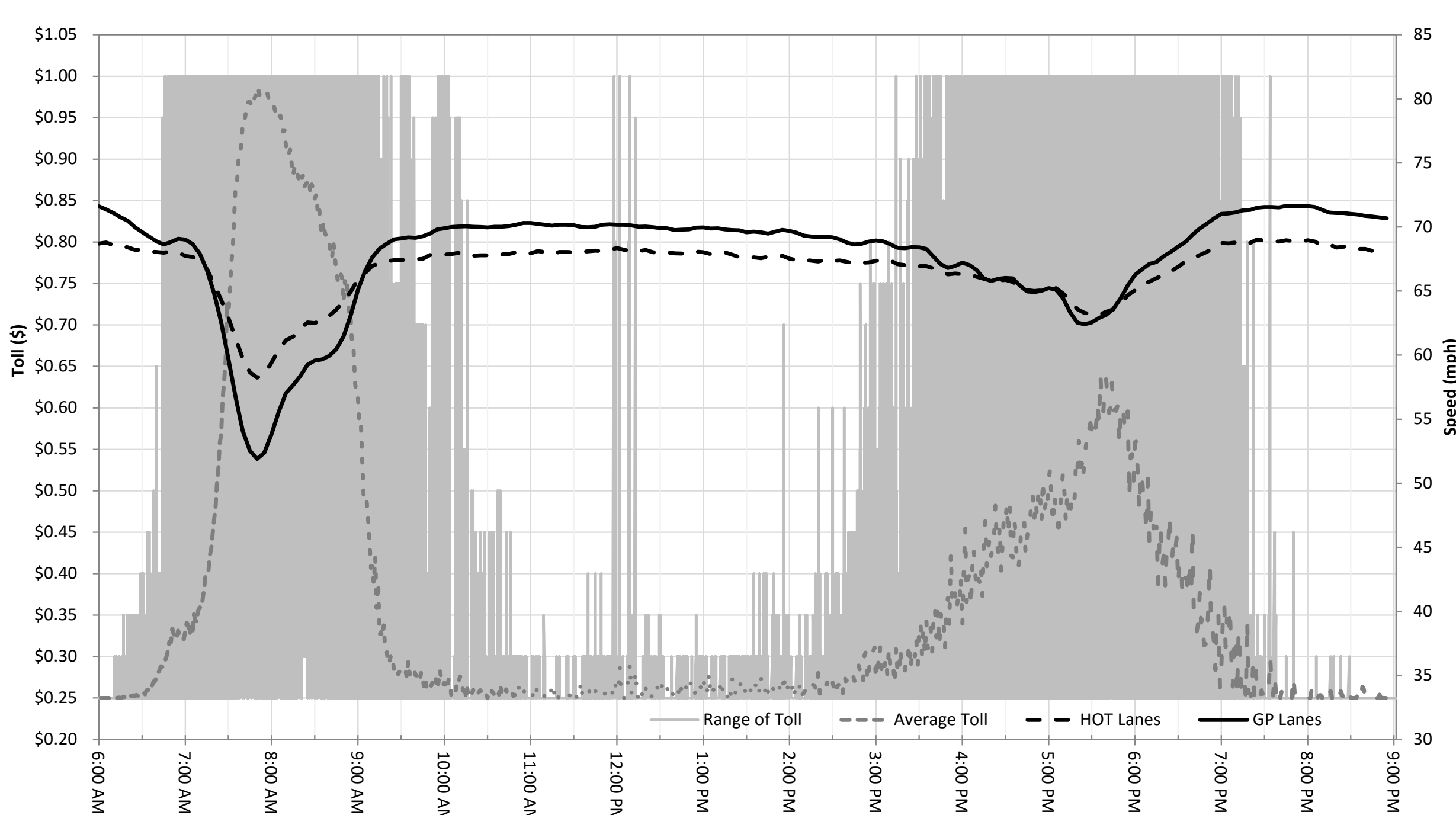
## Express Lane Average Toll by Time of Day per Zone



## Carousel Vehicle Positioning



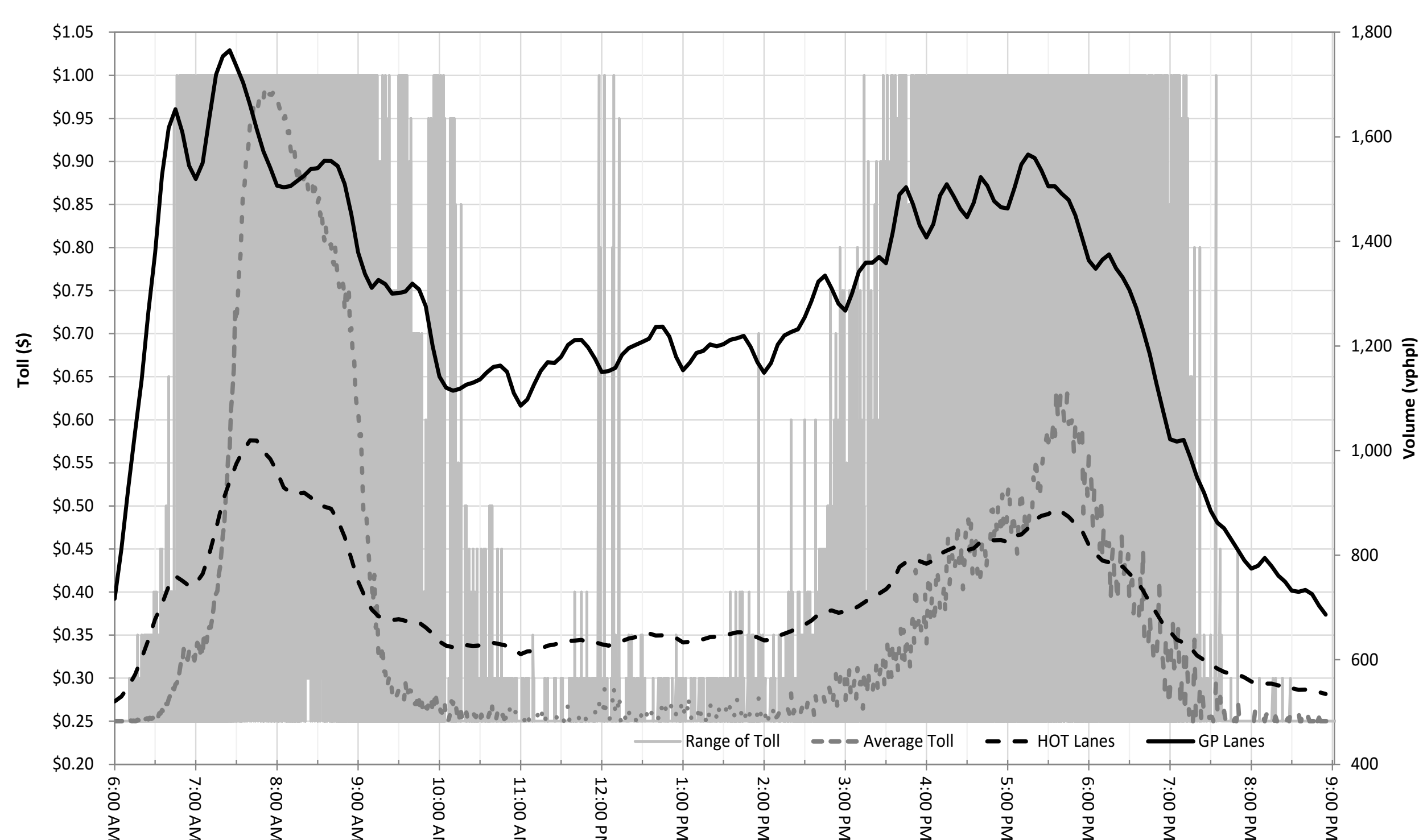
## Toll and Speed by Time of Day - Single Zone



## Average Differences in Speed per Impact Methodology

| Methodology  | Code | Lane | AM Peak Average Change in Speed | PM Peak Average Change in Speed |
|--|------|------|---------------------------------|---------------------------------|
| Education (-5% Violators)  | A    | HOT  | 1.5                             | 0.9                             |
|  |      | GP   | -1.0                            | -0.8                            |
| Education (-10% Violators)   | B    | HOT  | 2.7                             | 1.8                             |
|  |      | GP   | -1.9                            | -1.6                            |
| Education (-15% Violators)   | C    | HOT  | 3.8                             | 2.8                             |
|  |      | GP   | -2.9                            | -2.6                            |
| Enforcement (-10% Violators)   | D    | HOT  | 2.7                             | 1.8                             |
|  |      | GP   | -1.9                            | -1.6                            |
| Education & Enforcement (-20% Violators)   | E    | HOT  | 4.8                             | 3.4                             |
|  |      | GP   | -4.0                            | -3.3                            |
| Increased Toll (-30% Express Pass)   | F    | HOT  | 4.3                             | 3.2                             |
|  |      | GP   | -3.4                            | -2.7                            |
| Increased "C" Decal (+100% "C" Decal)  | G    | HOT  | -4.7                            | -1.8                            |
|  |      | GP   | 1.4                             | 1.4                             |
| Education & Enforcement (-20% Violators) plus Increased Toll (-30% Express Pass)   | H    | HOT  | 7.8                             | 5.9                             |
|  |      | GP   | -10.0                           | -7.8                            |
| Education & Enforcement (-20% Violators) plus Increased "C" Decal Permits (+100% "C" Decal)                                      | I    | HOT  | 2.9                             | 2.6                             |
|  |      | GP   | -2.0                            | -2.3                            |
| Increased Toll (-30% Express Pass) plus Increased "C" Decal Permits (+100% "C" Decal)  | J    | HOT  | 2.3                             | 2.3                             |
|  |      | GP   | -1.5                            | -1.9                            |
| Education & Enforcement (-20% Violators), Increased Toll (-30% Express Pass), plus Increased "C" Decal Permits (+100% "C" Decal) | K    | HOT  | 6.3                             | 5.2                             |
|  |      | GP   | -6.2                            | -6.1                            |

## Toll vs. 10th and 90th Percentile Speed by Time of Day - Single Zone



## Recommendations

The best method to increase speed in the HOT lane corresponds to the elements of code H: Provide an education and enforcement effort to reduce violators by 20% and double the maximum peak period toll to \$2.00 per zone. Increasing the number of C decals has a negative impact on speed; however this objective may be realized once the number of violators and Express Pass users is lowered.