

WILMAPCO DART Route 25 Analysis

Delaware City/
DuPont Highway

Route
25

Effective
December 4, 2011

Rush Hours
Mid-Day
Night
Saturday



WILMAPCO DART Route 25 Analysis

Overview of Model Process

Land Use Data
Population & Employment

TRIP GENERATION

Trips (by Purpose)

Road Network (Projects)

TRIP DISTRIBUTION

Origins & Destinations

Transit Network (Routes)

MODE CHOICE

Trips (by Mode)

AUTO ASSIGNMENT

TRANSIT ASSIGNMENT

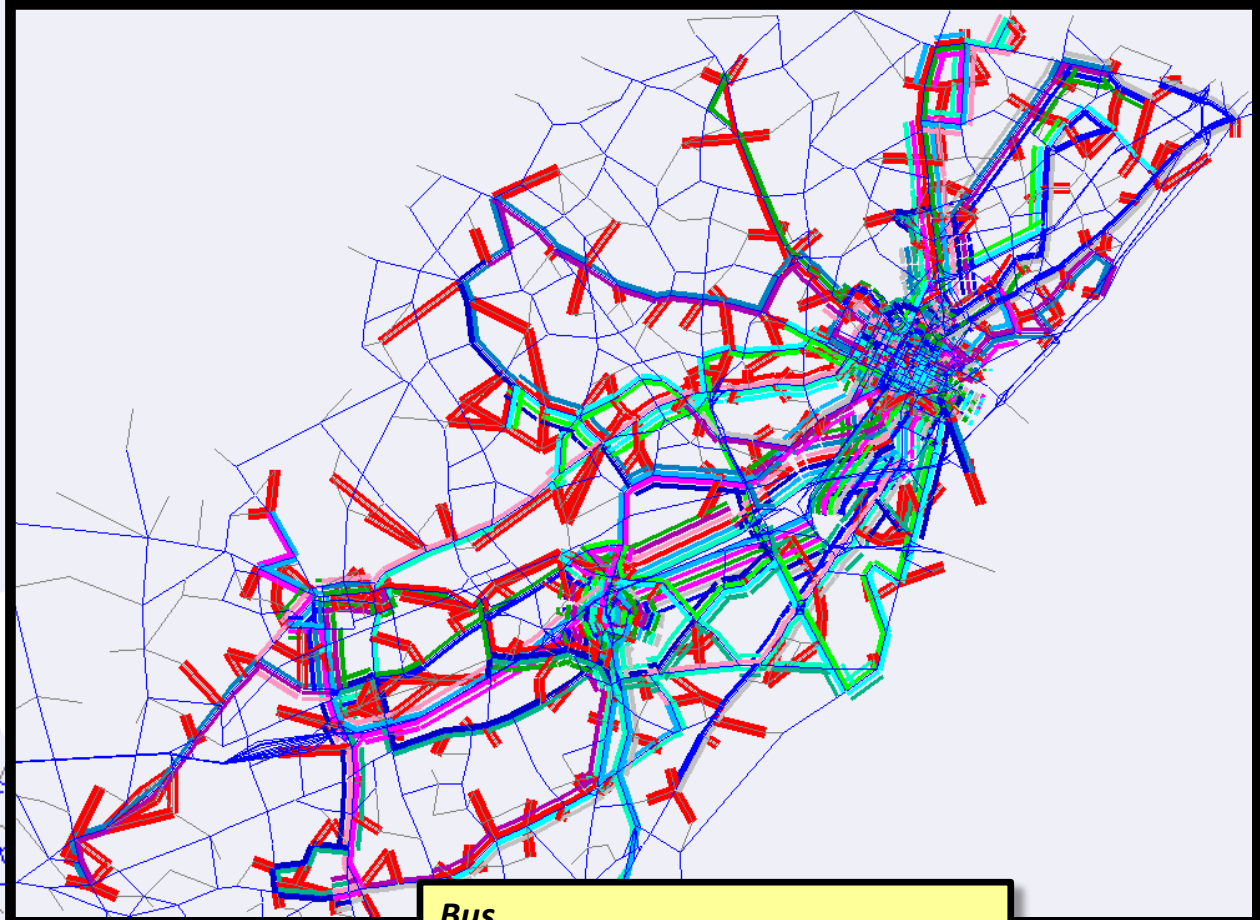
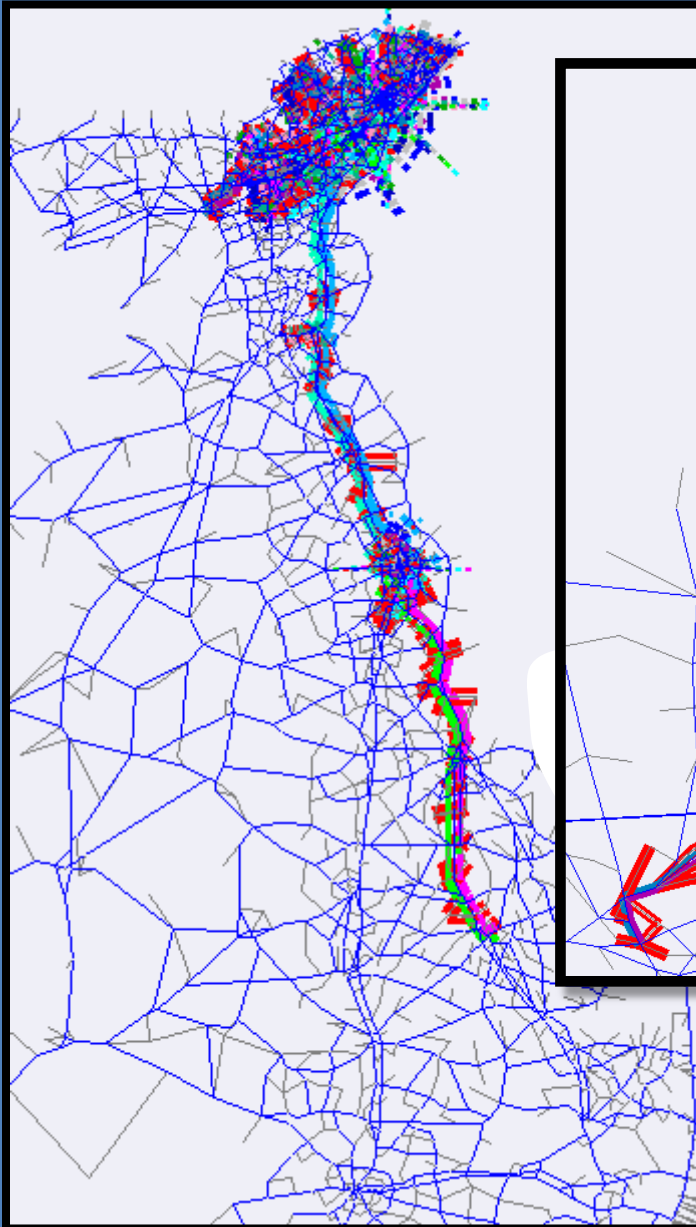
Volumes

Ridership



WILMAPCO DART Route 25 Analysis

Transit Routes



Bus

Local

Inter-county

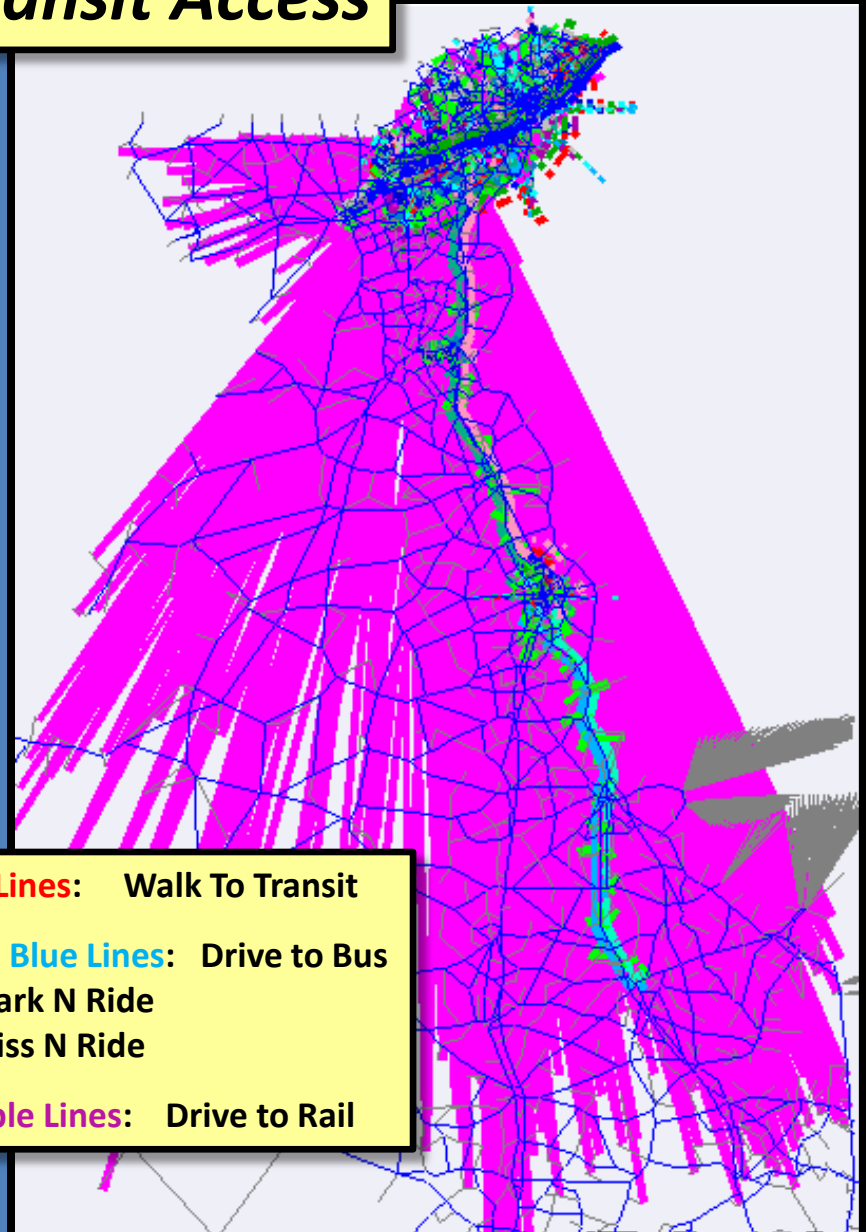
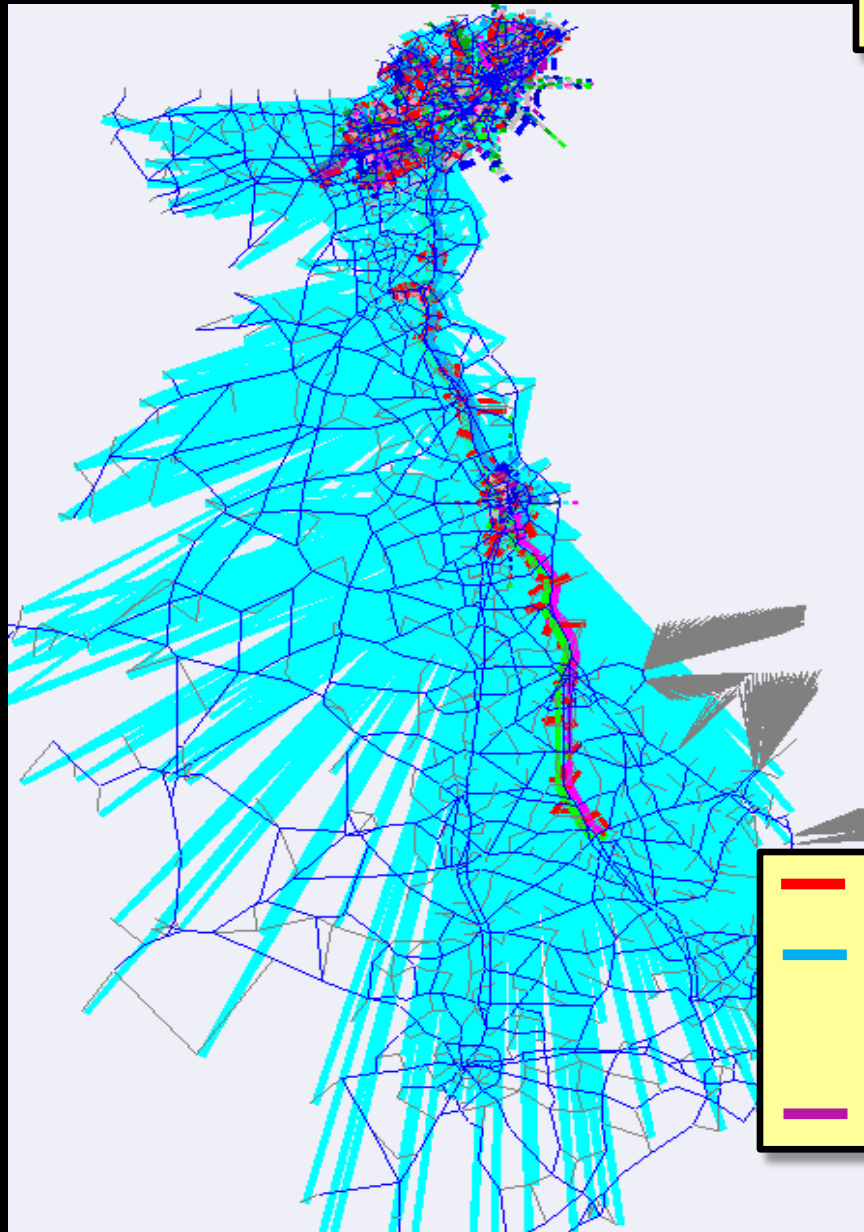
Rail

Local Rail (Newark to Claymont)

Regional Rail (Newark to Philly)

WILMAPCO DART Route 25 Analysis

Transit Access



- Red Lines: Walk To Transit
- Light Blue Lines: Drive to Bus
Park N Ride
Kiss N Ride
- Purple Lines: Drive to Rail

WILMAPCO DART Route 25 Analysis

Transit Coding

Typical Coding Data:

Highway:

Functional Class
Lanes
Speeds
Capacities

Transit:

Buses (Peak/Offpeak)
Seats/Bus
Load Factor
Headways
Dwell Times



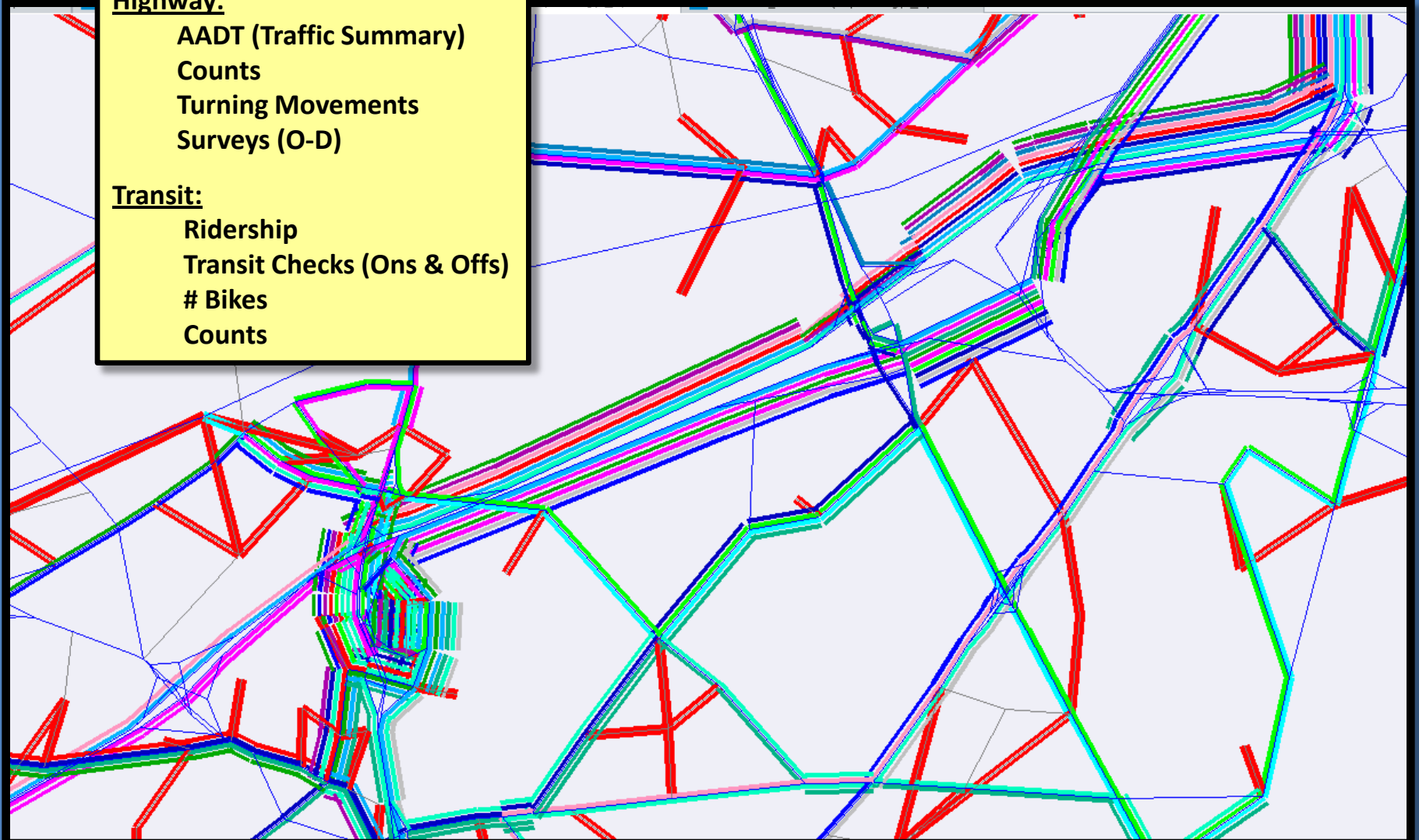
Typical Calibration Data:

Highway:

AADT (Traffic Summary)
Counts
Turning Movements
Surveys (O-D)

Transit:

Ridership
Transit Checks (Ons & Offs)
Bikes
Counts



WILMAPCO DART Route 25 Analysis

Transit Model

Part of Standard DeIDOT/MPO Model

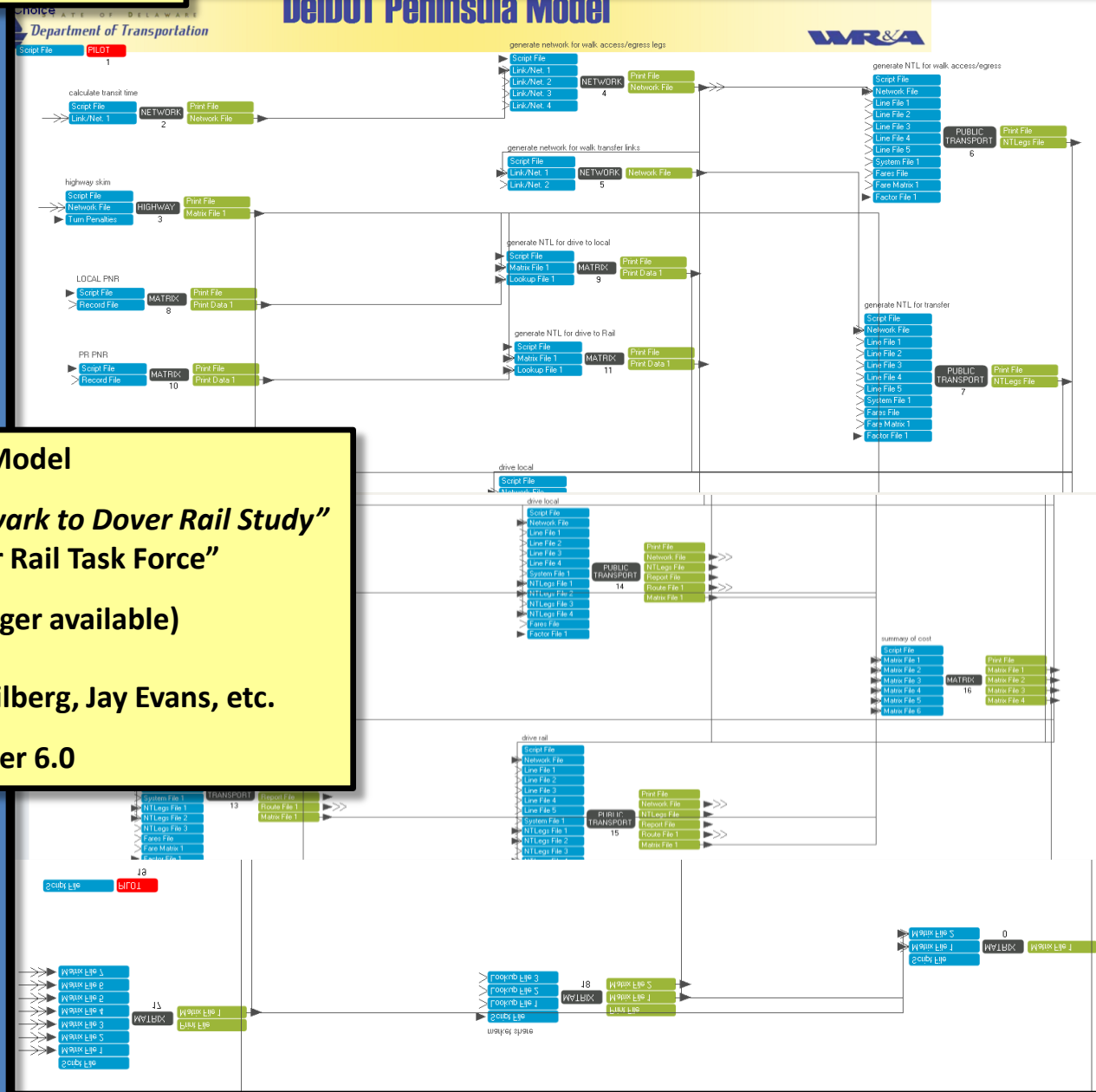
Model Adapted from 2005 “Newark to Dover Rail Study”
by the “Delaware Commuter Rail Task Force”

Original Model used TP+ (no longer available)

DMJM+Harris

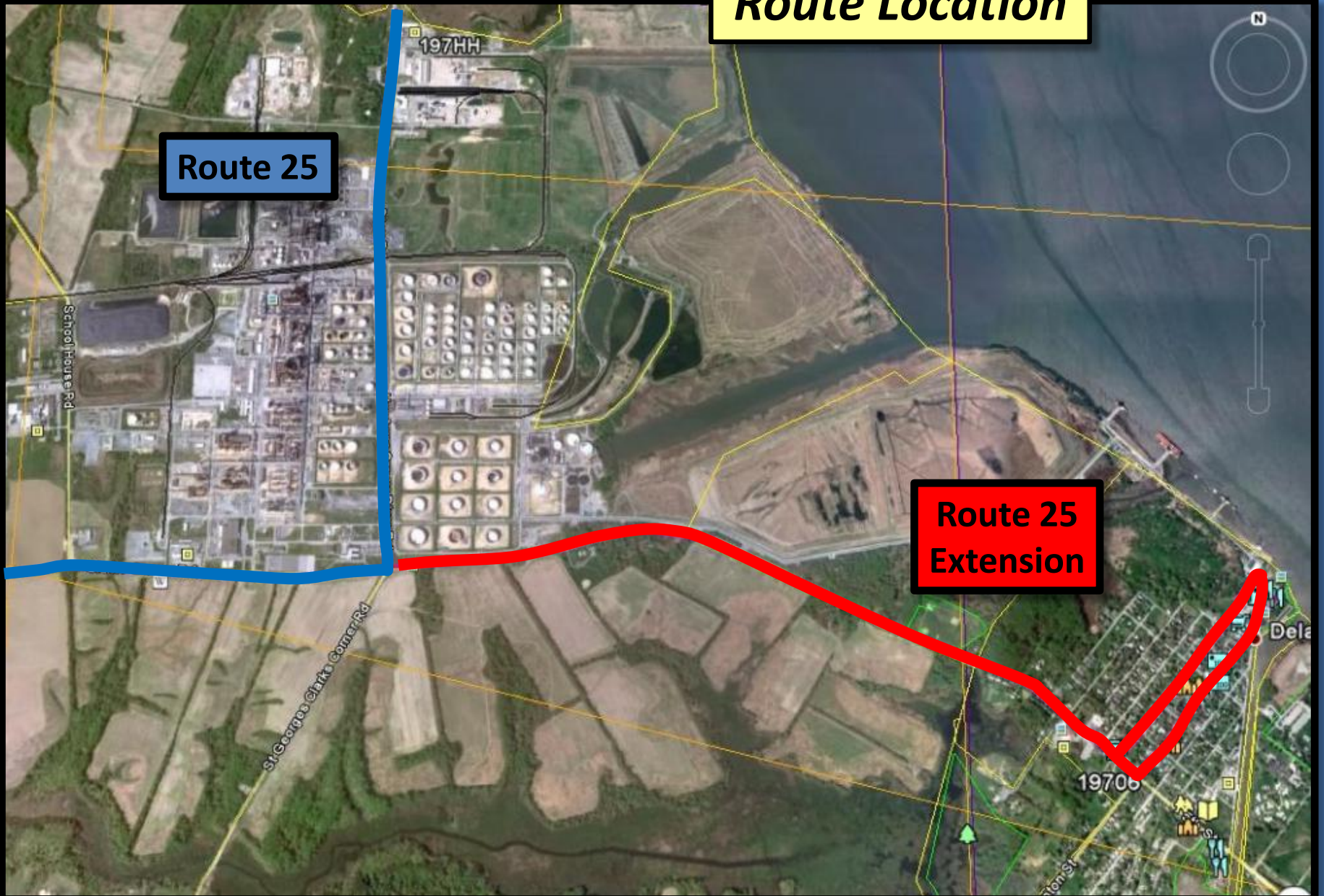
BMI-SG (VHB) Frank Speilberg, Jay Evans, etc.

Current Model uses CUBE Voyager 6.0



WILMAPCO DART Route 25 Analysis

Route Location



WILMAPCO DART Route 25 Analysis

Run #1:
"WITHOUT
Route 25 Extension"

Run #2:
"WITH
Route 25 Extension"

EMISSIONS
WITHOUT

EMISSIONS
WITH

MOVES
(DNREC Process)

AUTO ASSIGNMENT

Volumes

AUTO ASSIGNMENT

Volumes

Trips (by
Mode)

Emissions

TRANSIT ASSIGNMENT

Ridership

TRANSIT ASSIGNMENT

Ridership

WILMAPCO DART Route 25 Analysis

Results

Scenario	Rt 9 Roadway Section	Daily VMT	Emissions (tons/year)				
			NO _x	CO	VOC	PM _{2.5}	CO ₂
No Bus Service	Hamburg Rd (Tybouts PNR) to Wrangle Hill Rd	16,105	7.11	38.07	5.31	37.47	1,889
	River Rd to Clinton St	15,583	6.88	36.84	5.14	36.61	1,827
	New Castle County	16,195,649	6,841	58,534	3,352	43,663	2,483,404
New Route 25 Bus Service	Hamburg Rd (Tybouts PNR) to Wrangle Hill Rd	15,943	6.88	36.85	5.14	33.96	1,869
	River Rd to Clinton St	15,579	6.72	36.00	5.02	32.86	1,827
	New Castle County	16,183,773	6,834	58,480	3,349	43,633.21	2,479,661
Project VMT/Emissions Reduction		166 (0.52%)	.39 (2.76%)	2.07 (2.76%)	.29 (2.76%)	7.26 (9.8%)	19.7 (0.53%)
County VMT/Emissions Reduction		11,876 (0.07%)	7.6 (0.11%)	54.03 (0.09%)	3.01 (0.09%)	29.54 (0.07%)	3743 (0.15%)

A reduction in VMT and emissions was observed from the results of the modeling. These reductions are tabulated below and summarized as follows:

- A daily VMT reduction of 119 was observed for both sections of roadway. This represents a 0.5% reduction in VMT by extending the bus service.
- An annual NO_x reduction of 0.39 tons was observed, which accounts for a 2.8% reduction.
- CO was reduced by 2.07 tons and VOC by 0.29 tons, both indicating a 2.8% reduction from existing conditions.
- Particulates (PM_{2.5}) were reduced by 9.8%, an annual reduction of 0.02 tons was observed.
- CO₂ emissions were reduced by 19.7 tons, a reduction of 0.5 % annually.

Thank You !