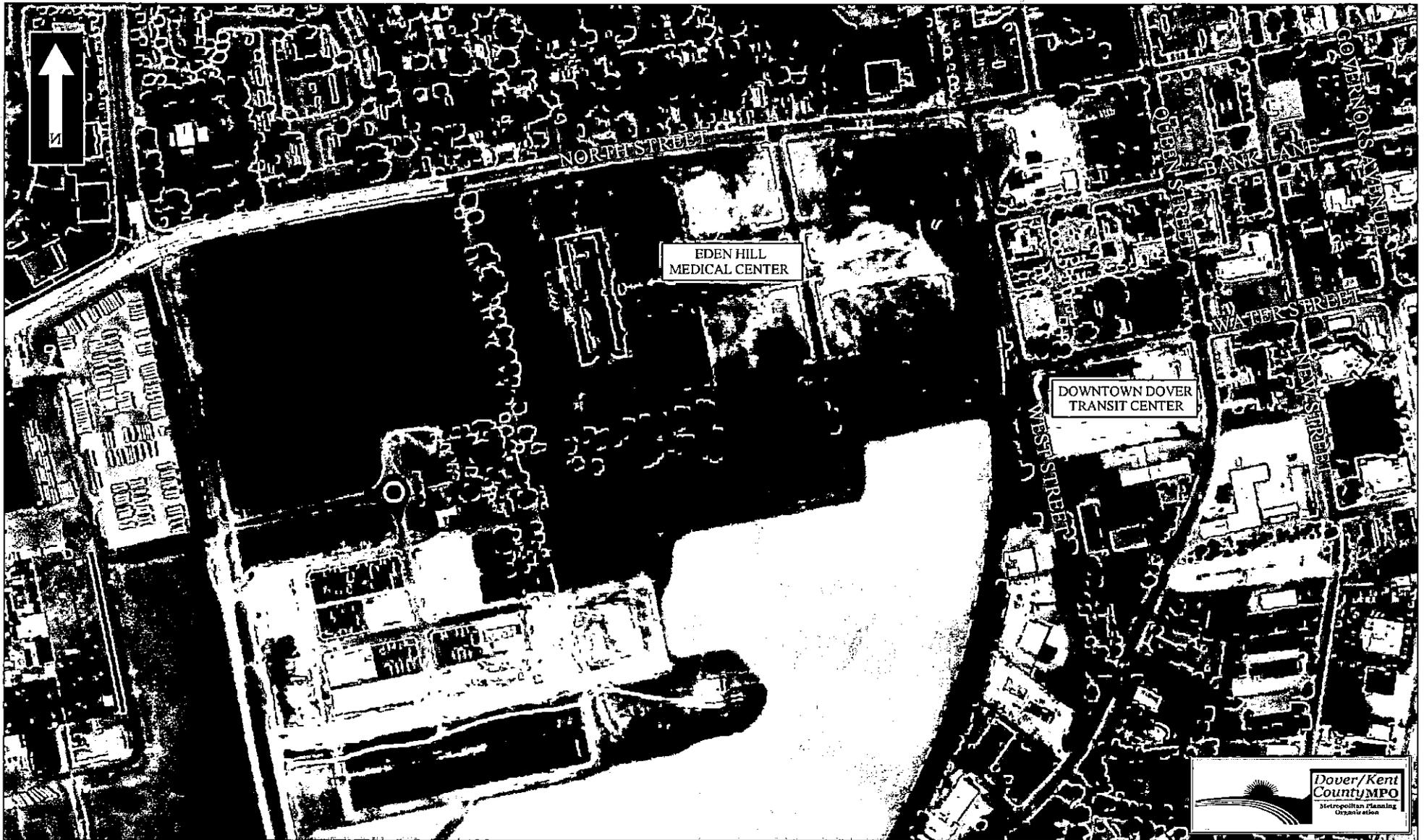


# West Street Traffic Study





The Dover/Kent County Metropolitan Planning Organization and Rummel, Klepper & Kahl, LLP

**TRAFFIC ENGINEERING SERVICES**

**Introduction**

South West Street is a two lane roadway connecting North Street, Water Street and Queen Street in downtown Dover, Delaware. The Dover/Kent County Metropolitan Planning Organization (MPO) requested that Rummel, Klepper & Kahl, LLP (RK&K) evaluate the traffic impacts of converting a section of S. West Street into a one-way street between North Street and Queen Street. This agreement outlines the scope of services that RK&K will perform in response to this request.

S. West Street intersects North Street as a T-intersection. Norfolk Southern Railroad in the area, running parallel to S. West Street between North Street and Water Street, crosses the eastbound approach of this intersection. The location of the railroad tracks, combined with sight distance issues currently creates a conflict between eastbound through traffic and northbound left turning traffic at this unsignalized intersection.

The Dover/Kent County MPO and the City of Dover, along with DelDOT have been working on creating bicycle and pedestrian friendly facilities in the City of Dover. There is an existing bike/pedestrian trail along the south side of North Street that ends just west of S. West Street. The Dover/Kent County MPO is considering extending this bike/pedestrian trail to access the Dover Transit Center located at the southeast corner of S. West Street and Water Street.

In order to address the above safety, pedestrian and bicycle issues along S. West Street, The Dover/Kent County MPO requested that RK&K prepare this proposal for conducting the necessary peak hour traffic counts at key intersections, and develop a traffic model to evaluate the traffic impacts of converting S. West Street into a one-way street.

**RK&K'S SCOPE OF SERVICES**

**Task 1 – Data Collection**

***Turning Movement Counts***

Under this task, RK&K will conduct AM and PM peak hour turning movement counts at the following locations:

- Intersection of North Street at S. West Street
- Intersection of North Street at Queen Street
- Intersection of Queen Street at Bank Lane
- Intersection of Queen Street at Water Street
- Intersection of Queen Street at S. West Street
- Intersection of S. West Street at Water Street
- Intersection of North Street at New Street and
- Entrance to The Dover Transit Center's Park & Ride on Water Street
- Intersection of Banning Street at North Street



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Traffic data will only be collected on Tuesdays, Wednesdays or Thursdays when schools are in session, and during fair weather conditions. The traffic counts will summarize vehicular, bicycle and pedestrian volumes in 15-minute increments. Heavy vehicles will not be tabulated separately. In addition to the turning movement counts, existing field data measurements, queue lengths, and other general traffic characteristics in the project area will be observed and recorded. The counts collected in the field will then be tabulated in a spreadsheet for input into the SYNCHRO Model.

***Tube Counts***

RK&K will collect 24 – hour tube counts at two locations along S. West Street. The tubes will be installed on S. West Street between North Street and Water Street, and between Water Street and Queen Street adjacent to the Dover Transit Center.

***293 S. Saulsbury Road (Royal Farms) – Traffic Analysis Report***

A Traffic Impact Study was conducted in support of a proposed land development located at the northeast corner of the intersection of North Street at Saulsbury Road. A Traffic Analysis Report was submitted to DelDOT in July 2011 to determine the impacts of additional traffic generated by the construction of a new Gas Station with a Convenience Store, and a Drive-in Branch Bank on the surrounding roadways. As part of the Traffic Analysis Report, a manual Turning Movement Count was conducted at the intersection of Saulsbury Road at North Street. Additional turn lanes are also proposed along Saulsbury Road and North Street to access the new development. RK&K will incorporate the turning movement count data and information regarding the proposed turn lanes into the SYNCHRO Traffic model. RK&K will also check local development and traffic data to determine if the 2011 volumes need to be adjusted to reflect the historic traffic growth rates in the area.

***West Dover Connector Traffic Data***

DelDOT is currently working on finalizing the Environmental Documentation for a proposed roadway connection called the West Dover Connector that would connect Saulsbury Road and US 13. According to the project website, construction for this project is anticipated to start in Fall/Winter 2014 with an anticipated duration of approximately 30 months. It is anticipated that the construction of this project would divert a portion of traffic from West Street to the West Dover Connector. RK&K will coordinate with DelDOT to obtain traffic information from this project, specifically and estimated detour volumes that are projected to use S. West Street during construction, and will incorporate this information into the SYNCHRO Traffic model to study the effect of the one-way conversion during the West Dover Connector construction.

***Dover Transit Center and Delaware Authority for Regional Transit (DART)***

The Dover Transit Center is located at the intersection of Water Street and S. West Street. According to the Transit Maps shown on DART’s website for the Central Dover area, the portion of S. West Street in the project area is currently utilized by buses on two routes (113 and 103). RK&K will coordinate with

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DART and The Dover Transit Center to determine and document the impacts of diverting these buses onto Queen Street.

**Task 2 – Model Calibration and Traffic Forecasting:**

RK&K will contact DelDOT and/or City of Dover to obtain signal timing information for the traffic signals in the corridor for use with the SYNCHRO Model.

During peak hours, RK&K will observe and record the existing queue lengths on West Street and other main roadways in the study area. The SYNCHRO/SimTraffic model depicting existing conditions will be calibrated to realistically depict the queuing issues in the study area.

For all proposed scenarios mentioned in the section below, RK&K will develop travel forecasts to estimate how traffic will be redistributed under proposed conditions. The redistribution of traffic onto the local street network will be a manual process, based on a “worst case” condition for Queen Street. In other words, all diverted traffic will be assigned to use Queen Street, the parallel alternative to S. West Street.

***Eden Hill Farm Development***

The Eden Hill Farm Development is located at the southwest corner of North Street and West Street. This 265 acre farm is currently being developed to incorporate a mix of commercial, employment and residential uses. The recently published 2008 Comprehensive Plan Update (dated August 2012) documents the City of Dover’s commitment to the Eden Hill Farm Master Plan. The intersections of Banning Street at North Street, and Saulsbury Road (extension) at North Street serve as the main access points to Eden Hill Farm. A TIS Study has not been developed for the Eden Hill Farm Development. Therefore, RK&K will develop planning-level trip generation and distribution estimates based on existing traffic patterns and the proposed land use for the Eden Hill Farm. The additional traffic generated by the Eden Hill Farm Development will then be incorporated into the future traffic volume networks (see Task 3).

**Task 3 – Analysis**

***Crash Data Analysis***

The Dover/Kent County MPO is responsible for obtaining all crash data from DelDOT. RK&K will analyze all existing crash data for the most recent three (3) - year period along the following roadway segments:

- North Street from Saulsbury Road to New Street
- S. West Street from North Street to Queen Street
- Queen Street from North Street to S. West Street
- Water Street from S. West Street to New Street



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RK&K will summarize the crash data and identify notable trends and statistics. A tabular summary of this information will be included in the final Technical Memorandum.

***SYNCHRO/SimTraffic Analysis***

***Existing Conditions:***

RK&K will develop a SYNCHRO/SimTraffic Model depicting existing conditions utilizing the turning movement count data. The model will include the following roadways and intersections:

- North Street
  - North Street and Saulsbury Road
  - North Street and Banning Street
  - North Street and S. West Street
  - North Street and Queen Street
  - North Street and New Street
  
- S. West Street
  - S. West Street and Bank Lane
  - S. West Street and Water Street
  - S. West Street and Queen Street
  
- Queen Street
  - Queen Street and Bank Lane
  - Queen Street and Water Street

***Proposed Conditions:***

RK&K will modify the existing SYNCHRO/SimTraffic Model using the redistributed volumes to depict the traffic conditions for the following proposed conditions:

- Convert S. West Street into a one-way street from North Street to Water Street before construction of the West Dover connector.
- Convert S. West Street into a one-way street from North Street to Water Street after construction of the West Dover connector.
- Convert S. West Street into a one-way street from North Street to Queen Street before construction of the West Dover connector.
- Convert S. West Street into a one-way street from North Street to Queen Street after construction of the West Dover connector.

**Task 4 - Documentation**

RK&K will develop a Technical Memorandum summarizing the data collection, safety analysis, traffic forecasting process, potential economic impacts and traffic impacts associated with each proposed



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modification scenario (see above) to S.West Street. The memorandum will also include recommendations to address any safety and sight distance issues identified within the Study area. One copy of the Final Technical Memorandum will be submitted to the Dover/Kent County MPO. The Technical Memorandum will also be submitted on a CD.

**Task 5 - Meetings**

Once the draft SYNCHRO/SimTraffic Models are developed, RK&K will meet with The Dover/Kent County MPO to discuss the results and answer any questions. RK&K will then meet with The Dover/Kent County MPO, City of Dover and DelDOT to discuss the results from the SYNCHRO/SimTraffic models, the potential economic and traffic impacts caused by converting S.West Street to a one-way street, and seek input on a preferred alternative.

RK&K will record notes of both meetings and distribute them to the participants.

**Project Assumptions**

- Turning movement counts will be managed and led by RK&K staff, with the assistance of three additional staff members from The Dover/Kent County MPO.
- For the intersection of North Street at Saulsbury Road, RK&K will use the turning movement count information included in the Traffic Analysis Report (July 2011) obtained from DelDOT.
- The Dover/Kent County MPO is responsible for obtaining all crash data from DelDOT.
- The Dover/Kent County MPO is responsible for providing RK&K with land use information for Eden Hill Farm Development.
- Traffic growth in the area under proposed conditions will be consistent with growth values assumed by DelDOT for the West Dover connector. In the absence of such data, an annual growth factor (percentage) will be determined based on historic growth trends in the study area, upon concurrence with The Dover/Kent County MPO.
- In order to evaluate the “worst case” scenario, under proposed conditions, it is assumed that all traffic on West Street will divert to Queen Street.
- All SYNCHRO/SimTraffic Models assume that the TE project at the intersection of S. West Street and North Street, which includes construction to prohibit westbound left turns from North Street, is complete.