**Free Flow Study**

**Chungus**

**123 Big Chungus Land, Amman MD 21163**

**Tax Map 22, Parcel 22**

for

Scott Harbinson

9055 Meadowvale Court

Ellicott City MD, 21042

410-530-6925

Prepared by:

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OmarAlomar

January 2023

I hereby certify that these documents were prepared or approved by me and that I am a duly licensed Professional Engineer under the laws of the State of Maryland.

License no. 3333, Expiration date 2023-01-13

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Bobby LEe, P.E. Date: 2023/01/06

**85th Percentile Operating Speed Study**

Mildenberg, Boender & Associates Inc. performed an 85th percentile operating speed determination at the access point to the above referenced parcel.

The proposed access point is located at . The survey was conducted between the hours of 2:00pm and 4:00pm on Friday January 06, 2023. The weather was overcast and 55ºF. vehicles were observed. The posted speed limit is 45mph on Big Chungus Land.

***Raw Car Speeds (mph)***

|  |  |
| --- | --- |
| **South** | **North** |
| 13 | 25 |
| 28 | 28 |
| 32 | 31 |
| 24 | 31 |
| 41 | 26 |
| 27 | 25 |
| 27 | 36 |
| 26 | 27 |
| 25 | 24 |
| 28 | 23 |
| 25 | 26 |
| 24 | 24 |
| 25 | 27 |
| 24 | 28 |
| 21 | 25 |
| 29 | 29 |
| 19 | 32 |
| 21 | 42 |
| 18 | 36 |
| 15 | 31 |
| 28 | 27 |
| 14 | 28 |
| 25 | 30 |
| 26 | 23 |
| 26 | 29 |
| 26 | 32 |
| 27 | 23 |
| 32 | 24 |
| 23 | 31 |
| 25 | 29 |
| 23 | 21 |
| 21 | 29 |
| 14 | 38 |
| 15 | 30 |
| 25 |  |
| 30 |  |

***South Data***

|  |  |  |  |
| --- | --- | --- | --- |
| **Speed (mph)** | **Number of Cars Observed** | **Percentage of Cars Observed (%)** | **Cumulative Percentage of Cars Observed (%)** |
| 13 | 1 | 2.8% | 2.8% |
| 14 | 2 | 5.6% | 8.3% |
| 15 | 2 | 5.6% | 13.9% |
| 18 | 1 | 2.8% | 16.7% |
| 19 | 1 | 2.8% | 19.4% |
| 21 | 3 | 8.3% | 27.8% |
| 23 | 2 | 5.6% | 33.3% |
| 24 | 3 | 8.3% | 41.7% |
| 25 | 6 | 16.7% | 58.3% |
| 26 | 4 | 11.1% | 69.4% |
| 27 | 3 | 8.3% | 77.8% |
| 28 | 3 | 8.3% | 86.1% |
| 29 | 1 | 2.8% | 88.9% |
| 30 | 1 | 2.8% | 91.7% |
| 32 | 2 | 5.6% | 97.2% |
| 41 | 1 | 2.8% | 100.0% |

***North Data***

|  |  |  |  |
| --- | --- | --- | --- |
| **Speed (mph)** | **Number of Cars Observed** | **Percentage of Cars Observed (%)** | **Cumulative Percentage of Cars Observed (%)** |
| 23 | 3 | 10.0% | 10.0% |
| 25 | 3 | 10.0% | 20.0% |
| 26 | 2 | 6.7% | 26.7% |
| 27 | 3 | 10.0% | 36.7% |
| 28 | 3 | 10.0% | 46.7% |
| 29 | 4 | 13.3% | 60.0% |
| 30 | 2 | 6.7% | 66.7% |
| 31 | 4 | 13.3% | 80.0% |
| 32 | 2 | 6.7% | 86.7% |
| 36 | 2 | 6.7% | 93.3% |
| 38 | 1 | 3.3% | 96.7% |
| 42 | 1 | 3.3% | 100.0% |

**SUMMARY:**

An off-peak spot speed study utilizing a radar was collected within the vicinity of the access point at the proposed easement.

The maximum South speed observed was mph and the minimum speed was mph.

The maximum North speed observed was mph and the minimum speed was mph.

The following are the operating speeds calculated at the access point to the project.

***85th Percentile Speed***

|  |  |  |
| --- | --- | --- |
| **road\_name** | **Number of Vehicles Observed** | **85th Percentile Speed (mph)** |
| **direction1** | **no\_vehs\_dir1** | **speed\_85\_dir1** |
| **direction2** | **no\_vehs\_dir2** | **Speed\_85\_dir2** |

***Photos:***

A road with trees on the side

Description automatically generated with low confidenceA road with trees on the side

Description automatically generated with low confidence