



# Dover / Kent County - Metropolitan Planning Organization Rail / Freight Zoning Study:

An assessment of municipal comprehensive plans & future land uses for rail freight related manufacturing/employment centers in Kent County, Delaware.

TRANSPORTATION PLANNING FOR TOMORROW

*An assessment of municipal comprehensive plans and future land uses for rail freight related manufacturing/employment centers in Kent County, Delaware*

By Reed Macmillan, Mike Ward, and Catherine Samardza  
Dover / Kent County Metropolitan Planning Organization

## **DOVER/KENT COUNTY METROPOLITAN PLANNING ORGANIZATION RAIL ZONING STUDY:**

An assessment of municipal comprehensive plans and future land uses for rail freight related manufacturing/employment centers in Kent County, Delaware

November 2018

*Written by*

**Reed Macmillan**

Executive Director, D/KC MPO

**Mike Ward**

GIS Planner, D/KC MPO

**Catherine Samardza**

Executive Assistant, D/KC MPO

*Published by*

Dover/Kent County MPO

1783 Friends Way

Camden, Delaware 19934

[www.doverkentmpo.org](http://www.doverkentmpo.org)

*Funded by*

Federal Highway Administration (FHWA)

Federal Transit Administration (FTA)

The Delaware Department of Transportation (DelDOT)

*The preparation of this document was financed by the 2019 Unified Planning Work Program of the Dover Kent County MPO, which is funded by the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), and the Delaware Department of Transportation (DelDOT).*

*The report reflects the views of the authors, who are responsible for the facts and accuracy of the research. The contents do not necessarily reflect the official view of FHWA, FTA, or DelDOT.*

*Cover photo courtesy of Cliff Grunstra, Carload Express*

## Preface

As the executive director for the Dover/Kent County Metropolitan Planning Organization, I am pleased to provide this publication, *DOVER/KENT COUNTY METROPOLITAN PLANNING ORGANIZATION RAIL ZONING STUDY: An assessment of municipal comprehensive plans and future land uses for rail freight related manufacturing/employment centers in Kent County, Delaware*. Funded by FHWA, FTA, and DelDOT, this resource is intended to show the importance between local government comprehensive plans and how these documents can support state and regional rail freight plan goals and objects, better coordination between local, state, and rail operators land use decisions, and attract rail freight related manufacturing/employment centers to Kent County, Delaware.

Land use decisions are made at the local government level while a majority of existing rail freight plans are made at the state level. The D/KC MPO is responsible to ensure existing and future transportation projects are continuing, cooperative, and comprehensive and as such, appreciates continued support from FHWA, FTA, DelDOT, and our local MPO partners in order to ensure transportation policy information is shared. I am pleased to acknowledge the following individuals efforts made on this project:

### **City of Dover**

- Dave Hugg, AICP, Director of Planning and Community Development

### **City of Harrington**

- Jeremy Rothwell, Planner

### **City of Milford**

- Rob Pierce, Planner and D/KC MPO TAC member

### **Delaware Department of Transportation**

- Nathan Attard, Transportation Planner and D/KC MPO TAC member

### **Delaware Office of State Planning Coordination**

- David L. Edgell, AICP, Principal Planner and D/KC MPO TAC Vice Chairman

### **Delmarva Central Railroad, Carload Express**

- Cliff Grunstra, Chief Marketing Officer and D/KC MPO TAC member

### **Kent County**

- Kris Connelly, Assistant Planning Director and D/KC MPO TAC Chairman

# **DOVER/KENT COUNTY METROPOLITAN PLANNING ORGANIZATION**

## **RAIL ZONING STUDY**

### **I. Executive Summary**

### **II. Purpose of Study**

#### **a. Background**

#### **b. Scope of Study**

### **III. Plan(s) Review & Results**

#### **a. Applicable Municipal Comprehensive Plan Summaries**

#### **b. Other Applicable Plans**

##### **1. Delmarva Freight Plan**

##### **2. Delaware State Rail Plan**

##### **3. Industrial Zoned Parcel Rezoning Activity**

##### **4. Subdivision Development Plan Activity**

### **IV. Future Comprehensive Plan Initiatives**

### **V. Recommendations**

### **VI. Conclusion**

### **VII. References**

## Executive Summary

There are several State of Delaware and regional (Delmarva Peninsula) rail freight-related plans highlighting federal and state goals and objectives to be considered in overall transportation planning policy. These state and regional plans detail the goals, objectives, and strategies that help guide the Delaware Department of Transportation (DelDOT), stakeholders, and the public with rail freight policies and capital investments. Although many of these plans embrace a multi-state/multi-jurisdictional and multi-modal freight planning perspective (DelDOT, 2015, pp.5), there appears to be a void regarding Kent County and municipal initiatives that would support the various State and regional freight plans. Comprehensive planning may help fill in this void and therefore comprehensive plans were used as a gauge to ascertain municipal and County inclusion of State and regional rail freight goals and objects. Assessments regarding rail freight information within comprehensive plans was used as a primary research tool for the Rail Zoning Study.

The Dover/Kent County Metropolitan Planning Organization (D/KC MPO) Rail Zoning Study summarizes 13 municipal and Kent County's current State-certified Comprehensive Plans regarding future uses for rail freight through the use of an interactive web map. There are five basic questions this study evaluates:

1. How do municipalities and Kent County address rail freight systems within their comprehensive plans?
2. What is the rezoning trend regarding industrially zoned parcels adjacent to the rail line?
3. What is the residential subdivision activity on parcels adjacent to the rail line?
4. Are there areas within the municipalities or Kent County where large manufacturing or employment centers could leverage rail freight systems by being co-located with current or planned rail lines?
5. What other rail freight studies should be considered for the MPO region?

The Study reviewed 14 future land use maps and compared all parcels immediately adjacent to and part of a one (1) mile buffer radius (1/2 mile on each side of the rail line) along the entire 55-mile short line railroad from Smyrna (see Exhibit A) southward past Farmington and southeastward past Milford in order to identify parcels larger than 6 acres and appropriately zoned where a rail freight-related manufacturing/employment center might be considered. The Rail Zoning Study interactive map was created as a visual means to capture the findings of this Study as well as providing a land use decision tool for Kent County; the 13 applicable municipalities; Federal, State, and local governmental agencies; and all Kent County citizens.

The Study found that rail freight is one element often missed in many of the comprehensive plans reviewed. Without identifying specific rail freight goals, local jurisdictions may often overlook the importance of freight in their communities, and may not carry out an adequate review of where freight facilities are located or planned (Envision Freight, 2011, pp.1). Likewise, without detailed rail freight elements within comprehensive plans, rail operators such as the Delmarva Central Railroad get concerned about adjacent parcel down zonings from industrial uses to residential uses that allow large residential subdivisions to be built adjacent to the rail line, creating a safety and noise concern. Moreover, the Study found that many of the 14 comprehensive plans did not mention a linkage regarding rail uses and State plans such as the 2015 Delmarva Freight Plan and 2011 Delaware State Rail Plan. Acknowledgement of these two State plans and providing implementation measures at the local jurisdictional level may assist Delaware in attaining the multiple goals and objectives listed in both plans.

Lastly, the Study outlines five (5) recommendations that may help support existing Federal, State and Regional freight plan goals and objectives; link local transportation initiatives articulated in comprehensive plans with available Federal

and State transportation funding (Envision Freight, 2011, pp. 2); and identify future economic initiatives requiring additional studies. Comprehensive plans can help initiate the required proactive planning efforts required to identify appropriate future land use areas necessary for potential rail freight-related manufacturing/employment centers. These future centers can leverage multi-modal systems (highway and rail), provide another economic development attribute for potential manufacturing and distribution employers, and create additional employment opportunities for the future of Kent County, Delaware.

## Purpose of Study

As described in the Executive Summary, there were five basic questions evaluated in this Study. The "Background and Scope of Work" section provides information regarding how these five questions were developed. The "Plan Review/Results" section explains how the comprehensive plans were reviewed and provides a list of observations that resulted from those reviews. The "Future Initiatives" section provides a list of recommendations resulting from this Rail Zoning Study.

**Background.** On January 3, 2018 the Dover/Kent County Metropolitan Planning Organization (D/KC MPO) sent out a notice to MPO members (State agencies, committee and council members and local municipalities) soliciting recommendations or ideas for Transportation Planning Studies to be included in our FY19 Unified Planning Work Program (UPWP). On January 8, 2018 Mr. Cliff Grunstra (Chief Marketing Officer for Carload Express) and member of the D/KC MPO Technical Advisory Committee (TAC) suggested the D/KC MPO review how state and regional rail freight goals are being included at the local governmental level. There appeared to be limited information regarding local land use activities regarding railroad rights of way, industrial/economic development to attract new rail related business and industry, and rezoning activity from industrial to residential uses adjacent to the railroad which might impact future rail freight opportunities. On July 23, 2018 the D/KC reviewed the Rail Zoning transportation study idea to ascertain the possibility of the D/KC MPO staff conducting the Rail Zoning Study rather than contracting out to consulting firms. As a result, the scope of work was developed on July 25, 2018.

**Scope of Work.** The Dover/Kent County Metropolitan Planning Organization (D/KC MPO) conducted a Zoning Map study regarding all parcels of land adjacent to the railroad lines in Kent County, Delaware. The purpose of the study is to create an inventory of properties with appropriate zoning suitable as future commercial, manufacturing, or industrial sites where Cargo Oriented Development (COD) could occur and which would promote and support economic growth that relies on freight rail transportation networks and facilities by maximizing access to freight terminals and nodes. The study was conducted by D/KC MPO staff, who provided the following:

- A map depicting (to include but not limited to) all undeveloped/vacant, commercial, and industrial parcels having at least 500' of direct railroad frontage and having a width at least 200'; a one-mile boundary study area (1/2 mile each side of the rail line) along the entire active rail line in Kent County; and parcels **at least 6 acres in size** on both sides of the track in Kent County (to include municipalities); current and proposed commercial, manufacturing, or industrial zoning (**Note:** A freight rail operator indicated parcels with minimum of 500 ft along rail might be a good starting point with a calculation  $500 \times 500 = 250,000$  sq ft. divided by  $43,560 = 5.7$  acres, rounded to 6 acres was an acreage attribute in the parcel GIS file easily searchable);
- Applicable State, County, and Municipal Comprehensive Plan language regarding Rail Freight future use; and
- Recommendations (to include future Rail Freight studies; multi-modal mobility hubs; etc...).

The current operator of the rail line in Kent County is the Delmarva Central Railroad (DCR), a subsidiary of Carload Express Incorporated (CEI); by formal agreement, the rail line operator is also a member of the D/KC MPO TAC. Mr. Cliff Grunstra noted that there did not appear to be a County-wide study that addressed future land uses and freight rail transportation in Kent County, Delaware, and suggested that such a study be done. The proposed study reviewed future land uses within required municipal and County comprehensive plans to assess how local governments incorporated state and regional rail freight goals and transportation.

As part of the scope of work, the D/KC MPO GIS Planner Mike Ward created an **interactive map** (see Exhibit A) which illustrates the study area within Kent County, Delaware and the location of the County in relation to its regional proximity to Maryland and New Jersey. As you scroll through the web page, the comprehensive plans will be seen on the left side of the screen beginning with the northern most municipality (Town of Smyrna) and progresses southward through each subsequent municipality along the rail line and concludes with the southeastern-most municipality (City of Milford), encompassing 13 municipalities. Kent County was evaluated as well, since the rail line traverses through unincorporated areas between municipalities. A total of 14 Comprehensive Plan Updates were reviewed regarding language in those plans that may provide information on any future land use changes leveraging rail freight-related manufacturing/employment centers.

**NOTE:** According to the *Delmarva Freight Plan*, there is also a railroad line moving southwest from Clayton, just outside Kenton, Hartly, and Marydel into Maryland that is considered inactive (*DelDOT, 2015, pp. ES-12*). For purposes of this Study, this line is not included.

As you scroll through the site, you will be able to see each of the 14 areas in this study. A summary of each State-certified comprehensive plan, as found on the Office of State Planning Coordination Comprehensive Plan web page, will be seen on the left side of the screen to include that municipality's future land use map and any additional maps associated with rail freight-related uses. To use the GIS map, simply click on the "+" button in the lower right screen and click anywhere on the map and move the map image to the location you wish to view in more detail. The "scroll" button on your mouse or arrow buttons on your keyboard will move the comprehensive plan maps and plan review on the left side of the screen, up or down, to the next municipality. As you scroll to the next municipality, you will see the Kent County map remain in place until you click on the map and move it in any direction. The "+" and "-" buttons on the lower left-hand side of the screen will enlarge or reduce the map's size. Lastly, each municipality has a green or boundary line, since many Kent County municipalities are located adjacent to one another and this will help the viewer match the municipal comprehensive plan map with the municipality within the main screen.

The results of this Study are meant to continue the dialog with Federal, State, and Local land use, road, and economic planners; Rail Freight interests; and our citizens regarding how to better leverage rail freight-related manufacturing/employment centers. Some key points to consider:

- Some once-appropriately zoned parcels 6 acres or larger and adjacent to the rail lines have been rezoned over time to residential uses;
- Residential uses adjacent to the rail lines are a safety concern without appropriate setback distances;
- Existing railroad rights of way that are not actively used by the railroad are often vacated and converted for bike and pedestrian pathways; once converted, those areas can no longer be considered for future rail lines; and
- Rail freight-related uses for manufacturing / employment centers appear more plausible and supported in the City of Dover; Harrington; and the City of Milford.

## Exhibit A- 1 mile Railroad Corridor 13 Municipalities and Kent County



Interactive web site: <https://www.arcgis.com/apps/Cascade/index.html?appid=09d5870675ae41d7ad906c400ccfb84a>

## Exhibit B- Future Map Industrial Areas within 1 mile Railroad Corridor



## Plan(s) Review & Results

**Applicable Municipal Comprehensive Plan Summaries.** The Comprehensive Land Use Plan is a document designed to guide the future actions of a community; provides a vision for the future, with long-range goals and objectives for all activities that affect the local government; and includes guidance on how to make decisions on public and private land development proposals, the expenditure of public funds, availability of tax policy (tax incentives), cooperative efforts and issues of pressing concern, such as farmland preservation or the rehabilitation of older neighborhoods areas (Extensions, 2015). In Delaware, comprehensive development plan requirements are codified in Title 22 in the Delaware State Code and require municipalities to review adopted comprehensive plans every 5 years to determine if its provisions are still relevant given changing conditions in the municipality or in the surrounding areas (OSPC, n.d.). Furthermore, the adopted comprehensive plan should be revised, updated and amended as necessary, and readopted at least every 10 years. Although many Kent County municipalities attempt to follow these time criteria regarding their comprehensive plans, limited full time staff and financial resources usually impact when municipalities can update their comprehensive plans. Nonetheless, the Delaware Office of State Planning Coordination (OSPC) does a remarkable job in providing outreach to these municipalities to assist in updating the plans. The OSPC maintains the most current certified comprehensive plans on their website (<https://stateplanning.delaware.gov/lup/comprehensive-plan.shtml>) and this is where the 13 municipal and Kent County Comprehensive Plans were found for this Study.

**NOTE:** *During the time this Study was being conducted (July through October 2018), some of the jurisdictions were updating their comprehensive plans and when possible, updated information was incorporated.*

The main purpose of reviewing these 14 Comprehensive Plans was to ascertain if rail freight-related uses or proposed future uses were being considered by the municipalities and Kent County; identify future land use zoning map changes regarding industrial zoning; and identify potential areas where rail freight-related manufacturing / employment centers might be supported by rail spur lines. The review process was as follows:

- Went to the OSPC Comprehensive Plan web site and used their Comprehensive Plan Database (which again, contains the most currently "certified" comp plan on record) to search for copies of the 14 Comprehensive Plans;
- Selected a municipality where the railroad is also located and opened the applicable comp plan in a PDF format;
- Conducted a word search for "Railroad" to identify specific pages to review;
- Made color copy of future land use map; and
- Made summary notes regarding each comp plan rail freight verbiage and future land use map in an excel spreadsheet related to the comp plan highlighting rail uses, potential rail spur line, and the number of existing parcels 6 acres or larger (minimum size a rail spur line might be considered) zoned industrial, commercial, or manufacturing (*NOTE- these summaries were incorporated into the interactive map*).

Rail freight current and future uses could be included in applicable municipal comprehensive plans in the Land Use, Economic Development, and Transportation Chapters. Although this Study concentrated on municipal and Kent County comprehensive plans where an active rail line is located, it appeared that rail freight was only mentioned in a cursory manner in those plans. Limited rail freight information and land use planning is not new. In his 2015 master's thesis, "Short Line Railroads and Municipal Land Use Planning, Policy, and Regulation" Alexander R. Train highlighted limited rail freight information within many municipal land use planning documents such as comprehensive plans. In fact, Mr. Train indicated that, "50% of the planners surveyed believed current policy pertaining to rail freight to be poor and

insufficient" (Train, 2015, pp. 12) and this finding appears relevant when comparing local municipal comprehensive plans where rail freight lines are operated in Kent County, Delaware. Nonetheless, Kent County and some municipalities are considering all economic development opportunities within their Comprehensive Plans and identifying areas where rail freight might be leveraged.

Appendix 1 provides the summaries for all 14 reviewed comprehensive plans. Each future land use map can also be viewed on the interactive map found on the Dover/Kent County MPO web page (<https://doverkentmpo.delaware.gov/>). After reviewing the comprehensive plans and their future land use maps for this study, the following observations apply:

- **1** comprehensive plan is listed as being expired; **7** are currently being updated; and **6** have been certified;
- **11** comprehensive plans do not highlight rail uses and **3** do highlight rail uses (Clayton; Felton; and Harrington);
- There are 57 parcels 6 acres or larger adjacent the rail line with commercial, manufacturing, or industrial zoning (**34** total from 13 municipalities (incorporated area) (13 in Dover, 8 in Harrington, and 5 in Milford) and **23** total in Kent County (unincorporated area).
- **3** municipalities (Dover; Harrington; and Houston) reference some future land use changes which could leverage rail freight-related manufacturing/employment centers
- Only **1** (Harrington) provided information regarding future investments into freight and passenger rail.
- **None** of the 14 comprehensive plans contained rail freight data and use in their Economic Development Chapters.

A final comment regarding these 14 Comprehensive Plans can be summed up quoting a line from Alexander Trains 2015 Thesis, "in most cases, the railroad's operations and infrastructure are omitted from town plans, with the exception of opportunities for recreational trail conversions" (Train, 2015, pp. 1).

## Other Applicable Plans

There are many railroad-related studies and plans available for review; simply type in "Railroad Studies" in your internet search engine and see the results (approximately 44 million). However, refining your search for railroad studies in Kent County, Delaware provides fewer yet still extensive results (approximately 1.6 million). The point is that this Rail Zoning Study attempted to ascertain how 13 municipalities and Kent County addressed rail freight in their comprehensive plans in comparison to applicable State or Regional rail freight plans. Although there were several other studies addressing passenger rail, such as the "Delmarva Intercity Rail Feasibility Study" completed in December 2013, this Rail Zoning Study primarily focused on freight rail systems. As such, the Delmarva Freight Plan and Delaware State Rail Plan are summarized below as two plans that recommend the importance of local jurisdictional coordination and provide some detail as to the importance of addressing rail freight systems in local land use planning documents such as comprehensive plans.

**Delmarva Freight Plan.** "This plan summarizes current and future freight planning and transportation needs to enhance freight and goods movement and related economic opportunities on the 14-county tri-state area of the Delmarva Peninsula" (DeIDOT, 2015, pp.3). This comprehensive document identifies freight flows and freight issues relevant to local and regional economics, integrates commodity flow modeling and performance-based scenario planning, and provides information for decision-makers on freight infrastructure investments and policy guidance (DeIDOT, 2015, pp.3). The document provides information on regional freight assets such as key highway, rail, port, waterway, air, and pipeline connecting multimodal hubs and freight system assets (DeIDOT, 2015, pp.3). There are a few aspects of this documents which are applicable to this Rail Zoning Study scope of work which are illustrated by the following points:

- Page 134 identifies several rail concerns but the "preservation of short line rail assets and service" is a real issue, as demonstrated by some municipalities wanting to convert rail right of way into bike and walking paths;
- Most Land Use decisions (including adoption of Comprehensive Plans) are made at the local jurisdictional level, and some decisions are void of rail freight considerations (i.e. approve a residential subdivision adjacent the rail line, etc...);
- As described on page 156, there is an interest in preserving the Peninsula's rail networks and increase rail dependent customers to help justify and enhance the local viability of the rail mode;
- As described in Chapter 6, there are planning efforts that leverage some environmental benefits by gaining insights into truck-to-rail mode shift benefits; and
- As described on page 243, recognize the need to provide multi-modal freight hubs linking roadway network with rail, water, air, or pipeline transportation systems.

The points noted above could contribute to an "action plan" that local governments might utilize to consider future land use changes involving rail freight-related manufacturing/employment centers.

**Delaware State Rail Plan (SRP).** This document describes how rail fits into the overall transportation planning process and presents a series of goals, objectives, and strategies for Delaware's passenger and freight rail system (DeIDOT, 2011, pp. 2-1). In addition to providing short histories on the various rail lines in Delaware outlined in Chapter 4, and freight activity by commodity and mode in Chapter 5, the document describes Federal Funding Programs in Chapter 8 that are necessary for a long-range investment program for current and future freight and passenger infrastructure. However, Chapter 3 (SRP Vision, Goals and Objectives) outlines six (6) broad goals for Delaware's rail transportation system as well

as specific objectives with strategies developed to attain those objectives (DelDOT, 2011, pp. 3-2). Interestingly, the following two (of the six) goals are relevant to this Rail Zoning Study:

- Preserve the existing network and provide additional rail capacity to maintain and improve Delaware's important link in regional and national rail networks; and
- Contribute to the decision-making process with local governments and land owners to preserve rail corridors and potential station areas for future investment.

Both goals include multiple objectives and strategies which provide a sound "action plan" when considering future land use changes involving rail freight-related manufacturing/employment centers.

**Industrial Zoned Parcel Rezoning Activity.** The Kent County railroad operator expressed concern regarding industrial zoned parcels adjacent to the railroad being down-zoned into some other zoning classification that would preclude potential rail freight-related manufacturing or employment center development. Rezoning history from the 13 municipalities in this Study were not readily available and therefore not included in this study. However, Kent County industrial rezoning activity for parcels adjacent to the railroad was acquired. Appendix 2 provides a summary of that industrial rezoning activity. Summary points regarding Kent County industrial rezoning activity:

- From 1972 to 2018 there were **31** total Kent County re-zoning applications **adjacent to the railroad** of which **24** were **approved**; **4** were **denied**; and **3** were **withdrawn**;
- **7** of these rezonings were approved for the parcels to be rezoned to an **Industrial** zoning from a **Residential and/or Commercial** zoning (**gain** of Industrial zoned parcels);
- **10** of these rezonings were approved for the parcels to be rezoned to **Residential and/or Commercial** zoning from **Industrial** zoning (**loss** of Industrial zoned parcels);
- From 1972 through 2018 there was a net loss of **3 Industrial zoned parcels** or **18%** (3 more of the "loss" Industrial parcels divided by 17 total (gains plus loss) rezonings) adjacent to the railroad.

*NOTE: Although there are 3 less parcels zoned Industrial, there is a total of **15 additional acres of Industrial zoned land** (238 acres gained vs 223 acres lost) from 1972 through 2018.*

**Subdivision Development Plan Activity.** Most of Kent County's municipalities have evolved over time from an industrial and agricultural past to a bedroom communities. Similar to the industrial rezoning activity, the Kent County railroad operator was concerned about residential subdivision plan activity on properties adjacent to the railroad. This was primarily a safety concern as setback requirements vary between Kent County (unincorporated areas) and municipalities (incorporated areas). Specifically, residential areas adjacent to the railroad lead to significant safety concerns regarding children playing too close to the rail line. A secondary concern was noise issues residential homeowners might experience if their homes were built in close proximity to the railroad. Appendix 3 depicts the 23 residential subdivisions that are adjacent to the railroad. Here are summary points:

- Kent County encompasses approximately 586 square miles or 375,040 acres in size;
- Kent County unincorporated area parcels adjacent to the railroad comprise approximately 7,681.61 acres;
- There are eleven (11) recorded residential subdivisions adjacent to the railroad in the unincorporated area (Kent County) equaling approximately 763 acres;
- Thirteen (13) incorporated municipal parcels adjacent to the railroad equals approximately 1,154.10 acres;

- Eight (8) of the thirteen (13) municipalities have a combined eleven (11) recorded residential subdivisions adjacent to the railroad equaling approximately 534 acres.

## Future Comprehensive Plan Initiatives

As described in the reference section of this study, there are a plethora of National, Regional, and State level Rail Freight studies providing multiple reasons freight systems are important to the federal, state, and local economies. The myriad of studies provide policy vision, objectives, data analysis, use and projection models, and rail freight system investment strategies. However, what do all these studies and plans mean to the local jurisdictions?

As already described in this report, land use decisions are primarily made at the local jurisdictional level. The primary document used to assist the local jurisdiction is their Comprehensive Plan. As this study shows, many times rail freight system considerations are minimally described within most of the 14 Comprehensive Plans reviewed for this study. There could be multiple reasons why substantive rail freight information is not provided within comprehensive plans to include but not limited to:

- Rail freight has been primarily focused at the State and Federal level;
- There are limited financial resources available to thoroughly address rail freight systems with the town/County comprehensive plans; and
- Smart growth principles inadvertently promote non-industrial uses over rail freight-related uses.

Land Use authority is a very emotional topic. As such, the recommendations in this Study **do not recommend** local jurisdictions stop considering rezoning actions involving industrial, manufacturing, or commercially zoned parcels into residential zoning classifications. However, the recommendations and interactive rail zoning study map do provide techniques that may better demonstrate the importance of rail freight systems which could aide in future local land use decisions involving parcels adjacent to rail lines. Preserving properties that could be developed for rail freight use is one consideration that should be reviewed when these important and finite locations are being evaluated for future use. This is exemplified by Alexander Train in his Master's thesis where he writes, "serving a multitude of customers with a variety of freight types (auto, packaged goods, perishables, etc.) in their hauls leads to a positive economic impact through employment, business and industrial activity" (Train, 2015, pp. 18). The merger of rail freight, economic opportunities, and land use initiatives for Kent County, Delaware will require some comprehensive plan modifications in a majority of the 14 comprehensive plans reviewed for this study. However, potential modifications will depend on how those local jurisdictions want to address rail freight operations and how rail freight information is submitted to those local jurisdictions.

As described in Appendix 1 and illustrated in the Rail Zoning Study interactive map, a majority of these 13 municipalities are very small in size with limited appropriated zoned parcels that could handle a rail freight-related manufacturing/employment center. Nonetheless, these smaller municipalities should consider how the rail line impacts or could be impacted by the municipalities' current and future land use plans. The land use and transportation chapters in a comprehensive plan are appropriate areas to address rail systems in general and regarding this report, rail freight systems (Envision Freight, 2011, pp. 1). For the larger municipalities and Kent County which may have appropriately zoned and sized parcels that could support a rail freight-related manufacturing/employment center, the land use, transportation, and economic development chapters in the comprehensive plans are typically ideal for articulating rail freight systems. In fact, there are several factsheets available on line such as the "Envision Freight Fact Sheet: Incorporating Freight into a Comprehensive Plan (2011)" that provide suggestions on how freight modes and facilities should be delineated within comprehensive plans. For those larger jurisdictions with appropriately zoned and sized

parcels that appear suitable for a rail freight-related manufacturing/employment centers, additional research may be required for their comprehensive plans future land use, transportation, and economic development chapters.

Those applicable larger Kent County, Delaware jurisdictions may wish to conduct a cursory search of available reports found online, providing examples of industries and land use needs required to support rail freight-related manufacturing/employment centers. Whether these potential areas are called rail freight-related manufacturing/employment centers; logistics and distribution hubs; industrial and manufacturing hubs; multi-modal warehouse centers; or Freight Villages (CMRPC, 2015, pp. v), the area required varies from 9 acres to 316 acres of land for new facilities depending on employee density (URS, 2009, pp. 6). Acknowledging the potential in their comprehensive plan is a precursor to any rail freight feasibility study or economic development plan. Nonetheless, the comprehensive plans development, public involvement, and approval process is an effective mechanism to ensure that any land use plans created as a consequence of the comprehensive plan effectively consider transportation goals, policies, and projects that are being conducted at the regional and statewide level (Envision Freight, 2011, pp. 2).

## Recommendations

The following recommendations may help support existing Federal, State and Regional freight plan goals and objectives; link local transportation initiatives articulated in comprehensive plans with available Federal and State transportation funding (Envision Freight, 2011, pp. 2); and identify future economic initiatives requiring additional studies.

Nonetheless, these recommendations may assist the 14 jurisdictions in this study regarding local land use decisions and rail freight systems:

1. State and Dover/Kent County MPO provide funding for University of Delaware (UD) Institute for Public Administration (IPA) to write a rail freight specific sub-chapter within each Transportation Chapter applicable to each of the 13 municipalities and Kent County comprehensive plans. Many of these applicable municipalities already use the IPA for various comprehensive plan chapters. This proposed project would contract the IPA to analyze the current and proposed future land uses within those municipalities and Kent County **specific to rail systems** regarding zoning and land use compatibilities adjacent to the existing or proposed rail lines; rail related economic development potential; and identification of potential policies that annotate a local jurisdiction's rail systems priority. The main goal would be to link some of the local rail goals with those listed in State and Regional rail freight plans.
2. Railroad outreach to the 13 municipalities and Kent County. The Kent County railroad operator should meet with the 13 municipal bodies and provide a short presentation regarding the continued importance of rail freight operations throughout Kent County, Delaware. The purpose of these engagement activities would be to also hear from the municipalities their thoughts, concerns, and ideas regarding the railroad operations within their municipal boundaries. This recommendation could be separate or in conjunction with Recommendations #3, and #4.
3. Standard zoning setback minimum from railroad. A recommended residential use or building setback standard for Secondary lines should be considered. This would need to be determined and established by the local jurisdiction and the set-back distance might be further discussed in Comprehensive Plans. For example, some studies recommend setback distances from Secondary Lines of 150 feet (Envision, 2016, pp. 1). Kent County for example, has a 50 foot setback requirement in their zoning code (<https://ecode360.com/7601166?highlight=railroad,setback#7601166>). Regardless, the local jurisdiction has the first hand knowledge and authority to determine setback requirements for their zoning. There are two primary reason for an increased standard setback requirement: Safety and Nuisance concerns. As Kent County's population increases and new residential subdivisions are built adjacent to the railroad, there are safety concerns with children playing too close to the rail line and also, homes built too close to the railroad and then having those homeowners becoming angry with train noise. This recommendation can also be separate or in conjunction with Recommendation #2.
4. The Kent County railroad operator (i.e. Delmarva Central Railroad) should submit a request to the Office of State Planning Coordination (OSPC) to be added to the Preliminary Land Use Service (PLUS) distribution list. This service will provide the railroad operator an opportunity to review all Kent County agenda items being discussed during the monthly PLUS meetings and the railroad users would have to ascertain the land use actions (i.e. rezonings and subdivision plans, etc...) of interest to them. All PLUS applications are already posted at

<https://stateplanning.delaware.gov/plus/> Once a railroad operator identifies a specific land use application of interest with a potential impact to rail freight systems, they can submit comments regarding that plan to the applicable local land use authority who has jurisdiction over that particular land use action. Comments could also be submitted to DelDOT who is responsible to ensure the Delaware State Rail Plan is implemented and submitted comments may result in the applicant addressing mitigation efforts to lessen the impact.

5. Coordinate with the Delaware Department of Transportation (DelDOT) and the Kent County Economic Partnership for a Freight Rail Economic Development Plan. The State of Minnesota and the Central Massachusetts Regional Planning Commission (both listed in the reference section) have examples of rail freight economic plans. The purpose of this recommended plan would be to identify ways to increase rail-related business development within Kent County, Delaware. Should a County-wide study be too costly, perhaps focus on the Dover, Harrington, and Milford sites where those comprehensive plans identify future land use changes that could leverage rail freight related manufacturing/employment centers (as described in Appendix 1 and shown on the interactive map).

## Conclusion

This Rail Zoning Study was a qualitative study used to answer five basic questions as described in the executive summary. Additionally, the Kent County railroad operator has an economic interest regarding how properties adjacent to the rail line are zoned, rezoned, and developed, and the Dover/Kent County MPO has an interest to ensure local jurisdictions understand the importance of rail freight planning within their comprehensive plans. The rail line traverses through Kent County and 13 municipalities, all of which have different zoning codes and land use requirements. All however, must have an updated comprehensive plan that addresses, among other things, current and future land uses in their jurisdictions. Each comprehensive plan reviewed for this study included some historical perspective regarding how important rail operations were in the establishment of their municipality during the nineteenth century, especially with regards to the movement of passengers and commodities throughout Delaware. From a historic perspective, Delaware's rail operations became secondary to truck operations during the latter half of the twentieth century and even today, trucks move 80% of all goods compared to 12-15% by rail (DelDOT, 2015, pp. 166). However, rising fuel costs, air quality attainment requirements, and reduced highway maintenance funding are examples of challenges ahead regarding commodities moved by truck along our roadways. There are some articles that state that using rail to move commodities is four times more fuel efficient than trucks, help reduce highway congestion, and reduces emissions (AAR, 2018). Environmental and land use concerns; evolving economic opportunities, commerce trends, and global trade initiatives; and population changes all require proactive planning efforts. Comprehensive Plans can help initiate the required proactive planning efforts required to identify appropriate future land use areas necessary for potential rail freight-related manufacturing/employment centers. These future centers can leverage multi-modal systems (highway and rail), provide another economic development attribute for potential manufacturing and distribution employers, and create additional employment opportunities for the future of Kent County, Delaware.

## References

- American Trucking Association (ATA)(n.d). The Future of Trucking Industry. Retrieved September 19, 2018, from <http://onlinepubs.trb.org/onlinepubs/futureinterstate/CostelloRobert.pdf>
- Association of American Railroads (AAR)(2018, June). The Environmental Benefits of Moving Freight by Rail. Retrieved September 17, 2018, from <https://www.aar.org/wp-content/uploads/2018/07/AAR-Environmental-Benefits-Moving-Freight-by-Rail.pdf>
- Carload Express, Inc. (CEI).(2017, June 21). Carload Express Unveils Video to Celebrate Six Months Operating Delmarva Central Railroad. Retrieved September 20, 2018, from <http://carloadexpress.com/2017/06/carload-express-unveils-video-celebrate-six-months-operating-delmarva-central-railroad/>
- Carload Express, Inc. (CEI).(2018, January 8). Cliff Grunstra electronic mail message to the D/KC MPO regarding FY19 Transportation Studies. Retrieved September 20, 2018, from internal D/KC MPO electronic mail folders.
- Central Massachusetts Regional Planning Commission (CMRPC)(2015, August). Freight Rail Planning Study and Feasibility Analysis All Aboard: Freight Rail-based Economic Development Opportunities Ahead Freight Rail Pilot Project Final Report. Retrieved September 4, 2018, from <http://www.cmrpc.org/sites/default/files/Documents/CDAP/Freight%20Rail%20Pilot%20Project%20and%20Feasibility%20Analysis%20Report%20-%20Final%20Revised%20Complete.pdf>
- Delaware State Code (n.d). Title 22 Municipalities, Chapter 7, section 702 Comprehensive Development Plan. Retrieved September 20, 2018, from <http://delcode.delaware.gov/title22/c007/#702>
- Delaware Department of Transportation (DelDOT)(2011, October 12). Delaware State Rail Plan Presentation. Retrieved September 4, 2018, from [https://www.dvrpc.org/Freight/pdf/2011-10\\_Geier.pdf](https://www.dvrpc.org/Freight/pdf/2011-10_Geier.pdf)
- Delaware Department of Transportation (DelDOT)(2011, September). Delaware State Rail Plan. Retrieved September 4, 2018, from [https://dartfirststate.com/pdfs/DelDOT\\_SRP\\_101011.pdf](https://dartfirststate.com/pdfs/DelDOT_SRP_101011.pdf)
- Delaware Department of Transportation (DelDOT)(2013, December 10). Delmarva Intercity Rail Feasibility Study. Retrieved September 4, 2018, from [https://dartfirststate.com/information/programs/transportation\\_plans/Delmarva\\_Intercity\\_Rail\\_Feasibility\\_Study.pdf](https://dartfirststate.com/information/programs/transportation_plans/Delmarva_Intercity_Rail_Feasibility_Study.pdf)
- Delaware Department of Transportation (DelDOT)(2015, May). Delmarva Freight Plan. Retrieved September 4, 2018, from [https://www.deldot.gov/Publications/reports/freight\\_plan/index.shtml](https://www.deldot.gov/Publications/reports/freight_plan/index.shtml)
- Delaware Office of State Planning Coordination (OSPC)(n.d.). Comprehensive Plans Data Base (Note: Certified Comprehensive Plans) . Retrieved multiple times from August through September 2018, from <https://stateplanning.delaware.gov/lup/comprehensive-plan.shtml>
- Delaware Valley Regional Planning Commission (DVRPC)(2017, October 11). Freight Planning at the Delaware Valley Regional Planning Commission. Retrieved on September 25, 2018, from <https://www.dvrpc.org/Committees/DVGMTF/Presentations/2017-10.pdf>

Ecology-Recycling and Transportation Services (2017, December 1). 5 Environmental Benefits of Moving Freight by Rail. Retrieved on September 17, 2018, from <http://ecoparts.com/5-environmental-benefits-of-moving-freight-by-rail/>

Envision Freight (2011). Fact Sheets: Incorporating Freight into a Comprehensive Plan. Retrieved on September 20, 2018, from [http://www.envisionfreight.com/factsheets/index.html%3Fid=compplan\\_freight.html](http://www.envisionfreight.com/factsheets/index.html%3Fid=compplan_freight.html)

Envision Freight (2016, December). Fact Sheets: Setback Standards. Retrieved on September 27, 2018, from <http://www.envisionfreight.com/factsheets/pdf/BufferDistanceTables.pdf>

Extension (2015, December 9). The Purpose of the Comprehensive Land Use Plan. Retrieved on September 21, 2018, from <https://articles.extension.org/pages/26677/the-purpose-of-the-comprehensive-land-use-plan>

Federal Highway Administration (FHWA) Freight Management and Operations (n.d.). Freight Facts and Figures (2017). Retrieved September 20, 2018, from [https://ops.fhwa.dot.gov/freight/freight\\_analysis/faf/](https://ops.fhwa.dot.gov/freight/freight_analysis/faf/)

Federal Highway Administration (FHWA) Freight Management and Operations (2012, April). FHWA Freight and Land Use Handbook, Chapter 4. Retrieved on September 28, 2018, from [https://ops.fhwa.dot.gov/publications/fhwahop12006/sec\\_4.htm](https://ops.fhwa.dot.gov/publications/fhwahop12006/sec_4.htm)

Federal Railroad Administration (FRA)( 2013, September). State Rail Plan Guidance. Retrieved on September 27, 2018, from <https://www.fra.dot.gov/Elib/Document/3382>

Minnesota Department of Transportation (2013, November 15). Freight Rail Economic Development. Retrieved September 4, 2018, from <http://www.dot.state.mn.us/ofrw/fred/PDF/final.pdf>

Train, Alexander R. (2015). Short Line Railroads and Municipal Land Use Planning, Policy, and Regulation. Masters Theses. 211. Retrieved on September 21, 2018 from, [https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1227&context=masters\\_theses\\_2](https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1227&context=masters_theses_2)

Transportation Topics (2017, July 19). ATA Forecasts 2.8% Freight Growth for 2017, 3.4% Rise Through 2023. Retrieved on September 19, 2018, from <https://www.ttnews.com/articles/ata-forecasts-28-freight-growth-2017-34-rise-through-2023>

URS (2009, October). Land/Building Needs Analysis for Targeted Industries. Retrieved on September 28, 2018, from <https://www.fcgov.com/planning/pdf/land-bldg-analysis.pdf>

U.S. Environmental Protection Agency (EPA)(2017, March 29). Trends Shaping the Future of Freight. Retrieved September 17, 2018, from <https://www.epa.gov/sites/production/files/2017-04/documents/sw-feight-trends-2017-03-29.pdf>

## Appendix 1- Comprehensive Plan Summaries

NOTE: When these comprehensive plans were created or updated, Norfolk Southern was the railroad operator. The operator is now Carload Express as the Delmarva Central Railroad.

	A	B	C	D	E	F	G
1	Municipality	Comp Plan Year	Comp Plan Map	Highlight Rail uses	Potential of rail spur line	# of existing parcels 6 acres > commercial, manufacturing, or Industrial zoning	Comprehensive Plan Analysis for Kent County Railroad Zoning Study Summary
2	Smyrna	2012	<a href="#">Smyrna</a>	No	limited	1	A review of the 2012 Update provides a summary about the 1997 Update which depicted designated lands east of railroad and south of Rt 300 as a proposed industrial park. Page 34 describes how the town intends to attract new light industrial and other clean business uses and also points out the Wal-Mart regional distribution center on west side of town very near the rail road. Pages 45-46 describe some residential pressure near the rail lines along Brentford Road. The town only has the Employment Center with Light Industry uses on the East side of the Rail line where the Wal-Mart Distribution Center is located and the rest of the rail line running adjacent the town boundary is next to medium density residential on the east side of the line and some residential (Town of Clayton) uses on the West side. There does not seem to be any major changes between current and future land uses in town lands adjacent rail line and there appears to be only 1 parcel larger than 6 acres adjacent to the rail line with current zoning which might support a spur line. The 2012 Update does not appear to depict future land use changes which could leverage rail freight related manufacturing/employment centers.
3	Clayton	2009	<a href="#">Clayton</a>	Some	Yes	0	A review of the 2009 Update provides some information regarding future rail uses. Page 50 recommends working with DNREC and DelDOT to target unused railroad rights-of-way for recreational purposes. Pages 51 and 52 describe the Delmarva Secondary, Main Street North, and Clayton-Easton rail lines however, only recognizing the Delmarva Secondary as an active line. There is some discussion from referenced Delaware Transit Corporation and DelDOT studies regarding passenger rail services to Dover but nothing more substantive. There is some discussion on page 52 about converting the 44 mile Clayton-Easton line to a bike path in cooperation with the Maryland Department of Transportation. Page 54 lists several recommendations tied to the railroad however, recommendations are geared towards targeting unused railroad rights-of-way for hiking and biking paths and also to add passenger service. Page 66 describes a 7.4 acre linear parcel running parallel on the east side of the railroad currently in Kent County as annexation into the town and map #7 shows the location of this parcel which is being proposed as "railroad" zoning. This parcel has existing residential and some industrial uses adjacent to the parcel. Interesting at the location where the Clayton-Easton line splits off the main Delmarva Secondary line, there is a spur line which appears to have a westerly direction up to the Towns western boundary and stops. On the north and south sides of this spur, there are residential uses and the end of the spur goes into a residential neighborhood and terminates at a large parcel in Kent County where the Hanover Food Corporation is located. Although there are no parcels over 6 acres in size properly zoned, adjacent to the rail line where a rail spur could be consider, the existing spur line MAY have the potential for rail supported industry however, the Town appears to see the future of this spur line as more recreational. Additionally, the parcel adjacent to the spur line on the south side is currently "community service" use and depicted as being "residential" for future land use. Other than using existing rail spurs within the town, the 2009 Update does not appear to depict future land use changes which could leverage rail freight related manufacturing/employment centers.
4	Cheswold	2010	<a href="#">Cheswold</a>	No	Yes	1	A review of the 2010 Update provides some information on the rail line. Page 34 does mention freight movement along the Norfolk-Southern line and it also mentions potential passenger rail via three routes in New Castle County down to Dover. Pages 37 and 38 mention the air field as possible economic development uses and recommends the town to complete a study to determine appropriate development near the airport but does not mention anything about increased use of rail freight possibilities. It appears the current land use adjacent to east side of the rail line and south of main street is industrial use. This use does not change in their future land use map #4. There is 1 parcel properly zoned larger than 6 acres adjacent to the rail line however, the large parcel of land north of the airport and on the west side of the railroad is depicted as being residential use on their future land use map. However, this area may also be an ideal location for a rail spur into a industrial park but route 92 (Morton Road) runs immediately adjacent to the railroad and this would have to be considered if a spur line was proposed. Although the 2010 Update does not appear to depict future land use changes which could leverage rail freight related manufacturing/employment centers, there is one large residentially earmarked parcel adjacent to the rail line which might be considered.

	A	B	C	D	E	F	G
1	Municipality	Comp Plan Year	Comp Plan Map	Highlight Rail uses	Potential of rail spur line	# of existing parcels 6 acres > commercial, manufacturing, or Industrial zoning	Comprehensive Plan Analysis for Kent County Railroad Zoning Study Summary
5	Dover	2008 (currently being updated)	<a href="#">Dover</a>	N	Yes	13	The 2008 Comp Plan does not really highlight future rail freight related uses. Page 12 indicates major industrial uses along the Norfolk-Southern railroad line within the south-central (Dover) planning region. Page 95 depicts brief information about the use of freight rail, the need for flexible operating strategies, and a continued pursuit for passenger rail use. Page 107 describes two "rail" goals to relocate chemical cars from the New Burton Road location to some other location and to continue studying the use of passenger rail. Comparing map #2-2 (Existing land use) and map #12-1 (Proposed land development plan) there are some changes but mainly identifying some parcels as "mix use". Although there does not seem to be many changes between the current and future zoning, there is one large parcel on the west side of the rail line just south from the City of Dover municipal boundary which is R-1 (Single family residential) change to "Community Uses". There are some areas on the East side of the track at the northern most part of the Town boundary for designated for residential uses. NOTE: Dover is currently updating their comprehensive plan to include potential industrial zone parcels adjacent the rail line. Additionally, although there appear to be 13 properly zoned parcels over 6 acres adjacent to the rail line in the City of Dover, there are three specific areas as shown next to their comp plan map that are being considered for rail freight related uses. Therefore, the current 2018 "draft" Update Plan does appear to depict future land use changes which could leverage rail freight related manufacturing/employment centers.
6	Wyoming	2011	<a href="#">Wyoming</a>	No	limited	2	A review of the 2011 Update does not show increase activity for rail freight related land uses. Page 30 describes how the Norfolk Southern line originates south of Wilmington, Delaware and terminates in Pocomoke City, Maryland. There is also a suggestion to resume passenger rail services along this rail line. Section 4-5 on page 30 however, recommends retaining public rights-of-way for pedestrian paths, bicycle links, and access to infill development so future changes near the rail line should be reviewed. Page 44 depicts opportunities for redevelopment however, there is no mention leveraging rail services regarding economic development plans for commercial or industrial uses. Map #6 depicts existing zoning and map #7 shows future land use. Although there are 2 properly zoned parcels larger than 6 acres adjacent the rail line, the 2011 Update does not appear to depict future land use changes which could leverage rail freight related manufacturing/employment centers.
7	Camden	2007	<a href="#">Camden</a>	No	limited	1	A review of the 2007 Update provides some rail highlights. Section 6.0 begins on page #53 and highlights Transportation topics but railroad use is not really highlighted. In section 8.0 (Critical Community Development Issues) on page #67, there are future objectives for highway commerce zoning for example, but nothing mentioning future rail uses. Page #69 describes how DelDOT focuses resources providing options to address transit, bicycle, pedestrian, and freight needs but nothing specific on rail freight in the recommendations section. Page #76 describes the need for a Strategic Plan for commercial properties and perhaps rail use could be apart of the plan? Page #82 mentions 711 acres evaluated for annexation which includes large parcels on the west and east side of the rail line at the town's southern boundary, just north of Woodside. Although these areas are earmarked for the Transfer Development Rights (TDR) receiving areas, the area may be a potential for rail freight industrial or commercial areas supporting spur lines. Nonetheless, the current land use (Map #3) shows agricultural, some industrial, high density residential and other residential uses. The future/proposed land uses show agricultural areas in the northern portion of the town into highway commercial and the southern portion of the town on the west side of the rail line as medium density residential. The 2007 Update does not appear to depict future land use changes which could leverage rail freight related manufacturing/employment centers.
8	Woodside	2018	<a href="#">Woodside</a>	No	limited	0	A review of the 2018 Update provides some rail information. Page #8 provides some nice historical information on rail service and even though page #14 describes future discussions for commercial activity in the town, very little is written using rail freight as a potential mechanism for economic development. Page #24 describes four properties which are being considered for annexation into the town however, three of the four recommend residential uses as seen on Map #5. However, one annexed parcel is earmarked for commercial use on the southern boundary of the town and on the east side of the rail line which runs directly adjacent to this parcel. Comparing the current land use (map #3) to the future land use (map #6) maps show very little change to the zoning. Although there are zero properly zone parcels larger than 6 acres adjacent to the rail line, there is however, some potential for rail freight if the town changed its current designation for one of the four annexed properties from agricultural use to industrial. The parcel is on the western side of the rail line and sits at the southern most boundary of the town. Nonetheless, the 2018 Update does not appear to depict future land use changes which could leverage rail freight related manufacturing/employment centers.

	A	B	C	D	E	F	G
1	Municipality	Comp Plan Year	Comp Plan Map	Highlight Rail uses	Potential of rail spur line	# of existing parcels 6 acres > commercial, manufacturing, or Industrial zoning	Comprehensive Plan Analysis for Kent County Railroad Zoning Study Summary
9	Viola	2004	Viola	No	None	0	Although the town is currently (as of September 2018) updating their 2004 plan, the 2004 Update does not depict increased activity of rail freight related uses. The town characterizes its future land uses as residential, agricultural residential, or institutional and very no industrial and commercial zoning. Thus, in addition to the fact that there are no existing appropriately zoned parcels larger than six acres, it may be difficult to consider a future industrial or commercial park using rail. On page #19, the Delmarva Secondary Line of the Norfolk Southern Railroad is described as providing freight services to the entire Delmarva Peninsula but no discussion regarding expanding supportive zoning for rail businesses. The 2004 Update does not appear to depict future land use changes which could leverage rail freight related manufacturing/employment centers.
10	Felton	2008	Felton	Yes	limited	1	The 2008 Update provides some cursory information regarding rail. Page #44 describes how the rail line bisects the town and provides freight rail services from four to eight trains per day hauling grain, stone, coal and other agricultural projects. The description also mentions Pennsy Supply where stone and gravel products are regularly unloaded and shipped out by truck throughout Delaware. Although map #7 depicts the proposed annexation areas in two periods (2008 through 2011 and 2012 through 2013) map #4 (current land use) and map #5 (future land use) show one large parcel on the east side of the rail line at the southern boundary of the town for Purchase Development Rights (PDR). In addition to the fact that there is one appropriately zoned parcel adjacent to the rail line larger than 6 acres, it appears the idea of a spur line adjacent several industrial zone parcels adjacent to this parcel on the western side of the rail line may not be conducive. The 2008 Update does not appear to depict future land use changes which could leverage rail freight related manufacturing/employment centers.
11	Harrington	2013	Harrington	Yes	Yes	8	The 2013 Update does provide information supporting future rail freight related uses. Chapters 8 (Land Use and Growth Management) and 11 (Transportation) provide a lot of information regarding rail freight and potential manufacturing businesses. The Comp Plan lists a goal on page 8-15 to pursue businesses interested in available freight rail services for location in the town. Page 11-5 describes the Delaware State Rail Plan (SRP) and how it serves as a strategic guide for DelDOT, stakeholders, and the public to guide the future freight and passenger rail capital investments. Page #11-6 describes the Harrington Yard as being adjacent to land designated for industrial uses which could also help in pursuing rail-related industries to support economic development and page #11-10 lists this as one of 16 transportation goals. A review of their current land use map #16 and future land use map #17 shows mixed use parcels on both western and eastern sides of the rail lines as it enters the town from the north. It also shows the rail line moving east and that area from railroad use to manufacturing use but additionally as the rail line continues east on the eastern side of Rt 13, there is a currently vacant parcel earmarked for industrial use (East of parcels earmarked for manufacturing use) which could be marketed for a rail freight business. In addition to the eight appropriately zoned parcels larger than 6 acres adjacent the rail lines, the 2013 Update does appear to depict future land use changes which could leverage rail freight related manufacturing/employment centers.
12	Farmington	2015	Farmington	No	limited	0	The 2015 Update provides some cursory information regarding the rail line. Page #27 highlights the fact that the railroad played a major role in Farmington's history but there is currently no station or other rail facility in town and the Comp Plan does not provide any mention of leveraging rail freight use. The existing land use map shows residential uses on both sides of the rail line and the future land use map depicts the one large agricultural parcel on the western side of the rail line at the town's southern border as converting to residential use. The Growth and Annexation Areas map shows parcels to the east of town along Rt. 13 as being commercial and one parcel on the east side of the rail line at the southern most town boundary line as being residential. There are no appropriately zoned parcels larger than 6 acres conducive for a rail freight business. Therefore, the 2015 Update does not appear to depict future land use changes which could leverage rail freight related manufacturing/employment centers.

	A	B	C	D	E	F	G
1	Municipality	Comp Plan Year	Comp Plan Map	Highlight Rail uses	Potential of rail spur line	# of existing parcels 6 acres > commercial, manufacturing, or industrial zoning	Comprehensive Plan Analysis for Kent County Railroad Zoning Study Summary
13	Houston	2018	<a href="#">Houston</a>	No	Yes	2	The 2018 Update provides some information about rail uses. Page #10 lists one transportation goal but does not mention rail freight. Page #37 section 6-3 briefly describes the railroad indicating that it provides important linkages to statewide and regional destinations. Page #42 section 7-5 describes economic development but indicates two most obvious concerns being semi-vacant parcels and homes in dis-repair, particularly along the railroad. Page #49 describes open space and the fact that the railroad right-of-way takes up approximately 8.72 acres of land. Pages #64-71 lists 20 goals to be implemented by the town however, none of the goals include increased used of rail freight objectives. The rail line runs in a east and west direction directly through the middle of town. There is one industrial zoned parcel on the south side of the rail line at the western town boundary as well as a few commercially zoned parcels next to the one industrial zoned parcel. There are several agricultural zoned parcels as well as one larger commercially zoned parcel on the east side of town adjacent to the rail line as seen in the existing land use map. Although there are two appropriately zoned parcels larger than 6 acres, there is one large proposed annexed parcel just south of the rail line just outside the existing town western boundary and next to the one existing industrial zoned parcel. This might be a good location for a rail freight manufacturing business location. Therefore, the 2018 Update does appear to depict future land use changes which could leverage rail freight related manufacturing/employment centers.
14	Milford	2018	<a href="#">Milford</a>	No	Yes	5	The 2018 Update does not provide detailed information about rail uses. Page #82 describes the location of the railroad coming in from the western boundary before turning south into Sussex County. Other than page #82, railroad uses are not described. Chapter 13, Appendix A (Maps) show current and future uses in the Northwestern Neighborhood where the rail line enters the City. The maps depict low density residential the area adjacent and on the South side of the rail line and the area near the Baltimore Air Coil to remain industrial. The rail line traverses towards the center of Milford before bending south where the town of Milford extends into Sussex County. Comparing maps, there appears to be residential zoning adjacent the rail lines as it comes into the western boundary of Milford and then has some industrial and commercially zone parcels at the point the rail line bends south towards the center of Milford. In addition to the fact that there are five appropriately zoned parcels adjacent the rail line, this western approach into Milford may make an ideal location for a railroad centric manufacturing employment/business park if the currently zoning residential parcels got rezoned to allow rail spur lines. The 2018 Update does appear to depict future land use changes which could leverage rail freight centric manufacturing/employment centers
15	Kent County	2018	<a href="#">Kent Count</a>	No	limited	23	Although the 2018 Update does not specifically mention rail freight uses, it does provide supportive text to the concept of rail freight related uses. Page #7-4 describes preservation of areas for economic development as a priority for Kent County. Page #7-6 describes the future land use categories and the "industrial" category appears to best support rail use. Page #7-8 provides some supportive discussion for rail regarding light and heavy industrial uses should be located in areas appropriate to their intensity and infrastructure requirements. Page #7-11 indicates map # 7C as designating areas for future industrial, employment centers and other commercial areas in Kent County. Page #7-12 describe how Master Plans should be developed for designated Employment Centers and larger scale commercial areas. Page #7-13 lists several recommendations one of which describes preserving areas for economic development opportunities by focusing growth in Industrial, Employment Centers, and Commercial areas. Page # 8-7 provides a nice summary about the 56 miles of active freight railroad lines in Kent County. The rail lines are operated by Norfolk Southern which includes the Delmarva Secondary Line and Indian River Secondary Line. This page also highlights the importance of considering the rail lines in future land uses and economic development. There are no goals and objectives listed as future initiatives regarding rail freight manufacturing/employment center locations outside the 13 existing municipalities where the rail line is located. However, there are twenty three appropriately zoned parcels six acres or larger adjacent to the rail line which could be considered for future rail freight related uses. For example, a review of map #7C identifies several industrial areas which are located near the existing rail lines especially south of Felton, the southern part of Harrington, and the western portion of Milford. Therefore, although the 2018 Update does not appear to depict specific future land use changes which could leverage rail freight related manufacturing/employment centers, there remains the potential to leverage a County/Municipal partnership with some of the municipalities listed in this rail zoning study.

Appendix 2- Kent County Industrial zonings and re-zonings 1972-2018

File_Numbe	Comment	Name	Present_Zc	Requested	Decision	RPC_Rec	Date	Acreage	Map_Num	Locat	Ogri
Z-72-19		Dover Products Co., Inc.	RS1	IG	Denied		7/25/1972	5.4	05700-02-0500	5200 W Denneys Rd., N of Dover	Z-1972-19
Z-72-62	Now in City of Milford	Bay Central Corp.(Hugh Martin) (loc:Myron Factory)	AC	IL	Approved	Approve	2/13/1973	17.06	18200-01-0100	S side of Rt. 14, Milford	
Z-74-03	Now in City of Milford	Milford Fertilizer Co.	IL	IG	Denied	Approve	1/22/1974	26.33	18200-01-0200	W corner of Rt. 14 and Williamsville Rd., Milford	Z-1974-03
Z-74-15	Interior area of fairground	Delaware State Fair	IL	BG	Approved	Approve	4/23/1974	.074	17900-01-3300	W side of Ernest Raughley St., DE State Fairgrounds, S of Harrington	Z-1974-15
Z-74-56		Lockwood Emmert, lo with Ethel Emmert, Dr.	AC	IL	Approved	Approved	10/22/1974	50	18200-01-1400	1162 Holly Hill Rd, W of Milford	Z-1974-56
Z-74-51	Now two parcels 6500	Simpler Lumber and Coal Co.	IL	IG	Approved	Approve	10/22/1974	5	12800-02-6500	W of Turkey Point Rd., E side of RR tracks, N of Felton	Z-1974-51
Z-75-02	Made up of many parcels	Kent County Levy Court	IL	AR	Approved	Approve	1/28/1975	97	Multiple	E of Farmington Rd, N of Tower Hill Rd., S of Fairground Rd., S of Harrington	Z-1975-02
Z-75-28		Nanticoke Homes, Inc. (loc:Delmarva Power	AR	IL	Approved	Approve	10/28/1975	45.324	18700-01-3500	SW corner of Rt. 13 and Tower Hill Rd., S of Harrington	Z-1975-28
Z-77-15	Now Pinewood Acres MHP	Raymond L. and Mary V. Morgan	IL	RMH	Approved	Approve	6/28/1977	1.26	04600-02-0400	E side of RR tracks and McKee Rd., S of Cheswold	Z-1977-15
Z-77-23	Now in City of Milford	Collins and Ryan, Inc.	IL	IG	Denied	Deny	9/27/1977	1	18200-01-0100	S side of Rt. 14, in the City of Milford	Z-1977-23
Z-82-10	More rezoned in 2013	Ellwood L. Hunsberger (loc:John F. and	AR	IG	Mod. Approval	Deny	4/27/1982	56.9378	19900-01-1900	W side of S Dupont Hwy, S of Farmington	Z-1982-10
Z-82-48		Dover Products Co. Inc.	RS1	IG	Approved	Approve	12/28/1982	17.59	05700-02-0500	5200 W Denneys Rd., N of Dover	Z-1982-48
Z-83-16	Now the location of a	Glenn Hindt (loc:Lottie M. Hylinski)	IL	IG	Denied	Deny	7/26/1983	10.0145	04600-02-0400	W of N Dupont Hwy, S of Cheswold	Z-1983-16
Z-84-13		Chesapeake Ut. Corp. (loc: Edgell Construction Co.	AR	IG	Approved	Approve	3/27/1984	5.008	05700-01-0800	54 Fork Branch Rd., N of Dover	Z-1984-13
Z-84-27		Leroy A. and Thelma C.	IL	RMH	Approved	Deny	7/24/1984	7.5	04604-01-3700	64 Rose Bowl Rd., S of Cheswold	Z-1984-27
Z-84-31	Now Pinewood Acres MHP	Raymond L. and Virginia Morgan	IL	RMH	Approved	Approve	9/25/1984	1	04600-02-0400	E side of McKee Rd. and RR tracks, S of Cheswold	Z-1984-31
Z-85-01		Nanticoke Homes, Inc.	AR	IG	Approved	Approve	1/22/1985	42.7	19300-01-4800	W side of Rt. 13, S of Farmington	Z-1985-01
Z-87-29		Roger S and Carol S. Brown (loc: J. Francis Ball	RS1	IG	Approved (Mo	Deny	5/26/1987	11.13	05700-02-0400	S side of W Denneys Rd., adjacent to Dover	
Z-87-60	Now Pinewood Acres MHP	Walter A. Nelson, Sr (loc:Gary F. Cochran)	IL	RMH	Approved	Approve	1/26/1988	14.75	04600-02-0400	W of N Dupont Hwy., S of Cheswold	Z-1987-60
Z-91-24	Rezoned back with Z-93-26	ConAgra Poultry Company (loc: Curtis Farms, Inc.)	AC	IG	Approved	Approve	11/26/1991	60	15900-01-3800	690 Hopkins Cemetery Rd., N of Harrington	Z-1991-24
Z-93-09	Now Pinewood Acres MHP	Walter A. Nelson, Sr.	IL	RMH	Approved	Approve	6/22/1993	28	04600-02-0400	E side of McKee Rd. and RR tracks, S of Cheswold	Z-1993-09
Z-93-26		Curtis Farms, Inc.	IG	AC	Approved	Approve	1/25/1994	60	15900-01-3800	690 Hopkins Cemetery Rd., N of Harrington	Z-1993-26
Z-97-07	Part of area now annexed	Carl and Patricia Deputy	IL	BG	Approved	Approve	6/24/1997	11.76	12800-02-4502	E side of Walnut St., W side of RR tracks, N side of Felton	Z-1997-07
Z-97-22	Made property all AR	Kent County Planning (loc:Robert and	IL;AR	AR	Approved	Approve	10/28/1997	1.05	12800-02-4500	1020 Peach Basket Rd., N of Felton	Z-1997-22
Z-03-13	Two properties	Delmarva Excavation, LLC (loc:Boyd and Rosa Lee	IL	IG	Approved	Approve	12/16/2003	3.5	17900-02-4801	211 East St., S of Harrington	Z-2003-13
CZ-04-18		Randall & Debra Craft (loc:Charles & Gloria	IL	BG	Approved	Approve	12/21/2004	1.50	17900-02-4901	W side of East St., S of and adjacent to Harrington	CZ-2004-18
CZ-12-05	To make all RM	Onix Z, LLC (loc:North Dover 20, LLC)	RMH;IL;IG	RM	Approved	None	8/14/2012	20.8	04600-02-5401	E side of McKee Rd./RR Track, N of Fork Branch Rd., N of Dover	CZ-2012-05
CZ-05-06		North Dover 20, LLC.	IL	RS5	Withdrawn	Withdrawn		20.78	04600-02-5401	E side of McKee Rd./RR Track, N of Fork Branch Rd., N of Dover	CZ-2005-06
CZ-07-07	Withdrawn by applicant after RPC PH on	North Dover 20, LLC	IL	RS5	Withdrawn			20.08	04600-02-5401	E side of McKee Rd./RR track, N of Fork Branch Rd., N of Dover	CZ-2007-07
CZ-10-01	Withdrawn prior to ordinance being introduced. Never put on agenda	Harrington VFW	IG	BG	Withdrawn			1.5	17900-02-4900	W side of East St., SE of Harrington	None
Z-13-02	for expansion of Willards Ag	Silo Land Company, LLC	AR;IG	Additional IG	Approved	Approve	12/17/2013	11.428	19900-01-1900	22273 S Dupont Hwy, S of Farmington	Z-2013-02

**Appendix 3- Residential Subdivision locations adjacent the Rail Road.**

