Current and Forecasted Truck Parking Needs Assessment - Appendixes

WA 3 Tasks 2.8 and 2.10

Final: March 23, 2020
**Appendix A: Needs Prioritization Cutoffs**

This section provides details on how the “high,” “medium,” and “low” needs were categorized.

### Exhibit A.1: Truck Parking Capacity Need by Region Type

<table>
<thead>
<tr>
<th>Need Level</th>
<th>Number of Segments</th>
<th>Mileage</th>
<th>Value Range (Shortage per Mile)</th>
<th>Number of Segments</th>
<th>Mileage</th>
<th>Value Range (Shortage per Mile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>247</td>
<td>2,167</td>
<td>&gt; 0.08</td>
<td>192</td>
<td>1,551</td>
<td>&gt; 0.28</td>
</tr>
<tr>
<td>Medium</td>
<td>372</td>
<td>4,117</td>
<td>0.01 to 0.08</td>
<td>290</td>
<td>2,374</td>
<td>0.03 to 0.28</td>
</tr>
<tr>
<td>Low</td>
<td>619</td>
<td>7,383</td>
<td>&lt; 0.01</td>
<td>482</td>
<td>4,636</td>
<td>&lt; 0.03</td>
</tr>
<tr>
<td>No Data</td>
<td>904</td>
<td>8,273</td>
<td>N/A</td>
<td>365</td>
<td>2,253</td>
<td>N/A</td>
</tr>
<tr>
<td>Total</td>
<td>2,142</td>
<td>21,939</td>
<td></td>
<td>1,329</td>
<td>10,814</td>
<td></td>
</tr>
</tbody>
</table>


### Exhibit A.2: Truck Parking Safety Need by Region Type

<table>
<thead>
<tr>
<th>Need Level</th>
<th>Number of Segments</th>
<th>Mileage</th>
<th>Value Range (Safety Score per Mile)</th>
<th>Number of Segments</th>
<th>Mileage</th>
<th>Value Range (Safety Score per Mile)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>77</td>
<td>566</td>
<td>&gt; 0.34</td>
<td>121</td>
<td>633</td>
<td>&gt; 0.95</td>
</tr>
<tr>
<td>Medium</td>
<td>117</td>
<td>1,174</td>
<td>0.12 to 0.34</td>
<td>181</td>
<td>1,567</td>
<td>0.33 to 0.95</td>
</tr>
<tr>
<td>Low</td>
<td>195</td>
<td>2,803</td>
<td>&lt; 0.12</td>
<td>303</td>
<td>3,447</td>
<td>&lt; 0.33</td>
</tr>
<tr>
<td>No Data</td>
<td>1,753</td>
<td>17,396</td>
<td>N/A</td>
<td>724</td>
<td>5,167</td>
<td>N/A</td>
</tr>
<tr>
<td>Total</td>
<td>2,142</td>
<td>21,939</td>
<td></td>
<td>1,329</td>
<td>10,814</td>
<td></td>
</tr>
</tbody>
</table>

### Exhibit A.3: Freight Network Significance by Region Type

<table>
<thead>
<tr>
<th>Need Level</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Segments</td>
<td>Mileage</td>
</tr>
<tr>
<td>High</td>
<td>424</td>
<td>4,423</td>
</tr>
<tr>
<td>Medium</td>
<td>637</td>
<td>6,146</td>
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<tr>
<td>Low</td>
<td>1,064</td>
<td>11,280</td>
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<tr>
<td>No Data</td>
<td>17</td>
<td>90</td>
</tr>
<tr>
<td>Total</td>
<td>2,142</td>
<td>21,939</td>
</tr>
</tbody>
</table>

Source: Texas Freight Mobility Plan development, 2018.

### Exhibit A.4: Prioritized Segments—Combined Needs by Region Type

<table>
<thead>
<tr>
<th>Need Level</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Segments</td>
<td>Mileage</td>
</tr>
<tr>
<td>High</td>
<td>107</td>
<td>929</td>
</tr>
<tr>
<td>Medium</td>
<td>370</td>
<td>4,022</td>
</tr>
<tr>
<td>Low</td>
<td>1,665</td>
<td>16,988</td>
</tr>
<tr>
<td>Total</td>
<td>2,142</td>
<td>21,939</td>
</tr>
</tbody>
</table>

Appendix B: Truck Parking Forecasting Methodology

Estimation and Calibration Procedure
This section describes the process of creating a future prediction of truck parking, largely an extension of the earlier processing of ATRI data. This involved creating linked trips from that dataset and then comparing it to the Transearch forecasts.

Input Data
The inventory of ATRI-based stops provided the parking stops with point locations in the base year. These were over 12 million stops made by ATRI trucks. Stops for which the majority of the duration was not during the weekdays were filtered out, leaving 12 days for each month. SAM projections provided base and future year truck trips for the state. The SAM trip tables were organized by the statewide TAZs.

Exhibit B.1: ATRI Time Periods

<table>
<thead>
<tr>
<th></th>
<th>Start</th>
<th>End</th>
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</thead>
<tbody>
<tr>
<td>February</td>
<td>2/1/2018 Thu</td>
<td>2/15/2018 Thu</td>
</tr>
<tr>
<td>May</td>
<td>5/1/2018 Tue</td>
<td>5/15/2018 Tue</td>
</tr>
<tr>
<td>July</td>
<td>7/16/2018 Mon</td>
<td>7/30/2018 Mon</td>
</tr>
<tr>
<td>October</td>
<td>10/16/2018 Tue</td>
<td>10/31/2018 Wed</td>
</tr>
</tbody>
</table>

Methodology
The goal of this exercise is to establish how truck travel produces a need to stop based on travel activity. Therefore the observed parking stops needed to be related to the trip table in a way that would allow projection of future parking and locations thereof.

One of the main determinates of parking location is the time already traveled and/or left to travel. Using distance from origin and destination was considered. However this can vary based on the route, so it could create unclear results and put trucks in zones in which none park. An alternative was devised which could capture the distance implicitly and use more information about where trucks actually parked when traveling on certain routes.

Determining Stop Type and Linking Trips
First stops were divided into origins/destinations (OD) and parking based on a few rules. After testing different values we settled on stops being parking if they were:

1. In a known truck parking location.
   OR
2. Between 4 and 14 hours in duration AND caused a detour (of straight line distance) less than the threshold percentage.

The threshold percentage varied by the (straight line) distance between origin and destination. If that distance was less than 50 miles, the detour threshold was not applied. If
the straight line distance was 50 to 275 miles, detours of up to 12% were permitted for parking. For longer trips, 275+ miles, there was only a 5% increase in distance allowed. By doing this second level of filtering, stops which were otherwise considering parking but required drivers go an unreasonable distance to park, were changed to OD. The parameter values chosen were high enough to account for curves in interstates and indirect routes on which a truck would reasonably stop.

With the stops divided up into the ODs and parking stops between ODs, parking stops were linked to preceding origin and succeeding destination. A linked trip would include the OD and their parking stops, assuming that the truck’s purpose determined the location of the ODs and the parking stop locations were determined by the ODs of their trips.

**Zonal Structure**

To create a trip table, we designated a set of zones for ODs (ODAZ) and another for parking location (PAZ). The OD zones were large and regional - an aggregation of counties. There were 25 inside the state and 4 more outside. Using smaller zones would result in a sparse trip table that would complicate projection. Counties were used as parking zones.

**Exhibit B.2: Origin and Destination Zones**

![Origin and Destination Zones](image)

**Applying Parking to SAM Trips and Projecting**

By assigning parking stops to PAZs and ODs to ODAZs, the relationships required between trip activity and parking could be calculated. Each PAZ had a sum of parking stops by ODAZ
pair. Each ODAZ pair had a number of trips, i.e. a trip table. This could then be related to the SAM trip table, which modeled the commercial activity-related trucks stop but not parking.

After considering and running multiple relational methodologies, we decided to weight the (ATRI) trips and their parking stops. The weighted values were considered to describe the total average daily truck movements as does SAM. This allowed parking stops to be directly applied to the base year SAM trip table. The differences between SAM and ATRI county-level estimates were accepted as they were. The ATRI totals were multiplied by a truck expansion of 10 and divided by the total number of days, 48, to arrive at the final weighted projection for each county in 2018 and 2050.

There was a number of SAM trips for each ODAZ pair (28x28) and a (weighted) count of parking stops for each PAZ + ODAZ pair (254x28x28). Having done all of the computation up front, parking is projected by calculating the change in travel between each ODAZ and the scaling the value in each PAZ contributed by those ODAZ pairs. Note that for all the PAZs, there will be many OD pairs that contribute no parking. For example, trucks traveling from Dallas to Houston will not park in West Texas counties.

To illustrate the summation of parking stops, trips from the Laredo region to Metro DFW produced approximately 1,000 parking stops in McLennan County in the base year. The volume of trips for this origin and destination increased by 150% from 2015 to 2050, so the number of parking stops in McLennan County on trips with this OD would be 2,500. The total stops in McLennan County would be the sum of the projected parking in this county from each OD.

Exhibit A.3 illustrates the percent change in parking in Texas counties between 2018 and 2050. The percent change observed ranged between 0 and nearly 500 percent. However, 99 percent of counties exhibited an increase of less than 200 percent.
Assigning County-Level Demand to Links

The county-level truck parking demand was then assigned to highway segments within the county using current parking levels, current truck traffic, and forecasted truck traffic as determined by the SAM model.

Current and future truck-miles traveled (TMT) were aggregated for each highway segment in the needs analysis from the SAM model. The share of the county-level TMT for each segment was calculated to determine the amount of future truck traffic absorbed by each segment. For example, if a route consists of three segments with TMT growth of 10, 20, and 50 each within county A, and the total TMT growth of for county A is 240 then the share of TMT growth for the said route is \((10+20+50)/240 = 0.33\) or 33%. This method was used to incorporate the assumption that more truck parking will be demanded where more trucks are traveling.

The share of current truck parking demand for each route within the county was then calculated. The same methodology as above was used in this step. For example, if parking demand for the same segments above are 5, 10, 15 trucks per day, and total parking demand for the county is 600 trucks per day, then the share of parking demand for the route within county will be \((5+10+15)/600 = 0.05\) or 5%.

Finally, future truck parking demand was determined by distributing the county-level truck parking forecast across highway segments using the two shares described above: TMT and current truck parking demand. From the previous examples, a segment with 33% of the additional TMT and 5% of current parking, 2050 truck parking demand would be calculated.
as: \( (33\% \times \text{new demand} + 5\% \times \text{new demand})/2 \). The outcome of this formula is added to the current demand for each segment to calculate future demand.
Appendix C: Zoning Regulations on Truck Parking at New Warehouse and Distribution Facilities (Upper Macungie, PA)  
This section contains an ordinance passed by the Township of Upper Macungie, PA to address truck parking needs at new commercial/industrial development locations.

TOWNSHIP OF UPPER MACUNGIE
LEHIGH COUNTY, PENNSYLVANIA

ORDINANCE No. 2017-04
[Duly Adopted June 1, 2017]


SECTION §27-118. CONDITIONAL USE PROCESS
SECTION §27-202. TERMS DEFINED
SECTION §27-306. TABLE OF PERMITTED USES BY DISTRICT
SECTION 97-402.000. WAREHOUSE OR WHOLESALE SALES
SECTION §27-601. REQUIRED NUMBER OF OFF-STREET PARKING
SECTION §27-605. OFF-STREET LOADING


WHEREAS, Section 27-108 of the Upper Macungie Township Zoning Ordinance provides that "the Board of Supervisors may amend, challenge or repeal any or all portions of this Chapter on its own motion or upon agreeing to hear a written request for any person, entity or the Planning Commission."; and

WHEREAS, the Upper Macungie Township Board of Supervisors has identified certain procedural matters; certain definitions; certain uses and certain requirements related in whole, or in part, to Conditional Use applications; warehousing and truck tractor trailers which are in need of amending and/or updating; and

WHEREAS, the Upper Macungie Township Board of Supervisors finds that the proposed amendments will promote, protect and facilitate the public health, safety and welfare; and
WHEREAS, pursuant to Section 609 of the Municipalities Planning code, 53 P.S. § 10609, the Township of Upper Macungie is authorized and empowered to enact amendments to the Upper Macungie Township Zoning Ordinance after public hearing thereon pursuant to public notice; and

WHEREAS, the Board of Supervisors of the Township of Upper Macungie has conducted a public hearing pursuant to public notice concerning the following amendments to the Upper Macungie Township Zoning Ordinance; and,

WHEREAS, after public hearing pursuant to public notice, the Board of Supervisors of the Township of Upper Macungie desires to ordain and enact the amendments to the Upper Macungie Township Zoning Ordinance set forth hereinafter.

NOW THEREFORE, BE IT ORDAINED AND ENACTED by the Board of Supervisors of the Township of Upper Macungie, County of Lehigh, Commonwealth of Pennsylvania, as follows:

SECTION 1. DELETIONS, AMENDMENTS, INSERTIONS AND CHANGES

The following Sections denoted by Section numbers are amended, with such amendments being denoted by bold underlining. (*bold underlining*)

The following Sections or parts thereof denoted by Section numbers are added, with such additions being denoted by the word "NEW" preceding the addition which shall be denoted by bold text (*bold text*).

The following Sections or parts thereof denoted by Section numbers are deleted, with such deletions being denoted by brackets and strikethrough (*strikethrough*).

For purposes of Codification, all Sections noted herein follow the Sections as set forth in the Code of Ordinance of the Township of Upper Macungie, revised through October 1, 2009.

SECTION 2. BODY OF THE ORDINANCE
   lorb. 9-94, 4/7/1994, § 1181
1. Applicability.—Certain uses that are permitted by this Chapter as conditional uses shall be required to follow the review and zoning approval procedures described in this Section.—

2. Procedure.—

A. A conditional-use submission shall not be considered officially accepted for review until any needed zoning variance(s) or special exception approval that is directly relevant to the site layout and nature of the use is granted. The applicant may request an informal review by the Planning Commission of a site plan prior to requesting variances or a special exception.

B. Submission.—A minimum of three complete copies of any required site plan meeting the requirements of § 27-117 shall be submitted to the Township. The Zoning Officer shall refuse to accept an incomplete application which does not provide sufficient information to determine compliance with this Chapter.—

C. Applicant's Distribution.—

(1) Prior or within three working days after submittal to the Township, the applicant shall submit one copy to each of the following, as applicable, unless waived by the Zoning Officer:—

(a) The Township Engineer.—
(b) The Sewage Authority Engineer.—
(c) The County Conservation District.—
(d) The Lehigh Valley Planning Commission (if required under the Regional Stormwater Ordinance).—
(e) The Lehigh County Authority (if intended to be served by water service by such agency).—

(2) The applicant shall notify the Township in writing that such submittals were completed.—
D. Township Distribution. The Township shall distribute copies of the site plan to the
Planning Commission and the Board of Supervisors. A minimum of one copy shall be
retained in the Township files. The Township fire services should be given an
opportunity for a review, if deemed appropriate by the Zoning Officer.—

E. Zoning Officer Review. The Zoning Officer shall report in writing or in person to the
Planning Commission or Board of Supervisors stating whether the proposal complies
with this Chapter. The Zoning Officer may request a review by the Township
Engineer.—

F. Planning Commission. The Planning Commission has been designated by the Board of
Supervisors as the entity that will conduct the required public hearing on the conditional
use application. The Planning Commission shall submit a recommendation to the Board
of Supervisors. [Amended by Ord. 2010-6, 8/19/2010]

G. The Board of Supervisors shall not act to approve or deny a conditional use application
unless the Supervisors have received the reports of the Zoning Officer and the Planning
Commission or unless a period of 60 days has passed from the date of the application.—

H. The Board of Supervisors shall approve, conditionally approve or disapprove the
conditional use submission within a maximum of 90 days from the date of the first
scheduled Planning Commission regular meeting following the submission of a
complete and proper application, unless the applicant has agreed to a written time
extension. In granting a conditional use, the Board of Supervisors may require such
reasonable conditions and safeguards (in addition to those expressed in this Chapter) as
it determines are necessary to implement the purposes of this Chapter.—

I. The decision of the Board of Supervisors shall be in writing and shall be directly
communicated to, delivered to or mailed to the last known address of the applicant or
his/her representative.—

3. Approval of Conditional Uses. The Board of Supervisors shall approve any proposed
conditional use if it finds adequate evidence that the proposed use will meet:

A. Any specific standards for the proposed use listed in § 27-402 or 27-403.—
B. Other applicable Sections of this Chapter.—
NEW Section §27-118. Conditional Use:

1. Purpose. Before zoning approval is granted for any Use listed as a Conditional Use in this Ordinance, a site plan shall be reviewed by the Township Planning Commission and approved by the Township Board of Supervisors.

2. Approval of Conditional Uses.

   A. The Board of Supervisors shall approve any proposed Conditional Use only if they find sufficient evidence that any proposed Use will meet:
1. All of the Additional Requirements for Specific Principal and Specific Accessory Uses found in Part 4,

2. All of the General Requirements found in Part 8;

B. The Board of Supervisors shall hold hearings on and decide requests for such Conditional Uses in accordance with such Specific Standards in Section §27-402 and Section §27-403, as applicable. The hearing shall be conducted by the Board of Supervisors or the Board of Supervisors may appoint any member or an independent attorney as a hearing officer. The decision or, where no decision is called for, the findings shall be made by the Board of Supervisors.

However, the appellant or the applicant, as the case may be, in addition to the Township, may prior to the decision of the hearing, waive decision or findings by the Board of Supervisors and accept the decision or findings of the hearing officer as final.

C. In granting a Conditional Use, the Board of Supervisors may attach such reasonable conditions and safeguards, in addition to those expressed in this ordinance, as it may deem necessary to implement the purposes of this Ordinance.

3. Administration.

A. The Zoning Officer shall deny a zoning permit for the proposed development until written approval of the Township Board of Supervisors is obtained.

B. All applicants for Conditional Use shall submit five (5) sets of site plans sealed by a Pennsylvania licensed design professional.

C. All site plans shall contain information otherwise required by the Township Subdivision and Land Development Regulations for a Sketch Plan, and in addition thereto, all site plans, shall contain the following information as it pertains to the subject Lot(s):

1. The location of public and private water lines, supplies, wells, springs, streams, swamps, rivers and other bodies of water, and public and private sewer lines and septic systems;

2. The location of high-tension power line right-of-ways;

3. The location of pipeline right-of-ways,

4. The location of geologic and hydrologic features;
(5) The Flood plain and location of the site or facility within that Flood plain, and storm water runoffs;

(6) The location of public and private recreational areas;

(7) A soils, geologic and groundwater report of the characteristics of the area where the proposed site or facility will be located;

(8) The location of significant historical and architectural sites; and;

(9) Any other information needed in order to review compliance with the following;

(a) Part 4: Additional Requirements for Specific Uses;

(b) Part 5: Environmental Protection;

(c) Part 6: Off-Street Parking and Loading and;

(d) Part 8: General Requirements;

D. The Board of Supervisors, within ten (10) days of receipt of a completed submission, shall forward one copy of the site plan to the Zoning Officer, one copy to the Township Engineer, and one copy to the Director of Planning and Zoning for review by the Township Planning Commission. Owners of real property situated within three hundred (300) feet of the proposed site or facility shall be sent a notice of the Planning Commission's review meeting not less than ten (10) days prior to the date fixed for review.

E. The Zoning Officer shall, within thirty (30) days of receipt of a completed submission by the Township, review the plan and submission to determine compliance with this Ordinance, and submit a written recommendation to the Board of Supervisors.

F. The Planning Commission shall, within thirty (30) days of receipt of a completed submission by the Township, review the plan and submission to determine compliance with this Ordinance, and submit a written recommendation to the Board of Supervisors.

G. Failure of the Zoning Officer or the Planning Commission to submit a written report in a timely fashion shall not prevent the Board of Supervisors from hearing and deciding the request.

4. Referral to the Planning Commission,
A. The Board of Supervisors shall refer to the Township Planning Commission all applications for Conditional Uses.

B. In its review of the Conditional Use, the Township Planning Commission shall determine compliance with the standards and criteria set forth in this Ordinance.

C. In all cases the Township Planning Commission shall report in writing its findings and recommendations to the Board of Supervisors within thirty (30) days of receipt of a completed submission by the Township.

D. The Board of Supervisors and Planning Commission shall establish mutually acceptable procedures to assure that the review is accomplished in time to permit the Board of Supervisors to make its required decision.

5. Decision Findings.

A. The Board of Supervisors shall render a written decision or make written findings (when no decision is called for) on the application within forty-five (45) days after the last hearing before the Board of Supervisors. Where the application is contested or denied, the decision shall be accompanied by findings of fact and conclusions based thereon, together with the reasons therefore. Any conclusion based on any provision of Act 170, as amended, or of this Ordinance, or of any other Ordinance, rule or regulation, shall contain a reference to the provision relied on and the reasons why the conclusion is deemed appropriate in light of the facts found.

B. Where the Board of Supervisors fails to render the decision within the period required in paragraph A of this subsection (5) or fails to commence, conduct, or complete the required hearing as provided in Section 908(1.2) of the Pennsylvania Municipalities Planning Code (MPC), the decision shall be deemed to have been rendered in favor of the applicant, unless the applicant has agreed in writing or on the record to an extension of time. When a decision has been rendered in favor of the applicant because of the failure of the governing body to meet or render a decision as hereinabove provided, the Board of Supervisors shall give Public Notice of the decision within ten (10) days from the last day it could have met to render a decision in the same manner as required by the Public Notice requirements of the MPC. If the Board of Supervisors shall fail to provide such notice, the applicant may do so.

C. A copy of the final decision or a copy of the finding (when no decision is called for) shall be delivered to the applicant. The Board of Supervisors shall provide (by mail or otherwise) a brief notice of the decision or findings and the statement of the place where the full decision findings may examined to all other persons who have filed their names and addresses with the Board of Supervisors.
6. Appeals. In general, all appeals for securing a review of this Ordinance or any decision, determination, order of the Board of Supervisors, its agencies or officers issued pursuant to this Ordinance, shall be in conformance with Article X-A of, the Municipalities Planning Code as amended.

B. Section 27-202. Terms Defined.

**Distribution.** The processing of materials so as to sort out which finished goods are to be transported to different locations, and the loading and unloading of such goods. This use usually involves inventory control, material handling, order administration and packaging. This term shall not include a trucking company terminal.

"NEW" Land Development. The improvement of one lot or two or more contiguous lots, tracts or parcels of land for any purpose involving; a group of two or more residential or nonresidential buildings, whether proposed initially or cumulatively or; a single nonresidential building on a lot or lots regardless of the number of occupants or tenure; or the division or allocation of land or space, whether initially or cumulatively, between or among two or more existing or prospective occupants by means of, or for the purpose of streets, common areas, leaseholds, condominiums, building groups or other features or; a subdivision of land.

"NEW" Loading Dock. An area of a building, specifically an opening up to ten (10) feet wide in an exterior wall where goods are loaded or unloaded.

"NEW" Tractor Trailer Truck Semi-Truck. A truck, truck tractor or combination having a gross vehicle weight rating, gross combination weight rating, registered gross weight, registered combination weight or actual gross weight of 17,001 pounds or more; or A truck, truck tractor or combination engaged in interstate commerce and having a gross vehicle weight rating, gross combination weight rating, registered gross weight, registered combination weight or actual gross weight of 10,001 pounds or more.

**Trucking Company Terminal.** A use involving a large variety of materials, including materials owned by numerous corporations, being transported to a site to be unloaded primarily from tractor-trailer trucks and reloaded onto tractor-trailer trucks.

"NEW" Truck Terminal. An area or structure where trucks load and unload goods, products, cargo, materials and/or freight and where the same may be broken down or aggregated into smaller or larger loads for transfer to other motor vehicles or modes of transportation or to other points of junctions.

Motor Freight Terminal. See "Truck - trucking—Company Terminal."

**Warehouse.** A building or group of buildings primarily used for the indoor storage, transfer and distribution of products and materials, but not including retail uses or a truck terminal, unless such uses are specifically permitted in that zoning district.

"NEW" Warehouse/Distribution. A building or group of buildings primarily used for the unloading and indoor storage, transfer, and distribution of products and materials with a use of
the processing of materials so as to sort out which finished goods are to be transported to different locations, and the loading and unloading of such goods. This use usually involves inventory control, material handling, order administration and packaging. This term shall not include a trucking company terminal.

The remainder of this page is left blank intentionally.
C. Section §27-306 Table of Permitted Uses by District.

<table>
<thead>
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<th>Types of Uses</th>
<th>Business Districts</th>
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<td>(See definitions in Part 2)</td>
<td>NC</td>
</tr>
<tr>
<td><strong>Industrial Uses</strong></td>
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</tr>
<tr>
<td>Distribution as a principal use (other than trucking company terminal)</td>
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</tr>
<tr>
<td>Warehousing, Distribution (other than truck terminal)</td>
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</tr>
</tbody>
</table>

(See additional requirements in § 27-402)

KEY:

P = Permitted by right (zoning decision by Zoning Officer)

C = Conditional use (decision by the Board of Supervisors with review by Planning Commission)

SE = Special exception use (decision by Zoning Hearing Board)

N = Not permitted

(§ 27—402) = See additional requirements in § 27-402

(§27-403) = See additional requirements in § 27-403

(SW) = Public sewer and public water service both required
D. Section §27-402.000. Warehouse, Distribution or Wholesale Sales.

(1) See off-street loading requirements in § 27-605.

(2) No storage of garbage (other than is routinely produced on site and awaiting regular collection) shall be permitted. See the Township Fire Protection Ordinance.

(3) Uses that would involve the entrance to the use of an average of more than 100 tractor trailers per weekday shall be required to meet the additional site development standards in this § 27-402 for a trucking company terminal.

(4) See requirements in § 27-403 for "outdoor storage or display."

(5) “NEW” When permitted as a Special Exception, the applicant shall provide a detailed description of the proposed use in each of the following topics:

(a) The nature of the onsite activities and operations, the types of materials stored, the frequency of distribution and restocking, the duration period of storage of materials, and the methods for disposal of any surplus or damaged materials. In addition, the applicant shall furnish evidence that the disposal of materials will be accomplished in a manner that complies with State and Federal regulations;

(b) The general scale of the operation, in terms of its market area, specific floor space requirements for each activity, the total number of employees on each shift, and an overall needed site size;

(c) Any environmental impacts that are likely to be generated (e.g., odor, noise, smoke, dust, litter, glare, vibration, electrical disturbance, wastewater, storm water, solid waste, etc.) and specific measures employed to mitigate or eliminate any negative impacts. The applicant shall further furnish evidence that the impacts generated by the proposed use fall within acceptable levels, as regulated by applicable laws and ordinance, including but not limited to those listed in Part 5 of this Ordinance;

(d) The applicant shall present credible evidence that the number of "oversized" off-street parking spaces provided for trucks will be adequate to accommodate the expected demand generated by the Warehouse activities.

6) A traffic study prepared by a professional traffic engineer, according to Section §27812.

E. Part 6. Off-Street Parking and Loading:

Section §27-601.
Table 6.1
Off-Street Parking Requirements
(See definition of "employee" in Part 2)

<table>
<thead>
<tr>
<th>Use</th>
<th>Number of Off-Street Parking Spaces Required</th>
<th>Plus 1 Off-Street Parking Space for Each:</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. Industrial Uses: All industrial uses (including warehousing, distribution truck terminals and manufacturing)</td>
<td>1 per 1.2 per employee, based upon the maximum number of employees on site at peak period of times (including any overlapping shifts) plus 10' x 80' truck staging parking space per each 1/2 of a required loading spaces</td>
<td>1 visitor space for every 10 managers on the site</td>
</tr>
</tbody>
</table>

Section §27-605 Off-Street Loading.

2. Design and Layout of Loading Facilities. Off-street loading facilities shall meet the following requirements:

A. Each off-street loading space shall be at least (in feet):

<table>
<thead>
<tr>
<th>Largest Type of Truck Intended Minimum Width</th>
<th>Minimum Width</th>
<th>Minimum Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tractor-trailer</td>
<td>12 (except 11 if more than 10 such spaces on a lot) 10</td>
<td>80</td>
</tr>
<tr>
<td>Trucks other than tractor-trailers, pickups or vans</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>Pickup truck or van</td>
<td>9</td>
<td>18</td>
</tr>
</tbody>
</table>

"NEW." Each proposed use shall provide for the minimum number of off-street loading spaces:

<table>
<thead>
<tr>
<th>Use</th>
<th>Gross Floor Area Square Feet</th>
<th>Minimum Number of Spaces</th>
</tr>
</thead>
</table>


<table>
<thead>
<tr>
<th>Retail, manufacturing, wholesaling, commercial, institutional, personal services, funeral homes and similar uses</th>
<th>Under 8,000</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8,000 to 40,000</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>40,000 to 100,000</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>100,000 to 250,000</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Each additional 200,000</td>
<td>1</td>
</tr>
<tr>
<td>Office buildings, hotels, motels and similar uses</td>
<td>Under 100,000</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>100,000 to 300,000</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Over 300,000</td>
<td>3</td>
</tr>
<tr>
<td>Warehouse, Distribution, Truck Terminals, and similar uses</td>
<td>per Loading Dock</td>
<td>1</td>
</tr>
</tbody>
</table>

SECTION 3. EFFECTIVE DATE

This Ordinance shall become effective five (5) calendar days after the date of enactment.

SECTION 4. SEVERABILITY

In the event that any provision, section, sentence, clause or part of this ordinance shall be held to be invalid, such invalidity shall not affect or impair any remaining provision, section, sentence, clause or part of this ordinance, it being the intent of this Township that such remainder shall be and shall remain in full force and effect.

SECTION 5. REPEALER

All other Ordinances or parts of Ordinances inconsistent herewith shall be and the same expressly are repealed.

ENACTED AND ORDAINED the day of June, 2017 by the Board of Supervisors of the Township of Upper Macungie, Lehigh County, Pennsylvania, in a lawful session duly assembled.