

# BURLINGTON COUNTY DEPARTMENT OF PUBLIC WORKS DIVISION OF ENGINEERING

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# THE PENNSYLVANIA STATE UNIVERSITY

**25<sup>th</sup> ANNUAL**

**TRAFFIC ENGINEERING and SAFETY CONFERENCE**

**UNIVERSITY PARK, PENNSYLVANIA**

**THURSDAY DECEMBER 12, 2019**



**PennState**  
College of Engineering

# BURLINGTON COUNTY, NEW JERSEY



THE COUNTIES OF THE DELAWARE VALLEY REGIONAL PLANNING COMMISSION



# NEW TYPES OF WAREHOUSES: THE COUNTY ENGINEER'S PERSPECTIVE

# E COMMERCE WAREHOUSING

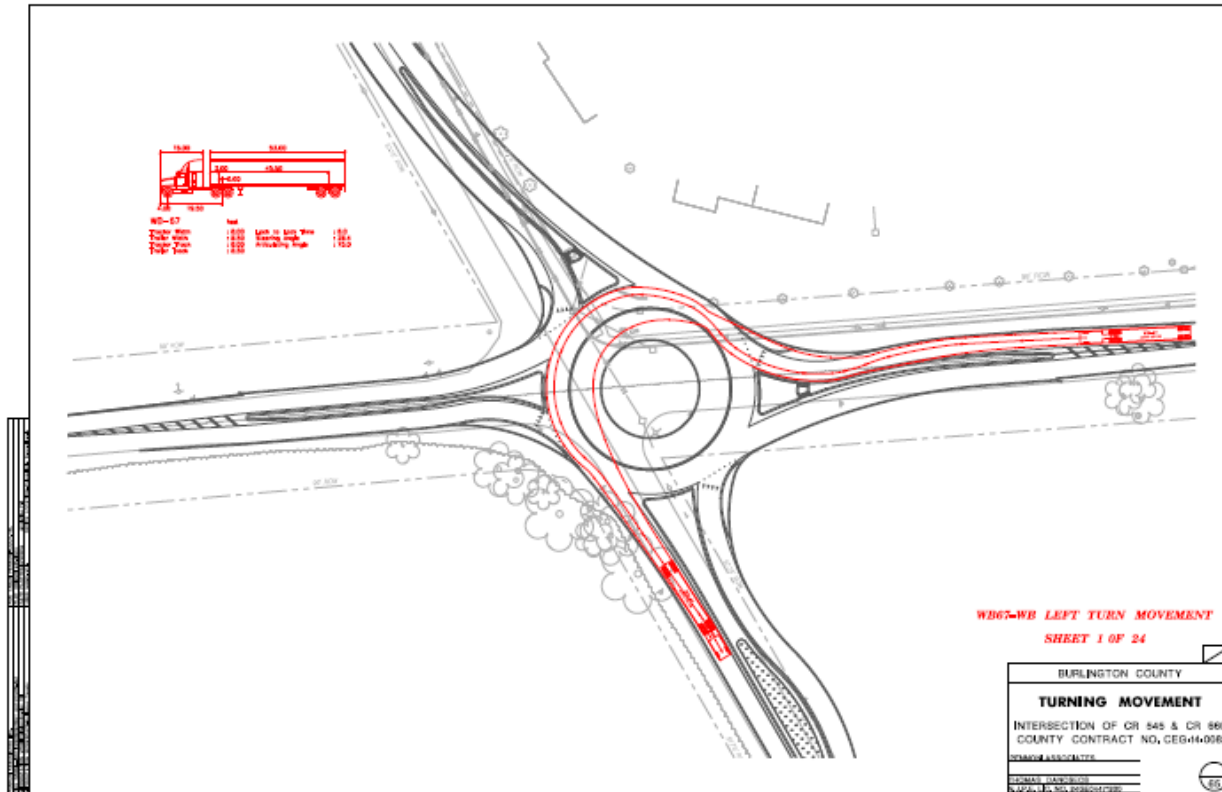
- ▶ LARGER THAN 500,000 SF
- ▶ OFTEN DESIGNED WITH INBOUND AND OUTBOUND LOADING DOCKS
- ▶ PARKING OFTEN 200% MORE THAN MUNICIPAL REQUIREMENTS
- ▶ BANKED PARKING PROPOSED FOR FUTURE GROWTH
- ▶ IMPACTS TO BOTH OFF-PEAK AND PEAK HOUR TRAFFIC

# EXAMPLE

- ▶ +634,000 SQUARE FEET WAREHOUSE WITH DOUBLE SIDED LOADING DOCKS
- ▶ 114 LOADING BAYS AND 176 TRACTOR TRAILER PARKING SPACES
- ▶ 294 PARKING SPACES PLUS 211 “BANKED” SPACES
- ▶ ITE LU 150                      ITE NEW TRIPS
- ▶ AM PEAK                              91 IN AND 49 OUT                      TOTAL 140
- ▶ PM PEAK                              36 IN AND 116 OUT                      TOTAL 152
- ▶ SATURDAY PEAK                      20 IN AND 12 OUT                      TOTAL 32
- ▶ 332% MORE PARKING PLANNED THAN REQUIRED FOR A SINGLE SHIFT
- ▶ BUILDING 100% OF THE REQUIRED PARKING TO RUN MULTIPLE SHIFTS WITHOUT STOPPING PRODUCTION
- ▶ BANKED PARKING PROVIDES AN ADDITIONAL 70% PARKING CAPACITY ABOVE THE PROPOSED
- ▶ “DESIGNING FOR POSSIBLE MULTIPLE TENNANTS” IS SOLE JUSTIFICATION FOR BANKED PARKING



# DESIGNING FOR E-COMMERCE DEMANDS



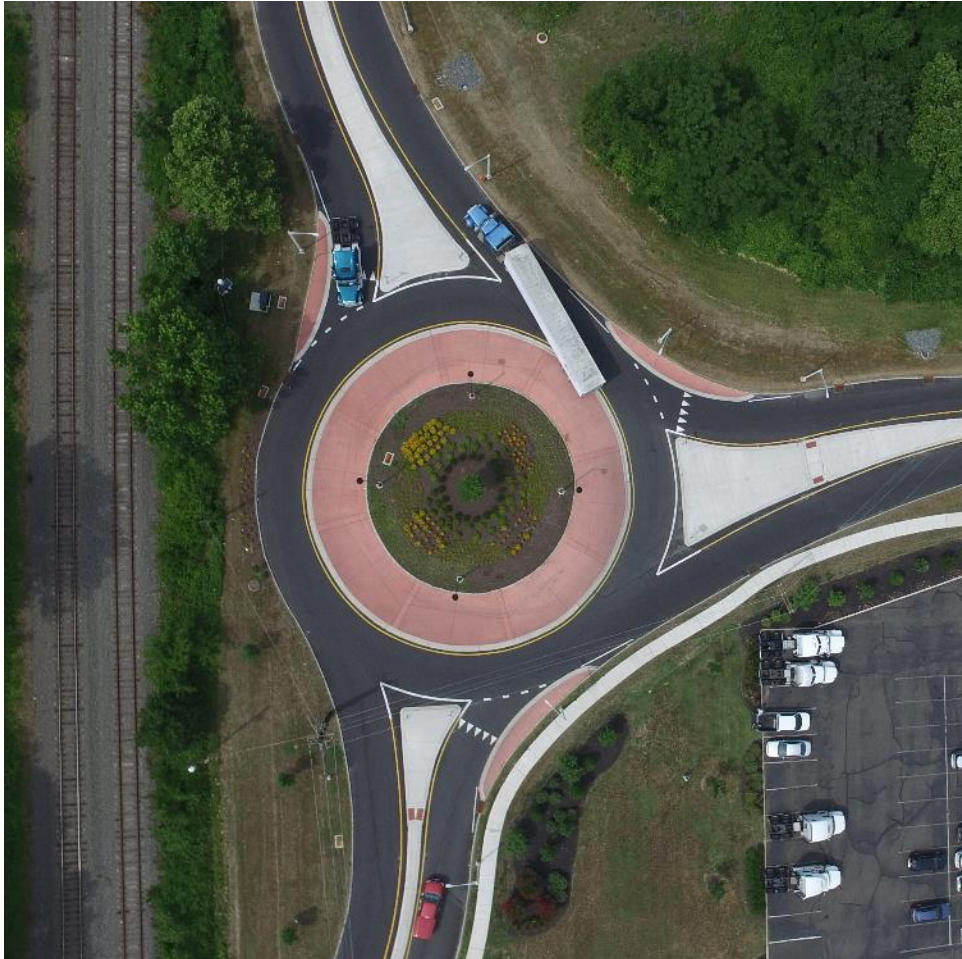
▶ CONVENTIONAL COUNTY INTERSECTIONS NOT DESIGNED FOR INTERSTATE COMMERCE -WB 67 VEHICLES

▶ RETROFITTING INTERSECTIONS NOT ALWAYS PEDESTRIAN FRIENDLY

▶ LARGER VEHICLES MAKE IT DIFFICULT TO IMPLEMENT OR FOLLOW NEW JERSEY'S COMPLETE STREETS POLICY

▶ ROUNDABOUTS OFFER SAFER MORE EFFICIENT ALTERNATIVE

# INCORPORATING ALL MODES OF TRANSPORTATION INTO TODAY'S DEMANDS



**MODERN ROUNDABOUTS  
PERMIT THE EFFICIENT  
FLOW OF TRAFFIC BY  
LARGER VEHICLES IN  
COMMERCIAL AREAS**



## FLORENCE AND BURLINGTON TOWNSHIPS WAREHOUSE DISTRICTS



Local redevelopment of extinct manufacturing and warehousing facilities near the Delaware River





# FREIGHT ROUTES

- ▶ CR 656 (DELAWARE AVENUE / FRONT STREET) -YELLOW ROUTE
- ▶ 30 MPH-RESIDENTIAL AND SMALL BUSINESSES THAT ARE SIGNIFICANTLY IMPACTED BY CONTINUOUS TRUCK TRAFFIC
- ▶ TRUCK TRAFFIC GENERATED BY GOOGLE MAPS DIRECTIONS
- ▶ US RT 130 AND DULTY'S LANE IS A SHORTER AND LESS RESTRICTIVE ROUTE FROM EITHER THE NEW JERSEY TURNPIKE OR I-295
- ▶ LONG TERM SOLUTIONS PROPOSED TO ELIMINATE THIS ROUTE AS A TRUCK ROUTE

# LONG TERM PLANNING SOLUTIONS

- ▶ REGIONAL TRANSPORTATION AND CIRCULATION STUDY / PLANS
- ▶ TRAFFIC MANAGEMENT PLANS FOR EACH SITE
- ▶ DANIELS WAY CONNECTOR ROAD
- ▶ FLORENCE-COLUMBUS ROAD BY-PASS
- ▶ BUSTLETON ROAD ROUNDABOUT
- ▶ DULTY'S LANE IMPROVEMENTS

# NORTHERN US RT 130 TRANSPORTATION AND CIRCULATION STUDY

- ▶ THE STUDY INCLUDED THE FOLLOWING DEVELOPMENT:
- ▶ EXISTING (OPERATIONAL) INDUSTRIAL SPACE - 13 MILLION SF
- ▶ IN VARIOUS STAGES OF DEVELOPMENT - 9 MILLION SF
- ▶ MAXIMUM BUILDOUT USING CURRENT ZONING- 6 MILLION SF
  
- ▶ TOTAL BUILD INDUSTRIAL /WAREHOUSE - 28 MILLION SF



# NORTHERN US RT 130 REGIONAL TRANSPORTATION AND CIRCULATION STUDY

- ▶ COMPREHENSIVE TRAFFIC COUNTS WITHIN THE SCOPE OF THE STUDY
- ▶ INTEGRATED PROJECTED DEVELOPMENT VOLUMES INTO 2040 NO-BUILD CONDITIONS
- ▶ DEVELOPED GROWTH RATES TO 2040
- ▶ MODELED THE ENTIRE REGION USING THE DVRPC REGIONAL MODEL
- ▶ DEVELOPED TRIP GENERATION FOR E COMMERCE WAREHOUSES
- ▶ IDENTIFIED OFF-TRACT TRAFFIC IMPACTS BY APPROVED AND PROPOSED DEVELOPMENTS WITHIN THE REGION
- ▶ IDENTIFIED OFF-TRACT IMPROVEMENTS NECESSARY TO MAINTAIN THE EXISTING QUALITY OF LIFE FOR LOCAL RESIDENTS IMPACTED BY THE NEW DEVELOPMENT
- ▶ CALCULATED OFF TRACT CONTRIBUTIONS FOR EACH DEVELOPMENT
- ▶ STARTED DISCUSSIONS WITH NJDOT TO MOVE THE IDENTIFIED IMPROVEMENTS TOWARDS DESIGN AND CONSTRUCTION
- ▶ GOAL IS TO HAVE CONSTRUCTION COMPLETE IN THREE YEARS

# NORTHERN US RT 130 REGIONAL TRANSPORTATION AND CIRCULATION STUDY

| NO BUILD SCENARIO    | AM   | PEAK   | TRIPS   |       |
|----------------------|------|--------|---------|-------|
| KEY INTERSECTIONS    | BASE | GROWTH | NET NEW | TOTAL |
| US RT 130 @          |      |        |         |       |
| FLORENCE-COLUMBUS RD | 3063 | 246    | 2364    | 5673  |
|                      |      |        |         |       |
| CEDAR LANE           | 2384 | 191    | 1530    | 4105  |
| DULTY'S LANE         | 2226 | 177    | 1164    | 3567  |

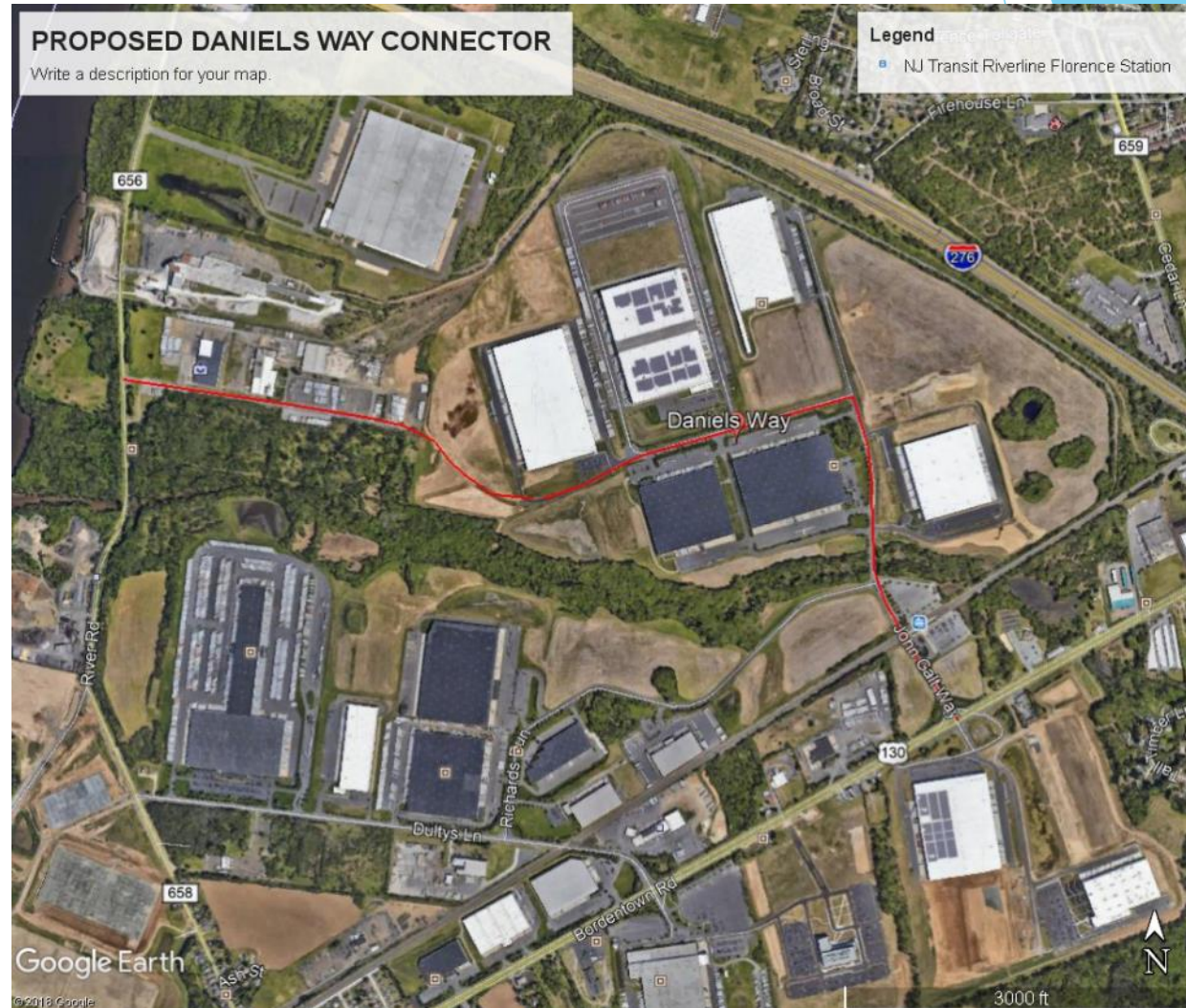
| BUILD SCENARIO         | AM   | PEAK   | TRIPS   |       |
|------------------------|------|--------|---------|-------|
| KEY INTERSECTIONS      | BASE | GROWTH | NET NEW | TOTAL |
| US RT 130 @            |      |        |         |       |
| FLORENCE-COLUMBUS RD   | 2905 | 232    | 2112    | 5249  |
| NJDOT GRADE SEPARATION | 2182 | 175    | 871     | 3228  |
| CEDAR LANE             | 2660 | 213    | 2010    | 4883  |
| DULTY'S LANE           | 2226 | 177    | 1080    | 3483  |

# TRAFFIC MANAGEMENT PLANS (TMP)

- ▶ DEVELOPERS ARE REQUIRED TO PROVIDE A TRAFFIC MANAGEMENT PLAN
- ▶ THE PLAN REQUIRES A RE-EVALUATION OF THE IMPACTS CREATED BY THE SITE IF BUILD CONDITIONS SIGNIFICANTLY DIFFER FROM THE PROJECTED IMPACTS
- ▶ KEEPS DEVELOPERS FROM THROWING UP THEIR HANDS AND PLACING THE BURDEN ON THE TAXPAYERS TO CORRECT
- ▶ INCLUDES A NEW TRAFFIC STUDY AT THE DIRECTION OF THE COUNTY ENGINEER
- ▶ INCLUDES BUT IS NOT LIMITED TO ADDITIONAL ROAD IMPROVEMENTS, FLEXING SHIFT TIMES, SHUTTLE SERVICES, CARPOOLING INCENTIVES.
- ▶ IT REQUIRES THE DEVELOPER TO BE A GOOD NEIGHBOR

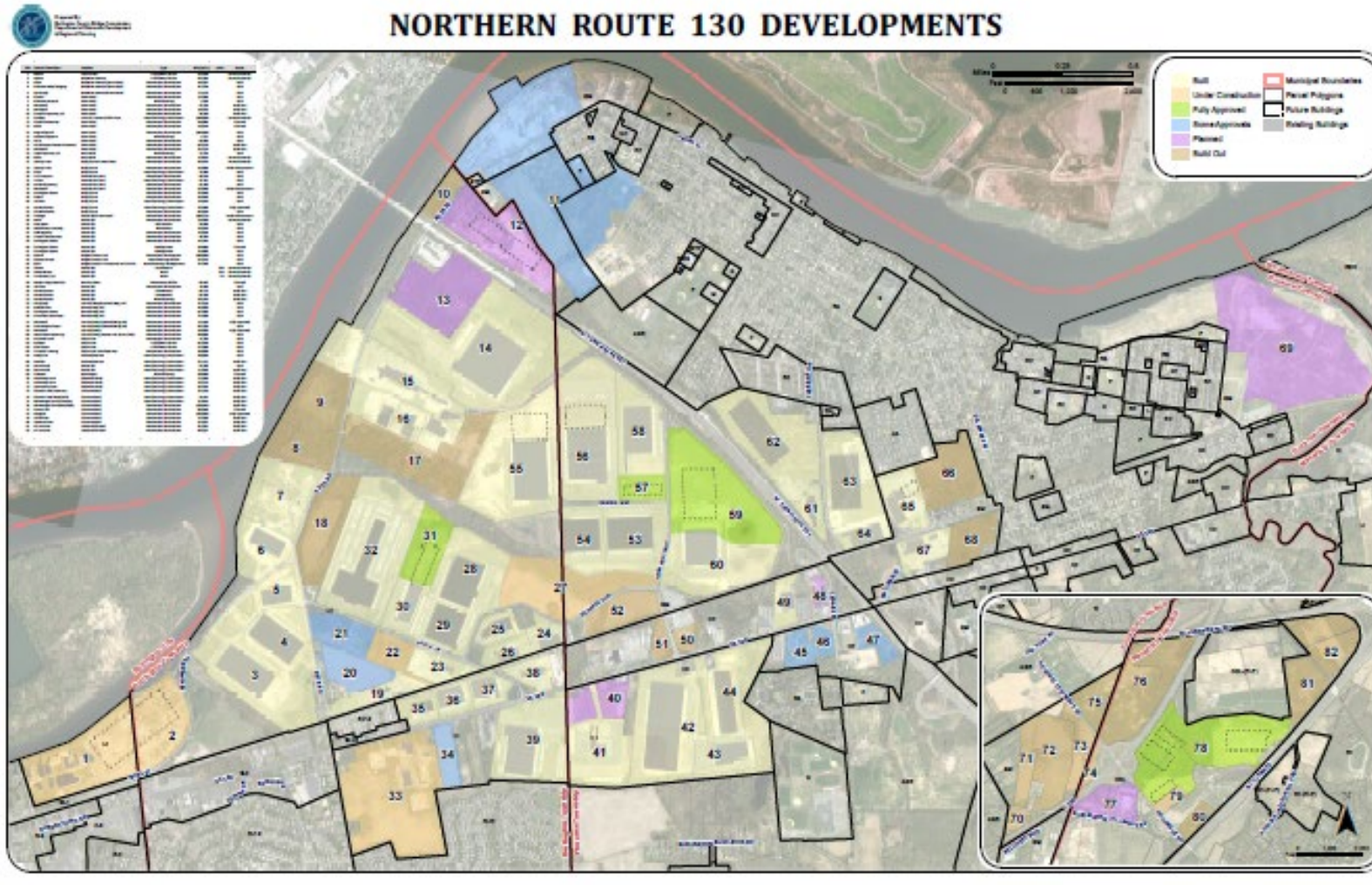
# DANIELS WAY CONNECTOR ROAD

- ▶ CONNECTS THE INDUSTRIAL SECTION OF RIVER ROAD DIRECTLY TO US RT 130 THROUGH THE EXISTING HAINES INDUSTRIAL COMPLEX ROAD NETWORK
- ▶ DIVERTS TRUCK TRAFFIC FROM RESIDENTIAL AREAS
- ▶ WILL INCLUDE A MULTIUSE PATH TO ACCESS THE LIGHT RAIL STATION
- ▶ WILL BE PAID FOR ENTIRELY BY FAIR SHARE CONTRIBUTIONS





# MAP OF NORTHERN 130 DEVELOPMENTS



EXISTING,  
APPROVED  
AND  
PROPOSED  
DEVELOPMENTS



# DANIELS WAY CONNECTOR ROAD BUILD ANALYSIS

CONTRIBUTIONS BASED ON AVERAGE OF AM AND PM PEAK HOUR TRIPS

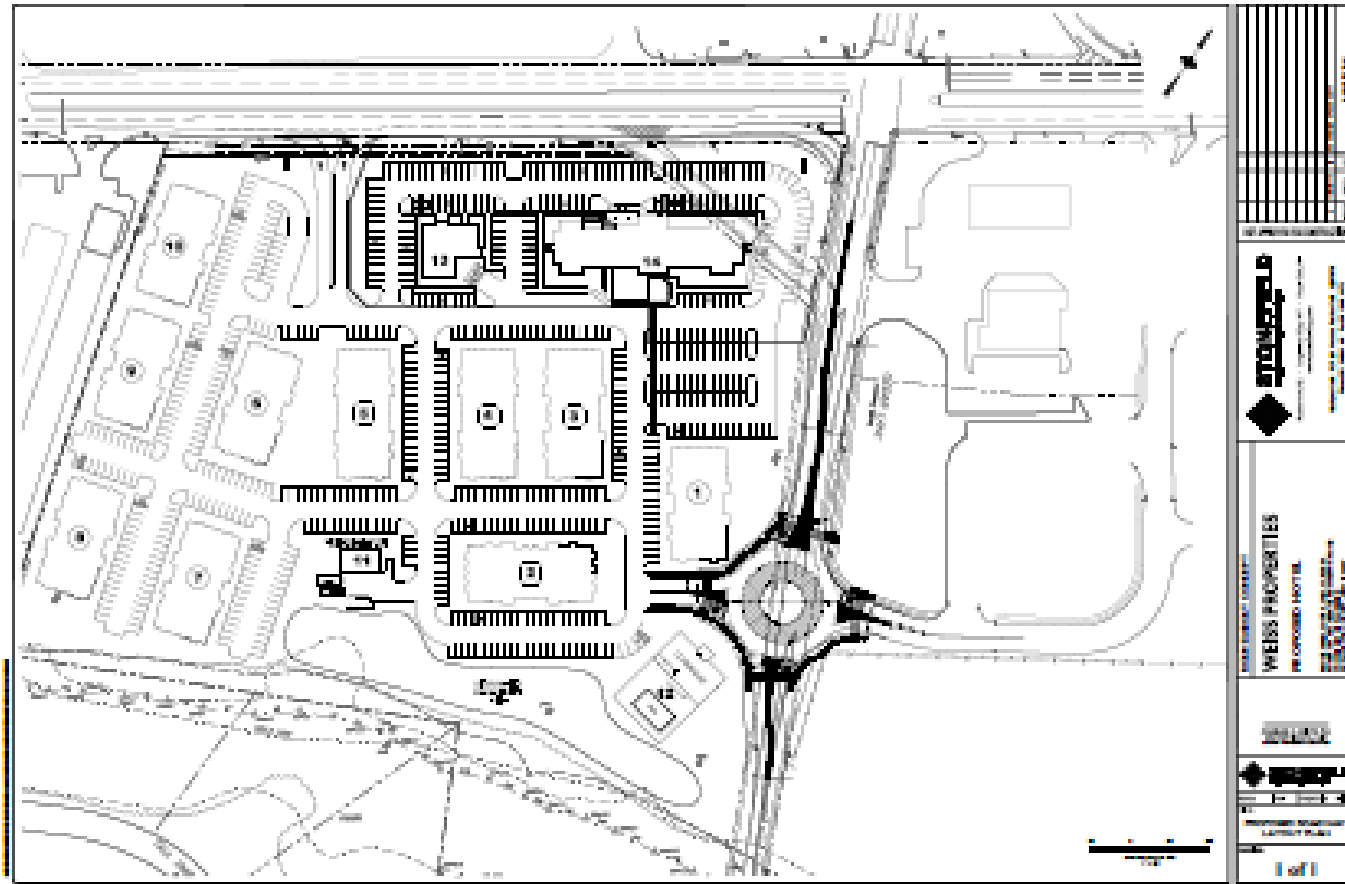
| DEVELOPMENT<br>(MAP LOCATION) | AM<br>PEAK<br>TRIPS | SHARE<br>OF<br>AM TRIPS | PM<br>PEAK<br>TRIPS | SHARE<br>OF<br>PM TRIPS | FAIR SHARE<br>CONTRIBUTION |
|-------------------------------|---------------------|-------------------------|---------------------|-------------------------|----------------------------|
| 9                             | 18                  | 4.9%                    | 4                   | 1.7%                    | 3.3%                       |
| 10                            | 0                   | 0.0%                    | 0                   | 0.0%                    | 0.0%                       |
| 11                            | 129                 | 35.0%                   | 19                  | 8.1%                    | 21.5%                      |
| 12                            | 37                  | 10.0%                   | 10                  | 4.3%                    | 7.1%                       |
| 13                            | 66                  | 17.9%                   | 39                  | 16.6%                   | 17.2%                      |
| 17                            | 118                 | 32.0%                   | 111                 | 47.2%                   | 39.6%                      |
| 18                            | 1                   | 0.3%                    | 52                  | 22.1%                   | 11.2%                      |
| TOTAL                         | 369                 | 100.0%                  | 235                 | 100.0%                  | 100.0%                     |

# FLORENCE COLUMBUS ROAD BY-PASS



- ▶ DIRECTS TRUCK TRAFFIC FROM I-295 DIRECTLY TO THE WAREHOUSES
- ▶ PROVIDES AN ALTERNATE ROUTE AWAY FROM RESIDENTIAL NEIGHBORHOODS
- ▶ IMPROVES CONNECTIVITY BETWEEN I-295 AND THE NEW JERSEY TURNPIKE INTERCHANGE 6A
- ▶ IMPROVES THE OPERATION OF THE ADJACENT SIGNALIZED INTERSECTIONS
- ▶ REQUIRES PUBLIC-PRIVATE PARTNERSHIP

# CEDAR LANE IMPROVEMENTS



- ▶ ELIMINATES FUNCTIONALLY OBSOLETE NEARSIDE JUG HANDLE
- ▶ INTRODUCES A MODERN ROUNDABOUT TO PROVIDE ACCESS TO NEW MULTIUSE DEVELOPMENT AND WAWA MARKET WHILE PROVIDING A LEFT TURN AND U TURN FACILITY FOR NORTHBOUND US RT 130





# DULTY'S LANE AND NECK ROAD

- ▶ REALIGNMENT OR ROUNDABOUT?
- ▶ REDIRECTING TRUCKS
- ▶ GOOGLE MAPS
- ▶ ROAD SWAP
- ▶ INTERSECTION IMPROVEMENTS AT US RT 130 AND DULTYS LANE





# SUMMARY OF STUDIES AND PLANS - LONG TERM MITIGATION

## THE NORTHERN US RT 130 TRANSPORTATION AND CIRCULATION STUDY

ANALYZED 28 MILLION SF OF EXISTING, PROPOSED AND FUTURE LAND USE DEVELOPMENT BASED ON CURRENT ZONING REQUIREMENTS

ANALYSIS OF FUTURE IMPACTS TO THE TRANSPORTATION INFRASTRUCTURE (STATE AND COUNTY) TO THE YEAR 2040

- NO BUILD SCENARIO INCLUDED WITH NO ROAD IMPROVEMENTS THROUGH 2040
- BUILD SCENARIO INCLUDED PROPOSED OR CONCEPTUAL ROAD IMPROVEMENTS NEEDED TO OFFSET PROJECTED IMPACTS BY FULL BUILD OUT

BUILD SCENARIO USED AS THE BASIS FOR IDENTIFYING REQUIRED OFF TRACT TRANSPORTATION IMPROVEMENTS AND DEVELOPERS' FAIR SHARE CONTRIBUTIONS

DEVELOPED AND ASSIGNED E COMMERCE TRIP GENERATION RATES FOR APPROVED AND PROPOSED WAREHOUSES GREATER THAN 500,000 SF OR WITH SIGNIFICANTLY MORE PROPOSED PARKING THAN REQUIRED BY MUNICIPAL CODE

## SUMMARY OF STUDIES AND PLANS - LONG TERM MITIGATION

- ▶ **THE STUDY IDENTIFIED THAT THE IMPACTS CREATED BY THE POTENTIAL 28 MILLION SF DEVELOPMENTS ALONG THE NORTHERN 130 CORRIDOR ARE FURTHER EXACERBATED BY THE ABSENCE OF A DIRECT CONNECTION BETWEEN THE NEW JERSEY TURNPIKE AND I-295 AS US RT 130 AND FLORENCE-COLUMBUS ROAD PROVIDE THE DELAWARE VALLEY CONNECTION FOR INTERSTATE TRAVEL**

# RECENT BURLINGTON COUNTY STUDIES

DVRPC (DELAWARE VALLEY REGIONAL PLANNING COMMISSION)

NJ INTERCHANGE 6A FREIGHT ACCESS STUDY, APRIL 2016

BURLINGTON COUNTY HIGHWAY MASTER PLAN , JUNE 2019

▶ BCBC (BURLINGTON COUNTY BRIDGE COMMISSION)

NORTHERN ROUTE 130 STUDY, DECEMBER 2019 (TENTATIVE)

BURLINGTON COUNTY / RIVER ROUTE CORRIDOR STUDY 2018

THANK YOU

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